

# QUANTITATIVE ASSESSMENT OF LOGISTICS STOCKS

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Management of logistic activity is important for process of enterprise functioning because logistic processes can both increase competitiveness and improve its image, and significantly increase costs and adversely affect its revenue. The logistics processes quantitative account is necessary for their effective management which promotes their evaluation and analysis.

Today there is a problem of quantitative measurement of quality indicators of logistics processes, the construction performance evaluation of various logistics operations to a single indicator (e. g. a measurement currency or percentage). Thus, there is a need to find ways of evaluation and analysis of individual logistics processes and the formation of ability to compare them with each other to improve the logistics efficiency.

Stocks of the company are always related with cost, the ideal situation is when the stock level is zero or minimal stock which is needed to ensure continuous production. However, enterprises create safety stock, which avoids downtime in production when the supplier delaying delivery for whatever reasons. Thus, it follows that the manufacturer has additional costs due to unreliable supplier. It means that the choosing a reliable supplier, which the company can be sure, can reduce the level of stock at least on the level of safety stock.

It is possible to use economic and mathematical modeling aimed at developing an optimal investment portfolio with regard to profit maximization and risk minimization to evaluation the supplier reliability, which can be transformed into a problem of choosing the best supplier compliance with the next rules:

1. Let the company has “n” suppliers and some established order quantity for each supplier during specific period of time (statistics).

2. Let the demand remains unchanged and cost on supplies can't be reduced. Thus we get the function to maximize the order quantity of supply.

3. Covariance helps to make quantify the relationship between suppliers, the amount of which should go to a minimum which formulates the second objective function.

4. In order to achieve two goals: maximizing the order quantity of supply to the particular supplier and minimizing dependence among suppliers more advisable to combine both functions in one using the method of additive reduction and giving equal importance to each function, as a result allows us to formulate the mathematical model with system limitations, which helps us to choose the most reliable suppliers and decrease the level of safety stock and, finally, general stock, which gives us possibility to economize general logistics cost.