ACCT7106 – Session #1: Introduction to Valuation

PART 1 – Background

3 main types of business organizations:

(1) sole proprietorship – a business owned by one individual

- easily and inexpensively f
- subject to relatively few g

(2) partnership - when 2 or more people associate to conduct business

- can operate under different degrees of formality
- relatively easy and inexpensive to form and/or dissolve (dissolution)

(3) corporation - a legal entity created by government

- separate and distinct from both its owners and managers

These forms of enterprise differ in 4 critical ways:

	proprietorship	partnership	corporation
Taxes	personal rate*	personal rate*	**corporate rate & when paid as a dividend then personal rate ("double" taxation)**
Owner liability	unlimited	unlimited	**limited to equity investment**
Longevity	limited to life of proprietor	dissolution if any change	**unlimited**
Funding	**debt (restricted forms)**	**debt (restricted forms)**	**equity and/or debt (many alternatives**

Our ***primary focus*** **–** ***corporate form*** of business (although the process followed for valuation applies to all forms of business & ownership)

There are 3 parties of fundamental interest:

(1) the legal owners (shareholders);

(2) the board of directors; and

(3) management

shareholders ↔ board of directors ↔ management

re: shareholders → ***legal owners*** - have right to

1) vote (to elect board of directors)

2) attend annual meetings

3) receive dividends, if declared

4) share in residual assets, if liquidated

5) receive information (e.g., annual reports)

re: board of directors → act a *s*

⇒ oversee management; set corp approve important decisions

2 broad categories of obligations

1. to exercise care and skill in carrying out functions
2. fiduciary duties i.e. to act
   - honestly and in best interests of the firm
   - for the furtherance of firm's, not personal, objectives
   - to avoid conflict of interest

re: management → operate firm

assumed objective of management = ***maximise shareholders' wealth***

⇒ ***maximise share price!***

Why? If management maximise [illegible] n always sell their shares if they don't like the firm's policies and receive [illegible] ice

Further, given well-functioning markets and rational investors, share price will reflect the market's risk attitude, time preference, and opportunity cost

asides:

1. Why not the more typical economic objective of maximising profit?

- profit should be viewed relative to investment ⇒ concept of opportunity cost
- since multiperiod, the time value of money must be acknowledged
- profit must be judged relative to risk

2. What underlies the assumed **olders' wealth?**

given rational and well-informed invest ee market economy

⇒ forces of supply and demand will driv e to reflect

- aggregate market's risk attitude
- aggregate market's time preference
- aggregate market's opportunity costs

but why only concerned about aggregate market?

argue that if individual shareholder is dissatisfied, can always sell shares (at max value)

difficulties underlying the objective of maximizing wealth and the market system

1) the market may not be rational or well-informed

⇒ for example, markets may focus on short-term interests and ignore the long-term interests of the firm, the owners, and/or society

2) there may be market imperfections i.e., exter ial responsibility

e.g., environmental and/or corporate social responsibility (CSR) concerns

⇒ should the firm focus only on $$$, or on society, or on ????

solution sometimes includes government regulation to enforce a uniform standard

Question: **Are substantive ethical, social responsibility, and/or legal issues considered in corporate financial theory?**

by failing to consider ethical implications explicitly, corporate financial theory implicitly assumes that shareholder wealth maximization (SWM) satisfies the ethical requirements

⇒ **basic question:**

while it is possible for management to select any number of ethical or unethical strategies, does … riminate among different sources of net cash flows based o … ility, or legal concerns?

to the extent that the market rewards ethical, socially responsible, and/or legal behaviours (as reflected in price), the objective of SWM incorporates these considerations!

alternatively, to the extent that it does not AND these objectives are deemed to be "desirable", regulators must impose rules to induce the desirable behaviours!

