

Bonds

Issuing bonds: *A bond arises from a contract known as a bond indenture and represents a promise to pay:*

- 1) *A sum of money at a designated maturity rate.*
- 2) *Periodic interest at a specified rate on the maturity amount (face value).*

<i>Cash (proceeds)</i>	<i>****</i>	
<i>Discount or Premium (plug)</i>	<i>*** or ***</i>	
<i>Interest payable (Between Interest Dates)</i>	<i>***</i>	
<i>Bonds Payable (Face Amount)</i>	<i>***</i>	

Proceeds: *The interest rate written in terms of the bond indenture is known as the stated, coupon, or nominal rate; is expressed as percentage of the face value called par value, principle amount, or maturity value of the bond.*

Present value approach :

Present value of principle (lump sum) at yield rate.
+ *Present value of interest (ordinary Annuity) at yield rate.*

Sales price approach:

Sales price given as percentage of face amount
Multiplied by face to give proceeds amount

Interest: *Bonds issued between Interests dates can be calculated as follows:*

Face amount of bonds

Stated rate

Portion of the year since previous Interest date

= Interest rate

To illustrate the computation of the present value of a bond issue, consider service master which issues \$ 100,000 in bonds due in 5 years with 9 % interest payable annually at year end. The market rate for such bonds is 11%. The following time diagram depicts both the interest and the principle

Cash flows:

<i>Present value of the principle</i>		
$\$100,000 * 59345$	$\$ 59,345.00$	
<i>Present value of the interest payments:</i>		
$\$ 9,000 * 3, 69590$	<u>$33,263.10$</u>	
<i>present value (selling price) of the bonds</i>		$\$92,608$

By paying 92,608. 10 at the date of issue, the investors will realize an effective rate yield 11% over the 5- year term of the bonds

Bonds issue at par on interest date: To illustrate , if 10- year term bonds with a bar value of \$800,000 , dated January 1, 2001, and bearing interest at an annual rate of 10% payable semiannually on January 1 and July 1, are issued on January 1 at par , the entry on books of the issuing corporation would be :

<i>Cash</i>	$800,000$	
<i>Bonds payable</i>		$800,000$

*The entry to record the first semiannual interest payment of 40,000 ($\$ 800,000 * .10 * 1/2$) on July 1, 2001, would be as follows;*

<i>Bond Interest Expense</i>	$40,000$	
<i>Cash</i>		$40,000$

The entry to record accrued interest payment at December 31, 2001 (year – end) would be as follows :

<i>Bond Interest Expense</i>	$40,000$	
<i>Bond Interest Payable</i>		$40,000$

Bonds issued at Discount or premium on interest date:

If the \$800,000 of bonds illustrated above were issued on January 1, 2001, at 97 (meaning 97% of par), the issuance would be recorded as follows:

<i>Cash ($\\$800,000 * .97$)</i>	$776,000$	
<i>Discount on bonds payable</i>	$24,000$	

Bonds Payable

800,000

Bond interest:

Effective Interest Method: under this method :

1) Bond interest expense is computed first by multiplying the carrying value of the bonds.

2) The bond discount or premium amortization is then determined by computing, comparing the bond interest to be paid.

<i>Bond interest expense</i>
<i>Carrying value Of at beginning of period * Effective Interest rat</i>

Subtract from it

<i>Bond interest paid</i>
<i>Face Amount stated Of bonds * interest rat</i>

Equals:

<i>Amortization Amount</i>

<i>Interest payable</i>	<i>Interest expense</i>
<i>Face amount * stated rat (contract rat) * portion of year since previous interest date = interest payable</i>	<i>Carrying value * yield rate (market rate) * portion of year since previous interest date = interest expense</i>

The Difference between Interest payable and Interest Expense Equals Amortization of discount or premium

Bonds issued at a discount:

Maturity value of bonds payable *\$ 100,000*
Present value of \$ 100,000 due in 5 years at 10% interest payable *\$61,391*
*Semiannually fv (pvf 10.5 %) (\$ 100,000 * .61,391)*

Present value of \$ 4,000 interest payable semiannually for 5 years at 10% annually R (pvf-OA 10,5%); (\$ 4,000 * 7.72173) 30,887

Proceeds from sale of bonds 92,278

Discount on bonds payable \$ 7,722

Schedule of bonds Discount Amortization				
Effective Interest Method – Semiannual Interest Payments				
5- year , 8 % Bonds sold to yield 10%				
Date	cash paid	Interest Expense	Discount Amortization	carrying amount of bonds
1/1/01				\$ 92,278
7/1/01	\$4,000	\$4,614	\$ 614	92,892
1/1/02	4,000	4,645	645	93,537
7/1/02	4,000	4,677	677	94,214
1/1/03	4,000	4,711	711	94,925
7/1/03	4,000	4,746	746	95,671
1/1/04	4,000	4,783	783	94,454
7/1/04	4,000	4,823	823	97,277
1/1/05	4,000	4,864	864	98,141
7/1/05	4,000	4,907	907	99,048
1/1/06	<u>4,000</u>	<u>4,952</u>	<u>952</u>	100,000
	\$ 40,000	\$ 47,722	\$7,722	
$\$4,000 = \$100,000 * .08 * 6/12$			$\$614 = \$4,614 - \$4,000$	
$\$4,614 = \$92,278 * .01 * 6/12$			$\$92,892 = \$92,278 + \$614$	

