

Book Values, Market Values and the Balance Sheet

The 'balance sheet', also called the 'statement of financial position', shows how the book value of assets (A) equals the book value of liabilities (L) plus the book value of owners equity (OE):

$$A = L + OE$$

The finance version is very similar, but it uses market values instead of book values. The market value of assets (V) equals the market value of debt (D) plus the market value of equity (E):

$$V = D + E$$

Book Values: $A = L + OE$

Book values are accounting figures usually taken from a balance sheet, also known as the statement of financial position. Since most balance sheet items are recorded at historical cost, book values are:

- + accurate when first recorded, but
- old, stale and out of date.

Market Values: $V = D + E$

Market value is the current price that an asset is actually traded at. If the asset was sold, then the market value would be the cash flow received. Market values are:

- + timely and useful but
- can be difficult and costly to measure, especially if the asset is illiquid (doesn't trade often). Also,
- if the market price can't be observed, then estimation is needed which is inaccurate.

Book Value of Equity (OE)

OE = Contributed equity + retained profits + reserves

The book value of equity (OE) is 'Contributed Equity' plus 'Retained Profits' plus 'Reserves'.

- **Contributed Equity** is the amount of shares first bought when the company floated or had its IPO (Initial Public Offering). Other names included paid-up capital or shareholders' equity.
- **Retained Profits** is the accumulation of net income less dividends since the IPO.
- **Reserves** includes things like Asset Revaluation Reserve and Foreign Currency Translation Reserve.

Market Value of Equity (E)

E = share price \times number of shares outstanding

$$= P_{share} \times n_{shares}$$

The market value of equity (E) is the share price trading on the ASX multiplied by the total number of shares outstanding.

The market value of equity is also called the market capitalisation of equity or just 'market cap'.

Contrasting Book and Market Values of Equity

When a new firm first floats its shares in an initial public offering (IPO), the book value of equity will equal the market price.

But after the moment when the shares are first sold in the IPO, then the market value of equity will go up and down as the stock is traded on the exchange.

The book value of equity will only change when the firm makes a profit (or loss) and increases its retained profits or when the firm raises more contributed equity in a rights issue or other form of capital raising.

If a firm (the acquirer) wants to take over another firm (the target), it will have to buy all of the target firm's equity, or at least a controlling stake. The acquirer will have to pay the market value of equity to the target firm's shareholders, which is often much higher than the book value.

Equity Value of Just Jeans Group

Just Jeans' is a retail clothing company that had a \$4.00 share price in July 2008, and 201 million shares outstanding.

Just Jeans' market value of equity was:

$$\begin{aligned} E &= \text{share price} \times \text{number of shares outstanding} \\ &= \$4 \times 201m = \$804m \end{aligned}$$

From its detailed online financial statements, the book value of equity was:

$$\begin{aligned} \text{OE} &= \text{Contributed Equity} \quad + \quad \text{Retained Profits} \quad + \quad \text{Reserves} \\ &= \quad \$14m \quad \quad \quad + \quad \quad -\$8m \quad \quad + \quad \$51m \\ &= \$57m \end{aligned}$$

Equity Value of Just Jeans Group - Takeover

In March 2008 Premier Investments (PMV) launched a hostile take-over bid for Just Jeans, offering a price of around \$4.10 per share. Prior to the takeover bid the Just Jeans share price was trading at around \$3.30.

In September 2008 PMV completed the takeover. They paid around \$4.25 per share. This shows that it is the market cap of equity, not the book value, which determines the actual price of a company's shares.

Calculation Example: Asset, Debt and Equity Valuation from Market Prices

A mining company is funded by:

- 100,000 bonds which currently trade in the over-the-counter (OTC) debt markets for \$60 each.
- 4 million shares which currently trade on the stock exchange for \$1 each.

Question: A big private equity fund would like to buy all of this mining firm's assets, including its machinery, land, brand name, intellectual capital and everything. What is the fair price of all of its assets? Assume that no premium is offered.

Answer: The value of the mining firm's assets is the value of the debt and equity that fund the assets. This can be calculated as:

$$\begin{aligned} V &= D + E \\ &= n_{bonds} \cdot P_{bond} + n_{shares} \cdot P_{share} \\ &= 100,000 \times \$60 + 4,000,000 \times \$1 \\ &= \$6m + \$4m \\ &= \$10m \end{aligned}$$

Question: A private equity fund would like to pay the minimum amount necessary to control the majority of all shareholder votes of the target mining firm. How much will this cost? Assume that no premium is offered.

Answer:

The private equity firm will need at least 50% of the shareholder votes, so it will need to buy at least half of the shares:

$$\begin{aligned} 0.5 \times E &= 0.5 \times n_{shares} \times P_{share} \\ &= 0.5 \times 4m \times \$1 \\ &= \$2m \end{aligned}$$

Questions: Book and Market Values Of Equity

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Balance Sheet Equations

The balance sheet can be represented as an equation:

$A = L + OE$ in book values or $V = D + E$ in market values.

Book total assets (A) can be broken into:

- Current assets (CA) such as cash, inventory and accounts receivable (or trade debtors) which are generally expected to last for less than one year.
- Non-current assets (NCA) such as property, plant and equipment (PPE), copyrights, patents, deferred tax assets and other things which last for more than one year.
- $A = CA + NCA$

Similarly for total liabilities (L) which can be broken into:

- Current liabilities (CL) such as short term loans including overdrafts, accounts payable (or trade creditors), which generally must be paid in less than one year.
- Non-current liabilities (NCL) such as bonds, loans and deferred tax liabilities which last for more than one year.
- $L = CL + NCL$

Business Decisions

Most of the business decisions are related to the balance sheet:

$A = L + OE$ in book values or $V = D + E$ in market values.

The book assets and liabilities can be broken into their current and non-current parts:

$$CA + NCA = CL + NCL + OE$$

Investment decision: Which assets (V or A) to buy?

Financing decision: Which type of funding (L or OE)?

Working capital decision: How much working capital (CA - CL)?

Payout policy decision: How much to pay out to equity holders (OE) in the form of dividends and buybacks (also called repurchases)?

The investment decision is the most important. The idea is to accept the most positive net present value (NPV) projects since that will maximise the business's market value of assets (V) and therefore also maximise shareholders' wealth.

Throughout the course we'll be looking at all of these decisions.

Questions: Business Decisions

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