3) conflicts of interest

(a) shareholders vs creditors

- some actions may effectively cause a wealth transfer from creditors to shareholders

e.g., A Ltd. has debt of $42,000 due in 1 year, its sales have dropped to approximately zero, and it can liquidate its assets for $40,000 at the present time

alt #1 - liquidate assets an creditors get $42,000 at year-end, shareholders get $0

alt #2 - liquidate assets and invest $40,000 in a m

if loose the entire $40,000 => credit lders get $0

BUT if rst $42,000 to creditors and shareholders get the rest

⇒ shareholders never worse off if take the risky alternative and may be better off; conversely, creditors potentially worse off since they shoulder the entire risk

- other types of behaviours with similar consequences include:
  - the payment of a large dividend
  - issuing additional debt of the same seniority

(b) managers vs shareholders

- standard assumption is that "all economic agents act in their own self-interest"

⇒ since managers are likely work-averse, they will make reduced effort

⇒ ct reduced

(relative to "first-best")

⇒ is realistic to assume that m t's true objective in their decision-making process is to maximise firm value?

i.e., do managers actually act in shareholders' best interests?

quick answer ≡ *YES* arguing that managers who fail to achieve this objective will

- be replaced by shareholders in pursuit of the objective
- find their firms the targets of takeover bids

⇒ whether managers actually act in the best interests of shareholders likely depends on:

1. how closely management goals are aligned with shareholder goals

factors affecting ' ude:

- managerial com ial performance and share value
- job prospects – promotion or al portunities
- monitoring – audited financial statements

2. likelihood of managers being replaced

relates to the issue of 'control of the firm'

important because management can be replaced in a takeover and poorly managed firms are more attractive targets because a greater turnaround potential exists

However, to the extent that shareholders can't perfectly incentivize or monitor managers, managers may still engage in suboptimal behaviour

→ ‘agency costs’ – arise in the ‘principle-agent’ setting

the principle (the shareholders) hires an agent (the management) to act on its behalf (i.e., management works on behalf of the shareholders)

however, the two parties li [illegible] sts and the agent has more or better information about its ac [illegible] etry); hence, the principal cannot directly ensure that the agent is acting [illegible] t’s best interest

these ‘agency costs’ will be recognized by shareholders (and the market)

⇒ share value will reflect potential agency costs!

⇒ reduced firm value relative to the "first best" solution

PART 2 – Role of Management

1. Controller function ⇒ asset efficiency

i.e., efficient use of working capital and liquidity management
running the internal accounting system

2. Treasury function ⇒ long-

i.e., debt or equity? - position of the firm

3. Capital budgeting ⇒ real (productive) asset acquisition

i.e., composition of the firm's fixed assets
mix of capital and labour

⇒ determines the firm's profitability and operating risk

Consider the 2020 Annual reports of ***Coles Group Limited*** which contains a set of financial statements, comprising the following (see pages 96 – 148):

➢ Balance Sheet	☐	"identifies" and "values" assets, liabilities, and equities
➢ Income Statement	☐	summarizes revenues and expenses
➢ Statement of Cash Flows	☐	summarizes cash inflows and outflows
➢ Notes to the Financial Statements		terial to aid in the understand primary financial statements

preliminary cautions:

- ➢ terminology and definitions are as determined through Accounting standards (e.g., assets, liabilities, revenues, expenses)
- ➢ determination of 'value' is also based on Accounting standards

Coles Group Limited 2020 Annual Report

Statement of Profit or Loss

for the year ended 28 June 2020

Coles Group Limited 2020 Annual Report

Statement of Changes in Equity

for the year ended 28 June 2020

Coles Group Limited 2020 Annual Report

Statement of Cash Flows

for the year ended 28 June 2020

'Superficial' Observations:

Re: Income Statement

- the core business is the primary activity
- 'sales revenue' represents the vast majority of revenues
- the two major expenses are 'cost of sales' and 'administration expenses'
- financing costs are relatively modest compared with the primary expenses

Re: Balance Sheet

- inventories represents the largest component of current assets, followed by cash and receivables
- trade payables represent the largest
- the major assets are 'capital assets' … right-of-use assets)
- the primary source of financing is provided through non- … s notably lease liabilities
- shareholders' equity represents a much more modest sou … s
- a reconciliation of Owners' equity (Statement of Change … resented separately

