

State Forecasting Models

April 30, 2014

State Models

- We may re-visit the model formulations based on the following factors
 - Feedback from stakeholders
 - Inclusion of 2013 historical data (if it is available early enough to do so)
 - Results when we run the models using the economic projections are not credible
- If we make any model adjustments, we will inform stakeholders

Dependent and Explanatory Variables

Variables	EvIEWS name	Units
<i>Dependent variable:</i>		
Electricity sales	ELECTRICITY_SALES	Gwh
<i>Explanatory variables:</i>		
Electricity prices	REAL_ELECTRICITY_PRICE	Cents/Kwh in 2005 dollars *
Natural gas prices	REAL_NATURAL_GAS_PRICE	Dollars/Mcf in 2005 dollars *
Real personal income	REAL_INCOME	Thousands of 2005 dollars *
Population	POPULATION	Number of people
Manufacturing employment	MANUFACTURING_EMP	Number of jobs
Non-manufacturing employment	NON_MANUFACTURING_EMP	Number of jobs
Non-farm employment	NON_FARM_EMP	Number of jobs
Gross state product	REAL_GSP	Millions of chained 2005 dollars
Cooling degree days	CDD	Fahrenheit
Heating degree days	HDD	Fahrenheit
• Original data was in nominal dollars. SUFG converted it to real 2005 dollars using state level CPI from IHS Global Insight. • These are the same candidate explanatory variables provided to MISO March 31, 2014.		

Arkansas

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	10153.62	3412.086	2.975781	0.0085	
REAL_ELECTRICITY_PRICE	-1510.663	197.1103	-7.664052	0.0000	-0.207429
REAL_NATURAL_GAS_PRICE	260.0201	97.02004	2.680066	0.0158	0.037032
REAL_GSP	0.349524	0.026244	13.31848	0.0000	0.699647
CDD	3.666795	0.502172	7.301868	0.0000	0.204896
HDD	1.190954	0.441476	2.697663	0.0152	0.085959

R-squared	0.995397	Mean dependent var	40001.16
Adjusted R-squared	0.994044	S.D. dependent var	6727.353
S.E. of regression	519.1934	Durbin-Watson stat	2.165387
F-statistic	735.3249		
Prob(F-statistic)	0.000000		

Illinois

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	57564.28	23828.46	2.415779	0.0272	
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-2976.033	732.3127	-4.063884	0.0008	-0.167014
REAL_INCOME/POPULATION	1114.134	382.9021	2.909710	0.0098	0.306283
NON_MANUFACTURING_EMP	0.007244	0.003500	2.070016	0.0540	0.260752
CDD	11.41321	1.533661	7.441811	0.0000	0.099455
HDD	2.501311	0.857782	2.916023	0.0096	0.099827

R-squared	0.988580	Mean dependent var	132802.6
Adjusted R-squared	0.985221	S.D. dependent var	10924.26
S.E. of regression	1328.060	Durbin-Watson stat	2.014057
F-statistic	294.3155		
Prob(F-statistic)	0.000000		

Indiana

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	27160.42	6276.360	4.327416	0.0005	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-1985.668	422.2641	-4.702432	0.0002	-0.134034
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	653.4294	162.4422	4.022536	0.0009	0.039664
REAL_GSP	0.289142	0.012665	22.83091	0.0000	0.702235
CDD	5.243999	0.996895	5.260334	0.0001	0.062199
HDD	1.667886	0.574212	2.904653	0.0099	0.090906

R-squared	0.994476	Mean dependent var	95347.45
Adjusted R-squared	0.992851	S.D. dependent var	10954.77
S.E. of regression	926.2677	Durbin-Watson stat	1.874429
F-statistic	612.0405		
Prob(F-statistic)	0.000000		

Iowa

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	15371.50	4715.051	3.260093	0.0046	
REAL_ELECTRICITY_PRICE	-1655.225	354.6526	-4.667174	0.0002	-0.240484
REAL_INCOME/POPULATION	390.9441	159.5598	2.450142	0.0254	0.323576
REAL_GSP	0.151856	0.042223	3.596505	0.0022	0.429654
CDD	2.632238	0.669726	3.930323	0.0011	0.072175
HDD	0.719842	0.272699	2.639696	0.0172	0.113385

