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# FINM2001

Lecturer: J-dude again (swag)

Consultations: Tuesday 1-3, room 4.05, CBE jozef.drienko@anu.edu.au, CBE 5 Tutorial Quizzes, best 4 count, 15% Mid-Sem exam 25% or 0% Final Exam 60% or 85% No formula sheet again (waaaahhhhhh) QUIZ SCHEDULE: available on Wattle (first in week 3) Text Book: check Wattle, make sure to grab it at some point Been used for a long time, so check for second hand, or just an online copy Tutes available tomorrow at 1pm

## L1

4 Types of Firms: - Sole proprietor (private: one owner) - Partnerships (private: between 2 and 20 owners) - Limited liability companies (private: many owners) - Corporations (public: many, many owners)

**Main characteristics of a corporation** - Legal entity, separate from it's owners, hence, limitied liability - Separation of ownership and management

**Agency Conflict** - The separation of onwrship and control pgives rise to what is known as the *agency conflict* - The agent (manager) may not act in the best interests of the principal (owner) - How might the owner of the firm reduce the principal-agent conflict? The most common way is to link manager compensation to company performance

**Objective of a firm**: maximize shareholder's wealt Firms exist to create value *over and above* that which it's owners can create by themselves. Moreover, firms that do not create this value will be either: - Forced to undergo change; or - Cease to exist altogether

Required Rate of Return = real risk-free rate + expected inflation + risk premiums

## L2

**Investment Decisions (NPV, IRR and more!)* Chapter 7 for reading (when you get the book you fucking slug)

QUIZ NEXT WEEK Workshop this week too, got some questions to do for that niqqa

**Depreciation**: calculated 3 ways: 1. straight line 2. reducing-balance 3. accelerated depreciation

**Accelerated**: follows a depreciation schedule set by the tax authorities that is based on the type of asset being depreciated

**Working Capital**: shit to work with on hand at the time. Increase treated as cash outflow

*Remember*: indifferent if NPV=0

Unless told otherwise, assume the NWC is fully recovered unless otherwise stated

4 Methods of Project Evaluation: - Net Present Value (NPV) - Internal Rate of Return (IRR) - Payback Period (PP) - Average Accounting Return (AAR)

**IRR**: discount rate that causes a project's NPV to equal 0 k = rrr if IRR > k, accept if IRR <\> k, reject if IRR = k, indiff

When doing manually, have to do trial and error. Pick something reasonable, like 3% or 8%. Higher IRR - probs more negative, means too higher, use a lower IRR

When IRR Rule does not apply: - Delayed investments - nonexistent IRR - multiple IRR

## W1

Reminder that we have a quiz next tutorial, not fun, on the stuff from this weekend so get ready to do that shit you nerd. Also don’t forget you have your maths assignment to do too.

**Incremental IRR** IRR of the incremental cash flows that would result from replacing one project with the other

**Shortcomings**: - may not exist - multiple may exist - the other ones that apply to the normal IRR still apply to this one as well - NPV still much better to use if possible - mulitple may exist

## L3

### Capital Budgeting

**Methods of comparing projects with different lives**: - Equivalent annual value method - Constant chain o

replacement in perpetuity method - lowest common multiple method

((EAV Formula already in my book!!!!!!!! Extra practise available )

in the extra shit folder on wattle so make sure to do that

**Project Selection with Resource Constraints** - May not actually be able to accept all NPV positive projects available - Can be assessed using a Profitability Index - Firm has to select the best combination of available projects given the resources available

Profitability Index assumes that: 1. The set of project taken will exhaust all resources completely 2. There is only a single relevant resource constraint that can be considered by the index at any one time

**Incremental Earnings**: Sales - COGS - General Expenses - R&D - DEP = EBIT (earnings before Interest and Tax) EBIT - Income Tax = Unlevered Net Income

Rent is usually pre-paid

**Cannibalization**: when sales of a new product displace sales of an existing product This and cost of rent *should* be included in the decision making process

**Sunk Costs**: costs that have been or will be paid regardless of the decision whether or not the investment is undertaken. *Not to be included in the decision making*

## L4

### Leasing

Chapter 25 in buku

**Lease**: contract between twow parties, the Lessee and the Lessor. Lessee: party lble for periodic payments in exchange for the right to use the asset. Lessor: entitled to the lease payments in exchange for lending the asset a - Involve little or no upfront payment - At the end of the contract term, the lease specifies who will retain ownership of the asset and at what terms. Typically, the lessee has the option to purchase the asset at a predetermined value or the market price - Also specifies cancellation provisions, possibility of extensions, responsibility for maintenance, etc.