The entry to record the issuance of Evermaster Corporation's bonds at a discount on January 1, 2001, is:

Cash	92,278	
Discount on bonds payable	7,722	
Bonds payable		100,000

The journal entry to record the first interest payment on July 1, 2001, and amortization of the discount is:

Bond interest expense	4,614	
Discount on bonds payable		614
Cash		4,000

The journal entry to record the interest expense accrued at December 31, 2001 and amortization of the discount is:

<i>Bond interest expense</i>	<i>4,614</i>
<i>Bond interest payable</i>	<i>4,000</i>
<i>Discount on bonds payable</i>	<i>645</i>

***Bonds issued at premium:** if the market were willing to accept an effective rate of 6% on the bond issue illustrated above, they have paid \$ 108,530 or a premium of \$ 8,530, Computed as follows :*

<i>Maturity value of bonds payable</i>	<i>\$ 100,000</i>
<i>Present value of \$ 100,000 due in 5 years at 6%, interest payable semiannually (100,000*.74409)</i>	<i>74,409</i>
<i>present value of \$4,000 interest payable semiannually for 5 years at 6% annually (4,000 *8.53020)</i>	<i><u>34,121</u></i>
<i>proceeds from sale of bonds</i>	<i><u>108,530</u></i>
<i>premium on bonds payable</i>	<i>\$8,530</i>

<i>Note: \$4000 = \$ 100,000 * .08 * 6/12</i>	<i>\$744 = 4,000 – 3,256</i>
<i>\$ 3,256 = \$ 108,530 * .06 * 6/12</i>	<i>\$ 107,786 = \$108,530 - \$744</i>

The entry to record the issuance of Evermaster bonds at a premium on January 1, 2001, is:

<i>Cash</i>	<i>108,530</i>
<i>Premium on bonds payable</i>	<i>8,530</i>
<i>Bonds payable</i>	<i>100,000</i>

The journal entry to record the first interest payment on July 1, 2001 and amortization of the premium is :

<i>Bond interest expense</i>	<i>3,256</i>
<i>Premium on bonds payable</i>	<i>744</i>
<i>Cash</i>	<i>4,000</i>

Straight – Line Method: under this method the amount amortized each year is a constant amount. For example using the:

Bond discount of \$ 24000, the amount amortized to interest expense each year for 10 years is \$ 2,400 (\$ 24, 00/10), it can be recorded as follows:

Bond interest	2,400
Discount n bonds payable	2,400

Premium on bonds: if the 10 years bonds of a par value of \$ 800,000 are dated and sold on January 1, 2001, at 103, the following entry is made to record issuance:

Cash (800,000* 1.03)	824,000
Premium on bonds	24,000
Bonds	800,000

At the end of 2001 and for each year the bonds are outstanding, the entry to amortize the premium on a straight line method basis is:

Premium on bonds payable	2400
Bond interest expense	2400

Bond interest expense is increased by amortization of a discount and decreased by amortization of premium.

<i>Interest payable</i>	<i>amortization</i>
<i>Face Amount</i>	<i>Premium or discount</i>
<i>*</i>	<i>/ months in bonds term =</i>
<i>stated amount</i>	<i>= amortization per month</i>
<i>*</i>	<i>interest dated</i>
<i>portion of year since</i>	<i>*</i>
<i>previous interest date</i>	<i>months since last interest date</i>
<i>= interest payable</i>	<i>= amortization</i>

Interest expense = interest payable + amortization

-

+ Amortization of discount

- Amortization of premium

Accruing interest:

Interest expense	***	
Bond premium or discount (amortization)	***	
Cash or interest payable		***

Let's illustrate an example based on the schedule of bond discount amortization compensations, so if we report financial statements at the end of February 2001, in this case, the premium is prorated by the appropriate number of months to arrive at the proper interest expense as follows:

Interest accrual (\$4,000* 2/5)	\$ 1,085.33
Premium amortized (\$744* 2/6)	<u>(248.00)</u>
Interest expense (jan.- feb)	\$ 1,085.33

The journal entry to record this accrual is as follows:

Bond interest expense	1,085.33	
Premium on bonds payable	248.00	
Bond interest payable		1,333.33

Bond issue costs: it involves engraving and printing costs, legal and accounting fees, commissions, promotion costs, and other similar charges.

Recorded as asset:

- deferred charge*
- Amortization (straight line) over term of bonds*
- Not considered part of carrying value*

Bond retirement:

Journal entry

Bond payable (face a amount)	****	
Bond premium or discount (balance)	****	
Extraordinary gain or loss (plug)	***	
Bond issue costs (balance)	***	
Cash (amount paid)		***