

## **Busi 293 Notes**

### **Chapter Eleven**

### **Reporting and Interpreting Long-term Liabilities**

When a company decides to expand it, must decide how to finance the expansion. The next two chapters deal with two financing alternatives available to management. In chapter 12 we will discuss the issuance of equity - either common and/or preferred shares. As opposed to bringing on new shareholders, the company may decide to borrow the necessary funds. Unlike securing a demand loan which is used to finance inventory and accounts receivable, management usually secures long-term financing – i.e. financing which will be repaid over an extended period. This is the focus of chapter 11.

Some of the advantages and disadvantages of long term debt are:

#### **Advantages**

- Current shareholders do not lose control of the company – no dilution
- Interest expense is tax deductible
- The return on the expansion is hopefully greater than the cost of borrowing the funds – i.e. earnings are positively impacted.

#### **Disadvantages**

- Greater level of debt, higher risk of bankruptcy and/or interest defaults
- Debt must be repaid, negative effect on cash flows

## Bonds

When a borrower and a lender enter into a contract covering a significant sum of money, one would expect that the contract between the two would be comprehensive. In order to understand bonds, it is important to familiarize yourself with the terms discussed in Textbook reference A. I would like to highlight the following terms:

- Bond indenture – the formal agreement between the issuer and lender (bondholder) outlining the specifics of the agreement
- Bond Covenants - the specific restrictions that are placed on the borrower - (e.g. dividend restrictions, salary bonus restrictions, capital asset restrictions, minimum current ratios etc.)
- Face amount, par value, or maturity value - the stated (principal) value of the bond
- Bond (Stated) interest rate - the interest rate specified in the bond indenture
- Market (effective, discount or yield) interest rate – the interest rate currently required by investors for similar bonds

In a perfect world, an issuer will issue a bond with the stated interest rate equaling the market interest rate. When this happens the bond will sell at its face or par value.

## **Bonds** continued

There are many types of bonds. The following identifies some of the more common types:

- Unsecured bonds (debentures) – none of the issuer's assets are pledged as security
- Secured bonds – specific assets pledges as security for this type of bond
- Callable/Redeemable – may be called for early retirement by the issuer
- Retractable – may be called for early retirement by the bondholder
- Convertible – may be converted into common shares

The next paragraph should be remembered whenever completing bond questions:

- A bond will sell for an amount equal to the present value of the remaining interest payments plus the present value of its face or maturity value. **The interest payments are always equal to the par value of the bond times the stated interest rate. The present value is always calculated using the market interest rate at the date the bond was issued.** ( See Textbook reference B for a refresher of present value concepts)

When preparing present value calculations, you will need a financial calculator or for our purposes on the exam two present value tables - Textbook reference C is used for calculating the present value of the principal value of the bond while Textbook reference D is used for calculating the present value of the interest payments. Often people get these tables mixed up – the factor used to discount the principal value will always be less than 1 while the factor used to calculate the present value of the interest payments (an annuity) will usually be greater than 1.

## **Bonds** continued

The key to understanding the selling or issue price of a bond is to appreciate the relationship between the market and the stated interest rates. There are three situations which may arise:

- Market interest rate = Stated interest rate

In this situation, as noted above, the bond will be issued or will **sell for its par value.**

- Market interest rate is greater than the Stated interest rate

In this situation, the borrower is not prepared to pay the market rate of interest. As a result, the lender will only lend funds which will allow them to earn the market rate of interest. Thus the lender will lend an amount **less than** the par value of the bond. In this situation, the bond is said to be **sold at a discount.**

- Market interest rate is less than the Stated interest rate

In this situation the borrower is offering to pay an interest rate which is above the market rate. As a result, the lender will be prepared to lend **more funds than** the face value of the bonds as this will still allow them to earn their desired market rate of interest. In this situation, the bond is said to be **sold at a premium.**

As we work through this chapter, remember we are talking about a situation where an issuer issues bonds which trade on a recognized stock exchange. Their price will fluctuate - such fluctuations are based on the creditworthiness of the issuer and changes in market interest rates.

## **Bonds** continued

**The bonds we are discussing are not like Canada Savings Bonds which are more like a guaranteed investment certificate.**

## **Accounting for Bonds**

### **Bond sold at par**

The entry to record bonds sold at par is:

Dr Cash  
Cr Bonds Payable (Long-term liability)

The bonds will sell at face value because the two interest rates are the same.

Each period the borrower must pay interest payments to the lender. The interest expense will always equal the face value of the bonds times the stated interest rate for the period. It is important to determine whether the interest is being paid annually or semi-annually. Unless advised, the interest rates provided in the questions will always be annual rates. If you are given a stated annual rate of 8% and the interest is paid annually, the interest payment at the end of each year will be the par value of the bond times 8%. However if the interest is paid semi-annually, the **interest expense per period** will equal the par value of the bond times 4% (8/2).

