

---



## **Safety Stock: When Do You Need It, and How Big Should It Be?**

### **When Do You Need Safety Stock?**

- When forecasts are unreliable (they can never be 100% accurate)
- When supplier lead times or order fill rates are unreliable
- If your business model requires a high service level
- When operational processes are poorly defined and lack consistency

### **Forecasting**

Because forecasts are never 100% accurate, safety stock is necessary to cover times when demand exceeds supply. It is a balancing act between the cost of carrying extra inventory and the cost of potential lost sales due to lack of inventory. With this in mind, you need safety stock any time there is uncertainty in your forecasts, and anytime you need to mitigate the risk of losing sales.

### **How Large Should the Safety Stock Be?**

Safety stock should be large enough to maintain defined service levels. This requires striking a balance between achieving customer satisfaction (having product in stock in order to ship on time) and the cost of holding inventory. Each company can establish its own level of inventory risk-tolerance: the potential for stock-outs that the company is willing to allow in order to minimize safety stock.

Some organizations choose to base their safety stock levels on a target service level, for example, 96% order fill rate. This means that there will be stock outs, but only at a level that is acceptable to the company. A higher service level requires more safety stock and therefore incurs higher inventory holding costs.

### **Inherent Risk in Inventory Systems**

Additional considerations for safety stock levels include the risk of obsolescence, depreciation in quality or value of the stock over time, or the limited shelf life of certain products, such as perishable goods. Inventory systems that use a periodic review will be at a greater risk for stock-outs and will require a larger safety stock than continuous review systems, which can be replenished at any time.

### **Ways to Reduce Safety Inventory:**

1. Reduce order lead times from suppliers
2. Establish reliable supply sources and back-up sources for times of increased demand
3. Reduce demand uncertainty through accurate forecasting

This comes down to strong forecasting and supplier partnerships, both of which help to mitigate supply chain risk and improve profitability.