and donochapter-2 New Winoming Love Man

The role of Time value in Finance:

Financial managers and investors can make meney by investing in projects or interest bearing options. Time value of money is important because when you get or opend money motters. It's based on the idea that a dollar today is worth more than the same dollars in the future. In Finance, we out at two things is a firsonly side occurred givenity out to see future value which about how much money will be worth

in the future. Present value with librabola how much money is worth right now. transformi no sando et assimple

Future value, fre cf (1+x)

Present value, PV = (Htg)h of and but & Here, CF = consh flow In present value,

8 = interest rate relationsh sate

n=time

solve topolog such - told loss

Barrie partierens of carsh flows: Forsettiri sont - your sur

aspired to moit of some or airest to transferring of posices

Single amount:

A lump rum is a big amount of money that your either have right now or will get in the feiture.

A level periodie stream of earth flow for our phoposer,

we'll work primareily with annual carsh flows.

Mined stream: A retream of unequal periodic caren flows that reflect no particular pattern.

Interest route:

An interest -to in An interest rate is a rate of return that reflects the relationship between differently dated early flows.

Interest raters have three perspectives:

- 1. They are the least amount of profil an inversion requires to choose an invertment.
- 2. They work on discount paten.
- 3. They show the value that inversions give up when they choose one option over another.

Real Rink-free interest rate:

and some The real rink-free interest rate is the interest on a super-rafe inversement if there's no expectation of prices going-up. It shows how People decide between enjoying Hings now or later based on time preferences.

expressed to est mate whom to more subject that it

曲 Difference between liquidity premium and Maturity premium.

Liquidity

The liquidity premium is like a payment to investors for the rink of losing money if they need to quickly

Maturity pre: in slike lan entra reward for inventors who take on the sink of larger-term coopy to radioning

Maturity

Reflects difficulty in anieky buying or selling an asset.

Reflects the time value of money and uncertainty about future interest rate.

Deals with sisk of loring value during fast buying or alling an asset.

Deals with risk related to changes in interest rates Over time. ver more colonies.

000110007 =

compound interest:

compound interest is when you earn interest not only on your starting money but also on the interest you've already earned. It's like your money growing furter by adding interest on top of interest.

months Present value, pr. (1+8/m) printing of the bound. THE LO ENTINES rapidly ENUISIBN (1+ Skil) consissed April and acothorni of throngson of yes centeration end promone welfind where,
- expend to xon sale most year

re = Annual interest year prisal to Aris was not Applicab of poor Rouge F: Rowald m = number of years m = minder of periods based on compounding frequency. hoping us nothing on most. DATE April 100m bus Brown Quaterly, m=4 Somi-annually, m= 2 with PV: CF monthly was = 12 is a food to = ctath 2 mm of brigger and ing. on easet Annually anim, PV = (I+T) thosphiri brenogni - Practices -(2) Mixen, too topostori mas not make at topostori brows a PV: \$ 1400,000 mo only that your princes 10 minterest rode, 7 = 64. = 0.06 341 MIL 100002 toposini to option to intensest FV 5 ?

1 10 DA (1+ 1) mu cravial (8) e1 = \$10,000 = 10,00,000 (1+ 0.06)12×1 5 54. 00.CD 210,616 47.812 Given, 1. 1528 (m/6 +2) 10 - 17 PV = 4, 576 EXT (400 ti) 200 ar = discounted rode to = 51. = 0.05 000, 70 = 30 : 11,506.03 H= m, = 0.011 PV · PV (1+2m) mn FV = CF (1+ 10) mm =10,000 (1+ 0.05 2×3 Fr = Prilitim) mn 3 (2) 576 (1+ 0.05) 12 211,5961:110 5xP((1+ 1))Fa, 11= $b_A = \frac{(7+\sqrt[4]{m})_{mu}}{Ct}$ JR DUS, NI C 14,576 (1+0.05)4x3 - worin) (3) 1000, KF = 75, COC 3620 = 12 F = 2 2 99 72.82

J. 1 ...

(4) Given,

2 14, 840, 86

(3) Given,

m = 12

Criven,

80,081. =0.08

moy

OF = 10,000

FV oct (1+8/m)mm

= 10,000 (T + 0.08) AX5

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(1 - 1 1) 1) + V)

0185 (-51.0- 11) 000 02,1,

Continuous compounding:

continuously compounded interest is the mathematical limit of the general compound interest toomules.

present value, PV = Fix strois 1 1 000001.

Future value, FV = pvxein (d. 1105:00)

Given,

M 2 10

t cf = 10,000 or one or the grade of brown who

8 = 127. =0.012 2000 bestrogong abordes

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annually, FOR

> FV = CF(I+ryn = 100000 (14 0,12)10

> > = 310584,82

For semiamually, m=2

Ex > CE (TI =) my

=1,00000 (1+ 0.12)2×10

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Mary (20/0/11) 10 0 /1

Continuous compounding:

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FV = CF Xeim browsques months to timil

=100000 X(e) 0.72 X20 = 17 2 mor trong

= 332011.69 rig x vg = VI . 2 mbnv 2001-11

Annuitien:

An emnity is a long-term insurance product that provides guaranteed income. 110.00 111

Ordinary annuity:

An annuity for which the carshflow occurs at the end of each period.

Annuity due:

An annuity for which the cash flow occurs at the begining of each period.

For ordinary annuity.

$$FV = P \times \frac{(Hr)^{N}-1}{r}$$

$$PV = P \times \frac{1-(1+r)^{N}}{r}$$

for annuity due_

$$FV_A = P \times \frac{(1+r)^{N}-1}{r} \times (1+r)$$

$$PV_A = P \times \frac{1-(1+r)^{N}}{r} \times (1+r)$$

D Annuity A.

=1,000
$$\times \frac{(1+0.07)^{5}-1}{0.07}$$

$$fV$$
Amounty due = $PX = \frac{(1+\tau)^{\gamma}-1}{\gamma} \times (1+\tau)$

$$=1.000 \times \frac{(1+0.07)^{5}-1}{0.07} \times (1+0.07)$$

2) Given,

$$=700 \times \frac{1-(1+0.08)^5}{0.08}$$

PV Annuity =
$$P \times \frac{1 - (1+8)^{-N}}{70}$$

= $1.47,000 \frac{1 - (1+0.1175)^{-5}}{0.1175}$

= 642016.84

Project B.

$$P = 1,43,000$$
 $8 = 14.251. = 0.1425$
 $8 = 5$

PV annuity due =
$$P \times \frac{1 - (1+7)^{-n}}{7} \times (1+7)$$
=1,43,000 $\frac{1 - (1+0.1425)^{-5}}{0.1425} \times (1+0.1425)$

2560653.55.