

PREFACE



This summary notes doesn't guarantee passing the exam.
IT IS ONLY MEANT TO CONDENSE THE HUGE CONTENT OF ICMAI.

One needs to have a visualisation of connected questions with every concept studied here.

THE VISUALS COME ONLY WHEN YOU HAVE PRACTICED THE CONNECTED SUMS AT LEAST 3 TIMES AFTER UNDERSTANDING THE LOGIC BEHIND THE CONCEPTS.

For effortless understanding of logic and practice of sums once, Join full classes of SFM with Satish Sir.

Exclusively taught as per **CMA Final Course.**
ICMAI Material Covered with all practicals and theories.

YOU WILL FALL IN LOVE FOR FINANCE, FOR SURE

"I believe in - showing students how to cook rather than to give the food. Specially, I have also given sessions for preparing summary notes, where I am showing the process of how to summarise the big chapters. This would help you in all other subjects." - **Satish Sir**



Reviews of our regular classes of SFM

The books were great with regards to the content and coverage that has been provided. I really liked the numerous variation of sums that were provided to us in the entire course. I really loved the flow of the classes and the content was very well covered.

Thanking You.
Dipti Saraf

The content in the book is very good and well organized, there is extra space for page numbers and what is new is very useful and saves time for study, also the quality of the book is very good including the quality of paper and binding of the book.

Anjali Kumari Shaw

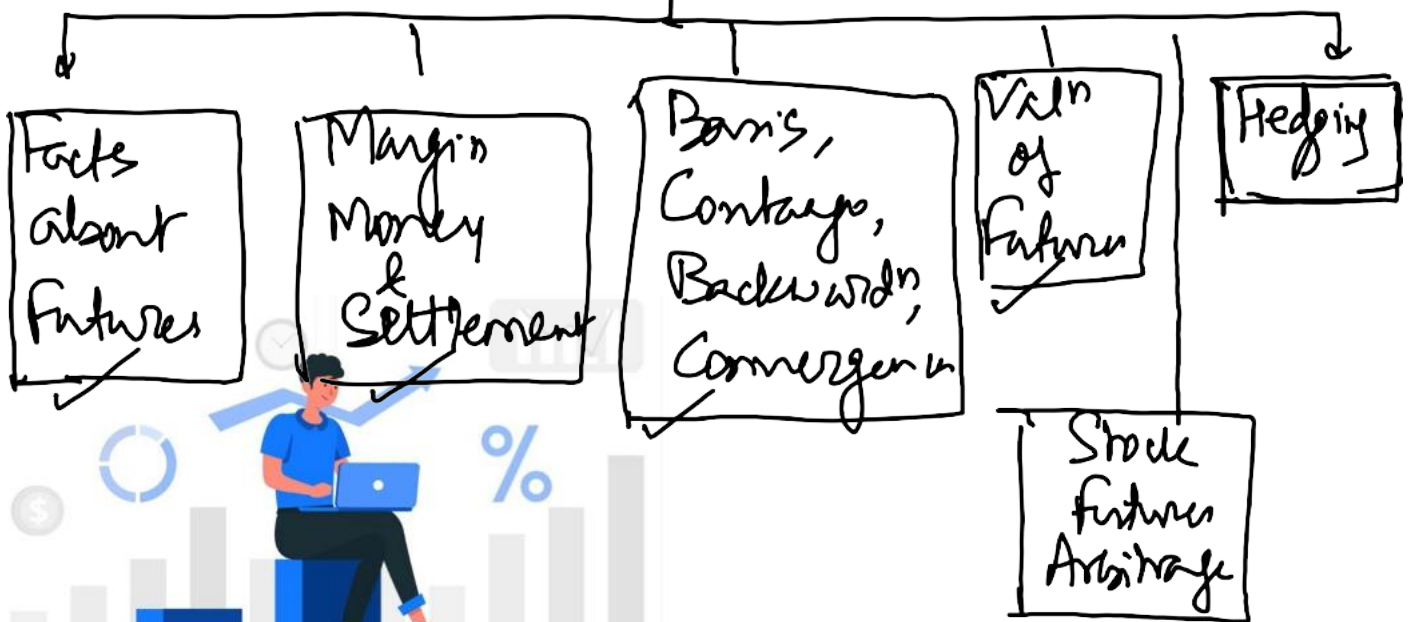
Futures

FUTURES



<u>Stock</u>	<u>Futures</u>	<u>Fwd</u>	<u>Futures</u>
Price based on EPS/DPS	Price based on Share Price	Any two parties any item any period	Standard Contract by Stock exch
Full amt	Margin Money	- Non Standardised	
Shareholder rights	No rights	Counterparty Risk is involved	No Risk
No expiry	Expiry	Physical Settlement	Cash settlement
No fluctn	High fluctn		

