

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 formed
- subject to relatively few government regulations

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(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

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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)

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re: board of directors → act as **trustees for shareholders**

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⇒ oversee management; set corporate policy; approve important decisions

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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!*

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Why? If management maximises share price, investors can always sell their shares if they don't like the firm's policies and receive maximum price

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 \Rightarrow concept of opportunity cost
- since multiperiod, the time value of money must be acknowledged
- profit must be judged relative to risk

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2. What underlies the assumed objective of max shareholders' wealth?

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given rational and well-informed investors, and a free market economy

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\Rightarrow forces of supply and demand will drive share price 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

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2) there may be market imperfections i.e. externalities, social responsibility

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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 the securities market discriminate among different sources of net cash flows based on ethical, social responsibility, 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 and invest \$40,000 in T-bills @ 5% \Rightarrow creditors get \$42,000 at year-end, shareholders get \$0

alt #2 - liquidate assets and invest \$40,000 in a new hi-tech firm

if lose the entire \$40,000 \Rightarrow creditors and shareholders get \$0

BUT if do well, repay first \$42,000 to creditors and shareholders

get the rest

\Rightarrow 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

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⇒ value of manager's product reduced

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⇒ firm value reduced (relative to "first-best")

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⇒ is realistic to assume that management'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 'degree of alignment' include:

- managerial compensation – tied to financial performance and share value
- job prospects – promotion or alternative opportunities
- 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 likely have different interests and the agent has more or better information about its actions (information asymmetry); hence, the principal cannot directly ensure that the agent is acting in the agent'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 \Rightarrow asset efficiency

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

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2. Treasury function \Rightarrow long-term funds acquisition

i.e., debt or equity? - <https://powcoder.com> will affect the risk and tax position of the firm

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3. Capital budgeting \Rightarrow real (productive) asset acquisition

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

\Rightarrow 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	<input type="checkbox"/>	“identifies” and “values” assets, liabilities, and equities
➤ Income Statement	<input type="checkbox"/>	summarizes revenues and expenses
➤ Statement of Cash Flows	<input type="checkbox"/>	summarizes cash inflows and outflows
➤ Notes to the Financial Statements	<input type="checkbox"/>	provide supplemental material to aid in the understanding of the 3 primary financial statements

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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 Financial Position
as at 28 June 2020

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		CONSOLIDATED	
	NOTES	28 JUNE 2020 \$M	30 JUNE 2019 \$M
Assets			
Current assets			
Cash and cash equivalents	2.1	992	940
Trade and other receivables	2.2	434	360
Inventories	2.4	2,166	1,965
Income tax receivable		42	-
Assets held for sale	5.2	75	94
Other assets	2.3	70	47
Total current assets		3,779	3,406
Non-current assets			
Property, plant and equipment	2.5	4,127	4,119
Right-of-use assets	2.7	7,660	-
Intangible assets	2.6	1,597	1,541
Deferred tax assets	1.6	849	365
Equity accounted investments	5.1	217	212
Other assets	2.3	120	134
Total non-current assets		14,570	6,371
Total assets		18,349	9,777
Liabilities			
Current liabilities			
Trade and other payables	2.8	3,737	3,380
Provisions	2.9	861	743
Lease liabilities	2.7	885	-
Other		198	168
Total current liabilities		5,681	4,291
Non-current liabilities			
Interest-bearing liabilities	3.1	1,354	1,460
Provisions	2.9	472	598
Lease liabilities	2.7	8,198	-
Other		29	71
Total non-current liabilities		10,053	2,129
Total liabilities		15,734	6,420
Net assets		2,615	3,357
Equity			
Contributed equity	3.2	1,611	1,628
Reserves		43	42
Retained earnings		961	1,687
Total equity		2,615	3,357

Statement of Profit or Loss
for the year ended 28 June 2020

	NOTES	CONSOLIDATED	
		YEAR ENDED 28 JUNE 2020 \$M	YEAR ENDED 30 JUNE 2019 \$M
Continuing operations			
Sales revenue	1.3	37,408	38,176
Other operating revenue		376	288
Total operating revenue		37,784	38,464
Cost of sales		(28,043)	(29,253)
Gross profit		9,741	9,211
Other income		108	428
Administration expenses	1.4	(8,081)	(8,031)
Other expenses		-	(146)
Share of net profit / profit of equity accounted investments	5.1	(6)	5
Earnings before interest and tax (EBIT)		1,762	1,467
Financing costs	1.5	(443)	(42)
Profit before income tax		1,319	1,425
Income tax expense	1.6	(341)	(347)
Profit for the year from continuing operations		978	1,078
Discontinued operations			
Profit from discontinued operations after tax	5.3	-	357
Profit for the year		978	1,435
Profit attributable to:			
Equity holders of the parent entity		978	1,435
Earnings per share (EPS) attributable to equity holders of the parent:			
Basic and diluted EPS (cents)		73.3	107.6
EPS attributable to equity holders of the parent from continuing operations:			
Basic and diluted EPS (cents)	1.2	73.3	80.8

