VAR Estimation Results:

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Endogenous variables: energy\_train, temp\_train

Deterministic variables: both

Sample size: 2947

Log Likelihood: -23325.13

Roots of the characteristic polynomial:

0.9697 0.7203 0.7203 0.7181 0.7181 0.678 0.678 0.6675 0.4994 0.4994 0.4711 0.3831 0.3831 0.09112

Call:

VAR(y = combo, p = 7, type = "both", season = 24L)

Estimation results for equation energy\_train:

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energy\_train = energy\_train.l1 + temp\_train.l1 + energy\_train.l2 + temp\_train.l2 + energy\_train.l3 + temp\_train.l3 + energy\_train.l4 + temp\_train.l4 + energy\_train.l5 + temp\_train.l5 + energy\_train.l6 + temp\_train.l6 + energy\_train.l7 + temp\_train.l7 + const + trend + sd1 + sd2 + sd3 + sd4 + sd5 + sd6 + sd7 + sd8 + sd9 + sd10 + sd11 + sd12 + sd13 + sd14 + sd15 + sd16 + sd17 + sd18 + sd19 + sd20 + sd21 + sd22 + sd23

Estimate Std. Error t value Pr(>|t|)

energy\_train.l1 3.668e-01 1.856e-02 19.764 < 2e-16 \*\*\*

temp\_train.l1 -1.908e+01 1.522e+01 -1.254 0.21006

energy\_train.l2 2.240e-01 1.973e-02 11.353 < 2e-16 \*\*\*

temp\_train.l2 -5.826e+00 3.172e+01 -0.184 0.85430

energy\_train.l3 1.429e-02 2.018e-02 0.708 0.47892

temp\_train.l3 1.960e+01 3.712e+01 0.528 0.59759

energy\_train.l4 -1.701e-02 2.017e-02 -0.843 0.39913

temp\_train.l4 -2.174e+01 3.811e+01 -0.571 0.56836

energy\_train.l5 1.548e-02 2.018e-02 0.767 0.44290

temp\_train.l5 3.957e+01 3.713e+01 1.066 0.28667

energy\_train.l6 -8.179e-03 1.974e-02 -0.414 0.67867

temp\_train.l6 -2.023e+01 3.175e+01 -0.637 0.52419

energy\_train.l7 2.362e-04 1.852e-02 0.013 0.98982

temp\_train.l7 8.231e+00 1.528e+01 0.539 0.59012

const 2.415e+02 2.081e+01 11.606 < 2e-16 \*\*\*

trend -5.638e-03 9.740e-03 -0.579 0.56276

sd1 2.015e+02 4.704e+01 4.283 1.91e-05 \*\*\*

sd2 3.182e+02 4.787e+01 6.647 3.56e-11 \*\*\*

sd3 -1.363e+02 4.925e+01 -2.767 0.00569 \*\*

sd4 -2.051e+02 5.000e+01 -4.103 4.19e-05 \*\*\*

sd5 -2.830e+02 5.070e+01 -5.583 2.59e-08 \*\*\*

sd6 -3.711e+02 5.172e+01 -7.174 9.20e-13 \*\*\*

sd7 -3.459e+02 5.250e+01 -6.587 5.30e-11 \*\*\*

sd8 -2.897e+02 5.318e+01 -5.448 5.53e-08 \*\*\*

sd9 -2.697e+02 5.381e+01 -5.012 5.71e-07 \*\*\*

sd10 -2.678e+02 5.329e+01 -5.026 5.32e-07 \*\*\*

sd11 -2.625e+02 5.290e+01 -4.963 7.34e-07 \*\*\*

sd12 -2.484e+02 5.216e+01 -4.763 2.00e-06 \*\*\*

sd13 -2.303e+02 5.190e+01 -4.437 9.45e-06 \*\*\*

sd14 -2.026e+02 5.170e+01 -3.919 9.10e-05 \*\*\*

sd15 -8.995e+01 5.144e+01 -1.749 0.08047 .

sd16 2.980e+01 5.122e+01 0.582 0.56072

sd17 -4.785e+00 5.134e+01 -0.093 0.92574

sd18 3.172e+01 5.125e+01 0.619 0.53605

sd19 6.215e+01 5.076e+01 1.225 0.22086

sd20 -4.790e-01 5.005e+01 -0.010 0.99236

sd21 4.159e+00 4.892e+01 0.085 0.93225

sd22 -8.530e+01 4.767e+01 -1.789 0.07369 .

sd23 -8.299e+01 4.697e+01 -1.767 0.07734 .

