

# MSP Finance Team Financial Forecasting

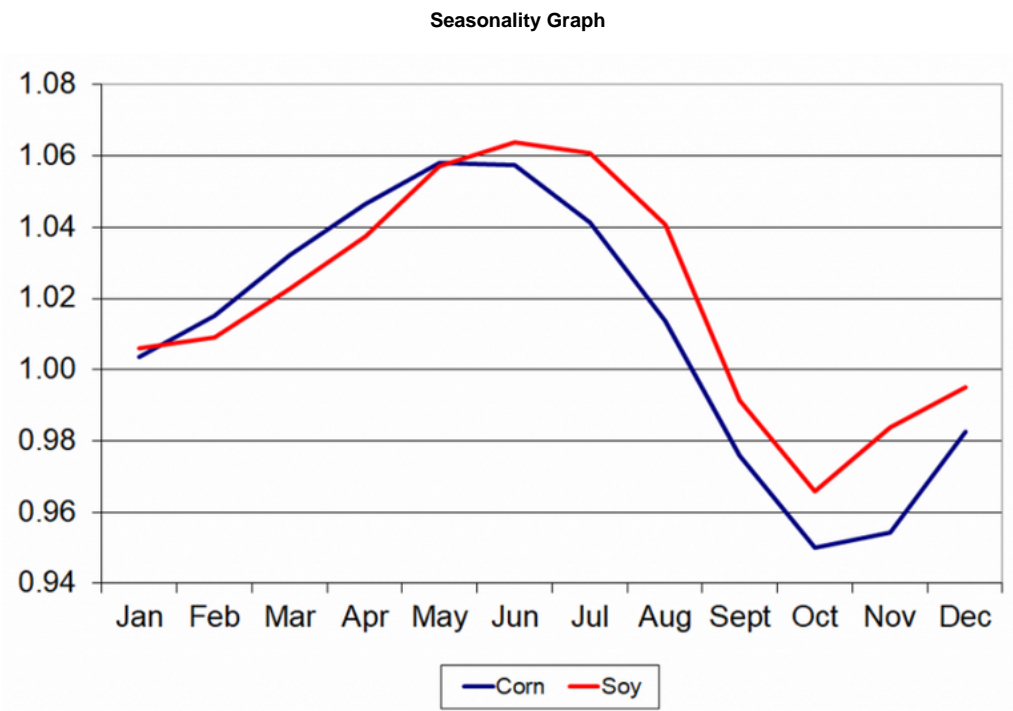
The MSP Finance Team Financial Forecasting app enables users to make informed decisions on resource allocation, investments, budgeting, risk management, and strategic planning. By analyzing historical data, trends, and seasonality, you can plot potential future outcomes and inform decision-makers of the direction of the company's finances.

This article discusses the following about MSP Finance Team Financial Forecasting:

- [Background and Methodology](#)
- [How Actual Gross Margin, Revenue, and Expenses are calculated](#)
- [What forecasts are available in the MSP Finance Financial Team Forecasting app?](#)
  - [Related Topics](#)

## Background and Methodology

The MSP Finance Team Financial Forecasting app of MSPbots uses Overall Trends and Seasonality to calculate values for forecasting. For example, the following seasonality graph illustrates how it is possible to forecast the high price seasonality of commodities corn and soy, where abundant supply during the fall harvest period results in lower prices. Based on the values in the graph, this period reaches its peak during the summer months.



Graph A: Seasonal Pricing Patterns. Data source: USDA, NASS, Monthly Price Data 1980-2018

The following graphs show how time components affect trends.

### Components of Time Series

A. Trend

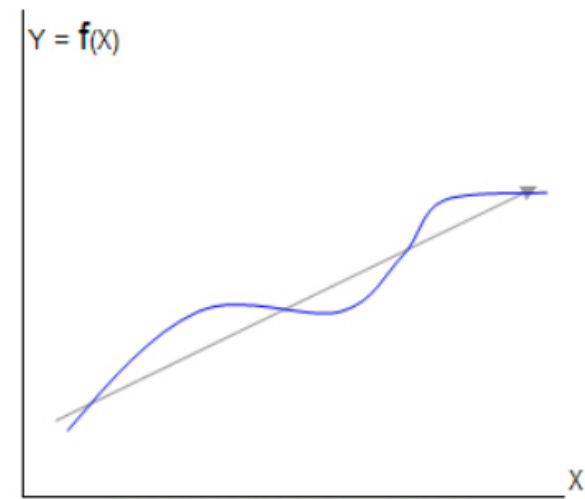
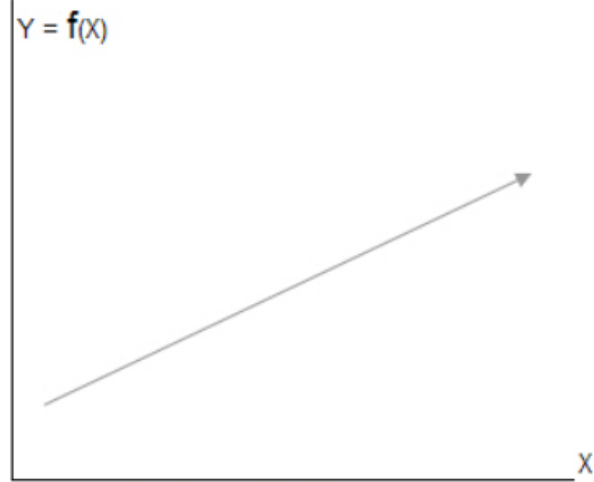