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Statement of Changes in Equity
for the year ended 28 June 2020

	ATTRIBUTABLE TO EQUITY HOLDERS OF THE PARENT				
	CONTRIBUTED EQUITY \$M	SHARE-BASED PAYMENTS RESERVE \$M	CASH FLOW HEDGE RESERVE \$M	RETAINED EARNINGS \$M	TOTAL \$M
At 1 July 2019	1,628	43	(1)	1,687	3,357
Effect of adoption of AASB 16 <i>Leases</i>	-	-	-	(831)	(831)
At 1 July 2019 (adjusted)	1,628	43	(1)	856	2,526
Net profit for the year	-	-	-	978	978
Other comprehensive income	-	-	(12)	-	(12)
Total comprehensive income for the year	-	-	(12)	978	966
Share-based payments expense	-	13	-	-	13
Purchase of shares under Equity Incentive Plan	(17)	-	-	-	(17)
Dividends paid	-	-	-	(873)	(873)
Balance as at 28 June 2020	1,611	56	(13)	961	2,615
At 1 July 2018	2,193	39	-	1,018	3,250
Net profit for the year	-	-	-	1,435	1,435
Other comprehensive income	-	-	(1)	-	(1)
Total comprehensive income for the year	-	-	(1)	1,435	1,434
Capital return	(538)	-	-	-	(538)
Share-based payments expense	-	4	-	-	4
Purchase of shares under Equity Incentive Plan	(27)	-	-	-	(27)
Distributions to Wesfarmers	-	-	-	(766)	(766)
Balance as at 30 June 2019	1,628	43	(1)	1,687	3,357

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Coles Group Limited 2020 Annual Report

Statement of Cash Flows for the year ended 28 June 2020

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	NOTES	CONSOLIDATED	
		YEAR ENDED 28 JUNE 2020 \$M	YEAR ENDED 30 JUNE 2019 \$M
Cash flows from operating activities			
Receipts from customers		39,971	41,126
Receipt from Viva Energy		-	137
Payments to suppliers and employees		(36,486)	(38,665)
Interest paid		(37)	(33)
Interest component of lease payments		(399)	-
Interest received		7	4
Income tax paid		(504)	(294)
Net cash flows from operating activities	2.1	2,552	2,275
Cash flows used in investing activities			
Purchase of property, plant and equipment and intangibles		(833)	(1,104)
Proceeds from sale of property, plant and equipment		211	288
Proceeds from sale of controlled entities		-	544
Net investments in controlled entities and associates	5.1	(11)	(6)
Acquisition of subsidiaries or businesses, net of cash acquired		(25)	(2)
Net cash flows used in investing activities		(658)	(280)
Cash flows used in financing activities			
Proceeds from borrowings		5,120	10,260
Repayment of borrowings		(5,226)	(8,800)
Proceeds from borrowings with related parties		-	170
Repayment of borrowings with related parties		-	(3,678)
Payment of principal component of lease payments		(846)	-
Distributions to Wesfarmers		-	(320)
Redemption of redeemable preference shares		-	1,322
Dividends paid		(873)	-
Capital return		-	(538)
Purchase of shares under Equity Incentive Plan		(17)	(27)
Net cash flows used in financing activities		(1,842)	(1,611)
Net increase in cash and cash equivalents		52	384
Cash at the beginning of the financial period	2.1	940	556
Cash at the end of the financial period	2.1	992	940

‘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 current liability
- the major assets are ‘capital assets’ (property, plant, and equipment & right-of-use assets)
- the primary source of financing is provided through non-current liabilities notably lease liabilities
- shareholders’ equity represents a much more modest source of financing
- a reconciliation of Owners’ equity (Statement of Changes in Equity) is presented 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 \neq 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)

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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

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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

Non-current liabilities
Interest-bearing liabilities
Provisions
Lease liabilities
Other
Total non-current liabilities
Total liabilities
Net assets

Equity
Contributed equity
Reserves
Retained earnings
Total equity

→ 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

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⇒ market capitalisation $\approx \$18 * 1,334$ million shares = \$24,012 million

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Quite clearly: *accounting value* \neq *market value*

Why not?

