

Lesson 47. Costs and Returns On Storage

47.1 Cost and Returns on Storage

The gross return on storage may be defined as the increase in the price of the stored product at the time of storage till it is "de-stored" and either sold or consumed. The cost of storage should include the following:

1. The cost of the maintenance of the storage structure, i.e., depreciation, repairs, insurance and interest on sunk capital; or, alternatively, the rent paid for hiring the storage structure;
2. Interest on the value of the stored goods;
3. Value of the quantitative and qualitative loss during storage;
4. Risk premium for a possible price fall and damage during storage;
5. The cost of protective materials; for example, insecticides, pesticides, rodenticides, fumigation, gunny bags, electricity, polythene covers; and
6. Tax payments, payment's to labour, etc.

These items of costs may be grouped into fixed or variable costs, depending on whether they vary with the quantity of goods stored or not. For example, for a professional warehouse owner, the maintenance and repair of the storage structure, the salaries of the permanent staff, depreciation on the building, taxes, record keeping, etc., are fixed costs. For a farmer, however, who is trying to decide whether to sell or store grain for some time for later sale, all the costs are variable.

Whether it pays a farmer to store his farm produce may be worked out with the help of the following formula:

$$NR = GR - C \quad \dots\dots\dots (47.1)$$

Where

NR = Net returns to storage (Rs.)

GR = $P_1 - P_0$

P_0 = Purchase price or market price at the time of storage

P_1 = Selling or market price at the time of de-storing

C = Cost involved in storage

NR > 0, implies positive returns on storage

NR < 0, indicates negative returns on storage

The Margin (Ms) from storage may be calculated as:

$$M_s = \frac{P_1 - P_0 - C}{P_0 + C} \dots\dots\dots (47.2)$$

Where all have meanings as defined earlier.

Let us understand this with the help of an example. Let there be farmer who has the option of selling his wheat immediately after vest in the month of April or of putting his produce in a warehouse selling at a later date (say, in the month of December). The market in the month of April is, say, Rs. 250 per quintal. Assume that produce is lying on the auction platform in a regulated market yard, implying that in April, he gets a net price of Rs.250 per quintal. Transportation of the produce to the warehouse will cost him (say) Rs. 1 per quintal. The loading and unloading charges prescribed by Market Committee are (say) Rs. 0.50 per bag or per quintal. The charge of the warehouse is Rs.2 per quintal per month. There is likely to be a loss of one per cent of grains during loading, unloading and storage. The farmer can earn an interest of (say) 16 percent per annum. Using this information let us work out the minimum that should be expected in December to make some profit from the storage of wheat. The answer to this question requires estimating the costs of storage as also the return to be foregone. The details for a quintal of wheat are as follows:

Sr No.	Item	Rs. (per quintal)
(i)	Charges of loading at the auction platform and unloading till the warehouse	1.00
(ii)	Transportation charges from the auction platform to the warehouse	1.00
(iii)	Warehouse charges for 9 months	18.00
(iv)	Loss during storage and transit	2.50
(v)	Interest on Rs. 250 foregone for 9 months @ 16% per year	30.00
(vi)	Transportation charges from warehouse to the auction platform	1.00
(vii)	Loading at the warehouse and unloading at the auction platform	1.00
Total		Rs.54.50

Using the notations given earlier, $P_o = 250$, $C = 54.50$, NR will be positive only if PI or price of wheat in the month of December is expected to be more than the sum of P_o and C i.e., Rs, 304.50.

References:

- 1) Hall, D. W. Handling and storage of food grains in tropical and subtropical Areas.
- 2) Sinha, R.N &Muir. Grain Storage: Part of a System. Avi Publisher