Financial Management
Cheat Sheet in Excel Form

Future Value and Present Value

FV=pv*(1+r)^n
PV=fv/(1+r)^n
rate=(fv/pv)^(1/n)-1
nper=ln(FV/PV)/ ln(1+r)
nper=LN((FV*r/pmt)+1)/LN(1+r)

Annuity

FV=pmt*((1+r)^n-1)/r
PV=pmt*(1-(1/(1+r)^n))/r
FVIFA=(1+r)^n-1/r
PVIFA=(1-(1/(1+r)^n))/r
PMT(loan)=pv/((1-(1/(1+r)^n))/r)
Nper=LN(fv/pv)/LN(1+r)
PV(con)=pmt/r

Interest Rate

FV=pv*(1+(apr/m))^(n*m)
FV(con)=pv*EXP(r*n)
PV(periodic)=fv/(1+(apr/m))^(n*m)
PMT(periodic)=pv/((1-(1/(1+(apr/m))^(n*m)))/(apr/m))
EAR=(1+(apr/m))^(m)-1
EAR=(Ending-beginning)/beginning
EAR(con)=EXP(r)-1
Price with inflation=price*(1+r)^n
Real Rate=(FV/PV)^(1/n)-1
Real Rate=(nominal rate-inflation)/(1+inflation)
Nominal Rate=real rate+inflation(real rate*inflation)
Inflation Rate=(nominal rate-real rate)/(1+real rate)

Equity Pricing

Bonds

Bond Price(zero coupon)=par/(1+(apr/m))^(n*m)
Bond price(with coupon)=par*(1/(1+r)^n)+(coupon*(1-(1/(1+r)^n))/r)
Bond price(with coupon and pmt)=par*(1/(1+(apr/m))^(n*m))+((coupon/m)*(1-(1/(1+(apr/m))^(n*m)))/(apr/m))
Discount=par*discountrate*((days to maturity)/360)
Price=par-discount
HPR(holding period return)=(par-price)/price
APR(annual percentage rate)=HPR*(365/(days to maturity))
Yield to Maturity=rate

Stocks

rate of return(Stock price with infinite stream of constant dividend)=dividends/stock price
Stock Price(dividend growth rate=0)=dividends/discount rate=pmt/r
Stock Price(period)=dividend/(discount rate/n)
Stock price(with finite dividend payment)=future price*(1/(1+r)^n)+(dividend*(1-(1/(1+r)^n))/r)
Dividend growth rate(geometric rate)=(F dividend/P dividend)^(1/(n-1))-1
Dividend growth rate(quarter)=(f dividend/p dividend)^(1/(n*m))-1
Price(with constant dividends infinite)=dividend/r
Gordon growth model(infinite growing dividends); price0=div0*(1+g)/(r-g)
Gordon growth model(finite growing dividends); price=div0*/(r-g)*(1-((1+g)/(1+r))^n)
Required rate of return with growing dividends infinite; Required rate of return=div 0*(1+g)/price+g
Required rate of return with constant dividends infinite; r=div/price

Foreign Exchange

Change Dollar to A Foreign Currency
$*indirect rate(FC/$1)=FC
$/direct rate($/FC1)=FC

FC*direct rate($/FC)=$
FC/indirect rate(FC/$)=$
FC1 to FC2=indirect
FC2/indirectFC1

Forward Rate and NPV

indirect forward rate=current indirect rate*((1+inf)/(1+inh))^t
Domestic NPV Steps
1 forward foreign indirect rate
2 forward foreign direct rate
3 dollar value
4 dollar NPV
Foreign discount rate=(1+us discount rate)*((1+inf)/(1+inh))-1

Risk Management

expected payoff=(pay off 1*probability 1)+(pay off 2*probability 2).....
expected Variance
=(pay off 1-expected payoff)^2*probability 1+(payoff 2-expected payoff)^2*probability 2
Standard deviation=variance^0.5
Return in situation A(sit=situation)=Return 1@sitA*propotion1+Return2@sitA*propotion2.....
Expected return@sitABC=return@sitA*prositA+return@sitB*prositB...

Risk Premium=slope
Risk-free rate=y intercept
return=risk free rate +(risk premium slope)*beta
sml(when beta=1)=risk free rate +(expected return on the market-risk free rate)*beta

Assembled by Marvin Li and Ryan Palmer based on BUS 310 Course Material. 2022 Cal Maritime Tutoring Services.