Current share price (ASX: COL)

\$17.99 **\$0.00**
0.0%

Exchange ASX
Currency AUD
Updated 11:32AM 04/12/2020

[View Coles Group Historical Share Price](#)



Historical share quote

Select year

Date	Open(\$)	High(\$)	Low(\$)	Close(\$)	Volume
17/12/2019	18.00	18.08	17.89	17.98	3,762,802
02/12/2020	18.05	18.18	17.93	18.11	3,083,023
01/12/2020	18.03	18.34	17.97	18.13	3,992,852
30/11/2020	18.05	18.15	17.85	17.86	11,017,477
27/11/2020	18.11	18.18	17.93	17.94	3,594,596
26/11/2020	18.04	18.24	18.00	18.05	2,558,254
25/11/2020	18.04	18.13	17.88	17.95	6,324,979
24/11/2020	18.03	18.18	17.92	18.03	5,855,114
23/11/2020	18.02	18.05	17.83	17.95	2,629,883
20/11/2020	18.04	18.09	17.90	17.98	3,553,383

Share performance

Exchange	ASX (Australian Dollar)	Today's Open	\$17.90
Price	\$17.99	Intraday High	\$18.07
Change (%)	\$0.00 (0.0%)	Intraday Low	\$17.90
Volume	419,984		

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 market-to-book ratio will differ from unity ($P / B \neq 1$).

Why? reasons include **Add WeChat powcoder**

- 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 earnings and market value. This limits their applicability for many important managerial decisions. However, financial statements are frequently the best information available, and if their limitations are borne in mind, they can be a useful starting point for analysis." (R.C. Higgins, "Analysis for Financial Management")

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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 operating decisions and its financial performance

⇒ the financial statements are an important window and facilitate an understanding of the factors that fundamentally determine a firm's 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

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XYZ Ltd. is considering the purchase of a sailboat in order to entertain clients. Management has decided that the best choice is the HK41 manufactured by Heavy Keel Inc.

The HK41 will cost \$250,000 and is expected to lead to additional net revenues for the firm of \$80,000 in the first year and \$135,000 in each of the following 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

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$44,800 = 80,000 * (1 - 0.44)$

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

Net Present Value (NPV)

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$$= -250,000 +$$

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

⇒ *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) calculating the net present value (NPV) of the project

→ the process requires the decision-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

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→ value of a financial asset derives from the cash flows that its holder has a claim to

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

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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) \rightarrow interest = $(\frac{1}{2})(0.0275)(100) = \1.375

maturity date 7 December 2030;

current market yield 4.18% (\rightarrow half-yearly yield = $0.0207 = \{(1.0418)^{\frac{1}{2}} - 1\}$)

$V_0 =$

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$$= 22.332 + 66.380 = 88.712 \rightarrow \$88.71$$

\Rightarrow 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

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*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 $\frac{1}{2}$ 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 bonds i.e., face or maturity value, coupon rate, payment dates, maturity date, and often additional features designed to either make the bond more attractive to investors (known as **sweeteners**) or to reduce 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

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note, the formula adopts an infinite investment horizon ($t = 1 \rightarrow \infty$) because equity financing is permanent financing.

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\Rightarrow 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:

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$V_0 = \frac{x}{k}$
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Alternatively, if the stream is *assumed* to grow at a constant 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 ($g = 0 \rightarrow x_1 = x_2 = x_3 = x_4 = \dots = x$):

$$V_0 = + + + + +$$

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

$$V_0 = + +$$

$$V_0 - V_0 = V_0 =$$

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Aside, to confirm the value with constant growth in perpetuity (g) i.e., perpetual growth:

$$V_0 = + +$$

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

$$= + + +$$

$$= \Rightarrow V_0 - V_0$$

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:

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

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

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:

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year	1	2	3	4	5
FCF	3.429	3.753	4.059	4.310	4.488

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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:

$$V_0 = \frac{3.429}{(1.107)} + \frac{3.753}{(1.107)^2} + \frac{4.059}{(1.107)^3} + \frac{4.310}{(1.107)^4} + \frac{4.488}{(1.107)^5}$$

year-by-year
estimates for 5 years

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$$+ \left(\frac{4.488(1.05)}{0.107 - 0.05} \right) \left(\frac{1}{(1.107)^5} \right)$$