**Types of Leases** *Sales-type Lease*: A type of lease in which the lessor is the manufacturer of the asset (e.g. photocopier from Xerox) *Direct Lease*: Lessor is not the manufacturer, often an independent company that specializes in purchasing assets and leasing them to customers *Sales and Lease-back*: Describes a type of lease in which a firm already owns an asset it would prefer to lease. Firm sells asset, gets cash, leases back from the new owner and makes lease payments. Useful for firms facing a funding shortfall or firms that are asset rich but cash poor. *Leveraged Lease*: Lessor borrows from a bank or other lender to obtain the initial capital to purchase an asset, using the lease payments to pay back the bank loan.

In order to value a lease, we need to consider the residual value of the asset. Residual value is the asset's market value at the end of the lease

**Lease payments are made at the beginning of each period, i.e. payment starts at time 0, *annuity due***

**PV(Lease Payments) = Purchase Price - PV(Residual Value)**

*Fair Market Value Lease*: Gives the lessee the option to purchase the asset at it's fair market value at the termination of the lease *$1 Out Lease (Or Finance Lease)*: Get the asset at nominal cost of $1. Basically purchasing over time *Fixed Price Lease*: Lessee has the option to purchase the asset at the end of the lease for a fixed price that is set upfront in the lease contract (this is a long call!). Lease payments oft. higher to compensate for this option. *Fair Market Value Cap*: lessee can purcase the asset at the minimum of its fair market value and a fixed price or 'cap' *Operating Lease*: Lease in which the lessor receives the depreciation deduction associated with the ownership of the asset *Finance Lease*: Lessee receives the depreciation deductions for tax purposes and can also deduct the interest portion of the lease payments as an interest expense

When calculating incremental cash flows, use Lease - Buy

## L5

**Equity and Debt Financing** quiz on this shit next week

Firms can get funds from Retained Earnings, Equity, and Debt

**Equity**: Limited liabiliyt, ownership, residual claim (ranked last in distributions of dividendst and funds from liquidation), non-redeemable (firm, can't force shareholders to sell back their shares).

**Convertible Preferrence Stock**: Preferred stock that gives the owner an option to convert it into common

stock at a future date.

**Equity Financing for Private Companies** - Initial capital that is required to start a business is uaually provided by the entrepreneur or their immediate family/friends - Often a private company mus seek outside sources that can provide additional capital for growth - private equity

**Angel Investors** - Individual investors who buy equity in small private firms - often the first significant source of outside funding for a start up

**Venture Capital Firm**: A limited partnership that specializes in raising money to invest in the private equity of early-stage, high-risk, high-potential firms who lack funding for growth Charge a fee for this, usually 20% of any positive return. Usually charge a 2% annual management fee

**Institutional Investors**:Pension funds, hedge funds, mutual funds, insurance companies, endowments and foundations

**Corporate Investors** are another potential contributor

**Initial Public Offering (IPO)**: The process of selling stock to the public for the first time - a common exit strategy that allows a private investor to realize gains

**Ad and Disad of going Public**: *Disad*: - Equity holders become more widely dispersed - more difficult to monitor management - loss of power and control for the intial owners - firm must satisfy all of the requirements of public companies *Advantages*: - Greater liquidity - Better access to more capital

**Underwriter**: an investment banking firm that manages a security issuance and designs its structure. A group of underwriters who jointly underwrite is called a syndicate **Underwriting Spread**: profit for the underwriter, usually around 7% **Primary Offering**:

**Types of IPOs** 1. Best Efforts: for smaller IPOs, a situation in which the underwriter does not quarantee that the stock will be sold, but instead tries to sell the stock for the best possible price. Little risk for the underwriter, performing largely a marketing role for the firms's shares. 2. Firm Commitment: most common. An agreement between an underwriter and an issuing firm in which the underwriter guarantees that it will sell all of the stock at the offer price. Done by purchasing shares themselves if demand is too low. 3. Auction IPO: Underwriter takes bids from investors and then sets the price that clears the market

Two ways to value a company: - Compute present value of all future cash flows - Estimate the value by examining comparables (recent IPOs) of similar size and nature Underwriters apply both methods in valuing IPOS, but if the two differ greatly, the use of comparables is preferred.

