

## Adding up percentiles in supply chain management

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### Abstract

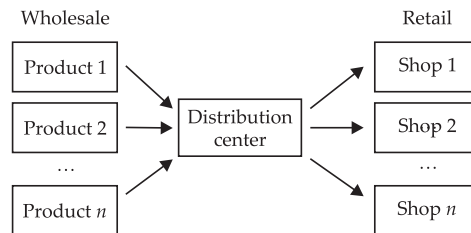
In statistics  $1 + 1$  is not always 2. We illustrate how rules to add up can be (mis)used in case of supply chain management where the policy of a distribution center is based on the theory of percentiles. A correct application of probability is given to fulfill commitments where guarantees are made with a limited certainty.

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*Keywords* : Decision strategy, supply chain, normal distribution, percentiles.

### 1. Introduction

In supply chain management remainders and shortages should be avoided. Therefore it is important to analyse the complete supply chain [1]. The distribution from wholesale dealer to retailer can be modelled as in Figure 1. Here the distribution center is the link between wholesale and retail where the transition occurs from trucks with a large amount of the same goods to trucks with a large variety of different goods.



**Figure 1**  
Flows in the supply chain

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