INFORMATION THEORY
- What is it?
  • Theory on the usefulness of accounting information in investment decisions
  • [Previously there was dissatisfaction with prescriptive theories (tells us how firms ought to be or what they should be doing) of accounting; there was a rise of empirical research in 50s and 60s investigating the following research question: is accounting info useful to decision makers?]
  • E.G. a prescriptive theory stated that firms should use the reducing balance method of depreciation; however, in the real world, most firms used straight line depreciation, thus, the theories were not being followed by firms

BALL AND BROWN STUDY
- Examined the relationship between earnings and share prices
- Assumptions?
  - investors find future EPS relevant for making decisions (info about firm’s future cash flows)
  - investors can forecast EPS from known data (FS)
  - investors react to errors in the forecast, when revealed, by adjusting the price at which shares are traded (when actual info becomes known about the EPS, investors will compare actual to forecast to find a difference; if one exists, is that difference a surprise to the investor? — i.e. do we expect a share price reaction?)

- How do we measure the forecast error in EPS?
  - Use the “Random Walk Model” to calculate expected EPS:

\[
\text{Expected EPS (i,t)} = \text{Actual EPS (i,t-1)}
\]
where: \(i\) = a subscript for each firm & \(t\) = a subscript for time

\[
\text{Forecast Error} = \text{Actual EPS (i,t)} - \text{Expected EPS (i,t)}
\]

- e.g.
  - CY EPS = $4.80
  - PY EPS = $4.75
  - Actual Return in share price CY = 0.141
  - \(E(R) = 0.048 + 1.000 \times Rm\)
  - forecast error = 4.80 - 4.75 = 0.05
BALL AND BROWN STUDY (continued)

- the greatest abnormal return was around the EPS announcement date
- accounting numbers not the monopoly supplier of information to investors
- the market is “semi-strong efficient” i.e. reacts quickly and unbiasedly to new information

RESEARCH SINCE B&B STUDY

- The size of unexpected EPS & abnormal returns:
  - is size and sign of unexpected EPS related to the size and sign of Abnormal Return; i.e. are the most positive or negative errors in the EPS related to most positive or negative changes in AR? Yes

- Accounting policy changes with direct cash flow consequences:
  - investors are smart enough to realise whether a change has a direct cash flow effect or not
  - e.g. business changes between FIFO/LIFO
  - financial effect? FIFO increases earnings, LIFO decreases earnings:
  - e.g. firm has opening inventory of 5 units @ $10 each (under both FIFO and LIFO)
  - during the year, 5 units are purchased @ $15 and 8 units are sold @ $20; what are the earnings for either scenario?

<table>
<thead>
<tr>
<th>Policy</th>
<th>Revenue</th>
<th>COGS</th>
<th>Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIFO</td>
<td>$160</td>
<td>-$95</td>
<td>$65 : FIFO is the income increasing technique</td>
</tr>
<tr>
<td>LIFO</td>
<td>$160</td>
<td>-$105</td>
<td>$55 : LIFO is the income decreasing technique</td>
</tr>
</tbody>
</table>

  - early studies find a positive reaction to the change LIFO
  - why? because of tax savings from using LIFO; lower earnings = less tax paid

  - more recent research have found a negative reaction to the change LIFO
  - why? could be due to adverse indirect cash flow consequences from changing to LIFO that affect firms, such as higher agency costs (indirect impact on wealth of stakeholders)

IMPLICATIONS ON REGULATORS

- in a perfect world, firms would be allowed to report using any accounting method they liked, as long as enough information is provided to permit adjustment to other methods, as investors are sophisticated enough to interpret implications of using alternative accounting methods
- in reality, this cannot happen; why? firms have a tendency to mislead people by misapplying accounting principles or providing false information deliberately
Module 2: The Theory of Accounting Choices

THEORY OF THE FIRM
- in economics, markets are considered efficient and effective in making resource allocations
- but we often see firms (hierarchical structures with a manager making these resource allocation decisions) replacing markets to do this, why?
- markets sometimes involve high contracting costs
  - firms in certain situations are more efficient at making resource allocation decisions than the market
    - in particular these contract costs

COASE'S STUDY
- firms exist to minimise contracting costs — costless contracting is not realistic
- competition between markets and other firms ensures firm survival — structures we observe are the most contracting cost efficient
- firms act as a nexus of contracts (the firm acts as an intermediary between other contractual parties that contract with the firm creditors)

EXAMPLE
- consider you want to own a chair, you have 2 choices:
  - make the chair yourself in a market — this will be costly
  - buy the chair from a firm, which will probably be cheaper due to:
    - the number of contracts negotiated being reduced
    - firms expertise in contracting
    - economies of scale from repetitive contracting