Futures

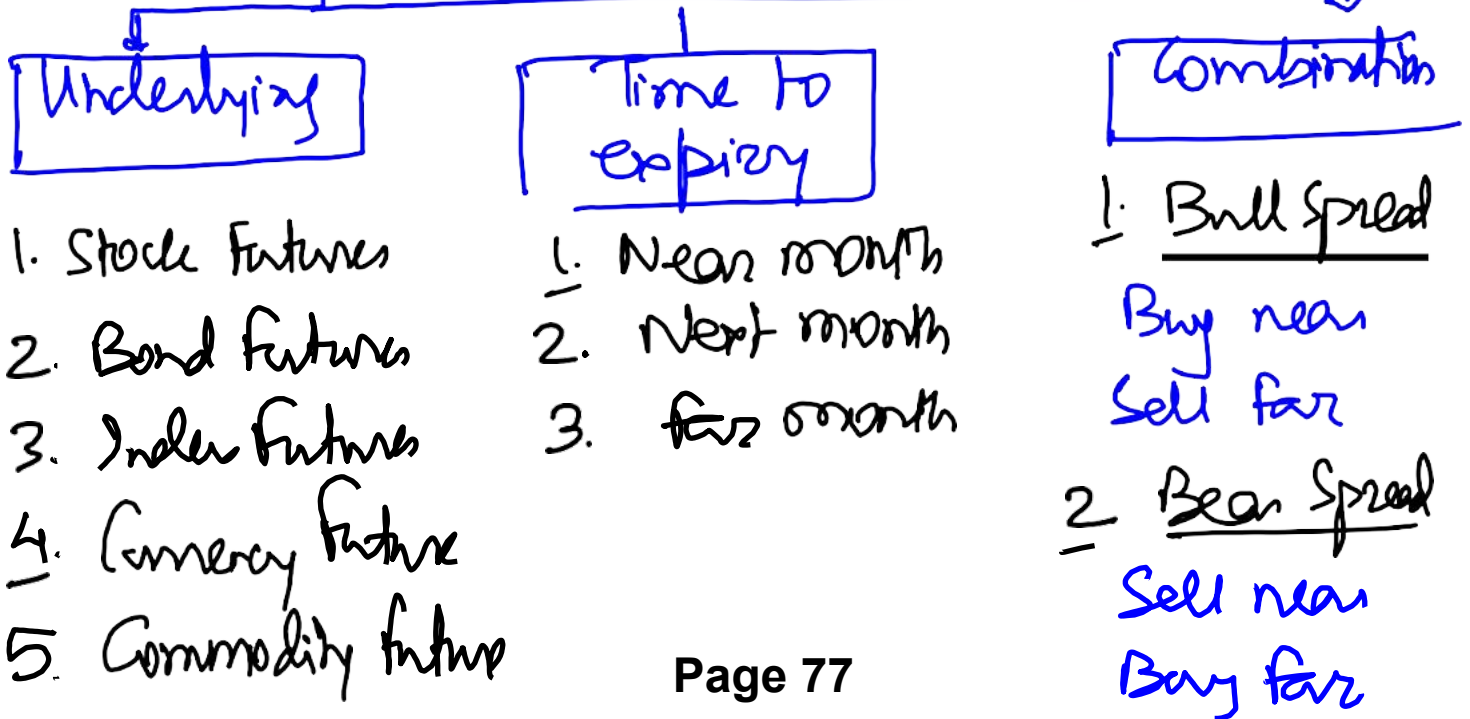


Facts About futures

1. F^+ (long) - Gain - from inc
2. F^- (short) - Gain - from dec
3. Lot size is applicable [QRS - assume 100 shares]
4. Margin money by both buyers & seller [QRS - 20% of contract value]
 - Exchange acts as a clearing house
 - Real time settlement = Marked to Market (m2m)
5. Sq off = Opposite position
6. Open Int - Jiska Sq off nahin hai
7. $FP > \text{or} < \text{or} = \text{Spot Price}$