The journal entry to record the interest expense will be:

### **Accounting for Bonds**

Dr Interest expense  
Cr Interest payable/Cash

## Accounting for Bonds continued

When a bond is issued at its par value, **the interest expense will always equal the interest payment.** On the maturity date, the borrower will repay the par value of the bond:

Dr Bond payable

Cr     Cash

The amount repaid will always equal the maturity or par value of the bond.

## Bond sold at a discount

Remember that the bond will have been sold at a discount because the stated rate of interest **is less than the market rate of interest.** The only way an investor will buy the bond is if they pay amount less than its par value. The most an investor should pay is the present value of the interest payments and maturity value **discounted at the market rate of interest when the bond was issued.**

The initial entry to record the sale of a bond at a discount is:

Dr Cash

Dr Discount on Bonds payable

Cr           Bonds payable

Notice that the bonds payable is still recorded at the maturity or par value. The difference between the selling price (i.e. the amount of cash received) and the par value is called “Discount on Bonds payable”. This is a contra account which will offset the Bonds payable account on the Statement of Financial Position. The discount will be amortized over the life of the bonds. It really represents additional interest expense that must be paid when the bond is repaid. The discount will be reduced each period and will equal zero at the maturity date.

## Accounting for Bonds continued

Remember that even though the issuer received less cash than the par value of the bond, they are still obligated to repay the par value of the bond at the maturity date.

The discount can be amortized one of two ways:

- On a straight-line basis over the life of the bond
- Using the effective-interest method

**Most companies use the effective-interest method – this is the method you will be responsible for.**

Before we review the entries, remember the interest payments made by the borrower will always be constant and equal to the par value of the bond times the stated interest rate for the period. However the interest expense recorded by the issuer will always be higher than the interest payments due to the amortization of the discount.

The interest expense for a period will always equal the carrying value of the bond at the beginning of the period times the market rate of interest when the bond was initially issued. If a bond is sold at a discount, it means the market rate of interest is higher than the stated interest rate. As the discount is amortized, the carrying value of the bond will increase each period. As a result the interest expense will rise slightly each period.

The journal entry to record interest expense each period will be:

Dr Interest expense (Carrying value \* Market interest rate)  
Cr       Discount on Bonds payable  
Cr       Interest payable/ Cash (Par value\*Stated interest rate)

## Accounting for Bonds continued

The carrying value is equal to the par value of the bond minus the balance in the Discount on Bonds payable.

Textbook reference E provides a good example including the amortization of the discount using the effective interest method

The total amount of interest expense recorded over its life on a bond issued at a discount is equal to the sum of the interest payments made over the bonds life plus the amount of the discount.

## Bond sold at a premium

This situation is the exact opposite of the example just discussed. In this case the **stated interest rate is greater** than the market rate of interest. Consequently a bond should sell at a premium - i.e. the borrower will **receive more cash** than the par value of the bond. As with the discount, the premium must be amortized and therefore interest expense will be less than the actual interest payments.

The initial entry to record a bond at a premium is:

Dr Cash  
Cr      Premium on Bonds payable  
Cr      Bonds payable

## Accounting for Bonds continued

Remember the interest payments are constant and equal to the par value of the bond times the stated interest rate. To calculate the interest expense, multiply the carrying value of the bond at the beginning of the period times the market interest rate when the bond was issued. The resulting entry is:

Dr Interest expense (Carrying value \* Market interest rate)  
Dr Premium on Bonds payable  
Cr        Interest payable/Cash (Par value\*Stated interest rate)

Notice that the carrying value of the bond is decreasing each period which means the interest expense will be decreasing slightly each period. Textbook reference F provides a good example including the amortization of the premium using the effective interest rate method.

The total amount of interest expense recorded over its life on a bond issued at a premium is equal to the sum of the interest payments made over the bonds life minus the amount of the premium.

I have prepared an example of a bond issued at both a premium and a discount. Please refer to my example posted of ubc Connect

## Redemption of Bonds

A company may find it attractive to redeem its bonds which are currently outstanding. It may redeem them for many reasons but the most common reason is because the current market interest rate has fallen well below the stated interest rate on the bonds. If the bonds contain a redemption provision (a right which allows the company to redeem the bonds), the company might redeem the old bonds which have the higher stated rate and reissue new bonds with a lower stated rate. However in order to do this, the company would usually have to

## Redemption of Bonds continued

pay the bondholders an additional payment known as a call premium. The difference between the carrying value of the bonds and the amount paid to redeem them would be shown as a loss on the Income Statement.

