Growth Rates for State Level Forecast Drivers

Forecasting Model Candidate Variables

At the beginning of the process for developing an independent load forecast, the State Utility Forecasting Group (SUFG) developed econometric models of retail electricity sales for each of the MISO states. The models are based on historical values for a variety of explanatory variables (or drivers), using Eviews, a statistical analysis program. The candidate variables and their data sources are provided in Table 1. The model formulations were provided previously.

Table 1. Dependent and Explanatory Variables

Variables	Eviews name	Data Source
Dependent variable:		
Electricity sales	ELECTRICITY_SALES	EIA
Explanatory variables:		
Electricity prices	REAL_ELECTRICITY_PRICE	EIA*
Natural gas prices	REAL_NATURAL_GAS_PRICE	EIA*
Real personal income	REAL_INCOME	BEA*
Population	POPULATION	IHS Global Insight
Manufacturing employment	MANUFACTURING_EMP	BLS
Non-manufacturing employment	NON_MANUFACTURING_EMP	BLS
Non-farm employment	NON_FARM_EMP	BLS
Gross state product	REAL_GSP	BEA
Cooling degree days	CDD	NOAA
Heating degree days	HDD	NOAA
* Original data was in nominal dollars. SUFG converted it to real 2005 dollars using state level CPI from IHS Global Insight.		

Projected Growth Rates

Each state's electricity sales forecast will be determined by using projections of values for the applicable drivers for that state. Table 2 provides compound average growth rates for the explanatory variables over the forecast period (2015-2024). Cooling degree days and heating degree days are held constant at their 30-year average values per NOAA. The projections provided in Table 2 are from a macroeconomic forecast by IHS Global Insight.

Table 2. Explanatory Variable Compound Annual Growth Rates (%)

Variables	AR	IL	IN	IA	KY	LA	MI	MN	MS	MO	MT	ND	SD	TX	WI
REAL_ELECTRICITY_PRICE	0.75	0.33	0.99	1.09	0.84	0.92	1.05	1.21	0.96	1.20	0.76	1.16	1.25	0.69	0.90
REAL_NATURAL_GAS_PRICE	-0.72		-0.43		-0.03			-0.59			-0.62	-0.40	-0.44		-0.58
REAL_INCOME								2.68							
POPULATION					0.52					0.51			0.84		
REAL_INCOME/POPULATION		2.11		2.21		2.10	1.93			2.36	2.56			2.18	2.40
REAL_GSP	2.51		2.40	2.58			2.08			2.37				3.61	2.19
NON_MANUFACTURING_EMP		0.70									0.88	0.79			
MANUFACTURING_EMP						-0.10					0.32				