

Transportation Cost Location Model

Assumptions

1. There is one point market where all output is sold.
2. There is one transferable input that is available at only one location.
3. Quantity demanded is fixed.
4. Input prices do not vary by location.
5. Product price is fixed.
6. Inputs are combined in fixed proportions.

Procurement Cost (PC) - the variable transportation cost of shipping the required number of tons of input per ton of output from the raw material site to the firm's location.

Distribution Cost (DC) - the variable transportation cost of shipping one ton of finished good from the firm's location to the market.

Terminal Cost (TC) - the fixed cost of loading/unloading input/output.

Total Transport Cost (K) = PC + DC + TC

W_s - the number of tons of input per ton of output

t_s - the transport price per ton-mile of input

t_m - the transport price per ton-mile of output

PC per mile = $W_s \cdot t_s$

DC per mile = $1.0 \cdot t_m = t_m$