**Trend Lines Model**

A linear trend model is computed for sum of Actual (actual & forecast) given Surg Date Day. The model may be significant at p <= 0.05. The factor Month of Surg Date may be significant at p <= 0.05.

|  |  |
| --- | --- |
| **Model formula:** | Month of Surg Date\*Forecast indicator\*Quarter of Surg Date\*Year of Surg Date\*( Day of Surg Date + intercept ) |
| **Number of modeled observations:** | 269 |
| **Number of filtered observations:** | 100 |
| **Model degrees of freedom:** | 28 |
| **Residual degrees of freedom (DF):** | 241 |
| **SSE (sum squared error):** | 60109.1 |
| **MSE (mean squared error):** | 249.415 |
| **R-Squared:** | 0.223016 |
| **Standard error:** | 15.7929 |
| **p-value (significance):** | < 0.0001 |

**Analysis of Variance:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Field** | **DF** | **SSE** | **MSE** | **F** | **p-value** |
| **Month of Surg Date** | 16 | 7904.9937 | 494.062 | 1.98088 | 0.015009 |
| **Forecast indicator** | 2 | 20.326016 | 10.163 | 0.0407473 | 0.960078 |
| **Quarter of Surg Date** | 0 | 7.2759576e-12 | N/A | N/A | N/A |
| **Year of Surg Date** | 0 | 7.2759576e-12 | N/A | N/A | N/A |

**Individual trend lines:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Panes** | | **Color** | **Line** | | **Coefficients** | | | | |
| **Row** | **Column** | **Forecast indicator** | **p-value** | **DF** | **Term** | **Value** | **StdErr** | **t-value** | **p-value** |
| Actual | 2011, Q4, October | Actual | 0.647659 | 14 | Day of Surg Date | -0.194275 | 0.415973 | -0.467037 | 0.647659 |
|  | | | | | intercept | 117.524 | 8.63582 | 13.6089 | < 0.0001 |
| Actual | 2011, Q4, November | Actual | 0.4977 | 19 | Day of Surg Date | -0.44845 | 0.648647 | -0.691361 | 0.4977 |
|  | | | | | intercept | 124.875 | 11.2696 | 11.0806 | < 0.0001 |
| Actual | 2011, Q4, December | Actual | 0.0166216 | 20 | Day of Surg Date | -2.13445 | 0.816597 | -2.61384 | 0.0166216 |
|  | | | | | intercept | 138.885 | 14.9715 | 9.27659 | < 0.0001 |
| Actual | 2012, Q1, January | Actual | 0.0396045 | 20 | Day of Surg Date | 0.582206 | 0.264455 | 2.20153 | 0.0396045 |
|  | | | | | intercept | 105.484 | 4.82749 | 21.8507 | < 0.0001 |
| Actual | 2012, Q1, February | Actual | 0.0324577 | 19 | Day of Surg Date | 0.506502 | 0.219514 | 2.30738 | 0.0324577 |
|  | | | | | intercept | 106.736 | 3.79091 | 28.1557 | < 0.0001 |
| Actual | 2012, Q1, March | Actual | 0.770754 | 20 | Day of Surg Date | -0.0979228 | 0.331523 | -0.295373 | 0.770754 |
|  | | | | | intercept | 118.071 | 6.07815 | 19.4255 | < 0.0001 |
| Actual | 2012, Q2, April | Actual | 0.972727 | 19 | Day of Surg Date | 0.0121454 | 0.350608 | 0.0346409 | 0.972727 |
|  | | | | | intercept | 118.386 | 6.10634 | 19.3874 | < 0.0001 |
| Actual | 2012, Q2, May | Actual | 0.636775 | 20 | Day of Surg Date | 0.154067 | 0.321298 | 0.479514 | 0.636775 |
|  | | | | | intercept | 115.21 | 5.76875 | 19.9714 | < 0.0001 |
| Actual | 2012, Q2, June | Actual | 0.594991 | 19 | Day of Surg Date | 0.169015 | 0.31258 | 0.540709 | 0.594991 |
|  | | | | | intercept | 121.431 | 5.58786 | 21.7313 | < 0.0001 |
| Actual | 2012, Q3, July | Actual | 0.440734 | 19 | Day of Surg Date | -0.141179 | 0.179288 | -0.787446 | 0.440734 |
|  | | | | | intercept | 116.809 | 3.34617 | 34.9083 | < 0.0001 |
| Actual | 2012, Q3, August | Actual | 0.274122 | 21 | Day of Surg Date | 0.205449 | 0.18295 | 1.12298 | 0.274122 |
|  | | | | | intercept | 120.989 | 3.43838 | 35.1878 | < 0.0001 |
| Actual | 2012, Q3, September | Estimate | 0.912895 | 14 | Day of Surg Date | -0.0485294 | 0.435706 | -0.111381 | 0.912895 |
|  | | | | | intercept | 108.904 | 10.007 | 10.8828 | < 0.0001 |
| Actual | 2012, Q3, September | Actual | 0.879803 | 7 | Day of Surg Date | -0.138776 | 0.884852 | -0.156835 | 0.879803 |
|  | | | | | intercept | 113.376 | 8.62951 | 13.1381 | < 0.0001 |
| Actual | 2012, Q4, October | Estimate | 0.81971 | 10 | Day of Surg Date | -0.13986 | 0.597705 | -0.233995 | 0.81971 |
|  | | | | | intercept | 112.076 | 4.39899 | 25.4776 | < 0.0001 |

**Options Used to Create Forecasts**

|  |  |
| --- | --- |
| **Time series:** | Day of Surg Date |
| **Measures:** | Sum of Actual |
|  |  |
| **Forecast forward:** | 30 days (September 14, 2012 – October 13, 2012) |
| **Forecast based on:** | May 17, 2012 – September 13, 2012 |
| **Ignore last:** | 1 day (September 14, 2012) |
| **Seasonal pattern:** | 7 day cycle |

**Sum of Actual**

# Options Used to Create Forecasts

|  |  |
| --- | --- |
| **Time series:** | Day of Surg Date |
| **Measures:** | Sum of Actual |
|  |  |
| **Forecast forward:** | 28 days (September 15, 2012 – October 12, 2012) |
| **Forecast based on:** | May 18, 2012 – September 14, 2012 |
| **Ignore last:** | No periods ignored |
| **Seasonal pattern:** | 7 day cycle |

# Sum of Actual

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Initial** | | |  | **Change From Initial** |  | **Seasonal Effect** | | | |  | **Contribution** | |  |  |
| **September 15, 2012** | | |  | **September 15, 2012 – October 12, 2012** |  | **High** | | **Low** | |  | **Trend** | **Season** |  | **Quality** |
| 98.648463458 | ± | 19.459919018 |  | 7.390402146 |  | October 11, 2012 | 4.237473498 | October 6, 2012 | -13.757142857 |  | 0.2% | 99.8% |  | Ok |

# Sum of Actual

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | | |  | **Quality Metrics** | | | | |  | **Smoothing Coefficients** | | |
| **Level** | **Trend** | **Season** |  | **RMSE** | **MAE** | **MASE** | **MAPE** | **AIC** |  | **Alpha** | **Beta** | **Gamma** |
| Additive | Additive | Additive |  | 9.928712553 | 8.011709604 | 0.78 | 6.8% | 405 |  | 0.248 | 0.000 | 0.106 |

