DATE 18/06/2021

Dirty price :

This is the market price / traded price of a debt instrument which includes interest accrued on that instrument

Eg:

Issuer :	Govt of India
FV of bond	1,00,000
Coupon rate	10%
Int payable	31st Dec of each year
Issued date	1/1/20
traded date	1st July 2021
market price	1,07,000

In the above details interest already accrued in the bond is

Int per year	10,000
Accrued from Jan 2021 to June 2021	5000 (for 6 months)

Market price is 1,07,000. accrued interest is 5000 which means the bond is purchased for 102,000 Rs. 2000 higher than the FV

Entries in the books for a hedge fund / investor is

Investment in bonds	Dr	102000	
interest receivable	Dr	5000	
To bank			1,07,000

(Being bonds purchased and the price included accrued interest)

clean price :

If the price of a bond is quoted / traded without interest included in that it is clean price

Eg :-

In the above example, if seller says the clean price of the bond is Rs 107.000 then buyer has to pay that money plus accrued interest of Rs 5000 so effective price of transaction price is 1,12,000

If a transaction on debt instrument is not specific if the price is including accrued interest (dirty price) or excluding accrued interest then it is considered as excluding accrued interest / clean price

If the above instrument is sold at 1@3000 dirty price, accrued interest as on sale date is 6000 then the investor is actually sold for 1.02000 so there is a loss of 5000 since the purchase price is 1,02000

Bank A/c	Dr	1.02000	
loss on sale of bonds A/c	Dr	5000	
TO investment in bonds			1.07000

(Being bonds are sold and loss is recognised)

Bank A/c	Dr	6000	
TO int receivable A/c			6000

(Accrued interest received on sale of investment in bonds)

Day convention

Issuer	govt of india
FV	1.00.000
coupon rate	10%
int payable	31st Dec of each year
issued date	1/1/2020
trade date	28th Feb

How much is the accrued interest as of 29th Feb 2024 (assuming 366 days in this year)

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Annual interest 10,000

Month	Amount	calculation	day convention
Jan	833.33	10,000/12	30/360
Jan	849.32	10,000 × 31/365	actual/365
Jan	846.99	10,000 × 31/366	actual/actual
Feb	833.33	10,000/12	30/360
Feb	794.52	10,000 × 29/365	actual/365
Feb	792.35	10,000 × 29/366	actual/actual

Market price (MP)

MP of a bond/debt security is the current market value in the market like stock exchange/any other market.

these debt securities are also traded in stock exchanges (most of them) like equity shares, the price can change on daily basis (though the issuer will repay only principal on maturity) mainly due to

A. Credit risk, if the issuer repayment capacity gone down due to losses incurred by them etc, that bond/debenture will trade at low prices in the market.

B. Interest rate changes :- if interest rates like Repo rates changes in the market, price of existing bonds will change in the market

Eg :- If GoI is paying 10% on bonds issued in 2019, the same issuer pays 6% for bonds issued in 2020, investor want to buy 2019 series bonds to get better interest, more demand will increase the price of 2019 series from Rs. 1 lac/bond to Rs. 1.2 lac/bond

Other reasons in the market are, if economy is expected to be in trouble due to recession, Equity markets will

.. ~~int~~ go down so money will go from equity markets to debt market and price increases, taxation on debt/equity gains are changed by govt and those changes are favorable to debt investments then price will go up etc.

- Sample Calculation of how int rate changes impact the market value

Issuer - GOI	2019 Series	2020 Series
FV	1,00,000	1,00,000
Coupon rate	10%	8%
market value	?	1,00,000

2019 series bond price will go up in market since they are paying better int rate of 10%.

Coupon on 2020 Series	8000
market value	1,00,000
coupon on 2019 series	10,000
expected market price	125,000 (1,00,000/8000 * 10000)

Q. if 2020 series is paying 8% coupon if 2021 series is paying 12% coupon rate on ₹ 1,00,000 bond will be the mp of 2020 bond in 2021

Coupon - 2021	12000
price - 2021	1,00,000
coupon 2020 series	8000
Appx rate of 2020 bond in 2021	66667 (100000/12% x 8)

more investors like to buy 2021 bond since they are getting 12% interest so demand for 2020 bonds will go down investors will look at earning capacity/ int on those bonds so the price will reach to a stage where YIELDS are same on both the bonds

Series	2020	2021
Yield	12	12
formula	8000 / 66,667	12000 / 100000 x 100

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	1 bhk	2 bhk
rent	10000	20000
price	10000000	?
		20.00.000
yield	1%	1%

yield should be similar on two assets which means more than income from a security / asset, more should be the price

YIELD

Yield refers to the income on an asset / security

Yield = income / (market price / investment)

Eg:- to buy a bond with face value of Rs. 1,00,000 giving 10% interest, if you pay 1 lack then yield is also 10%.

if the same bond is purchased at Rs. 200000, then the yield will be 5% (10000 / 2,00,000 x100)

If bond prices are increased, yields will go down since the amount of interest you get is same but amount paid is more

Eg:- if inflation is increasing, investors expect the RBI to increase the interest rates which means the new bonds will pay more int to the existing bond market rates will go down. this means the yields are raising in the market. same way if the economy is in trouble, int rates will go down to boost the economy and consumption so old bonds prices will increase as new bonds will give low returns than old bonds, yields will also decrease.

SO BOND price increases, YIELD decreases

If int rates are expected to decrease, Bond price increases.

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Eg: In 2021, int rates are expected to increase. Since economy is recovering from covid and inflation is expected to increase so investors are selling old bonds giving low interest, planning to buy new bonds so bond price are decreased, yields are raising

YIELD to maturity (YTM)

	AIRTEL	Reliance
FV	100.000	100.000
coupon rate	10%	10%
coupon frequency	semi-annual	annual
tenure	3 years	3 years

Date	cash flows	cash flows
1/1/2020	(1.00.000)	(1.00.000)
30/6/2020	5000	0
31/12/2020	5000	10.000
30/6/2021	5000	0
31/12/2021	5000	10.000
30/6/2022	5000	0
31/12/2022	105000	1.10.000
	10.25%	10%

Yield to maturity is the yield a bond can give if it is held till maturity and the cash flows are converted into current value.

Eg:- If a bond is paying Rs 10 interest each year in Dec and other bond is paying int on monthly basis at 10% then bond paying monthly int is better option to invest since that int received in jan can again earn int till december