IMPLICATIONS OF THE THEORY OF THE FIRM ON ACCOUNTING
- the role of the firm is to create and use technologies that make it efficient (minimising contracting costs)
- accounting is one of these technologies

TYPES OF CONTRACTING COSTS
- five general types:
  - transactions costs
  - information costs
  - renegotiation costs
AGENCY THEORY
- examines agency relationships (where a principal engages an agent to perform some service on their behalf which involves delegating decision making activity to the agent"
- a key assumption in agency theory is that individuals are retinal self-interested wealth maximisers

THE AGENCY PROBLEM
- conflicts of interest can arise between A and P
  - a firm manager doesn't always do what is best for the company; sometimes the pursue actions in their own interests; “opportunistic behaviour”
- such conflicts create agency costs:
  ● monitoring expenditures by P
    - incurred by P
    - the cost ensures the agent does what they are supposed to be doing
    - e.g. cost of preparing a budget, hiring of auditors
  ● bonding expenditures by A
    - cost incurred by A
    - attempts to convince P that A has been acting in P's interests
    - e.g. cost of preparing the FS for the firm
  ● residual loss (“opportunism”)
    - a loss in the value of the firm
    - result from conflicts of interest that cannot be resolved by spending money on monitoring or bonding
- Ultimately, ‘A’ bears the cost of being opportunistic, why?
  ● as P can “price protect”
    - this means, P factors in the fact that A may be opportunistic by offering a lower salary than they normally might have received
    - depending on A's history in terms of opportunism, the alteration of the salary might be greater or lesser
    - so, it is in the interests of A to contract with P to limit the amount of the opportunistic behaviour
    - in reality however, P cannot always price protect perfectly — P may end up bearing some of the cost of A's opportunistic behaviour

TWO IMPORTANCE AGENCY RELATIONSHIPS:
1) SHAREHOLDER / MANAGER CONFLICT
- if a manager owns none or a small fraction of a firm, a conflict between the interests of the manager and shareholder may exist
  - we can expect the manager to:
    ● shirk (taking an extended lunch; take fake sick days)
    ● consume perks (manager uses company car for personal reasons; managers spends company money on personal items)
  - the above DECREASE the firm's value (shareholders bear costs / manager enjoys the benefits)
  - ultimately, it is the manager who bears the cost however, as the P (shareholders) factor price protection into the manager’s salary
  - manager thus has incentive to contract with shareholders to limit their amount of opportunism
- what is each party's incentives?
- the shareholders WANT the manager to achieve their target as higher earnings result in higher firm value
- accounting numbers have a large role to play in this contract as bonuses are based on the earnings number (they indicate whether the manager is acting in the interests of the shareholders)

2) DEBTHOLDER / FIRM CONFLICT

- if a firm borrows funds, the firm may be opportunistic by taking any of the following actions:
  - paying excessive dividends (i.e. increasing the dividend rate without telling creditors, the shareholders benefit from increased dividends and the creditors lose out as the money could've been re-invested or use to pay back the principal)
  - dilute existing debt claims (by issue of additional debt of same or higher priority (e.g. secured vs unsecured) — creditor might not get any money back in the event of bankruptcy)
  - substitute low risk investments for high risk investments (also called asset substitution or risk shifting; firm borrows money to invest in a low risk project but actually puts $ into a high risk project; debt-holders return on funds ≠ risk taken)
  - forgo +ve NPV investments (if all payoffs flow entirely to debt-holders, firm will not invest — debt holder loses out)

- the above actions transfer wealth away from debtholders to the firm
- but debtholders can also price protect
  - increase interest rate
  - establish debt covenants

- hence, the cost of being opportunistic is borne entirely on the firm; firm has incentives to align its interests with those of the debtholders by contracting

- what is each party's incentives?
  - debtholders want to protect their investments (ensure loan can be repaid)
  - firms want to maximise their value for shareholders (keep interest low)

- can align interests by introducing “restrictive covenants”
  - e.g. cannot pay dividends while interest is unpaid
  - e.g. cannot sell major assets without debtholder's approval
  - e.g. accounting based restrictions on borrowing
    - not being able to borrow more debt
    - financial penalties if ratios are breached
      - (e.g. CA - CL < $XXX;  EBIT / Interest < 3;  TL / TA(tangible > 0.6)
      - infringement of such restrictive covenants is costly (increased interest rate, force firm into bankruptcy to repay loan)