R-squared	0.992241	Mean dependent var	38922.22
Adjusted R-squared	0.989959	S.D. dependent var	5428.231
S.E. of regression	543.9232	Durbin-Watson stat	1.791950
F-statistic	434.8220		
Prob(F-statistic)	0.000000		

Kentucky

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	-73242.26	9984.345	-7.335710	0.0000	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-2333.131	477.3511	-4.887662	0.0001	-0.160677
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	1010.142	235.3190	4.292652	0.0005	0.068859
POPULATION	0.034946	0.002073	16.85586	0.0000	1.718772
CDD	3.603448	1.607973	2.240987	0.0387	0.053980
HDD	2.915704	1.008896	2.889993	0.0102	0.163536

R-squared	0.982285	Mean dependent var	80805.80
Adjusted R-squared	0.977075	S.D. dependent var	9725.946
S.E. of regression	1472.608	Durbin-Watson stat	2.425481
F-statistic	188.5297		
Prob(F-statistic)	0.000000		

Louisiana

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	54699.27	10064.29	5.434986	0.0000	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-5194.793	368.1526	-14.11043	0.0000	-0.397645
REAL_INCOME/POPULATION	942.7084	117.7834	8.003746	0.0000	0.375089
MANUFACTURING_EMP	0.060829	0.026634	2.283883	0.0355	0.102087
CDD	5.785006	1.249078	4.631421	0.0002	0.211551
HDD	5.547568	1.016749	5.456184	0.0000	0.113428

R-squared	0.983642	Mean dependent var	76157.68
Adjusted R-squared	0.978830	S.D. dependent var	6267.344
S.E. of regression	911.8835	Durbin-Watson stat	2.292839
F-statistic	204.4457		
Prob(F-statistic)	0.000000		

Michigan

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1992 2012

Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	9887.556	23906.46	0.413593	0.6850	
REAL_ELECTRICITY_PRICE(-2)	-2009.455	777.2216	-2.585433	0.0207	-0.172984
REAL_INCOME/POPULATION	2260.565	515.8022	4.382621	0.0005	0.712365
REAL_GSP	0.052013	0.023470	2.216160	0.0426	0.173104
CDD	7.472736	2.050467	3.644406	0.0024	0.042552
HDD	2.176611	0.980449	2.220014	0.0422	0.146169

R-squared	0.974284	Mean dependent var	101334.8
Adjusted R-squared	0.965713	S.D. dependent var	7254.844
S.E. of regression	1343.371	Durbin-Watson stat	1.655936
F-statistic	113.6606		
Prob(F-statistic)	0.000000		

Minnesota

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	7388.648	4235.610	1.744412	0.0991	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-654.4179	303.6498	-2.155173	0.0458	-0.073421
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	453.7845	133.8691	3.389762	0.0035	0.040730
REAL_INCOME	0.000220	8.27E-06	26.56632	0.0000	0.703519
CDD	7.223193	1.357260	5.321893	0.0001	0.058357
HDD	1.405156	0.300272	4.679606	0.0002	0.198212

R-squared	0.993054	Mean dependent var	59548.41
Adjusted R-squared	0.991011	S.D. dependent var	7398.364
S.E. of regression	701.4585	Durbin-Watson stat	1.934167
F-statistic	486.0632		
Prob(F-statistic)	0.000000		

Mississippi

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1991 2012

Included observations: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	5015.631	3025.089	1.658011	0.1168	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-1513.318	230.6393	-6.561404	0.0000	-0.237037
REAL_INCOME/POPULATION	731.7930	288.4842	2.536683	0.0220	0.431093
REAL_GSP	0.264817	0.095223	2.781019	0.0134	0.472299
CDD	3.534194	0.667244	5.296703	0.0001	0.192359
HDD	1.446693	0.601993	2.403171	0.0287	0.076327

R-squared	0.991021	Mean dependent var	43205.89
Adjusted R-squared	0.988215	S.D. dependent var	5231.762
S.E. of regression	567.9565	Durbin-Watson stat	2.343873
F-statistic	353.1815		
Prob(F-statistic)	0.000000		

Missouri

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1997 2012

Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	-92323.29	31275.91	-2.951898	0.0145	
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-2870.827	1140.149	-2.517939	0.0305	-0.241815
POPULATION	0.018543	0.002333	7.947021	0.0000	1.355780
NON_MANUFACTURING_EMP	0.022565	0.009812	2.299640	0.0443	0.667380
CDD	8.196991	1.312581	6.244939	0.0001	0.141505
HDD	3.520744	0.780072	4.513355	0.0011	0.219506

