

Classifying finance as a liability or equity in the balance sheet

The traditional finance raised by companies is either a liability (debt) or equity and it is these classifications that appear in the balance sheet. However, financial instruments are now being issued (and have been for some time) that do not fall neatly in to either of these categories. Naturally, the issue arises as to how to treat these instruments. This matter is important since measures of leverage are often based on the proportion of the company's assets finance by debt.

The notes below are taken from very useful article which lays out quite clearly many of the issues involved. It is

Stephen Ryan and Catherine Schrand (the principal authors), "Evaluation of the FASB's proposed accounting for financial instruments with characteristics of liabilities, equity, or both", *Accounting Horizons*, December 2001, 387-400.

1. A classification of instruments

The first part of the paper illustrates the types of instruments which need to be classified.

I - SIMPLE INSTRUMENTS

These instruments are the traditional type and fall easily in to the two (liabilities and equity) existing classifications. Examples are straight debt or common equity.

II - COMPOUND INSTRUMENTS WITH SEPARABLE COMPONENTS

These instruments include both liability and equity components, but the components can be easily identified and separately valued. An example is a bond with a warrant attached. The bond can be valued in the normal way, as can the warrant which is sold together with the bond.

III - COMPOUND INSTRUMENTS WITH INSEPARABLE COMPONENTS

These instruments combine the qualities of both liability and equity, but the components cannot be separated because the payoff of the instrument is either as equity or as debt (but not both). For example, convertible debt has aspect of debt (it pays interest and is redeemable) but will have equity aspects if the holder wishes (by electing to swop the bond for a given number of shares).

IV - HYBRIDS

This is where the instrument has the characteristics of both liability and equity. For example, preference shares typically have a fixed payment each year irrespective of the company performance, but in the event of a liquidation, will rank along with common equity.

2. What is the real difference between debt and equity?

One of the useful parts of the paper is the discussion of what constitutes the difference between

debt and equity. And it is not as simple as you might think. There are two key areas which differentiate the instruments, and this provides an excellent basis for discussing the accounting for complex instruments.

I - THE SOLVENCY PERSPECTIVE

This reflects whether the holder has a claim on particular assets and therefore can file for the company to be put in to liquidation (in order to gain access to the assets). Debt has this characteristic whereas equity does not.

II - THE VALUATION PERSPECTIVE

This reflects whether the holder has a fixed or a residual claim. For example, common equity has a residual claim; the holders are paid after everyone else. Debt holders have a priority.

III - DIFFERENT PERSPECTIVES LEAD TO DIFFERENT CONCLUSIONS

Given that there are two ways of looking at the difference, it is not surprising to find that the two criteria can lead to different conclusions. For example:

An obligation to transfer cash equal to the fair value of a fixed number of shares.

This is a claim on a particular asset (cash) and therefore a liability (from a solvency viewpoint). However, the amount of cash is variable (and if the shares are worth nothing, then no cash will be paid) and therefore the claim is equity from a valuation perspective.

An obligation to transfer a variable number of shares with a fixed fair value.

This is not a claim on particular asset and therefore equity from a solvency perspective. However, the amount of the claim is fixed (not a residual claim) and therefore is a liability from a valuation perspective.

3. Classification in the balance sheet

I - THE PRIMARY PERSPECTIVE APPROACH

Given that different viewpoints will lead to different classifications, one way of solving this problem is to decide what viewpoint should be more important (the primary perspective). Then the balance sheet would look like this.

if solvency is the primary perspective	or	if valuation is the primary perspective
LIABILITIES From both perspectives From solvency perspective only EQUITY From both perspectives From solvency perspective only		LIABILITIES From both perspectives From valuation perspective only EQUITY From both perspectives From valuation perspective only

II - THE MEZZANINE APPROACH

Another approach is to create a separate section of the balance sheet which is home for the instruments where the perspectives give different conclusions, shown below.