Another possibility occurs when the market rate of interest rises. When the market interest rate rises, the trading price of a bond decreases. Remember the bond has a stated interest rate which is fixed for the life of the bond. The bond is now less attractive to investors. **The current trading or selling price will equal the present value of the remaining interest payments plus the present value of the principal discounted at the current market rate of interest per period.** The company may be able to purchase its bonds in the market place at an amount which is less than its carrying value of the bonds. **Remember the carrying value will equal the present value of the remaining interest payments plus the present value of the principal discounted at the market rate of interest when the bonds were issued.** In such a case, the difference between the purchase price and the carrying value of the bond may result in a gain/loss which would be recorded on the Income Statement.

## Lease Liabilities

Many companies now lease their assets. Prior to the introduction of guidelines on the accounting for leases, many companies did not record the leased asset or the related liability on their statement of Financial Position. Often the substance of a lease transaction is the acquisition of an asset and a related liability which should be recorded on the company's financial statements.

As with bonds, it is helpful to acquaint yourself with the terminology of leases:

- Lessor – the party who initially buys/owns the asset and leases it to another
- Lessee – the party who leases the asset from the initial owner
- Lease term – the length of the lease agreement
- Operating lease - a lease where the lessee is really just renting the asset often for a short period of time
- Finance lease – a lease where the lessee will either own the asset at the end of the lease agreement or will derive most of the benefits associated with the asset under the lease agreement

The accounting issue is determining whether the lease should be recorded as an operating or finance lease. From the lessee's point of view a lease would be categorized as a finance lease if it meets one or more of the following criteria:

- Title to the asset passes to the lessee by the end of the lease term
- The lease term is for the major part of the asset's economic life.
- The present value of the minimum lease payments is substantially all of the fair market value of the leased asset when the lease was signed.

## Operating lease

When a lease is deemed to be an operating lease the entry is:

Dr Operating lease expense  
Cr       Cash

No asset or liability is set up on the Statement of Financial Position rather expense payments when made.

## Finance lease

When a lease is deemed to be a capital lease, an asset and a related liability must be established on the Statement of Financial Position.

The entry to record the transaction is:

Dr Leased Asset  
Cr       Obligation under Capital Lease

As the lease payments are made, they represent the repayment of the obligation and the related interest expense related to the obligation - just like a mortgage payment.

The interest expense is recorded as follows:

Dr Interest expense  
Cr       Obligation under Capital Lease

The interest expense is equal to the balance of the obligation at the start of the period times the interest rate contained in the lease.

## **Finance lease** continued

When a lease payment is made, the entry is:

Dr Obligation under Capital Lease  
Cr      Cash

Remember that the Leased Asset will have to be amortized over its useful life – the same as when we covered Long-lived Assets in chapter 9.

You will study leases in greater depth in your Intermediate Accounting classes.

## **Asset Retirement Obligations**

Often a company will have substantial environmental obligations when it ceases operations. The best examples are the mining industry and nuclear power plants. The anticipated costs of these clean ups are now required to be accrued by the company well in advance of the actual outlay of any amounts. While the details of the calculation are better suited to Intermediate Accounting it is important you are aware of the importance and magnitude of these future liabilities. As the amounts and timing of these payments is uncertain they are included as provisions as discussed in chapter 10.

## Employee Retirement Obligations

With the present financial troubles, everyone has become very interested in their pensions. It is important to understand that there are two forms of pension plans:

- Defined Benefit - the company has guaranteed to pay its employees a certain benefit during each year of retirement
- Defined Contribution – the company has agreed to contribute a certain amount of money to a plan for each employee each year

Accounting of Defined Contribution plans is very easy. The company simply determines the amount it owes each year and records and funds this amount. Once the amount is paid, the company has no further obligation.

Defined Contribution plans are much more complicated. Actuaries must determine the amount owed in respect of each employee. Based on these estimates, the company must record an expense each period. Under defined contribution plans, the company must ensure enough assets are in the pension fund to fund all the benefits which have been promised. If investments in the pension plan do not perform well, the company carries the risk of having to cover any deficiencies. As a result, the financial exposure is far greater than that which is present in a Defined Contribution plans

This is a very emotional issue as it deals with peoples' livelihoods. It has been in the papers often over the last number of years and will continue for the foreseeable future. Many companies are attempting to switch their plans from defined benefit to defined contribution to minimize their financial risks.

## Financial Analysis

### Debt-to-Equity Ratio

Calculation = Total liabilities/Shareholders' Equity

This ratio advises the user of the amount of debt which has been used relative to the amount of equity supplied by shareholders. The higher the ratio, the more the company relies on debt to finance itself.

### Times interest Earned Ratio

Calculation = (Net earnings + interest expense + income tax expense)/  
Interest expense

This ratio measures a company's ability to generate resources from current operations to meet its interest obligations. Clearly, the higher the ratio, the lower the risk of defaulting on interest payments.