Re: Statement of Cash Flows

- the statement is subdivided into three categories (operations, financing, and investing)
- the operating section reveals the primary sources of inflows and outflows (net cash inflow = \$2,552 million)
- operating cash flow ≠ operating income
- the financing section provides insights into changes in capital structure (net cash outflow = \$1,842 million)
- the investing section provides insights into capital expenditures (net cash outflow = \$658 million)

Note – the Balance Sheet can be reorganised to fit with the ‘financial executives’ 3 functions:

Current assets
Cash and cash equivalents
Trade and other receivables
Inventories
Income tax receivable
Assets held for sale
Other assets
Total current assets

Current liabilities
Trade and other payables
Provisions
Lease liabilities
Other
Total current liabilities

→ Controller Function

Non-current assets
Property, plant and equipment
Right-of-use assets
Intangible assets
Deferred tax assets
Equity accounted investments
Other assets
Total non-current assets
Total assets

→ Capital Budgeting

→ Treasury Function

Finally, what is the ***Coles Group Limited*** actually worth?

- *from the Balance Sheet* Net Assets (Net Book Value) = Equity = $2,615 million

- current share price (3 December 2020) = $17.98

⇒ market capitalisat shares = $24,012 million

Quite clearly: ***accounting value*** ≠ ***market value***

Why not?

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Stated Objective of Financial Reporting:

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.

Typically (always), a firm's market value (market capitalization) will differ from its book value i.e., its price-to-book or m … ffer from unity (P / B $\neq$ 1).

Why? reasons include

- orientation (historical vs. future)
- GAAP (accounting 'conventions')
- perspective (accounting vs. economic income – notion of opportunity cost)

So why do we even consider the Financial Statements?

"To summarize, the value problem means that financial statements typically yield distorted information about company ear is limits their applicability for many important managerial dec statements are frequently the best information available, and it their limitations ar ind, they can be a useful starting point for analysis." (R.C. Higgins, "Analysis for Financial Management)

Why do we analyze historical performance as presented in the financial statements?

provides insights into the firm's

- operating policies
- production techniques and technologies
- inventory and credit-control systems etc. etc.

⇒ the ties between its oper ncial performance

⇒ the financial statements are an important d facilitate an understanding of the factors that fundamentally determ financial profile

In the ideal world, the analyst would like to have access to full 'market value' information about the firm's assets, etc. etc. etc.

⇒ "the primary reason for looking at historical accounting information is that we don't have, and can't reasonably expect to get, market value information"

PART 3 – Valuation: Preliminaries

To provide a frame of reference, consider the following relatively simple capital budgeting (NPV) analysis:

Example #1-1

XYZ Ltd. is considering the pur ... er to entertain clients. Management has decided that the best choi ... red by Heavy Keel Inc.

The HK41 will cost $250,000 and is expected t ... ditional net revenues for the firm of $80,000 in the first year and $135,000 in e ... llowing four years.

At the end of five years, the firm will give the boat to its president.

XYZ's cost of capital is 10% and its tax rate is 44%. The firm is unable to take a depreciation charge for tax purposes because of the unique circumstances surrounding the purchase.

Based on this information, should XYZ purchase the HK41?

Projected cash flows –

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Initial investment	(250,000)	- - -	- - -	- - -	- - -	- - -
Net after-tax cash flows	- - -	44,800	75,600	75,600	75,600	75,600
Total Cash Flow	(250,000)	44,800	75,600	75,600	75,600	75,600

75,600 = 135,000 * (1 - 0.44)

Net Present Value (NPV)

= -250,000 +

= -250,000 + 258,577 = $8,577

$\Rightarrow$ *should purchase since NPV > 0* (i.e., adds wealth to the firm)

⇒ a typical capital budgeting analysis consists of:

1. Estimating project cash flows

2. Determining the economic value of the project by:

a) assessing the risk profile of the project

b) assigning the appropriate discount rate to reflect the risk

c) [illegible]sent value (NPV) of the project

→ **the process require[illegible]on-maker to:**

- ✓ **estimate the future flows (the *numerator*)**
- ✓ **assess risk and identify the appropriate discount rate (the *denominator*)**