**IPO Puzzles**: 1. Underpricing: Generally, underwriters set the issue price so that the average first-day return is positive. Underwriters benefit from underpricing as it allows them to manage their risk. 2. Number of IPO issues is highly cyclical:. When times are good, market flooded with new issues. Dries up quickly when times are bad. 3. Costs of an IPO are very high. 4. Long run performance is poor.

**Seasoned Equity Offering (SEO)**: When an already pulbic company offers new shares for sale to riase additional equity Two Types: 1. Cash (by far most common) 2. Rights Offer: firm offers the new shares only to existing shareholders

**Debt**

A firm may choose to issue debt to raise finances. Two types: *Public Debt* and *Private Debt*.

**Public Debt** - Traded on an exchange - Types of corporate debt: - Notes (<10 yr maturity, unsec) - Debentures (>10 yr maturity, unsec) - Mortgage bonds (secured by property) - Asset-backed bonds (secured by firm's asset) - Secured debtholders rank above unsecured debtholders in a distribution

**Private Debt** - Debt that is not publicly traded - Term loans - loans that last for a specific term - Private placements - bonds traded within small groups of investors. Less reulatory requiremns (potentially faster and cheaper to issue debt). Less liquid than public debt markets.

**Bond Covenants (for Lender)** - Restrictive clauses in a bond contract that protect lenders by limiting the issuers from undercutting their ability to repay

**Repayment Provisions (for Borrower)** - A bond issure typically repays its bonds by making coupon and princitpal payments as specified in the bond contract.

- *Callable Bonds*: bonds that contain a call provision that allows the issuer to repurchase

# W6

## Capital Structure I (M & M Theory)

Mid-sem exam stuff available on Wattle 3 questions, multiple parts, 90% calc, 10% theory. All questions seen before, uses textbook to help out, as well as going through all previously seen questions and actually pay

attention to what's happening this time

Q1 - Week 5 material - lec, tut, wrk. Could potentially ask shit like "explain a fair value thingamabob"

Q2 - IRR. Know everything about it lmao, probs the hardest (he said)

Q3 - NPV/Leasing question. Probs have to compare between outright purchasing and borrowing to buy it.

**Capital Structure**: The relative mixe of debt, equity and other securities that a firm has outstanding. Mix will affect a company's level of risk, the return it will need to generate from it's investments and even the characteristics of the investments the firm can undertake

**Unlevered Firm**: Firm with no debt, unlevered equity = equity in an unlevered firm

*Leverage increases the risk of equity even when there is no risk that the firm will default*

E + D = U = A

**Weighted Average Cost of Capital**: Used to discount Free Cash Flows

# W7

## Capital Structure I (M&M Theory, and Optimal Capital Structure *with Taxes*)

**The Interest Tax Deduction** Corporations pay taxes on their profits after interest payments are deducted, Thus interest expense reduces the amount of corporate taxes. Creates an incentive to use debt because reduces tax.

**M&M Proposition 1 with Taxes** *Total value of the levered firm exceeds the value of the firm without leverage due to the present value of the tax savings from debt* V^L = V^U + PV(Interest Tax Shield)

PV(Intest Tax Shield): get from lecture slides

**Weighted Average Cost of Capital with Taxes**: $r_{wacc}$ from lecture notes **M&M Proposition II (With Taxes)**: again, from slides to book

The value of the interest tax shield can be found by comparing the balue of the levered firm, V^L, to the unlevered value, V^U - unlevered value is calculated by discounting free cash flows at the firm's unlevered cost of capital, the pretax WACC - levered value is calculated by discounting free cash flows at the firm's levered cost of capital, the after-tax WACC

When firms raise new capital from investors, they do so primarily by issuing debt. More common for companies to buy back shares than to issue shares, because debt is cheaper than equity (due to taxes)

Most investment and growth is supported by internally generated funds

Use of debt varies by industry Firms in growth industries (e.g. biotech and other high technology) carry very little debt, while airlines, automakers, utilities, and financial firms have high leverage.