Terminal value = PV of
flows from year 6 onward

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$$= 3.097 + 3.063 + 2.992 + 2.870 + 2.670 + 49.731 = \$64.423$$

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:

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

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on this basis, shifting the point in time to year 5 from year 0 (which is today), we have

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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 include:

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

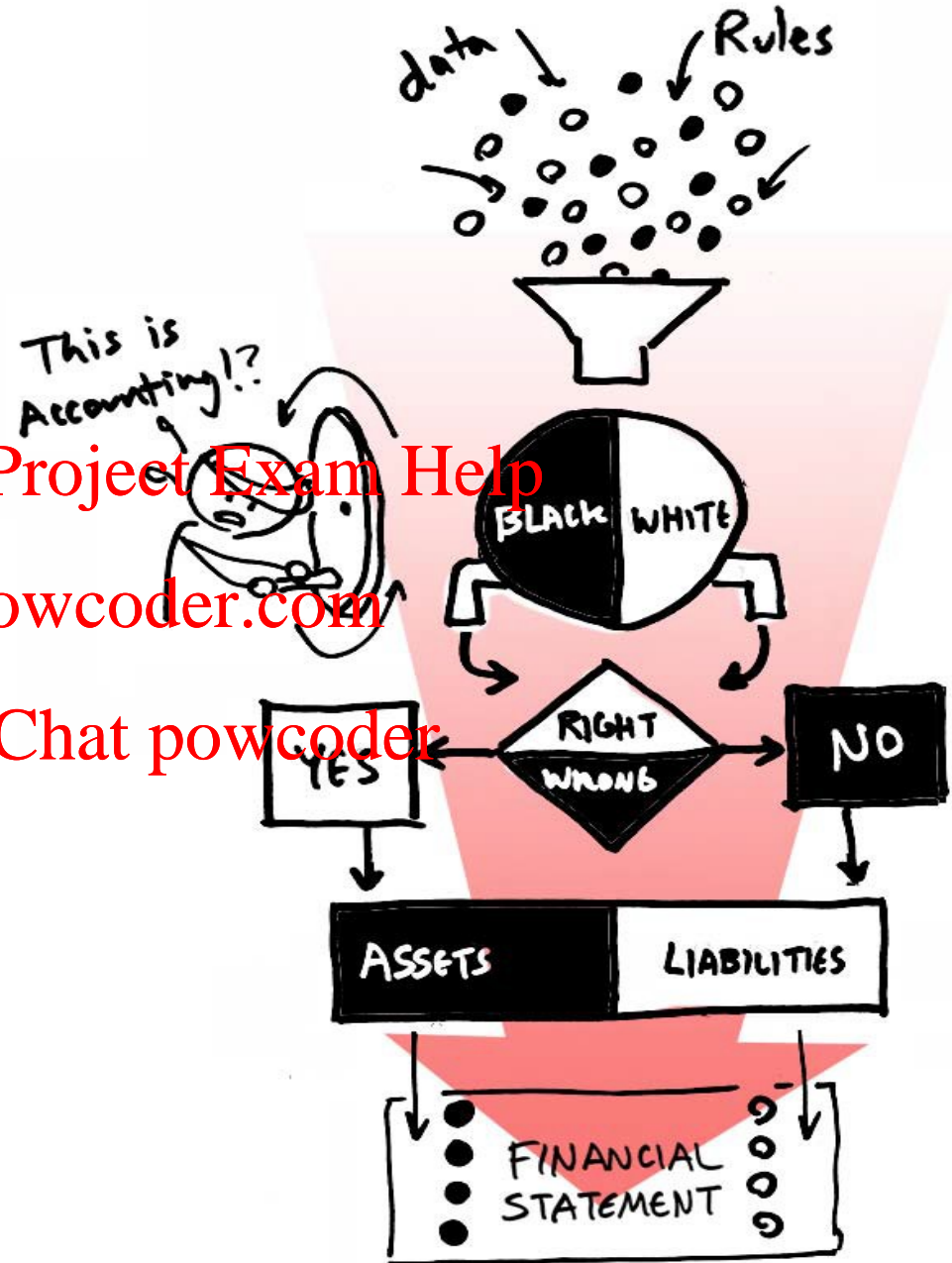
Why should historical financial accounting information play a role in the valuation process)?

