Cheatography

Financial Management Cheat Sheet

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Capital budgeting & Investment Decisions

4 methods - Payback, AAR, IRR and NPV
- Payback period approach.
Payback = outgoings - CFAT (number of periods)
No time value of $, no decisions based in economics, ignores CF after payback period, will not choose projects to max. share holder value

- Accounting rate of return (AAR)
AAR = Average Income / Average invested capital
1. Estimate average income after tax for project
2. Estimate net investment after depreciation
3. Calc ARR
4. If ARR > targeted return = accept project
Limitations of ARR - components reflect tax and accounting figures, not market values and cash flows, time value of $ and no guidance on target AAR

- NPV technique.
- IRR = rate of return where NPV = 0
i.e IRR of project outlaying $100 returning $106 in 1 year when opp cost of capital is 7% =
0 = -100 + 106/(1 + IRR)
100 = 106 / (1 + IRR) = 6%

Capital budgeting & Investment Decisions

Payback period approach.

8 Rules

1. Do not double count (interest is included in the hurdle rate)

2. Use incremental cash flows, not accounting income (depreciation, interest expense) after tax

3. Include incremental working capital costs (current assets - current liabilities)

4. Include side effects - positive or negative

5. Exclude overheads - only include incremental cash flows

6. Include opportunity costs - salvage value, land use etc.

8 Rules (cont)

7. Ignore sunk costs - costs incurred regardless

8. Inflation is important - (1 + nominal rate) = (1 + real rate) x (1 + inflation rate)

The role of financial manager

Valuation and pricing of assets

Evaluation of investment proposals

Corporate financial policy

Investment decisions

Finance decisions

Payout and manage cash flows

OVERRIDING GOAL to maximise shareholder wealth

Payout Policy

What company decided to do with free cash flows;
- reinvest/accumulate in reserves
-payout in dividends or share repurchase
- also dividend reinvestment
Miller & Modigliani irrelvance proposition.
Dividend policy does not effect shareholder wealth (trade off higher dividends for fall in share price)
- Increase dividend
- Pay no dividend
- Home-made dividend (sell shares)
Dividend smoothing - practice of maintaining relatively constant dividend and maintaining long term target levels of dividends.

What decision is it?

Financing
Investment
Payout

Risk and interest rate

Discount rate, Hurdle rate, Opportunity cost of capital & required rate or return

Compound Interest

Financial mathematics required consistency between numerator and denominator. If cashflow occurs monthly, need a monthly hurdle rate or cashflows annual and rate monthly provided need to convert to annual.
1.5% per quarter to yearly = $(1 + r)^4 = (1.015)^4$ = 6.136% Effective annual.
10.5% PA comp daily to yearly = (1 + 0.105/365) = (1 + y)
$(1 + 0.105/3650^{365}$ = 11.07%
Continuous compounding;
FV = PV e^{rt}
r = continuously compounded rate of return
e = 2.718282
T = compounding periods.

Cash Flows

Present Value of an irregular cash flow
$PV= CF/(1+r)^n$
Future value of an irregular cash flow
$FV= CF \times (1+r)^n$
Present value of Annuities (also use for EAA - replace CF with EAA)
$PV=CF\ (1-(1+r)^{-n})/r)$
Future value of annuities
$FV=CF((1+r)^n-1)/r)$
Present Value of perpetuity
PV = CF/r
Present Value of growing perpetuity
PV = d1 / re-g
Present Value of growing annuity
$PV= C \times 1/(r-g)\ (1-((1+g)/(1+r))^n$
Determining "n" whenPV and FV is known
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Risk & Return

β is a measure of how a firm correlates to the market.
The higher the firm's debt, the more variable is its price and hence its β
Always assume given β is levered
If projects or leverage changes then we must adjust β
β = 1 (market)
β < 1 (risk of security is lower than average market)
β > 1 (risk of security is higher than average market risk)
If β is 0 there is no risk (government bond)
CAPM $r_e = r_f + \beta (r_m - r_f)$ OR $r_f + (\beta X ERP)$
Suppose RF is 5% and market risk premium is 7%.
Qantas has β of 1.33
According to CAPM what is expected return?
$r_f + \beta (e_m - r_f) = 0.05 + 1.33 (0.07) = 14.31\%$
Therefore because qantas β of 1.33 investors will require a risk premium os 9.31% over RF rate.
Unleveling B.
$B_u = B_L / (1+ (1-t)((MV Debt)/(MV Equity)))$
T is tax rate, B_L is the observable levered β of equity (also known as project risk of a firm)
To reliever with new D/E ratio $B_L = B_u (1 + (1-T) x (new D/new E)$

Annuities

Equal in size, equal in space and it ends.
$500 placed into an account each year earning 5% PA comp annually. How much in 5 years?
$FV = 500 ((1.05)^5 - 1) / 0.05) = \$2763$
What is value of asset paying $2.3m each year from 1 to 6 with 10% PA (comp monthly)?
$(1 + 0.1/12)^{12} = 10.47\%$
$PV = 2.3 (1 - (1.1047)^{-6}) / 0.1047) = \$9.88$

Perpetuities

PV of perpetuity = A / r
i.e BHP paid half yearly divided of $0.58, share market expected to return 10% PA comp 6 monthly, what is value of BHP?
PV = A / r = 0.58 / 0.05 = $11.60
0.05 because 10% divided into 6 months (and dividend paid 6 monthly also).
Annuity starting end of year 1 to 8;
$PV = 100 (1 - (1.10)^{-8} / 0.10) = \$533.4$
Annuity starting straight away (0 to 7)
$PV = 95 (1 - (1.10)^{-7} / 0.10) +95 = 557.9$
Deferred annuity, i.e 1.49 CF @ 10% beginning in year 3.
$PV = 1.49 ((1 - (1+0.10)^3 / 0.10) + (1.10)^2$
To bring forward to yr 0 we need to discount it at 10% 2 times/periods.

NPV tender price

Supply contract. 5 years and require supply of 1000 units at end of each year. Equip cost $20m, annual operating expenses of $7m. Straight line depreciation to zero and salvage value of $5m. 40% tax rate and required return is 10% after tax. What price would you bid?
$0 = -20 + cash (1-(1.10)^{-5} / 0.10) + 3/(1.10)^5$
3 is salvage value of machine (5) less tax
Cash = 4.785.
Rev 12.308
Exp 7
Dep__ 4
PBT 1.308
Tax__
PAT 0.785
Dep__ 4
Cash 4.785

Business Valuation

Value of a firm = debt + equity ~ V = D + E
PV of debt;
What is MV of 10% debentures redeemable in 10 years at face value of $1,
when similar securities are yielding 5%?
FV x Coupon ~ 1m * 0.10 = $100
$PV_{bond} = 100 (1 - (1.05)^{-10} / 0.05) + (1m / (1.05)^{10})$
=$1,386,087.
Cost of purchase is $1m and we get back $1.3 so we BUY
PV of equity = share price x no. of shares
PE Ratio (P/E = payout ratio / r_e-g))
EPS is it a good indicator. Price = EPS x P/E

Company cost of capital

WACC
- When should you use - if scale enhancing, when D/E remains unchanged.
E = Market value of equity (current share price x no. shares)
D = Market value of debt
- Yield on similar risky debt (calc like bond)
r_e = cost of equity (CAPM)
r_d = Cost of debt (market yield)
- Yield is after tax to reflect the tac shield provided to shareholders, not bond holders
WACC = r_A = (r_d (1 - T) x (d/v) + (r_e x E/V))
`Modify WAA > need new re > B changes > new WACC`