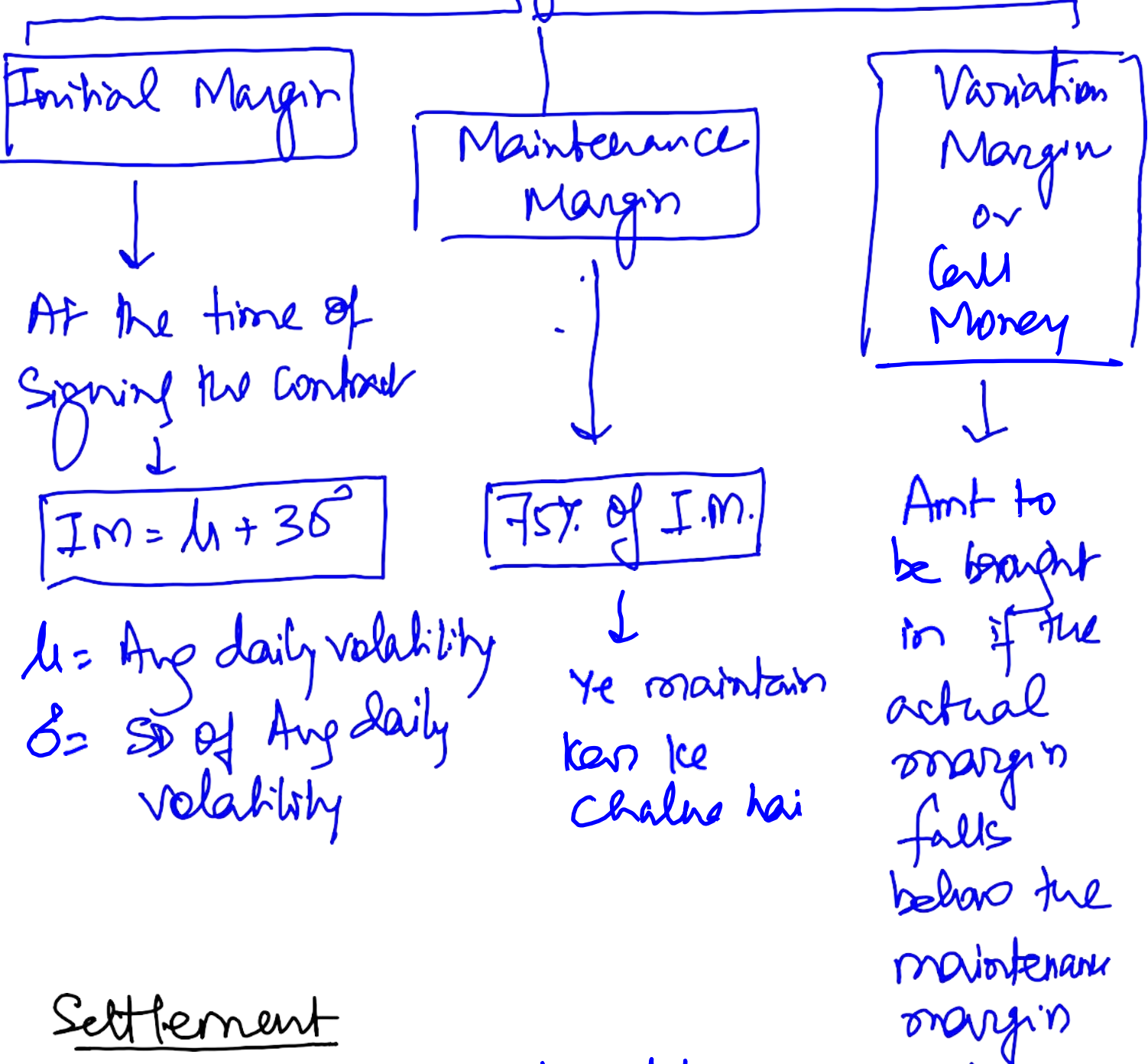


8. Types



Margin Money & Settlement

Margin



Settlement

• Real time = Mark to market

