



COVID-19: production & inventory planning

What is the best production strategy during the Corona period?

The COVID-19 pandemic has impacted the business. The market is disrupted, it is uncertain when the demand picks up again and at what level the 'new normal' will be. Nevertheless, you need to make a decision now! Do you keep producing and build up inventory or do you slow down production and limit inventory levels?

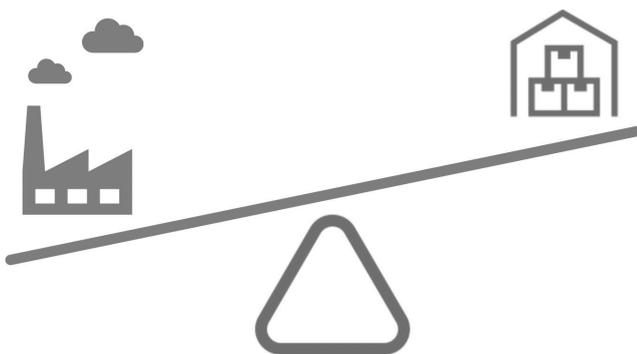


Figure 1 balancing production vs. inventory

What factors drive demand uncertainty?

Deciding on the best production strategy is difficult, there is uncertainty about the:

- Duration of the pandemic: when does the demand pick up again? During this period there is no / limited demand for your products. Therefore, it is important to make multiple scenarios to grasp the importance of the demand period.
- Market development: will COVID-19 shrink market size or does it remain unchanged? How is the consumer behaviour impacted and how does this link to the demand? What will the competition do? There is an opportunity to increase your market share if you are able to balance the inventory levels and meet the customer demand after the COVID-19 period.
- Bulldozer effect: Is the demand during the period of COVID-19 lost or is demand pushed-out after the quarantine? It is likely that some of the demand is not lost, but how much is this demand and secondly is there production capacity to meet this demand? Additionally, it can be that capacity in the market is limited and that is a constraint to meet customer demand.

The combination of this uncertainty makes it challenging to assess the impact on profitability. Which of these factors has the biggest impact on profitability and at what point do the inventory costs outweigh the production costs? In addition, the question is how to forecast the demand uncertainty?

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Decision making under uncertainty using scenario planning

Scenario planning, also called scenario thinking or scenario analysis, is a planning method that is used to make flexible plans. Scenarios are possible views of the world that provide a context in which managers can make decisions. To assess the best production strategy EyeOn has developed a scenario planning tool. The tool simulates scenarios for three production strategies; conservative, neutral and aggressive. The scenario planning tool simulates the uncertain factors and calculates the distribution of profit for each production strategy. In the example of figure 1, the aggressive production strategy has the highest average profit (denoted by the line-mark inside box), but also the highest variability (presented by the size of the box) and most outliers (shown by the circles).

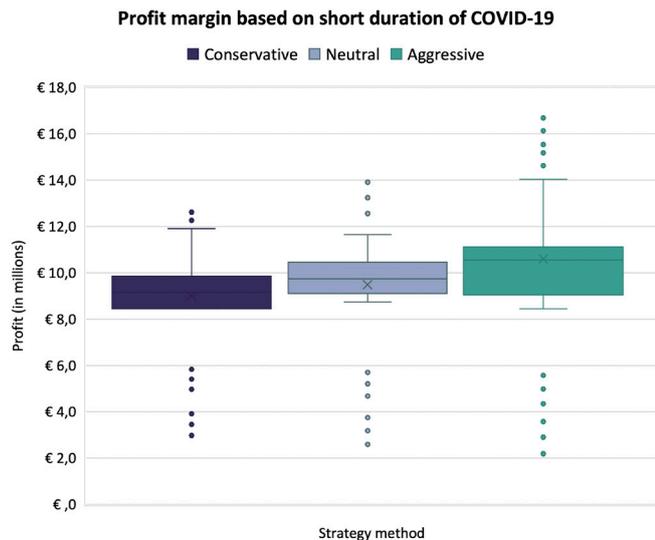


Figure 2 distribution of profit per production strategy

The scenario planning tool generates insights by creating a small set of scenarios comparing the impact of different demand factors. Figure 3 illustrates that the duration of COVID-19 impacts the profit margin for the aggressive production strategy. Thereby the scenario planning tool generates insights that are relevant to drive critical business decisions. It enables management to decide on the production strategy depending on the preferred risk profile.

The model considers the different demand factors and takes into account a number of variables:

- Production costs
- Stock parameters
- Inventory holding costs
- Cost price
- Sales price
- Demand
- Lead-time

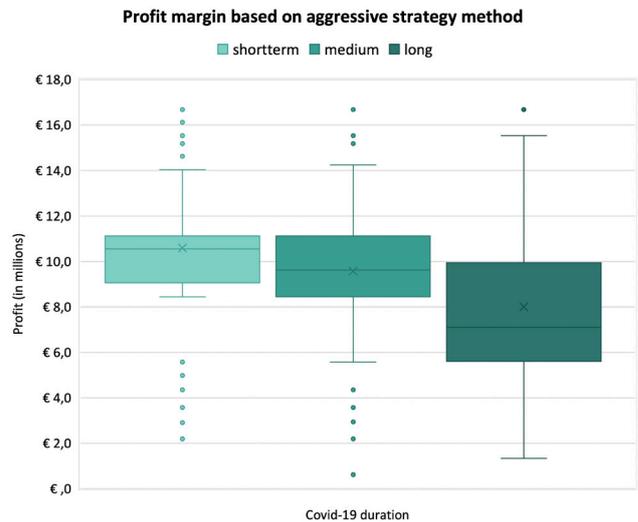


Figure 3 profit margin per duration of COVID-19

The scenario planning tool is the starting point to understand the drivers for profitability and their impact on your business. You can optimize your supply chain by exploiting the data that is available in the models. The tool provides direction for which variable you need to improve the forecast to get more accurate results. As planning & forecasting consultants at EyeOn it is our intention to help you to improve the input of the model and generate accurate insights. All these insights allow you to make a robust plan that considers the impact of uncertainty for the key scenarios and facilitates the decision-making process.

How can we help you?

Lighten your load. Let us assist you in managing complex supply chain and planning processes. Make use of our high-quality planning and modelling resources to get ahead. Give your team the opportunity to focus on critical business decisions that enable your company to stand out from the rest.

Interested?

You can contact us at mail@eyeon.nl for more information or to make an appointment.

Our promise

We implement proven innovations to raise your forecasting and planning performance.

We work in the most pragmatic way possible, based on our knowledge and experience in over hundred large, international companies. We develop and implement the best fit-for-purpose improvements with real impact.