R-squared	0.986652	Mean dependent var	77392.46
Adjusted R-squared	0.979979	S.D. dependent var	6559.812
S.E. of regression	928.1939	Durbin-Watson stat	2.145002
F-statistic	147.8396		
Prob(F-statistic)	0.000000		

Montana

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1996 2012

Included observations: 17

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	-147.2706	4936.305	-0.029834	0.9768	
REAL_ELECTRICITY_PRICE	-2319.576	250.4169	-9.262858	0.0000	-1.179269
@MOVAV(REAL_NATURAL_GAS_PRICE,5)	557.3859	110.0592	5.064417	0.0005	0.325891
REAL_INCOME/POPULATION	472.6714	92.23000	5.124920	0.0004	1.121158
MANUFACTURING_EMP	0.265660	0.074082	3.585997	0.0050	0.337264
CDD	1.303610	0.495909	2.628727	0.0252	0.041810
HDD	0.720867	0.208191	3.462536	0.0061	0.398884

R-squared	0.960434	Mean dependent var	13609.20
Adjusted R-squared	0.936694	S.D. dependent var	1058.139
S.E. of regression	266.2357	Durbin-Watson stat	2.255830
F-statistic	40.45654		
Prob(F-statistic)	0.000002		

North Dakota

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1995 2012

Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	-6298.058	1168.215	-5.391180	0.0001	
@MOVAV(REAL_ELECTRICITY_PRICE,2)	-832.9679	126.5348	-6.582914	0.0000	-0.360069
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	151.4305	37.61366	4.025945	0.0014	0.050621
NON_MANUFACTURING_EMP	0.056609	0.001436	39.41398	0.0000	1.553223
HDD	0.371532	0.071051	5.229110	0.0002	0.293716

R-squared	0.994687	Mean dependent var	10705.33
Adjusted R-squared	0.993052	S.D. dependent var	2027.470
S.E. of regression	168.9944	Durbin-Watson stat	2.419346
F-statistic	608.4711		
Prob(F-statistic)	0.000000		

South Dakota

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1995 2012

Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	-24504.61	1213.219	-20.19801	0.0000	
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-341.9450	89.70761	-3.811772	0.0025	-0.207574
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	105.8534	23.60448	4.484462	0.0007	0.051028
POPULATION	0.043675	0.000848	51.53076	0.0000	3.109470
CDD	0.345942	0.115548	2.993940	0.0112	0.027503
HDD	0.193068	0.037102	5.203737	0.0002	0.153476

R-squared	0.998637	Mean dependent var	9446.345
Adjusted R-squared	0.998069	S.D. dependent var	1490.663
S.E. of regression	65.50321	Durbin-Watson stat	2.071926
F-statistic	1758.412		
Prob(F-statistic)	0.000000		

Texas

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	30527.38	33755.29	0.904373	0.3784	
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-4641.131	1375.351	-3.374506	0.0036	-0.108300
REAL_INCOME/POPULATION	3515.000	1454.605	2.416465	0.0272	0.346215
REAL_GSP	0.145494	0.026098	5.574822	0.0000	0.482663
CDD	16.16171	3.823118	4.227363	0.0006	0.170940
HDD	20.84670	5.074099	4.108454	0.0007	0.094441

R-squared	0.993627	Mean dependent var	307551.8
Adjusted R-squared	0.991752	S.D. dependent var	43037.33
S.E. of regression	3908.547	Durbin-Watson stat	1.629527
F-statistic	530.0731		
Prob(F-statistic)	0.000000		

Wisconsin

Dependent Variable: ELECTRICITY_SALES

Method: Least Squares

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Elasticity at 2012 (weather at means)
C	3338.401	4033.360	0.827697	0.4200	
REAL_ELECTRICITY_PRICE	-1409.155	165.4177	-8.518773	0.0000	-0.181672
REAL_NATURAL_GAS_PRICE	277.8522	92.06560	3.017981	0.0082	0.025929
REAL_INCOME/POPULATION	804.5379	302.7931	2.657055	0.0172	0.424950
REAL_GSP	0.161445	0.037478	4.307672	0.0005	0.528265
CDD	4.065225	0.767690	5.295401	0.0001	0.041011
HDD	1.168013	0.290250	4.024162	0.0010	0.131086
R-squared	0.996163	Mean dependent var	62989.83		
Adjusted R-squared	0.994724	S.D. dependent var	7021.303		
S.E. of regression	509.9883	Durbin-Watson stat	1.562163		
F-statistic	692.3359				
Prob(F-statistic)	0.000000				