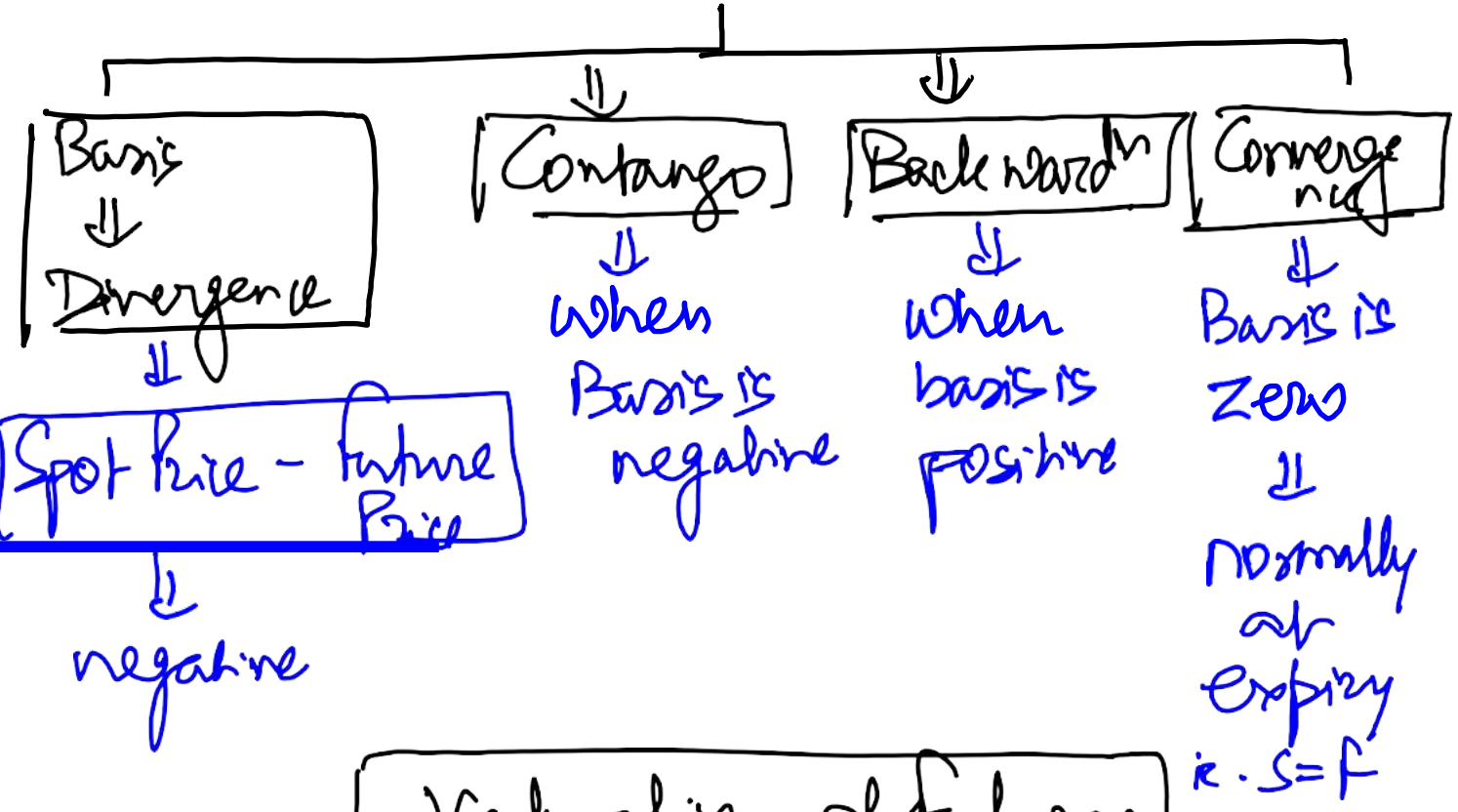
Withdrawal of Margin

Excess of IM can be withdrawn

$IM - MM$
 ↓
 [IM jama pahnchana hai]