ACCOUNTINGS ROLE IN CONTRACTS:
1) THE “EFFICIENT CONTRACTING” VIEW

- accounting is used to:
  - define contractual rights of the contracting parties
  - monitor contractual provisions
  - provide accurate information about the performance and position of the firm

- Examples:
  - monitoring manager performance
    - (bonus pay contracts)
    - we use accounting numbers to analyse the efficiency of managers, why not use share prices though?
- **the use of accrual accounting**
  - why use accrual accounting to measure financial performance? why not cash basis?
  - accrual measures are more timely; recognises better the consequences of transactions when they occur not when they are realised (e.g. credit sales)
  - accrual accounting provides are better matching between revenues and expenses in a give period — much more accurate view of the performance of the firm

- **defining accounting policy — revenue recognition**
  - assume a production manager from a mining company has a guaranteed contract with client to take all the minerals it produces, where those mineral sale prices are easily determined, and the manager has an earnings based bonus plan
  - based on the above set of circumstances, the firm should adopt a production based revenue recognition
    - the firm is best suited to recognise revenue at the point of production; this is efficient as the manager will have better incentives to produce as much as possible giving them the opportunity to get a bigger bonus; this is beneficial to the firm as the more that is produced, the more that is sold
  - assume the same facts as above, but now the company doesn't have a guaranteed contract of sale
    - if the firm recognises revenue at the point of production, the manager will produce as much as possible
    - but this is NOT efficient
    - the firm is recognising revenue before it is earned — the efficient policy is to recognise revenue at the point of sale in this case, as it concentrates the manager's efforts on sales, and not on production (aligning interests)

- **debt contract monitoring**
  - debt contracts often define ratios that depart from GAAP (e.g. excluding intangibles in TA)
  - why?
  - an example — the debt leverage ratio (a common debt covenant restriction on borrowing is to limit the amount of TL to TA(excl. intangible) to 60%)
    - why not include intangibles? inefficient as IA are not a good source of security against debt (cane really use IA as collateral as the value of IA is difficult to measure and its value varies considerably over time — it may become worthless one day)
  - these departures from GAAP offset manager's ability to tweak the financial numbers (inflate/ deflate earnings, etc) i.e. they are conservative
2) THE “OPPORTUNISTIC” VIEW

- under this view, accounting numbers are used to transfer wealth away from one party to another
- this is because conflicts cannot be totally eliminated and price protection is not complete
- the intent is to use accounting numbers to deceive (so that one party benefits while the other loses out)
- assumes the manager has discretion to choose the relevant accounting policies after contracts have been agreed
- 3 hypotheses:

  - **bonus plan hypothesis**
    - "managers with bonus plans are more likely to choose accounting policies that shift reported earnings from future to current periods"
    - e.g. using SL over accelerated depreciation; using FIFO over LIFO (both are income increasing accounting techniques)
    - simple bonus plan diagram:
    - complex bonus plan diagram:
      - IF: LB < Earnings < UB = bonus is payable and managers will instigate accounting policies that move earnings as close as possible to the UB
      - IF: Earnings > UB = no extra bonus is payable beyond the UB, the manager will choose income decreasing accounting policies (to ensure that no earnings are wasted on this non-bonus area; the manager will try and push these earnings out to a future period to ensure bonuses then
      - IF: Earnings < LB = if there is no chance of reaching the LB, the manager will use income decreasing accounting policies to "move" income to a future period

  - the complex bonus plan includes "upper and lower bounds"; there are incentives to choose both income increasing and income decreasing accounting techniques
  - such actions mean that the manager is being opportunistic (as the firm may not show its "true" earnings); the manager is maximising their own pay at the expense of the firm/shareholders

  - **debt/leverage hypothesis**
    - "the higher the leverage ratio is, the more likely managers select accounting policies that shift reported earnings from future periods to the current period"
    - i.e. choosing income increasing accounting policies
    - why? to avoid default on debt covenants (breaching the specified covenant ratios)
    - how? careful choice of accounting policies (even if such policies don't reflect the true financial position of the firm)
    - example:
      - assume a firm has a debt covenant requiring no further borrowing if debt to total tangible assets exceeds 60% (currently debt = $50,000 and total tangible assets = $80,000)
      - the firm has discretion to revalue its tangible assets
      - current ratio = 50,000/80,000 = 0.625
      - "new" ratio = 50,000/100,000 = 0.500 (after the revaluation policy change)
      - the business is no longer in breach and so can borrow more