LIABILITIES

From both perspectives

MEZZANINE

Equity from a valuation perspective but liability from a solvency perspective

Liability from a valuation perspective but equity from a solvency perspective

EQUITY

From both perspectives

III - FAVOURING THE MEZZANINE APPROACH

The research which gives support to favouring the mezzanine approach is: P Hopkins, "The effect of financial statement classification of hybrid instruments on financial analysts' stock price judgements", *Journal of Accounting Research*, Supplement 1996, 33-50.

Although we shall summarise it here quite brutally, it is a well written paper which can be easily understood and is strongly recommended. Hopkins asked analysts to value a company. All analysts received the same information except that for some a recently issued complex financial instrument was classified as a liability for some, as equity for others and in the mezzanine for the remainder..

It is well known that the current stock prices falls after an equity issue but not when debt is issued. When the instruments was classified as a liability, the average stock price was estimated at \$38.35 compared with \$36.68 when the instrument was classified as equity. This is consistent with the known properties of equity and debt issues.

Valuation of stock price (\$) by analysts according to the balance sheet classification of complex financial instrument		
classified as liability	classified in the mezzanine	classified as equity
38.35	35.91	36.68

The surprising finding was that the share was not valued in between these extremes when the instrument was classified in the mezzanine. It was below the "classified as equity" value. The reason for this was investigated further, by asking analysts for justifications about their decision. These comments were divided in to (i) *category* explanations, where they were talking about the characteristics of the liability category or the equity category and (ii) *attribute* explanations, where they were talking about the particular characteristics of the financial instrument. Hopkins found that attribute explanations were more common when the instrument was classified in the mezzanine.

This suggests that when the complex instrument is classified as equity, investors tend to treat it as just another type of equity. And when the complex instrument is classified as a liability, investors tend to treat it as just another type of liability. In contrast, when the instrument is classified in the mezzanine, inventors tend to treat it on its individual merits. This suggests that the mezzanine category serves a useful purpose.

The mezzanine approach is useful for dealing with hybrid instruments, those where the liability-equity classification depends on which viewpoint is taken. However, it is not a panacea for all complex financial instruments. The trouble with compound instruments is that *even from a single perspective* it is unclear whether they are a liability or equity, because they include both aspects. These are discussed next.

4. The valuation of compound instruments

Standard setters (for example IAS 32) deal with compound instruments by the decomposition method. That is, the instrument is decomposed into an equity component and a liability component. Then each component is accounted for separately (the liability component is classed as a liability in the balance sheet and the equity component is classed as equity in the balance sheet).

I - COMPOUND INSTRUMENTS WITH SEPARABLE COMPONENTS

Where the instrument has separable components (for example a bond with an attached warrant), then it is straight forward to value each component individually and allocate the total value of the instrument.

II - COMPOUND INSTRUMENTS WITH INSEPARABLE COMPONENTS

A good example of an instrument having inseparable components is the convertible bond. This is where the instrument is issued as a bond, but the holder has the option of converting the bond to specified number of shares in the future. However, the fact that the parts are inseparable does not stop the standard setters (eg IAS 32) from taking a decomposition approach! But how can this be done?

The value of the bond is split into

- (i) the value of the bond without the option to convert (to be treated as a liability)
- (ii) the extra (or incremental) value of the instrument in the market (to be treated as equity).

This is called the incremental approach to decomposition.

Ryan and Schrand point out that this decomposition is different from what intuition might suggest which is:

:

- (i) the value of the instrument as equity multiplied by the probability of the payoff being as equity;
- (ii) the value of the instrument as a liability multiplied by the probability of the payoff being as a liability.

They illustrate their point with an example of a \$60 convertible bond, shown below.

III - RYAN AND SCHRAND'S ILLUSTRATION OF THE PROBLEMS WITH THE INCREMENTAL APPROACH TO DECOMPOSITION.

