

Knowledge Sprint

Stress Testing

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This article is on Financial Risk Management : Stress Testing

It contains concepts like -

- About Stress Testing -
- Uses of Stress Testing -
- Terminologies associated with Stress Testing -
- Approaches of Stress Testing -
- Stress Testing Events -

About Stress Testing -

- The Objective of Stress testing, is to analyse the effect of worst circumstances of portfolios.
- The analysis is independent of past events (past events are not taken into consideration)
- Simply, we can say that stress testing to understand strength of a firm under worst conditions
- Generally, in an corporate organisations Risk Manager is responsible for analysis of Stress testing.

Uses of Stress Testing -

- Risk manager can understand or prioritize the factors of risk that influence on portfolio value.
- Helps to analyse the economic conditions that prevail in market.
- Prevents the business risks involved.
- Helps a company to undertake the stress testing of their products in extreme conditions, so that they can examine its risk impact value before adventure of product into market.
- Can evaluate the different types of risk like -
 - market risk
 - Derivative risk
 - credit or default risk

Terminologies associated with Stress Testing -

- Contagion Affect - It means a situation where downfall of one market causes crisis in another market.
- Frequency of Price Shock - It means a situation where, the worst conditions are quickly spreads to other markets that impact the derivatives, and their prices holdings are no longer relevant.
- Liquidity Consequences - Here the firm faces a risk of liquidity positions in market and their exit becomes very problematic.
- Concentration - Here the firms will have chance to become leaders of market under normal conditions. However, they will face the risks of huge losses under extreme conditions.

Approaches of Stress Testing -

We have various approaches in stress testing, let us see each of them :

1. Based on Past Events	<ul style="list-style-type: none">- Here, the analysis is done based on the past events, which are in nature of drastic impact and recurrent, are considered as basis for analysis.
2. Scenario Analysis	<ul style="list-style-type: none">- Here a firm already uses a framework to overcome incidents of risk- These framework "results" are used as basis for stress testing analysis.
3. Institutional Scenario Analysis	<ul style="list-style-type: none">- Here the events of risk are arranged in order of its extremity that are specific to various industrial types like - banking, Manufacturing etc.

4. Standard Deviation Approach	- Investigation of events are done if the Standard Deviation is around 4, 5 or 9.
5. Severe and Tail Risks Approach	- Here the approach uses the events that cause the risk from extreme market moves and losses incurred from it.

Stress Testing Events -

Below are the various events involved in stress testing :

1. Market moves -
 - Decline in value of currency
 - Changes in prices
 - Liquidity issues of firms
 - Contagion affect
 - Speed and time duration of adverse market situations
 - Basis variations (interest rates how often changed)
 - Changes in Yield curves



2. Modelling Hypothesis

- Pricing models
- Volatilities
- Correlations
- Methods used in trading
- Strategy adopted in hedgings

3. Product Complexity

- Derivatives
- Mortgages
- Products of different prices
- New markets risks

4. Credit

- Brand value of firm in industry
- Industry leadership role
- Position of firm among clients

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