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 366.5 on 2908 degrees of freedom

Multiple R-Squared: 0.451, Adjusted R-squared: 0.4438

F-statistic: 62.86 on 38 and 2908 DF, p-value: < 2.2e-16

Estimation results for equation temp\_train:

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temp\_train = energy\_train.l1 + temp\_train.l1 + energy\_train.l2 + temp\_train.l2 + energy\_train.l3 + temp\_train.l3 + energy\_train.l4 + temp\_train.l4 + energy\_train.l5 + temp\_train.l5 + energy\_train.l6 + temp\_train.l6 + energy\_train.l7 + temp\_train.l7 + const + trend + sd1 + sd2 + sd3 + sd4 + sd5 + sd6 + sd7 + sd8 + sd9 + sd10 + sd11 + sd12 + sd13 + sd14 + sd15 + sd16 + sd17 + sd18 + sd19 + sd20 + sd21 + sd22 + sd23

Estimate Std. Error t value Pr(>|t|)

energy\_train.l1 1.080e-05 2.246e-05 0.481 0.63071

temp\_train.l1 1.845e+00 1.842e-02 100.145 < 2e-16 \*\*\*

energy\_train.l2 -2.030e-05 2.388e-05 -0.850 0.39530

temp\_train.l2 -1.359e+00 3.839e-02 -35.403 < 2e-16 \*\*\*

energy\_train.l3 -2.973e-05 2.442e-05 -1.218 0.22350

temp\_train.l3 8.853e-01 4.493e-02 19.704 < 2e-16 \*\*\*

energy\_train.l4 4.745e-06 2.442e-05 0.194 0.84592

temp\_train.l4 -6.875e-01 4.612e-02 -14.906 < 2e-16 \*\*\*

energy\_train.l5 -2.669e-05 2.442e-05 -1.093 0.27457

temp\_train.l5 5.197e-01 4.494e-02 11.564 < 2e-16 \*\*\*

energy\_train.l6 1.150e-05 2.389e-05 0.481 0.63036

temp\_train.l6 -3.437e-01 3.843e-02 -8.944 < 2e-16 \*\*\*

energy\_train.l7 1.884e-05 2.242e-05 0.840 0.40078

temp\_train.l7 1.268e-01 1.849e-02 6.856 8.61e-12 \*\*\*

const 4.536e-02 2.519e-02 1.801 0.07181 .

trend 4.646e-05 1.179e-05 3.941 8.30e-05 \*\*\*

sd1 1.585e-02 5.693e-02 0.278 0.78066

sd2 -1.121e-01 5.793e-02 -1.934 0.05318 .

sd3 -1.464e-01 5.961e-02 -2.456 0.01410 \*

sd4 -1.604e-01 6.051e-02 -2.650 0.00809 \*\*

sd5 -8.167e-02 6.136e-02 -1.331 0.18327

sd6 1.742e-02 6.260e-02 0.278 0.78085

sd7 -5.533e-02 6.354e-02 -0.871 0.38400

sd8 -3.501e-02 6.437e-02 -0.544 0.58656

sd9 -3.372e-02 6.512e-02 -0.518 0.60462

sd10 -2.369e-02 6.450e-02 -0.367 0.71347

sd11 -1.107e-01 6.402e-02 -1.730 0.08382 .

sd12 -4.250e-02 6.313e-02 -0.673 0.50088

sd13 2.151e-02 6.281e-02 0.342 0.73205

sd14 5.187e-02 6.257e-02 0.829 0.40719

sd15 2.479e-01 6.226e-02 3.981 7.03e-05 \*\*\*

sd16 4.967e-01 6.199e-02 8.013 1.61e-15 \*\*\*

sd17 5.884e-01 6.213e-02 9.471 < 2e-16 \*\*\*

sd18 5.523e-01 6.203e-02 8.904 < 2e-16 \*\*\*

sd19 4.513e-01 6.143e-02 7.346 2.63e-13 \*\*\*

sd20 3.384e-01 6.058e-02 5.586 2.53e-08 \*\*\*

sd21 2.854e-01 5.920e-02 4.821 1.50e-06 \*\*\*

sd22 2.553e-01 5.770e-02 4.424 1.00e-05 \*\*\*

sd23 1.695e-01 5.684e-02 2.981 0.00289 \*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.4436 on 2908 degrees of freedom

Multiple R-Squared: 0.9925, Adjusted R-squared: 0.9924

F-statistic: 1.013e+04 on 38 and 2908 DF, p-value: < 2.2e-16

Covariance matrix of residuals:

energy\_train temp\_train

energy\_train 1.343e+05 6.6250

temp\_train 6.625e+00 0.1968

Correlation matrix of residuals:

energy\_train temp\_train

energy\_train 1.00000 0.04075

temp\_train 0.04075 1.00000