definitions

discounting	the compound reduction from FV to PV
compounding	the earning of interest on interest
compound interest	interest earned in subsequent periods on the interest earned in previous periods
lump-sum payment	one time payment at a PV or FV
TVM	key value that a dollar today is worth more than a dollar tomorrow
amortization schedule	listing of periodic interest expense, reduction in principal each period, ending balance for each period
amortized loan	loan in which interest and principal is paid each period
annuity	series of equal cash flows at regular intervals across time
annuity due	series of equal & regular pmts at the beginning of a period
console (perpetual bonds)	stocks that pay interest forever, no maturity date, no promise to pay principal
discount loan	loan where interest & principal is repaid at maturity
interest only loan	loan where interest is paid regularly. principal & final interest is paid at date due.
perpetuity	infinite regular & equal pmts

definitions (cont)

APR	yearly uncompounded rate of interest
EAR (effective annual rate)	compound rate of interest per year
compounding period	period in which interest is applied
fisher effect	relationship which nominal interest rate is a function of the real rate, inflation, and product of inflation and real rate
maturity premium	the portion of the nominal interest rate that compensates the investor for additional waiting time to receive payment in full
nominal interest rate	interest rate composed of real interest rate plus the inflation rate
periodic interest rate	the number of compounding periods per year
real interest rate	the reward for waiting
reward for waiting	real rate of interest paid for forgoing use of money today.
risk free rate	theoretical interest rate with zero risk of any kind
yield curve	graph relating return rate and an asset's time to maturity
basis point	one hundredth of a percentage point
bearer bond	bond where ownership to the possessor

definitions (cont)

Bone equivalent yield (BEY)	annual % rate converted from bank discount rate on a treasury bill
callable bond	bond that issuer has the right to buy back prior to maturity at a predetermined price
convertible bond	right to swap bond for another asset, usually common stock, at a preset conversion ratio under certain conditions
corpus	bond with the coupons clipped off representing only principal
coupon	regular interest pmt of bond
current yield	annual bond coupon pmt divided by current price
debentures	unsecured bonds
floating rate bond	bond with changing coupon rate
indenture	formal contract of a bond detailing important information
junor debt	debt subsequent to the other (senior) debt with lower priority of pmt
par value	principal amount to be paid at the maturity date
premium bond	bond that current value is above par value
prime rate	interest rate banks charge their best customers
protective covenant	part of the bond that spells out both required and prohibited actions of the bond issuer

definitions (cont)

putable bond	bond holder has the right to sell the bond back to the issuer at a determined price prior to maturity
sinking fund	special fund for the retirement of debt on bonds
STRIPS	zero-coupon bonds made by separating the interest and principal on us. govt bonds
treasury bill	govt bond with a maturity less than one year
treasury bond	govt bond with maturity of more than ten years
treasury note	govt bond with a maturity between 2 and 10 years
yield to call	discount rate of return for a callable premium bond
yield to maturity (YTM)	return the holder receives if held on till maturity
zero-coupon bond	a bond that pays no coupons over its maturity

formulas

compounding interest

$FV_n = PV_o(1+r)^n$ (finding fv)

$PV_o = FV_o / (1+r)^n$ (finding pv)

$n = \ln(fv/pv)/\ln(1+r)$ (finding time)

$R = (FV_o * PV_o)^{(1/n)} - 1$ (finding rate)

FVn=

$PMT [((1 + r)n - 1) / r]$

PVt =

$PMT(t+1) [(1 - 1/(1 + r)n) / r]$

PVt =

$PMT(t+1) / r$

Periodic Interest Rate

$r = APR / m$

formulas (cont)

EAR =

$(1 + APR/m)m - 1$

. r ≈

$r^* + h$

r =

$r^* + inf + dp + mp$

Bond Price (PB) =

$Coupon\ PMT [(1 - 1/(1 + r)n) / r] + Par / (1 + r)n$

Current Yield =

$Annual\ Coupon\ PMT / PB$

YTM =

$(Par/PB)(1/n) - 1$

YTM ≈

$(Coupon + (Par - PB)/n) / [.4\ Par + .6\ PB]$

Profit =

ending value + distributions-original cost

HPR =

(profit or loss)/original cost

Simple annual return =

HPR/n

EAR =

$(1 + HPR)(1/n) - 1$

Variance (X) =

$[\sum(X_i - Average)2] / (n - 1) = \sigma2$ (Divisor of $(n - 1)$ for sample and (n) for population)

Standard Deviation =

$(\sigma2)(1/2) = \sigma$

Re =

$E (r_i) = r_f + \beta_i [E(r_m) - r_f]$

calculator input

excel