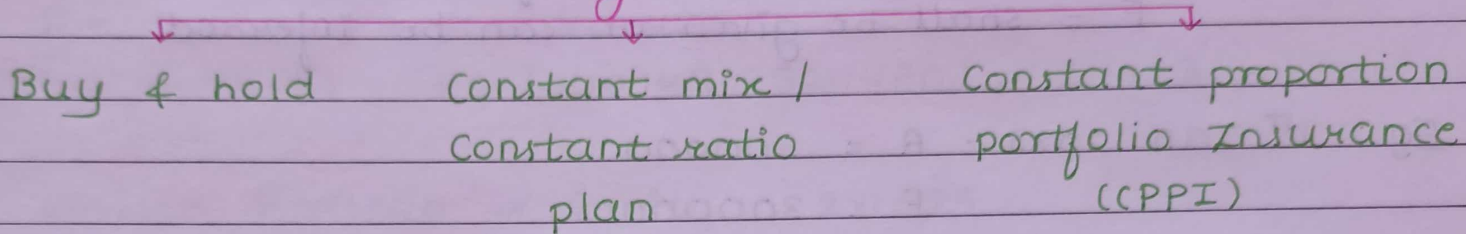


* Portfolio Rebalancing :-



Portfolio Rebalancing

Aggressive Portfolio

Conservative / Defensive portfolio

Equity

Risk Free Bonds

Price (P_0) or NAV $\uparrow/\downarrow$

Price will remain same

Then what is to be done?

Formula Plans

Buy & hold
(Do nothing)

Constant Mix or
constant ratio
plan.

Constant Proportion
Portfolio Insurance
(CPPI)

Note : Theory can also come in exam from this portion but hasn't come till now.

① Constant Proportion Portfolio Insurance (CPPI) :-

$$E = m(A - F)$$

where, E = Equity

m = multiplier

A = Asset i.e. Total Portfolio Value

F = shall be given or can be inferred.

Eg: 1st Jan. 2023 - A = 500000

F = 300000

m = 1.2, P = ₹1000 per share

Soln: $E = m(A - F) = 1.2(500000 - 300000) = 240000$

Amount invested in bond = $500000 - 240000 = 260000$

If R_f is given, Bonds & F will increase @ R_f

Rebalancing frequency → every 6 months

$R_f = 8\%$ p.a. comp^d semi-annually

i.e. 4% for six months

On 1st July, 2023 - Price = 1150

∴ Value of Equity = $240000 \times \frac{1150}{1000} = 276000$

Value of Bonds = $260000 \times 1.04 = 270400$

Assets (A) = $276000 + 270400 = 546400$

F = $300000 \times 1.04 = 312000$

∴ E = $m(A - F) = 1.2(546400 - 312000) = 281280$

Revised Portfolio - Equity 281280

Bonds 265120

546400

Comment: An amount of 5280 has been t/d from bond to equity.

on 1st Jan, 2024 - Price = 920

$$\therefore \text{Value of Equity} = 281280 \times \frac{920}{1150} = 225024$$

$$\text{Value of Bonds} = 265120 \times 1.04 = 275725$$

$$\text{Assets (A)} = 265120 + 275725 = 500749$$

$$F = 312000 \times 1.04 = 324480$$

$$\therefore E = m(A - F) = 1.2 [500749 - 324480] = 211523$$

Revised Portfolio → Equity	211523
Bonds	289226
	<u>500749</u>

Comment: An amount of 13501 should be tld from Equity to Bond.

Q.55	Pg	Common sense -
CW. 66		Maximum percentage fall in Nifty
		$= \frac{4793.4 - 5326}{5326} = 10\%$

$$\therefore F = A(1 - \text{max. \%} \downarrow) = 300000(1 - 0.1) = 270000.$$

Self practice: Extra Q.)

Part-2

② Constant Mix / Constant Ratio Plan :-

Aggressive → 500000 (1:1)

Defensive → 500000

Suppose Equity ↑ to 700000, portfolio = 1200000

Lets rebalance 1:1

Aggressive → 600000

Defensive → 600000

So, we will sell 100000 worth of equity & invest in Bonds.

Note : • When to Rebalance ?

CPPI me time k anusar rebalance krte the... (i.e. periodically) ... However, in constant mix, we have price based rebalancing.

Eg: whenever share price Δ by 10%, rebalance.

- They will ask us to compare the results with Buy & Hold strategy. You invest entire 1000000 in equity & just revalue at the end.

Part-3

Q-56 PG
 CW-66

Under Buy & Hold Strategy -

$$\text{Total portfolio @ end} = \frac{2000000 \times 43}{40} = 2150000$$

Under Constant Ratio Plan-

Month	NAV	Aggressive	Conservative	Total	Action	Units Held
Dec	40	1000000	1000000	2000000	Buy 25000 units	25000
Jan	25	625000	1000000	1625000		25000
	25	812500	812500	1625000	Buy 7500 units	32500
Feb	36	1170000	812500	1982500		32500
	36	991250	991250	1982500	Sell 4965.28 units	27534.72
Mar	32	881111	991250	1872361	-	27534.72
April	38	1046319.36	991250	2037569.36		27534.72
	38	1018785	1018785	2037570	Sell 724.89 units	26810.13
May	37	991974.81	1018785	2010760	-	26810.13
Jun	42	1126025.46	1018785	2144810	-	26810.13
July	43	1152835	1018785	2171620	-	26810.13

So, under constant ratio plan, total portfolio at the end of July = 2171620.

Self practice : HW-Q.28] pg. 41.