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Hedging: Technique to Reduce Price Risk

Read the Caselet carefully and answer the following questions:

The experience says that the prices of Refined Soya Oil fluctuates throughout the year owing to the fact of demand & supply position, festive season, crop grown etc. The sellers generally avoid the storing large quantities of oil because of storage space and cost associated, blockage of funds, risk in price variation and the chances of wastage etc.

Palm Soya Oil Pvt. Ltd. is a wholesale dealer of Soya oil. The co. is maintaining a stock of 50,000 containers of oil which has selling price of Rs. 500 per container. Palm soya enters into an agreement with Apna Bazar retail chain on September 2020 to supply the whole stock of soya oil to be delivered on 15th December 2020 at the prevailing rate then. The cost price considers to be Rs. 485.

From past experience the co. officials came to a conclusion that the prevailing rate on September 2020 is bound to reduce by December 2020 owing to the fact of subdued demand. The similar situation the co. faced for the last couple of years which led to an adverse impact on their profitability. Therefore, they took a decision not to absorb the price risk this time. The co. consulted with their chartered accountant about the problem. They advised the co. officials to hedge and participate in derivative transactions.

The palm oil is trading at Rs. 503 in future market, the basis being Rs. 3 above the selling price. The carrying and storage costs are assumed to be Rs. 3 per month. The selling price by 15th December is assumed to be Rs. 495 per container as per the estimation of co. officials. A put option of palm oil with a strike price of Rs. 495 is trading at a premium of Rs. 9 for December expiry and a put option of palm oil with a strike price of Rs. 495 for January expiry is trading at a premium of Rs. 12.

According to the suggestions given by chartered accountants the co. management of Palm Soya is trying to evaluate what would be the effective selling price in a hedged position and unhedged position.

Think yourself as a member of finance team of the co. and assist the management by answering the following questions in the situations when (a) no change in selling price (b) price reduced to Rs. 495 per container.

- (i) Compute the profit or loss in both the situations on the unhedged position.
- (ii) Compute the effective selling price if the co. opted for short future position. Take inference from effective selling price.
- (iii) Compute the effective selling price if the co. opted for long put option.

(i) Profit or loss on the unhedged position

No change in selling price, i.e. selling price Rs. 500

Selling price		Rs. 500
Less Cost	Rs. 485	
Carrying cost	Rs. 9	494
Profit per container		6

Price falls to Rs. 495

Selling price		Rs. 495
Less Cost	Rs. 485	
Carrying cost	Rs. 9	494
Profit per container		1

(ii) Short on future @ Rs. 503

No change in selling price, i.e. selling price Rs. 500

Selling price		Rs. 500
Less Cost	Rs. 485	
Carrying cost	Rs. 9	494
Profit per container		6
Add Profit on future		
(503-500)		3
Net Profit		9

Effective selling price (Rs. 500+ Rs.3) = Rs. 503.

Price falls to Rs. 495

Selling price		Rs. 495
Less Cost	Rs. 485	
Carrying cost	Rs. 9	494
Profit per container		1
Add Profit on future		
(503-495)		8
Net Profit		9

Effective selling price (Rs. 495+ Rs.8) = Rs. 503.

The effective selling price in both cases remained same i.e. Rs. 503. It indicates that whatever be the spot price or selling price, the end results must be same which is the ultimate objective of hedging, in other words, make the outcome more certain.

(iii) No change in selling price, i.e. selling price Rs. 500

Selling price		Rs. 500
Less Cost	Rs. 485	
Carrying cost	Rs. 9	494
Profit per container		6
Option with strike price Rs. 495		

(not to be exercised, loss to

the extent of premium paid) (9)
 Net loss (3)
Effective selling price (Rs. 500- Rs.9) = Rs. 491.

Price falls to Rs. 495
 Selling price Rs. 495
 Less Cost Rs. 485
 Carrying cost Rs. 9 494
 Profit per container 1
 Option with strike price Rs. 495
 (not to be exercised, loss to
 the extent of premium paid) (12)
 Net loss (11)
Effective selling price (Rs. 495- Rs.12) = Rs. 483.