What is accounting – **PERCEPTION**

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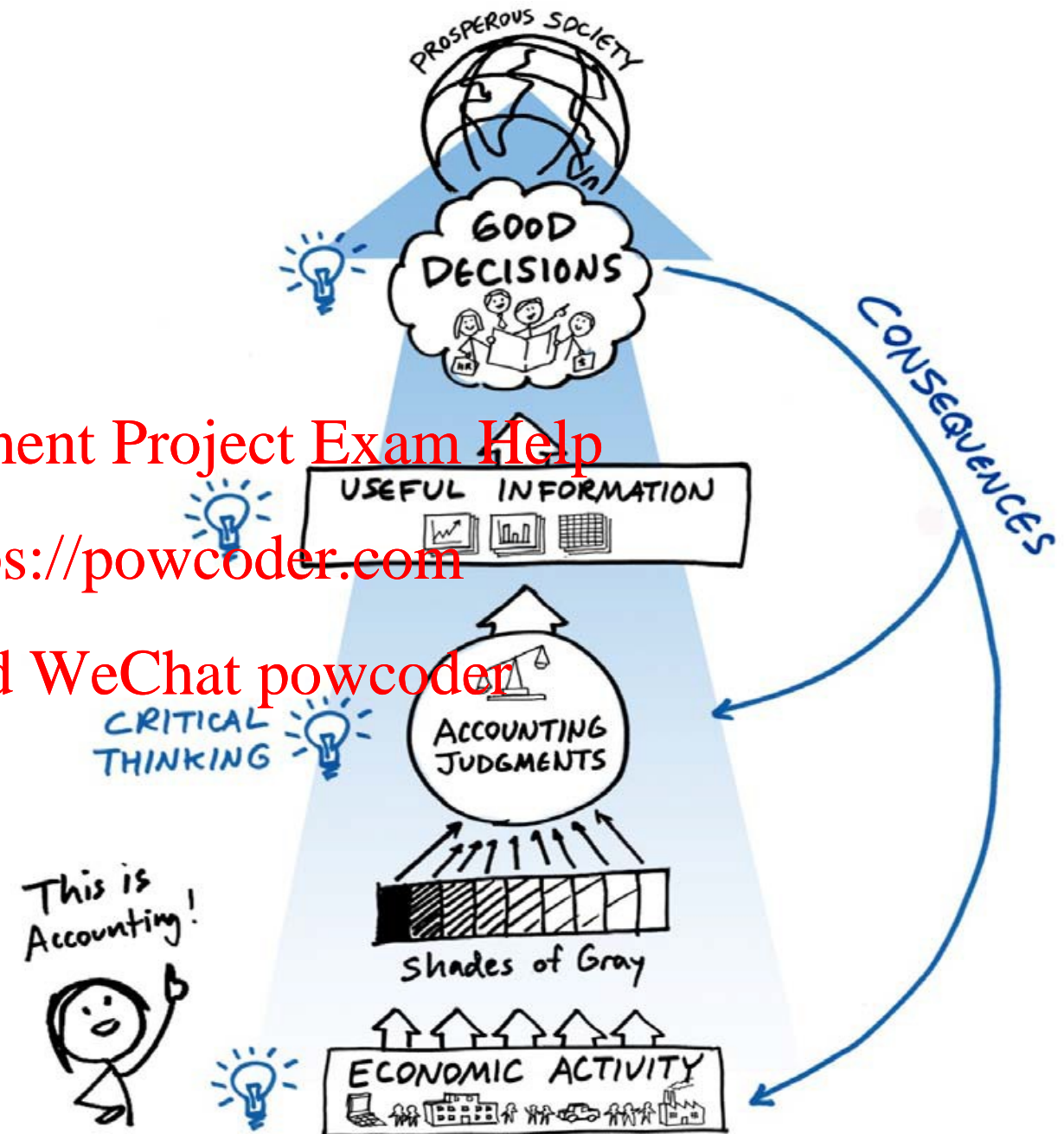


What is accounting – Assignment Project Exam Help

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:

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$$D_0 = 0.3(1.40) = 0.42$$

$$D_1 = 0.3(1.10)(1.40) = 0.46$$

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

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

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

$$V_0 = \$11.90$$

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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 horizon, n
- ✓ estimation of year-by-year flows until the forecast horizon
- ✓ estimation the post-forecast horizon TV (\rightarrow estimation of the ‘on average’ growth rate, g)

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