Basis, Contango, Backward & Convergence

$FP = \text{Spot Price} + \text{Net Cost of Carry}$



Valuation of futures

1. Continuous Compounding Trick

- $e^{0.10}$
- Step 1: Power \div 4096
2. + 1
3. \times = 12 times



2. Value vs Price

Value \Rightarrow Net income \Rightarrow R of benefit

Price \Rightarrow MP at which buy/sell happens

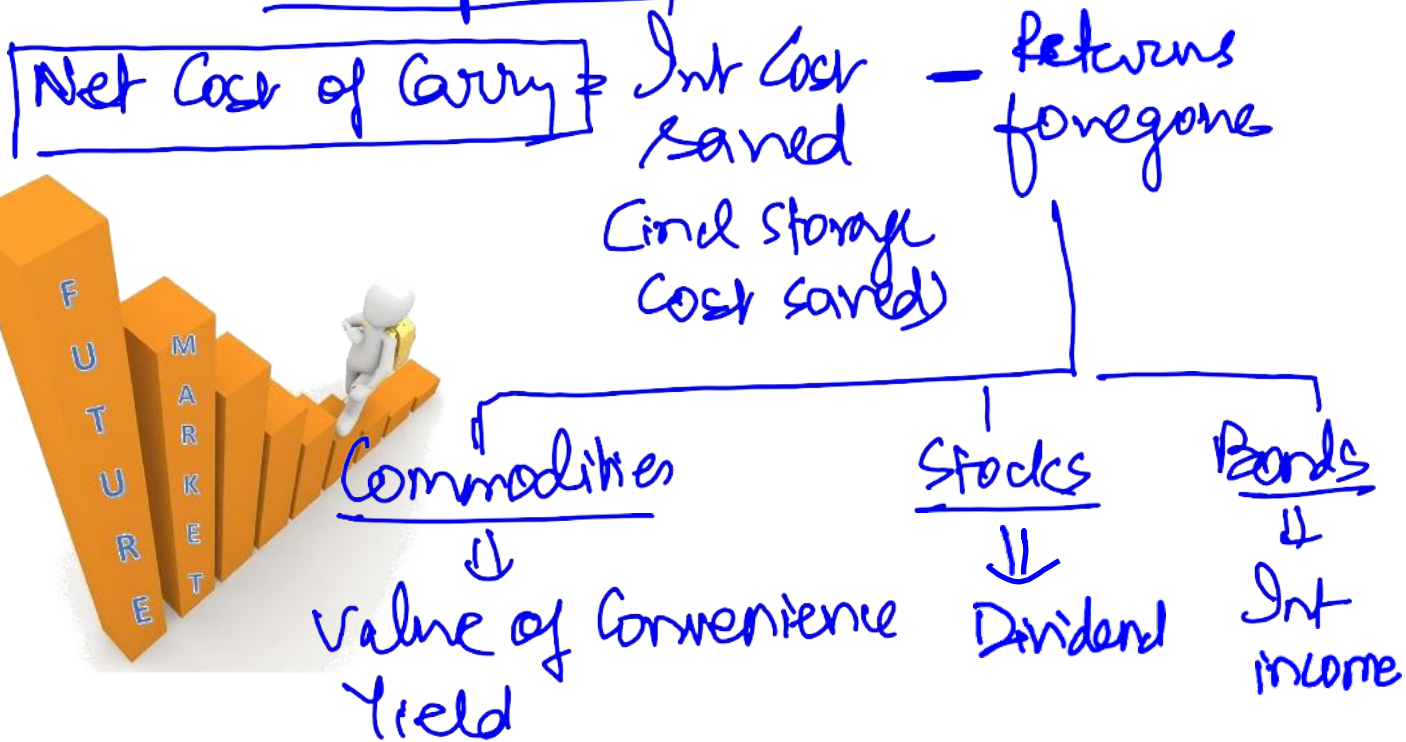
- Value of fwd contract at $T_0 = \underline{\underline{ZERO}}$ (No considⁿ reqd to enter the fwd contract)
- Value changes with Δ

Value of long fwd is opposite of short Fwd contract

$$\begin{aligned} \text{Long Fwd Contract} &= \text{Spot Price} - \text{Fwd Price} \\ \text{Short} &= \text{Fwd Price} - \text{Spot Price} \end{aligned}$$