Note: in this example, the maximum that XYZ should be willing to pay for the HK41 is $258,577 (the price that equals the present value of the estimated future flows – at this price, NPV = 0 i.e., the firm is earning exactly its required rate of return)

definitions:

real asset – a productive asset that generates cash flows

financial asset – a claim to the cash flows generated by the firm's real (productive) assets

e.g., debt, equity

→ value of a financial as lows that its holder has a claim to

⇨ in general terms, the value of a financial present value (PV) of the future cash flows that accrue to it

to value a financial asset, we need to:

(1) estimate the future cash flows; and

(2) establish an appropriate discount rate

(i.e., functionally the same exercise as the NPV exercise)

Example #1 -2: valuation of debt (bonds) –

Treasury Fixed Coupon Bonds, \$100 face value (*assume* today is 7 December 2020)

coupon rate 2.75% (half yearly) → interest = (½)(0.0275)(100) = \$1.375

maturity date 7 December 2030;

current market yield 4.18% (→ half-yearly yield = 0.0207 = $\{(1.0418)^{½} - 1\}$)

$V_0 =$

= 22.332 + 66.380 = 88.712 → \$88.71

⇨ value depends on two components

✓ regular income stream

✓ terminal value both discounted back to the present for bonds, the periodic cash flows (interest) and terminal value (principal) are fixed contractually

further, the discount rate (required return) is based on the risk of the investment (typically as assessed by a bond rating agency)

⇒ for debt, the valuation process is relatively straightforward and largely mechanical

Alternatively, for ***equity***, both the future flows and the discount rate must be ***estimated***

A **bond** is **legal** evidence of a **loan obligation**. The typical corporate or government bond is **a promise to return a regular, fixed interest payment plus a lump-sum repayment at the maturity of the bond**. The annual interest payment is determined as the bond's coupon rate times the face value of the bond, and typically ½ of the annual amount is paid half-yearly. The lump-sum repayment at maturity is equal to the face value of the bond, typically $100. The **bond contract, called the bond indenture, contains the terms or provisions of the bond**. The standard terms appearing in the indenture include the important aspects of the bond e, coupon rate, payment dates, maturity date, and often additio her make the bond more attractive to investors (known as sweeteners) the investor's risk exposure

Equity securities (preference and common shares) are **ownership certificates**, and represent sources of **permanent financing** to the firm. Any **cash distribution** to the common shares, called a **dividend**, is **not fixed in either timing or amount**, but rather can be varied (up or down) at the discretion of the firm's board of directors. A dividend only becomes a legal obligation when declared by the board.

In general terms, the value of equity can be expressed as:

$$V_0 = \sum_{t=1}^{\infty} \frac{x_t}{(1+k_t)^t} = + + + + +$$

where x_t and k_t are the relevant flows and discount rate, respectively, for period t

note, the formula adopts an infinite investment h $\rightarrow \infty$) because equity financing is permanent financing.

⇒ **in principle, must estimate both the amount and the timing of the future flows, and establish an appropriate (period-specific) discount rate**

Both the task and the formula can be made somewhat easier if certain simplifying assumptions are adopted

If the equity instrument is *assumed* to yield a constant (uniform) stream of flows in perpetuity and the discount rate is *assumed* to remain constant (a flat term structure), the valuation equation becomes:

Alternatively, if the stream is *assumed* to gr tant rate, g, in perpetuity and the discount rate is *assumed* to remain constant, the valuation equation reduces to:

$$V_0 = \frac{X_1}{k-g}$$

Aside, to confirm the value of a perpetuity ($g = 0 \quad \rightarrow \quad x_1 = x_2 = x_3 = x_4 = \ldots\ldots = x$):

$$V_0 = \; + \; + \; + \; + \; +$$

multiplying both sides by $(1 + k)$:

$$V_0 \qquad = \; + \; +$$

$$V_0 \qquad V_0 \qquad \Rightarrow \qquad V_0 - V_0 = \quad V_0 =$$

****

Aside, to confirm the value with constant gr al growth:

$$V_0 = \; + \; +$$

multiplying both sides by $(1 + k)$ and divide both sides by (1 +

$$= \; + \; + \; +$$

$$= \quad \Rightarrow \quad V_0 \quad V_0$$

Finally, drawing upon the above: under the assumptions

- constant discount rate (flat term structure) → the 'time subscript' can be dropped from k
- year-by-year estimates are made for a finite period (n years) after which flows are assumed to, *on average*, grow at a constant rate g

the valuation model then simplifies to the following:

$$V_0 = \sum_{t=1}^{\infty} \frac{x_t}{(1+k_t)^t} = \sum_{t=1}^{n} \frac{E(x_t)}{(1+k)^t} + \frac{E(x_n)(1+g)}{k-g} \frac{1}{(1+k)^n}$$

$$V_0 = \sum_{t=1}^{\infty} \frac{x_t}{(1+k_t)^t} = \sum_{t=1}^{n} \frac{E(x_t)}{(1+k)^t} + \frac{E(x_n)(1+g)}{k-g} \frac{1}{(1+k)^n}$$

PART 4 – Valuation Preliminaries (cont)

Example #1-3:

Suppose that an analyst has reliably projected the future cash flows for CC Ltd. over the next 5 years to be as follows:

year	**1**			**4**	**5**
FCF	3.429	3.		.310	4.488

The analyst also believes that these flows will grow at an average annual rate of 5% post year 5. Finally, the analyst believes that CC's risk profile is expected to remain unchanged into the foreseeable future and that the appropriate discount rate, k_e, is 10.7%.

Based on these forecasts, the residual equity value (value to the common shareholder) of CC Ltd. is:

year-by-year estimates for 5 years

Terminal value = PV of flows from year 6 onward understanding the ‘terminal value’ (TV) calculation –

recall, under the assumptions of a constant discount rate *(k)* and that the flows *(x)* grow at a constant rate, *g*, the valuation model simplified to the following formula:

$$V_0 = \frac{x_1}{k - g}$$

on this basis, shifting the point i 0 (which is today), we have

and the present value of this amount at time *0* (the starting point) is

= 49.731

Thus, in general terms, we need to address the following basic issues:

- ✓ determination of an appropriate discount rate, k
- ✓ choice of flow measure, x_t
- ✓ selection of an appropriate forecasting horizon, n
- ✓ estimation the post-forecast horizon TV (g)

Sources of input information incl

- ○ analysts and analyst forecasts

- ○ management guidance (management earnings forecasts)
- ○ financial statements
- ○ non-financial disclosures (e.g., CSR reports)

Why should historical financial accounting information play a role in the valuation process)?

***<u>What is accounting</u>* –**

PERCEPTION

What is accounting – Assignment Project Exam Help

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REALITY

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Example #1-4:

LAJ Inc. manufactures precision parts for the space industry. Earnings per share in the fiscal year just ended were $1.40. Earnings per share are forecasted to grow at 10% per year for the next three years, and at 8% per year thereafter. It is assumed that LAJ will maintain its current 30% dividend payout ratio. Estimate the value of LAJ shares using a discount rate of 12% *and basing the valuation on the dividends that investors will receive:*

$D_0 = 0.3(1.40) = 0.42$

$D_1 = 0.3(1.10)(1.40) = 0.4$

$D_2 = 0.3(1.10)^2(1.40) = 0.51$

$D_3 = 0.3(1.10)^3(1.40) = 0.56$

$D_4 = 0.3(1.10)^3(1.08)(1.40) = 0.60$

$V_0 = \quad = \$11.90$

and thus again, in general terms, the required inputs for the valuation process are:

- ✓ appropriate risk-adjusted discount rate, k
- ✓ choice of flow measure, x_t *(e.g., free cash flows, earnings, dividends)*

- ✓ appropriate forecasting horiz

- ✓ estimation of year-by-year flows until the for n

- ✓ estimation the post-forecast horizon TV (→ estimation of the 'on average' growth rate, *g)*