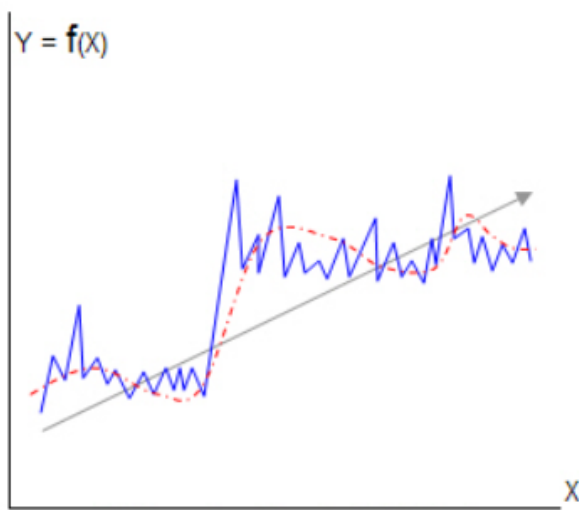
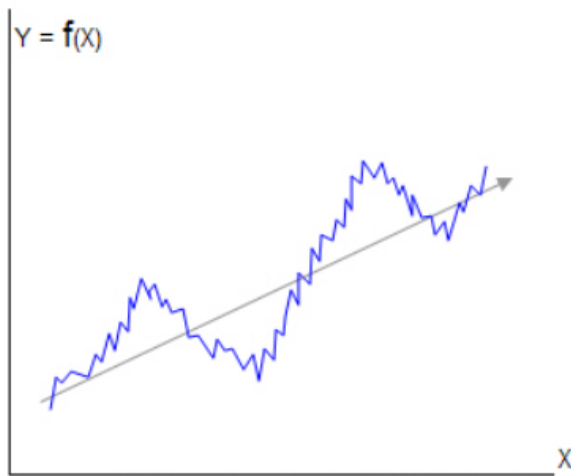
Fig. A displays a simple trend line of value (Y) over time (X) movement

B. With Cyclical Values

Fig. B Trend line overlaid with cyclical (regularly recurring)

C. With Cyclical and Seasonal Variations  
Random fluctuations

D. With Cyclical and Seasonal Variations and



Figures C and D add Seasonal and Random value movements to the trend.

## How Actual Gross Margin, Revenue, and Expenses are calculated

MSPbots uses a [Machine Learning](#) model to automatically calculate and detect Overall Trends and Seasonality.

This model uses the following methods to forecast values:

1. [Autoregressive Technique](#) - This technique assumes that a set of time series data is dependent on its past values and there is a linear relationship between the current value and its past data. Autoregressive models are used in financial and stock market forecasts and economic modeling.
2. [Fourier Method](#) - This is a method of forecasting which is designed to improve the accuracy of time series forecasting by incorporating a more flexible prior distribution for the trend component. This facilitates more complex and non-linear trends in time series data. This method also incorporates additional parameters to factor in seasonality and is widely used as a forecasting method in industries such as finance, retail, and manufacturing.

Because we apply the Machine Learning model, the forecasted values get better as more data becomes available for calculation and analysis. Ideally, data from one to two years is sufficient to achieve an acceptable level of accuracy and error margin.

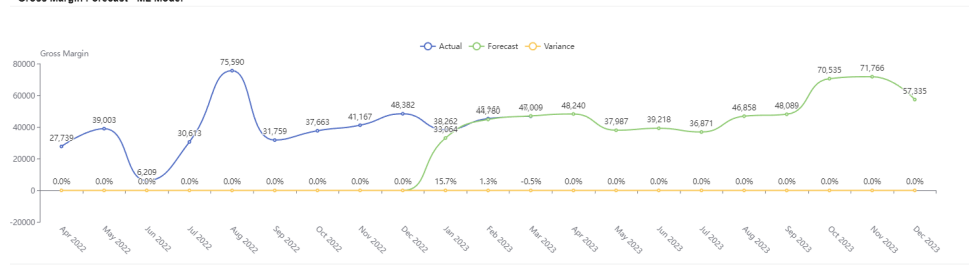
## What forecasts are available in the MSP Finance Financial Team Forecasting app?

Below are examples of forecasts available in the app.

### 1. **Gross Margin Forecast**

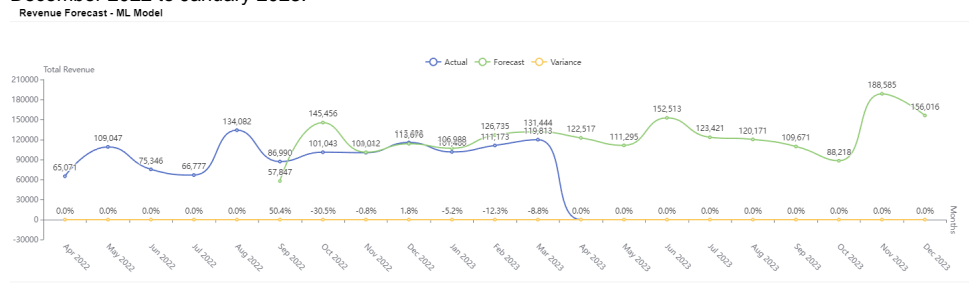
Gross Margin is calculated as  $(Total\ Revenue - Total\ COGS) / Total\ Revenue$ . Although Revenue and COGS (cost of goods sold) can be

modeled separately, we use the calculated value and run it using our model. As of posting, the graph below shows an average 93% accuracy measured by the variance (yellow line) between forecast and actual values over 3 months using sample data.



## 2. Revenue Forecast

The sample data below plots an average accuracy rate of 84.3% for the overall trend captured over seven months and shows a dip from December 2022 to January 2023.



## Related Topics

- [MSP Finance Team Financial Metrics and Benchmarks Suite](#)
- [MSP Finance Team Financial Metrics and Benchmarks Suite Dashboards](#)

The calculations for this Model is run based on an open-source code granted through this [license](#).