  - **the political process and accounting choice hypothesis**
    - "costs associated with the power of government and its regulatory agencies or other interest groups to transfer wealth away from companies to other parties in society"
    - accounting numbers are used to advocate and administrate existing regulation against firms
    - i.e. companies that are targeted are usually doing things against the aims of society
- firms that are politically sensitive tend to be large, as they have bigger profiles; when such firms are attacked, it is their accounting numbers that are usually criticised
- firms don’t want to attract this kind of attention as it can have an adverse effect on value
- what can firms do in this situation? choose accounting policies that will reduce political visibility
- “the larger the firm, the more likely managers choose accounting policies to defer reported earnings to future periods”
- example:
  - LIFO instead of FIFO (an income decreasing technique)

OTHER MECHANISMS TO CONTROL AGENCY CONFLICTS
- market mechanisms
  - examples:
    - market for corporate control (threat of takeover)
      - firms sometimes takeover other firms, if they are under-valued
      - why might they be undervalued? managers might be acting opportunistically
      - once the firm has been taken over, the managers are replaced
      - this is a powerful incentive for managers not to act opportunistically (threat of removal)
    - market for managerial talent (reputation)
      - manager has a reputation for being opportunistic, may find it difficult to get another job
      - the market knows who the good and bad managers are
- external directors
  - having directors on the board that are not executive
  - why have them? they are external and bring an independent view to the firm
- auditing mechanisms
  - having an external audit performed to verify the accounting numbers
  - having an audit and finance committee to check to ensure certain policies are being followed
  - having internal auditors that check everything within the firm is operating as it should be — check the internal controls, management control systems and report directly to the board

DISTINGUISHING EFFICIENCY v OPPORTUNISM
- efficient contracting and opportunistic views are competing explanations of accounting choice
- this does not mean that if one is present, the other is not; they are sometimes hard to distinguish at the theoretical and empirical level
- why is it important to distinguish these two viewpoints?
  - effect on regulation
    - if accounting is to opportunistic = more regulation to remedy the market failure
      - e.g. regulate to remove certain accounting policies
    - if accounting is in fact efficient such regulation would be counter-productive and creates additional costs
      - e.g. might have removed efficient accounting principles and left only opportunistic ones
Module 3: Accounting for Income Tax

PRINCIPLES OF CALCULATING INCOME TAX
- firms are taxed based on their “taxable profit” which may be different to accounting profit, why?
  • the tax rules are based on income tax law, and the objective is to provide revenue for the government
  • the accounting rules are based on GAAP, and the objective is to provide decision useful information

<table>
<thead>
<tr>
<th>Accrued Expenses</th>
<th>Under GAAP: an expense when accrued</th>
<th>Under IRD: recognised as tax deduction when cash is paid (Timing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(GAAP) - Day 0:</td>
<td>Accrue warranty expenses</td>
<td>(IRD) - Day 0:</td>
</tr>
<tr>
<td>Warranty Expense</td>
<td>100</td>
<td>Deductible Expense</td>
</tr>
<tr>
<td>Warranty Provision</td>
<td>100</td>
<td>Provision</td>
</tr>
<tr>
<td>(GAAP) - Day t:</td>
<td>Pay out case</td>
<td>(IRD) - Day t: Pay out cash</td>
</tr>
<tr>
<td>Warranty Provision</td>
<td>100</td>
<td>Deductible Expense</td>
</tr>
<tr>
<td>Cash</td>
<td>100</td>
<td>Provision</td>
</tr>
</tbody>
</table>

- tax authorities are interested only when a payment is made
- “temporary differences” — will reverse within a short time

<table>
<thead>
<tr>
<th>Prepaid Expenses</th>
<th>Under GAAP: recognised initially as an asset and expensed when economic benefits used</th>
<th>Under IRD: typically a tax deduction when cash is paid out</th>
</tr>
</thead>
<tbody>
<tr>
<td>(GAAP) - Day 0:</td>
<td>Prepay rent</td>
<td>(IRD) - Day 0: Prepay rent</td>
</tr>
<tr>
<td>Prepaid Rent</td>
<td>100</td>
<td>Deductible Expense - rent</td>
</tr>
<tr>
<td>Cash</td>
<td>100</td>
<td>Cash</td>
</tr>
<tr>
<td>(GAAP) - Day t:</td>
<td>When economic benefits used</td>
<td>(IRD) - Day t: When economic benefits used</td>
</tr>
<tr>
<td>Rent Expense</td>
<td>100</td>
<td>NO ENTRY</td>
</tr>
<tr>
<td>Prepaid Rent</td>
<td>100</td>
<td>NO ENTRY</td>
</tr>
</tbody>
</table>

- similar to a development expenditure (also deductible at the time cash is paid)
- becomes a deductible expense when the cash i said out