3. Pricing of fwd/futures = Theoretical fwd Price

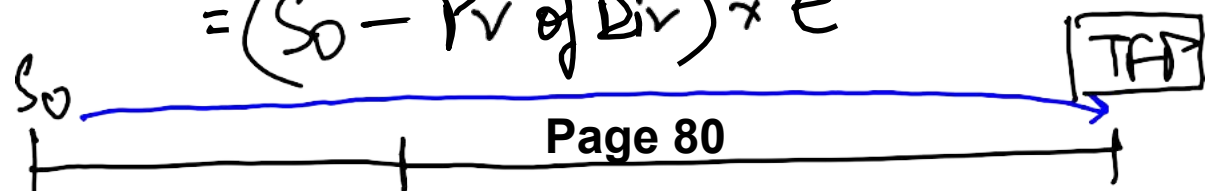
Cost of Carry Model



Theoretical fwd Price = Spot Price + Net COC

(a) $TFP = S_0 \times e^{\sigma t}$ (with continuous comp)

(b)
$$\begin{aligned} TFP &= (S_0 - D_0) \times e^{\sigma t} \\ &= S_0 \times e^{\sigma t} - D_n \\ &= (S_0 - \text{Pv of Div}) \times e^{\sigma t} \end{aligned}$$



Dividend

$$= S_0 \times e^{(\delta - y)t} \quad [\text{Div Yield \%}]$$

(C) $\text{PV of TFP} = \text{Spot Price} + \text{PV of Storage Cost saved} - \text{PV of Conv Yield}$

↓
Commodity future

↓
PV of Carrying cost

- Notes
1. $r = \%$ of rate
 2. prefer CCR

Theory

Pricing of Fwd =
Market Condition

(C) $\text{TFP of Commodities} = S \times e^{(r+c)t}$

Price

$r = \text{int}$
 $c = \text{storage cost}$

Perfect mkt = int rate is constant

Price of futures

Positive correlⁿ between Int rate & futures

$FP > \text{Fwd Price}$

Negative correlⁿ b/w Int rate & futures

$FP < \text{Fwd Price}$

4. $FV = PV \times e^{rt}$
 $PV = FV \times e^{-rt}$

[sometimes rt value will be given]

5. $\text{Act future Price} \neq \text{TFP} \Rightarrow \text{arbitrage possibility exists}$

6. TFP using Put Call Parity Spot Price Ke jagah

$$\text{Value of Call (C)} + \text{PV of EP (E)} = \text{Future Price} + \text{Value of Put (P}_0)$$

