

Frequently Asked Questions

1. What is a time series?

Answer: The first step in making estimates for the future consists of gathering information from the past. In this connection, one usually deals with statistical data, which are collected, observed or recorded at successive intervals of time. Such data are generally referred to as 'time series'.

2. What are the components of time series?

Answer: The components of time series are secular trends, seasonal variation, cyclical variation and irregular variation.

3. What is a seasonal variation?

Answer: A type of fluctuation, which completes the whole sequence of change within the span of a year and has about the same pattern year after year, is called a seasonal variation (S).

4. What kind of relationship is found between the components?

Answer: In traditional or classical time series analysis, it is ordinarily assumed that there is a multiplicative or additive relationship between these four components hence there are various models represented in the multiplicative form or the additive form or the combining of both the forms.

5. How is the multiplicative model calculated?

Answer: In the multiplicative model it is assumed that any particular value in a series is the product of factor that can be attributed to the various components, and symbolically represented as $Y_c = T \times S \times C \times I$

6. How is the additive model used?

Answer: The additive model, where we treat each observation of a time series as the sum of the four components. Symbolically represented as $Y_c = T + S + C + I$

7. What are the two variations model?

Answer: Two of such variations models are: $Y_c = TCS + I$ and the other model is $Y_c = TC + SI$

8. What is a trend how is it classified ?

Answer: The general tendency of the data to grow or decline over a long period of time is called 'Secular Trend'. Trends are classified in to 2 main categories:

- Linear / Straight Line methods
- Non-Linear Trends

9. What determines the period of time in the nature of data?

Answer: In case we are studying about the population growth between 2000 and 2005, then the duration is in terms of years. However if you take the case of growth of virus that multiplies so fast, the duration of the trend would be in the order of minutes.

10. What are the factors that affect the trend?

Answer: In case of increasing trend, the main factor responsible for such a trend is the population and demand. In case of declining trends in the series, the reasons could be due to technological, cultural and political.

11. What is seasonal variation?

Answer: Seasonal does not necessarily align to the different seasons in a year but to certain kind of variations that are periodic in nature and where the cycles repeat.

12. What factors affect the seasonal variations?

Answer: Seasonal variations can be attributed to periodic movements in business activity. Some of the factors that affect the seasonal variations are Climate, weather, customs, tradition and habits.

13. How does a data trend help the firm?

Answer: It is extremely important that the firm takes into consideration data and trends in planning for demand management, inventory and advertising to create maximum impact on consumers. This might help the firm to strategize upon various factors like introduce diverse products that cater to different seasonal peaks in demands

14. What does the business cycle consist of?

Answer: Business cycles consists of expansion occurring about the same time in many economic activities followed by similarly general recessions, contractions and revivals, which merge into the expansion phase of the next cycle.

15. What are the four phases of a business cycle?

Answer: Any business cycle has four well defined period or phases, namely:

- Prosperity
- Decline
- Depression
- Improvement / Revival