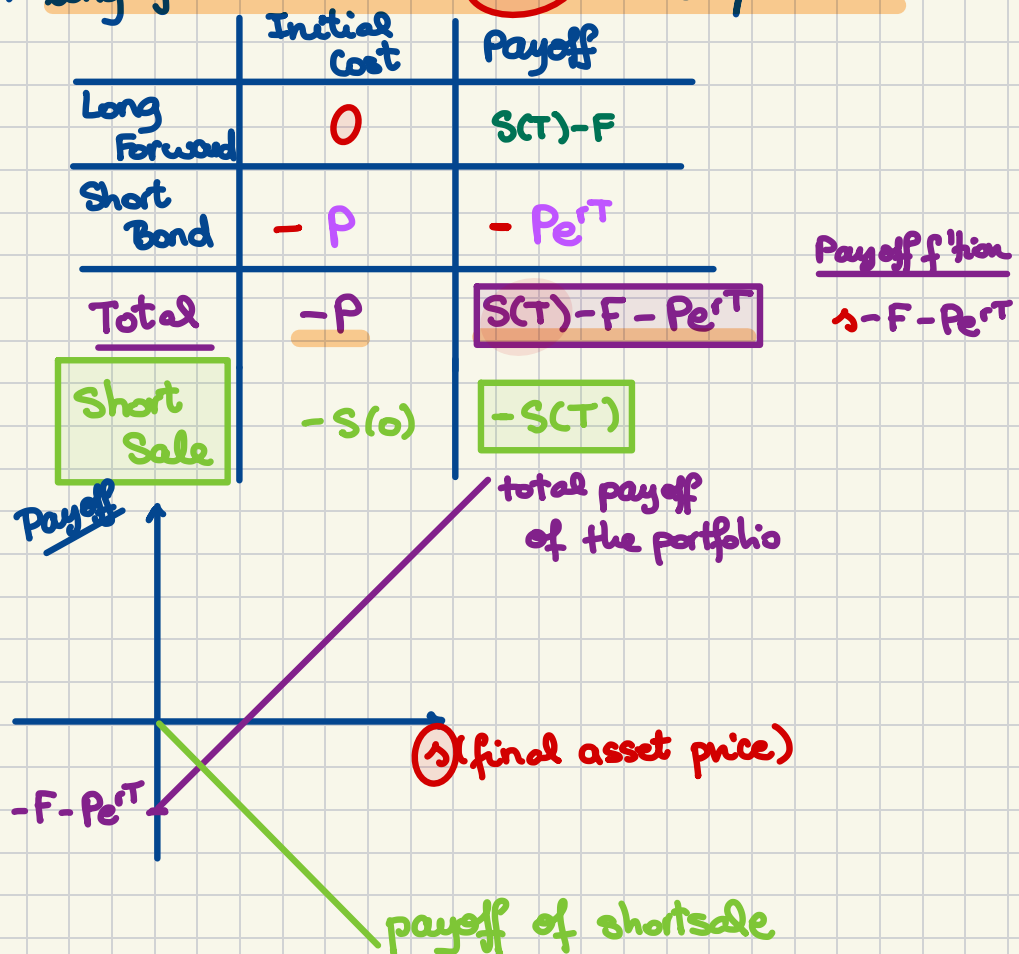


X (iii) long forward and a short zero-coupon bond



X (iv) short forward and a long zero-coupon bond

Initial Cost: Price of Bond > 0

(v) short forward and a short zero-coupon bond

Initial Cost: - Price of Bond

	Initial Cost	Payoff
Short Forward	0	$F - S(T)$
Short Bond	$-P$	$-Pe^{rT}$
Total	$-P$	$F - S(T) - Pe^{rT}$
Short Sale	$-S(0)$	$-S(T)$

Match:

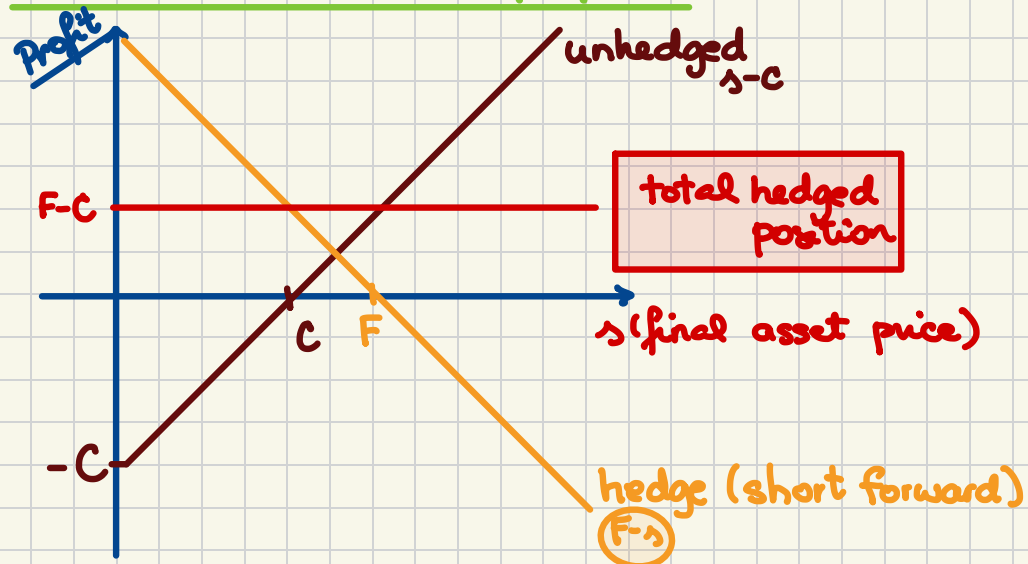
$$P = S(0)$$

$$F = Pe^{rT} = S(0)e^{rT}$$

Important!

Hedging Using forward Contracts.

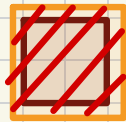
Focus on the Producer of Goods.



Algebraically:

$$\text{Profit (unhedged)} + \text{Profit (hedge)} = \text{Profit (total hedged)}$$

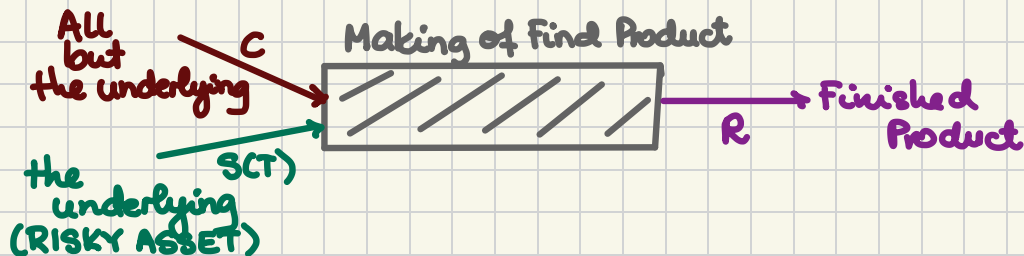
$$\cancel{S(T)} - C + F - \cancel{S(T)} = F - C$$



User/Buyer of Goods (to use as Raw Material)

fixed, deterministic { C ... total aggregate costs of production of some final product without the underlying asset valued @ time T when the underlying asset is needed and purchased
 R ... "revenue" ... the price @ which the final product can be sold @ time T

$S(T)$... the market price of the underlying asset @ time T



The bottom line @ time T : $R - C - S(T)$ unhedged

The appropriate hedge: long forward (buy forward)

$S(T) - F$ hedge