**Limits to the Tax Benefit of Debt** To receive the full tax benefits of leverage, a firm need not use 100% debt financing, but the firm does need to have positive taxable earnings to offset against: - a firm can only recieve a tax benefit if it is paying taxes in the first place - this constraint may limit the amount of debt needed as a tax shield - *no profit, no tax* No corporate tax benefit arises from incurring interest payments that regularly exceed EBIT

# W8

## Capital Structure II (Financial Distress, Agency Costs & Trade-off Theory)

**Mid-sem stuff**: 1. undersubscribed = can get all shares oversubscribed = for 30 to 1, shares you can get are (num you want)/30. Shit like that

**Financial Distress**: When a firm has difficulty meeting its debt obligations, if a firm is unable to rectify its financial stress -> default **Default**: WHen a firm fails to make the required interest or principarl payments on its debt, or violates a debt covenant. After the firm defaults, debtholders are given certain rights to the assets of the firm and may even take legal ownership of the firm's assets through bankruptcy - this is the worst case scenario. *This does not apply to all-equity financed firms as equity is* * not contractual***

The U.S. bankruptcy code was created so that creditors are treated fairly and hte value of the assets is not needlessly destroyed.

Three types of bankruptcy in Australia: 1. Receivership 2. Voluntary Administration 3. Winding up **not examinable^^**

Bankruptcy process is complex, time-consuming and costly Direct costs of bankruptcy reduce the value of the assets that the firm's investors will ultimately receive

Firms may avoid filing for bankruptcy by first negotiating directly with their creditors - this is referred to as a *workout*

V^L = V^U + PV(Interest Tax Shield) - PV(Financial Distress Costs) ( **Trade-off Theory**)

Trade-off theory states that firms should increase their leverage unitl it reaches the level for which the firm value is maximised

**Agency Costs**: Costs that arise when there are conflicts of interest between the firm's stakeholders

Value of levered firm = Trade-off theory - PV(Agency Costs of debt) + PV(Agency Benefits of Debt)

# W9

## Payout Policy (Dividends & Taxes)

**Payout Policy**: The way a firm chosses between the alternative ways to distribute free cash flow to equity holders (e.g. dividends and share repurchases). Like capital structure, a firms payout policy depends on market imperfections

A firms dividend policy is decided by its Board of Directors **Declaration Date**: The date on which the board of directors authorizes the payment of a dividend **Record Date**: when a firm pays a dividend only shareholders on record on this date receive the dividend **Ex-Dividend Date**: A date, two business days prior to a dividend's record date, *on or after* which anyone buying the stock will *not* be eligible fo the dividend **Payable Date (Distribution Date)**: A date, generally within a month after the record date, on which a firm provides dividend proceeds to its registered stockholders

Companies that pay dividends usually do so in cash and in a regular manner - quarterly or semi-annualy. However, firms can also pay: - Special dividends: A one-time dividend payment a firm makes, which is usually much larger than a regular dividend - Stock Split (Stock Dividend): When a company issues a dividend in shares of stock rather than cash to its shareholders.

**Share repurchases** can take the form of an open market repurchase, a tender offer or a targeted repurchase **Open market repurchase**: repurchasing shares by buying shares in the open market just like any other investor. By far the most common form of repurchase. **Tender offer**: offer by the company to buy back shares at a fixed price, usually above market value to motivate shareholders to sell. If there is not enough interest, the company will cancel the offer. **Dutch Auction**: the firm lists different prices at which it is prepared to buy shares, and shareholders in turn indicate how many shares they are willing to sell at each price. The firm then pays the lowest price at which it can buy back its desired number of shares. Very rare. **Targeted Repurchase**: purchasing shares directly from a specific (major) shareholder.

**Greenmail**: if a major shareholder is threatening to takeover the firm and remove its current management.

In perfect capital markets, holding the investment policy of a firm fixed, the firm's choice of dividend policy is irrelevant and does not affect the initial share price.

