

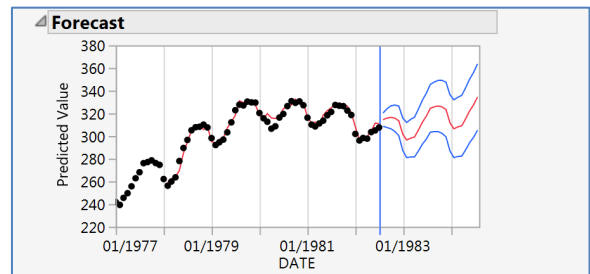
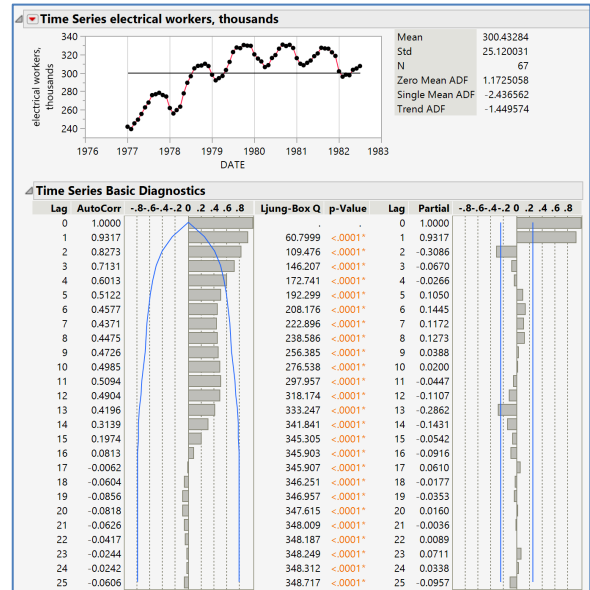
# Time Series Smoothing Models

Use smoothing based time series models to describe patterns and forecast future time periods.

## Smoothing Models

1. From an open JMP® data table, select **Analyze > Specialized Modeling > Time Series**.
2. Select a continuous variable from **Select Columns**, and click **Y, Time Series** (continuous variables have blue triangles).
3. Select a time and click **X, Time ID (optional)**. Click **OK**.  
- A time series graph of the data along with a graph and table of the Auto and Partial Correlation values is displayed.
4. To fit a model to the data, click on the **top red triangle**, select **Smoothing Model** and choose the method. Here we choose **Seasonal Exponential Smoothing**.
5. Choose **Observations per Period** (e.g., 12) and click **Estimate**.  
- JMP displays the Model Summary, Parameter Estimates and a Forecast plot that shows the fit and forecasts from the model.
6. To estimate an alternative smoothing model, click on the **red triangle**, and choose another method (**Winters Method** was selected for a second model).
7. Click **Estimate**.  
- JMP provides a **Model Comparison** report, (shown below) that compares the two methods. Click and drag the slider bar at the bottom of the report to see all of the statistics.

Workers.jmp (Help > Sample Data Folder > Time Series)



In this example, the Seasonal Exponential Smoothing model fits the data better than Winters Method (i.e., AIC, SBC, MAPE, and MAE are smaller).

Model Comparison											
Report	Graph	Model	DF	Variance	AIC	SBC	RSquare	-2LogLH	Weights	.2 .4 .6 .8	MAPE MAE
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Seasonal Exponential Smoothing( 12, Zero to One )	52	8.8809038	293.54535	297.52332	0.959	289.54535	0.994208		0.903996 2.778179
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Winters Method (Additive)	51	10.436989	303.83640	309.80335	0.953	297.8364	0.005792		1.010171 3.124498

- The default number of forecast periods is 25. To change, enter a different value in the **Time Series** launch dialog window.
- To save the forecast, select **Save Columns** or **Save Prediction Formula** under the red triangle for that model. A new table with the actual and predicted values will be generated.

Visit **Predictive and Specialized Models > Time Series Analysis** in **JMP Help** to learn more.