The facts

The holders of the instrument choose at time 1 whether or not to convert the bond to equity. The assets of the company at time 1 will be 150 (probability of 60%) or 50 (probability of 40%). The weighted cost of capital (r_w) is 10%, and the risk free rate (r_f) is 5%.

The current value of the company is 100, being the probability weighted payoffs for the company as a whole, discounted at the weighted cost of capital

$$= \{150 \cdot 0.6 + 50 \cdot 0.4\} / 1.10 = 100$$

As a bond: the payoff will be 64 at time 1, but if there are insufficient funds in the company then the bond holders will get all the company assets.

When converted in to equity: the holders will get 50% of the company assets.

The analysis

Time 0		time 1, company	time 1, convert bond	time 1, not convert bond
Value of company assets	probability			
100	60% = q (good state)	150 (a rise of 50% = u)	75 (50% of the assets)	64 (as agreed)
	40% = (1-q) (bad state)	50 (a fall of 50% = d)	25 (50% of the assets)	50 (all the assets)

Pricing the bond is achieved by using the binomial option pricing model. The risk neutral probability p is

$$p = \frac{(1+r_f - d)}{1+u-d} = \frac{(1+0.05 - 0.5)}{(1+0.5 - 0.5)} = \frac{.55}{1}$$

$$1 - p = 0.45$$

The value of the straight bond at time 0 is determined by the discounted payoffs as a bond weighted by the risk neutral probabilities:

$$\{(\$64 \times 0.55) + (\$50 \times 0.45)\} \text{ divided by } 1.05 = \mathbf{\$54.95}$$

The value of the instrument at time 0 is \$60.71 as follows:

the best payoff (discounted) if the assets of the company rise, weighted by the risk neutral probability of the assets rising $(\$75 \times 0.55) / 1.05 = \39.28

+

the best payoff (discounted) if the assets of the company fall, weighted by the risk

neutral probability of the assets falling $(\$50 \times 0.45)/1.05 = \21.43

According to the incremental approach, \$54.95 of the value of the instrument would be classified as a liability. The additional value, \$5.76, would be classed as equity.

However, Ryan and Schrand argue that the instrument will either be a liability or equity at time 1, and that the decomposition should reflect this.

It will be equity at time 1 if the assets of the company rise; then holders should convert and their payoff will be 75 (rather than 64 as a bond). The probability of the assets rising is 0.55. Therefore the equity part of the balance sheet at time 0 should be this value, discounted =

$$\frac{(\$75 \times 0.55)}{1+r_f} = \frac{(\$75 \times 0.55)}{1+0.05} = \$39.28$$

The instrument will be a bond at time 1 if the assets of the company fall; then holders should not convert and their payoff will be 50 (rather than 25 as equity). The probability of the assets falling is 0.45. Therefore the liability part of the balance sheet at time 0 should be this value discounted =

$$\frac{(\$50 \times 0.45)}{1+r_f} = \frac{(\$50 \times 0.45)}{1+0.05} = \$21.43$$

These two values $\$39.28 + \21.43 sum to the value of the instrument at time 0 = \$60.71. Ryan and Schrand argue that these values reflect far better what is meant in the balance sheet by equity and liability.

IV - CONSISTENCY OF IAS 32 AND FRS 4 WITH THE CONCEPTUAL FRAMEWORK

One final aspect of the debate is raised by Ma and Lambert, In praise of Occam's razor: a critique of the decomposition approach in IAS 32 to accounting for convertible debt, *Accounting and Business Research*, Spring 1998, which supports the Ryan and Schrand approach. They remind us that part of the definition of a liability includes the notion that the outflow of resources *is probable*.

They then argue that FRS 4, which classifies a convertible as liability irrespective of the probability of conversion, does not take account of the probability of the outflow of resources.

The also argue that IAS 32, which allocates the bond component to liabilities and the remainder to equity, also contravenes the liability definition. This arises because the bond component will always be classified as a liability, *irrespective of the probability* of conversion.