When the tax rate on dividends is greater than the tax rate on capital gains, it is undesirable for a firm to raise funds to pay a dividend

When tax rate on dividends is greater than the tax rate on capital gains, shareholders will pay lower taxes if a firm uses share repurchases rather than dividends

**Clientele Effect**: When the dividend policy of a firm reflects the tax prefexence of its investor clientele.

## L10

### Payout Policy (Dividends and Signalling)

Companies can use dividends to signal the future prospects of the firm

If a firm has already taken all positive-NPV projects, any additional projects it takes on are zero or negative-NPV projects. * Rather than waste excess cash on -ve NPV projects, a firm can retain the cash or use the cash to purchase fiancial assets

With market imperfections, there is a tradeoff to saving cash: retaining cash can reduce the costs of raising capital in the future, ***but*** it can also increase taxes Corporate taxes make it costly for firms to retain excess cash * Cash is equivalent to negative leverage, so the tax advantage of leverage implies a tax disadvantage to holding cash

Despite tax disadvantages of hoarding cash on the balance sheet, firms retain cash balances to cover potential future cash shortfalls * If there is a reasonable chance that future earnings will be insufficient to fund future +ve

NPV investment opportunities

When firms have excessive cash reserves, managers may use the funds inefficiently by paying excessive executive perks, over-paying for acquisitions, empire building, etc Firms should choose to retain as much cash as it needs to help future growth opportunities and to avoid financial distress costs. Beyond that, cash should be paid out to shareholders.

Costs of holding cash: - Taxes - Agency (wasteful behaviour)

Benefits: - Avoid financial distress - Avoid accessing external capital markets in the future (costly)

**Dividend Smoothing**: The practice of maintaining relatively constant dividends

The last market imperfection of interest is **assymetric information**, where managers know more about the firm than the shareholders

**Dividend Signalling Hypothesis**: the idea that dividend changes reflect managers' views about a firm's future earning prospects - The firm's dividend choice will contain information regarding managements's expectations of future earnings if the firm smooths dividends. - If management increases dividends this period, they are signaling that the dividend will remain at the higher level in the future (vice versa)

A dividend increase may also signal a lack of investment opportunities Conversely, a firm might cut its dividend to exploit new +ve NPV projects

Share repurchases can also be used as a signal of firm value and future prospects. This is a credible signal that the shares are underpriced, because if they are overpriced a share repurchase is costly to the firm

**Stock Dividends and Splits**: an alternative to cash dividends. With a stock dividend, a firm does not pay out any cash to shareholders. As a result, the total market value of the firm's equity is unchanged. Only thing that's different is the number of shares outstanding. Stock price falls because same equity over larger number of shares. Stock dividends of 50% and above are referred to as stock splits. Typical motivation for a stock split is to keep the share price in a range thought to be attractive to small investors. If the share price rises "too high", becomes difficult for small investors to invest in the stock since suck investors often invest in the stock since suck investors often invest in lots of 100 shares.

# W11

## L11

### Cost of Capital and WACC

Total risk = systematic risk + firm-specific risk 'E' is the most important term in the CAPM **Asset cost of capital**: Expected return requirde by investors overall to hold the firm's underlying assets **Comparables** If no prior data 1. look for a comparable firm in the that has the same (or closely comparable) risk 2. If the comparable firm is unlevered, use the firm’s cost of equity as the cost of capital for your project 3. If the firm is levered, you must incorporate the cost of debt also (as the cost of equity alone will be too high)

# W12

## L12

Be sure to grab the formulae from this shit When debt levels are set according to a fixed schedule, we can discount the pre-determined interest tax shield *using the debt cost of capital*

WACC method - easiest for fixed devt-to-value ratio over investment life APV method - for alternative leverage policies (constant interest coverage or pre-determined debt) FTE method - generally used only in complicated settings where firm's capital structure or interest tax shield are difficult to determine

# 13

## L13

fuckfuckfuckfuckfuckfuckfuckfuckfuck **Revision Shit** Maybe use this presentation so that you can see what you need to know, make sure you've got it *Exam shit*: - closed book (suppose that's okay, just make sure you know your shit) - 4 questions, multiple parts - 2 & 3 easier - 1 & 4 more difficult - 65% calculation, 35% theory - do tutorials, workshop, lecture notes, extra practise questions - no surprises, all material that we've seen before Q1. optimal capital structure Q2. capital budgeting - WACC/APV method Q3. payout policay and leasing theory Q4. investment decisions - long NPV question - No FTE - No lease calculation - Only straight line depreciation - no arbitrage questions If you don't understand what to do for the pactise exam questions wathc this lecture again as he goes through the stuff (explanation might help, is what i mean)