Call & Put - must be of same Exec Price

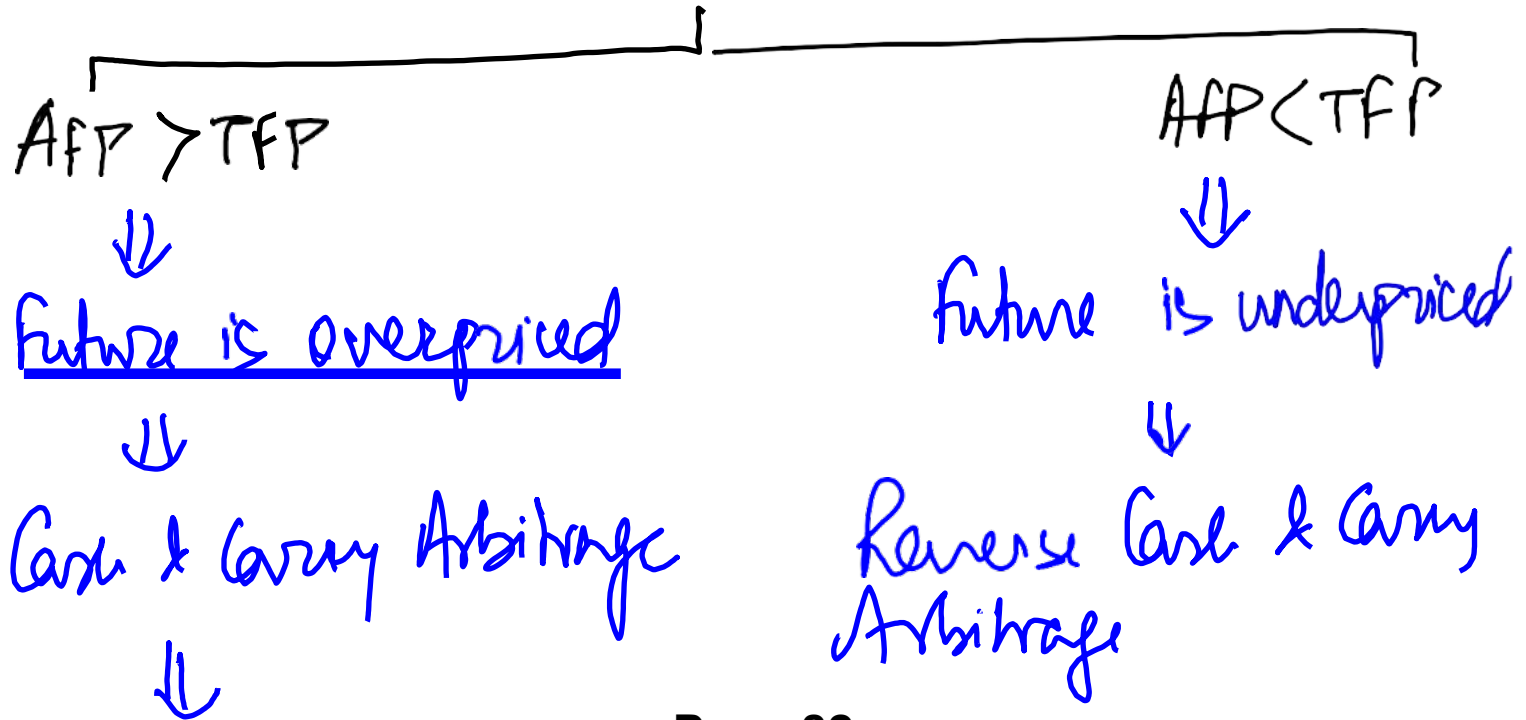
7. Div amt in stock futures

Div adj is the full amt of div, not the proportionate amt

Div amt in bond futures

Div Yield given \Rightarrow it gets proportionated

Stock futures Arbitrage



Overpriced wo sell
karke hai

Underpriced wo buy
karke hai

Steps

1. TFP
2. Compare TFP vs AFD
3. Maxm Gain = Diff b/w
TFP & AFD

Steps

- 1.
2. \Rightarrow Same
- 3.

4. Action (ignore margin money)

To f^- Tn = f^+ = 39 off
 s^+ s^- = stock
 sold

4. Action

To
 f^+ = Future long
 s^- = Stock short

B^+ = Borrow

B^- = Repay
 borrow
 ↓
 [Principal $\times e^{rt}$]

$B^- \Rightarrow$ Invest

Tn

f^-
 s^+ \Rightarrow

B^+ \Rightarrow Redemption
 of Inv



Note 1 Div Paying Stock (Q13)

- Include in TFP Calcula
- Include it as inflow/outflow in final settlement

Note 2 If expiry price given, ignore it (Q11)

Hedging

To hedge / protect



Commodity



Fear: Price rise



To earn from price rise,
Long futures

Stock



Fear: Price fall



To earn from price fall,
Short futures

Portfolio



Fear: Price fall



To earn from price fall
Short Index futures

Types of Hedging

Perfect



full hedging



full change in

Partial



< 100% of value is hedged

Cross



hedging by some other underlying

value of P/F or stock
is hedged

asset

Perfect

Partial

If futures position is taken without any stock/P/F, it is called speculation

Perfect Hedging using Index future

Step 1 Beta of P/F = WA beta

Step 2 Amt of position in short position of Index future = $V_{P/F} \times \beta_P$

Step 3 No of futures contract = $\frac{\text{Amt of Position}}{\text{Value of 1 cont. rate}}$

= Round off to next no



Selection of Ideal Index for hedging & P/F

1. Select the one with high correlation

With Portfolio

2. If there is a tie in correlation,

Select the one with low beta

Portfolio beta management
or
Partial hedging using Index futures

(1) No. of Contracts to bring down the P/F beta

$$= \frac{V_p \times (\text{Current beta} - \text{Desired beta})}{\text{Value of 1 Contract}}$$

To inc beta: $\Rightarrow \frac{V_p \times (\text{Desired beta} - \text{Current beta})}{\text{Value of 1 Contract}}$

N1
Beta is reqd only for Cross hedging
If hedging is done for a stock using its own futures - beta is not reqd.

N2 No. of Contracts for futures [using no. of shares] - [Q20]

$$= \frac{\text{No. of Shares} \times \beta}{\text{Equivalent no. of shares in 1 Contract}}$$



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SJC Institute.**

Thank You.