

Components of Time series

Definition of Time series

- The arrangement of data in accordance with their time of occurrence is a time series. It is the chronological arrangement of data. Here, time is just a way in which one can relate the entire phenomenon to suitable reference points. Time can be hours, days, months or years.

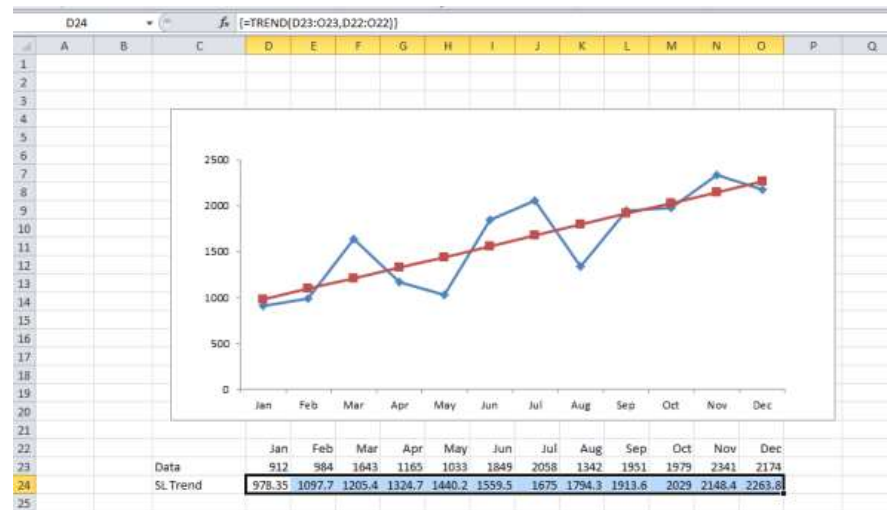
Components of Time series

- Trend
- Seasonal Variations
- Cyclic Variations
- Random or Irregular movements

Seasonal and Cyclic Variations are the periodic changes or short-term fluctuations.

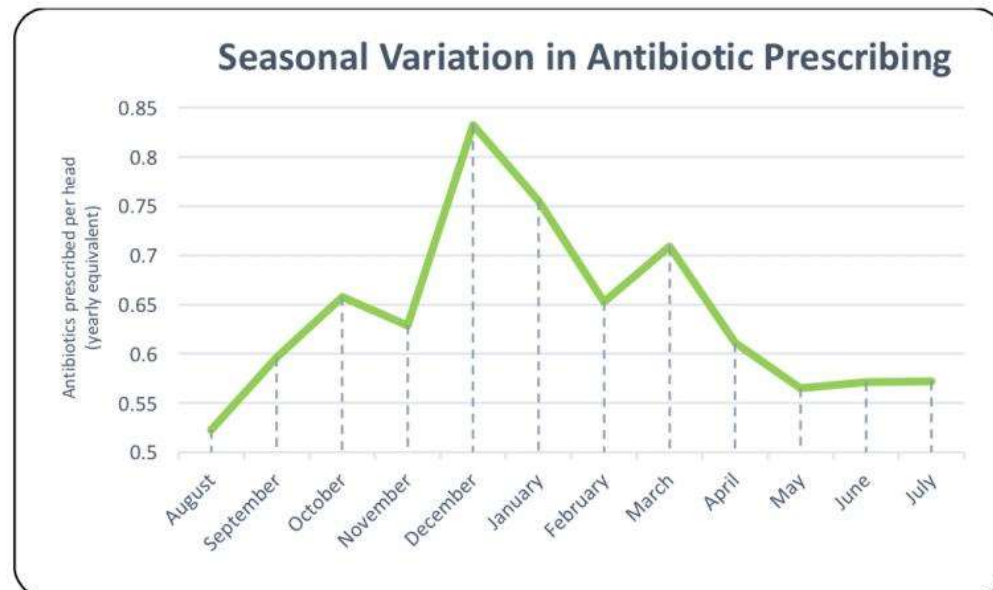
Trend

- The trend shows the general tendency of the data to increase or decrease during a long period of time. A trend is a smooth, general, long-term, average tendency. It is not always necessary that the increase or decrease is in the same direction throughout the given period of time.



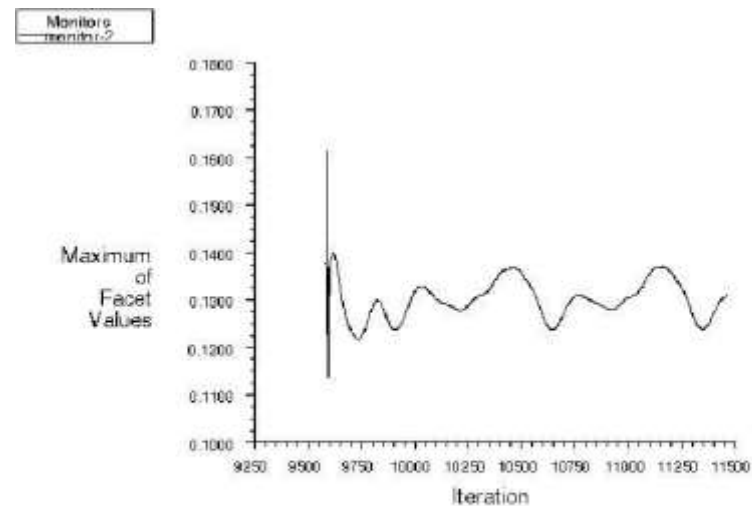
Seasonal variations

- These are the rhythmic forces which operate in a regular and periodic manner over a span of less than a year. They have the same or almost the same pattern during a period of 12 months. This variation will be present in a time series if the data are recorded hourly, daily, weekly, quarterly, or monthly.



Cyclical variations

- The variations in a time series which operate themselves over a span of more than one year are the cyclic variations. This oscillatory movement has a period of oscillation of more than a year. One complete period is a cycle. This cyclic movement is sometimes called the 'Business Cycle'.



Random movements

- There is another factor which causes the variation in the variable under study. They are not regular variations and are purely random or irregular. These fluctuations are unforeseen, uncontrollable, unpredictable, and are erratic. These forces are earthquakes, wars, flood, famines, and any other disasters.