Elasticity Summary

States Variables	AR	IL	IN	IA	KY	LA	MI	MN	MS	MO	MT	ND	SD	TX	WI
REAL_ELECTRICITY_PRICE	-0.207	-0.167	-0.134	-0.240	-0.161	-0.398	-0.173	-0.073	-0.237	-0.242	-1.179	-0.360	-0.208	-0.108	-0.182
REAL_NATURAL_GAS_PRICE	0.037		0.040		0.069			0.041			0.326	0.051	0.051		0.026
REAL_INCOME								0.704							
POPULATION					1.719					1.356			3.109		
REAL_INCOME/POPULATION		0.306		0.324		0.375	0.712		0.431		1.121			0.346	0.425
REAL_GSP	0.700		0.702	0.430			0.173		0.472					0.483	0.528
NON_MANUFACTURING_EMP		0.261								0.667		1.553			
MANUFACTURING_EMP						0.102					0.337				
NON_FARM_EMP															
CDD	0.205	0.099	0.062	0.072	0.054	0.212	0.0426	0.058	0.192	0.142	0.042		0.028	0.171	0.041
HDD	0.086	0.100	0.091	0.113	0.164	0.113	0.146	0.198	0.076	0.220	0.399	0.294	0.153	0.094	0.131

The elasticities are evaluated at 2012 values except for the weather variables which are evaluated at means.

Next Steps

- Develop allocation models to convert state-level forecasts to LRZ level forecasts
- Develop LRZ energy to peak demand conversion models
- Incorporate econometric model drivers
- Run and validate state econometric models
- July workshop

More Next Steps

- Determine LRZ level energy and peak demand forecasts
- Determine MISO system energy and peak demand forecasts
- September workshop
- Develop forecast report

APPENDIX

Coefficient Confidence Intervals

Arkansas

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	10153.62	2954.750	17352.49
REAL_ELECTRICITY_PRICE	-1510.663	-1926.530	-1094.797
REAL_NATURAL_GAS_PRICE	260.0201	55.32575	464.7145
REAL_GSP	0.349524	0.294155	0.404893
CDD	3.666795	2.607304	4.726286
HDD	1.190954	0.259521	2.122387

Illinois

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	57564.28	7290.625	107837.9
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-2976.033	-4521.078	-1430.989
REAL_INCOME/POPULATION	1114.134	306.2813	1921.987
NON_MANUFACTURING_EMP	0.007244	-0.000139	0.014628
CDD	11.41321	8.177472	14.64896
HDD	2.501311	0.691550	4.311073

Indiana

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	27160.42	13918.46	40402.38
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-1985.668	-2876.567	-1094.769
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	653.4294	310.7064	996.1524
REAL_GSP	0.289142	0.262423	0.315862
CDD	5.243999	3.140735	7.347263
HDD	1.667886	0.456405	2.879366

Iowa

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	15371.50	5423.615	25319.39
REAL_ELECTRICITY_PRICE	-1655.225	-2403.477	-906.9738
REAL_INCOME/POPULATION	390.9441	54.30236	727.5859
REAL_GSP	0.151856	0.062773	0.240939
CDD	2.632238	1.219241	4.045235
HDD	0.719842	0.144498	1.295186

Kentucky

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	-73242.26	-94307.39	-52177.13
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-2333.131	-3340.254	-1326.008
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	1010.142	513.6627	1506.622
POPULATION	0.034946	0.030571	0.039320
CDD	3.603448	0.210921	6.995975
HDD	2.915704	0.787118	5.044289

Louisiana

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	54699.27	33465.47	75933.06
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-5194.793	-5971.527	-4418.059
REAL_INCOME/POPULATION	942.7084	694.2071	1191.210
MANUFACTURING_EMP	0.060829	0.004636	0.117023
CDD	5.785006	3.149682	8.420330
HDD	5.547568	3.402416	7.692721

Michigan

Coefficient Confidence Intervals

Sample: 1992 2012

Included observations: 21

Variable	Coefficient	95% CI	
		Low	High
C	9887.556	-41067.86	60842.97
REAL_ELECTRICITY_PRICE(-2)	-2009.455	-3666.063	-352.8460
REAL_INCOME/POPULATION	2260.565	1161.159	3359.972
REAL_GSP	0.052013	0.001988	0.102038
CDD	7.472736	3.102268	11.84320
HDD	2.176611	0.086833	4.266390

Minnesota

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	7388.648	-1547.709	16325.00
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-654.4179	-1295.063	-13.77285
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	453.7845	171.3453	736.2237
REAL_INCOME	0.000220	0.000202	0.000237
CDD	7.223193	4.359624	10.08676
HDD	1.405156	0.771637	2.038675

Mississippi

Coefficient Confidence Intervals

Sample: 1991 2012

Included observations: 22

Variable	Coefficient	95% CI	
		Low	High
C	5015.631	-1397.272	11428.53
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-1513.318	-2002.251	-1024.384
REAL_INCOME/POPULATION	731.7930	120.2339	1343.352
REAL_GSP	0.264817	0.062953	0.466680
CDD	3.534194	2.119699	4.948688
HDD	1.446693	0.170524	2.722862

Missouri

Coefficient Confidence Intervals

Sample: 1997 2012

Included observations: 16

Variable	Coefficient	95% CI	
		Low	High
C	-92323.29	-162010.4	-22636.23
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-2870.827	-5411.238	-330.4158
POPULATION	0.018543	0.013344	0.023742
NON_MANUFACTURING_EMP	0.022565	0.000702	0.044428
CDD	8.196991	5.272377	11.12160
HDD	3.520744	1.782634	5.258854

Montana

Coefficient Confidence Intervals

Sample: 1996 2012

Included observations: 17

Variable	Coefficient	95% CI	
		Low	High
C	-147.2706	-11146.04	10851.50
REAL_ELECTRICITY_PRICE	-2319.576	-2877.539	-1761.612
@MOVAV(REAL_NATURAL_GAS_PRICE,5)	557.3859	312.1586	802.6132
REAL_INCOME/POPULATION	472.6714	267.1701	678.1726
MANUFACTURING_EMP	0.265660	0.100594	0.430726
CDD	1.303610	0.198655	2.408565
HDD	0.720867	0.256990	1.184745

North Dakota

Coefficient Confidence Intervals

Sample: 1995 2012

Included observations: 18

Variable	Coefficient	95% CI	
		Low	High
C	-6298.058	-8821.833	-3774.282
@MOVAV(REAL_ELECTRICITY_PRICE,2)	-832.9679	-1106.330	-559.6060
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	151.4305	70.17116	232.6899
NON_MANUFACTURING_EMP	0.056609	0.053506	0.059712
HDD	0.371532	0.218036	0.525027

South Dakota

Coefficient Confidence Intervals

Sample: 1995 2012

Included observations: 18

Variable	Coefficient	95% CI	
		Low	High
C	-24504.61	-27147.99	-21861.23
@MOVAV(REAL_ELECTRICITY_PRICE,3)	-341.9450	-537.4011	-146.4889
@MOVAV(REAL_NATURAL_GAS_PRICE,3)	105.8534	54.42365	157.2831
POPULATION	0.043675	0.041829	0.045522
CDD	0.345942	0.094186	0.597699
HDD	0.193068	0.112230	0.273906

Texas

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	30527.38	-40690.05	101744.8
@MOVAV(REAL_ELECTRICITY_PRICE,5)	-4641.131	-7542.868	-1739.393
REAL_INCOME/POPULATION	3515.000	446.0530	6583.948
REAL_GSP	0.145494	0.090431	0.200557
CDD	16.16171	8.095634	24.22778
HDD	20.84670	10.14129	31.55212

Wisconsin

Coefficient Confidence Intervals

Sample: 1990 2012

Included observations: 23

Variable	Coefficient	95% CI	
		Low	High
C	3338.401	-5211.940	11888.74
REAL_ELECTRICITY_PRICE	-1409.155	-1759.825	-1058.486
REAL_NATURAL_GAS_PRICE	277.8522	82.68189	473.0226
REAL_INCOME/POPULATION	804.5379	162.6453	1446.431
REAL_GSP	0.161445	0.081994	0.240895
CDD	4.065225	2.437795	5.692654
HDD	1.168013	0.552710	1.783316