

Long-Term Liabilities

Pratt, Financial Accounting 7e, Chapter 11

Liabilities and Interest Rates

In many cases a liability the effective interest rate associated with a liability will be stated in the borrowing agreement. However, sometimes no interest rate will be stated or the stated rate will be abnormally low. In these cases the effective rate must be imputed and used to record interest expense.

Example 1: On January 1, 2007, Medina Corporation borrowed \$100,000 for two years. The borrowing agreement requires Medina to repay \$100,000 plus interest at the 8% rate at the end of the two year period.

Date	Accounts	Debit	Credit
1/1/07	Cash	100,000	
	Notes Payable		100,000
12/31/07	Interest Expense	8,000	
	Interest Payable		8,000
12/31/08	Interest Expense	8,000	
	Interest Payable		8,000
1/1/09	Notes Payable	100,000	
	Interest Payable	16,000	
	Cash		116,000

Example 2: On January 1, 2007, Guadalupe Corporation borrowed money to finance a new operation. The borrowing agreement contained the following terms: No interest rate was mentioned, but Guadalupe received \$420,840 on 1/1/07 and will be required to pay back \$500,000 when the loan matures in 2 years.

The implicit interest rate for this loan is the rate that makes the present value (\$420,840) equal to the future value (\$500,000). That rate is 9%.

Date	Accounts	Debit	Credit
1/1/07	Cash	420,840	
	Discount on Notes Payable	79,160	
	Notes Payable		500,000
12/31/07	Interest Expense	37,876	
	Discount on Notes Payable		37,876
	420,840 X .09		
12/31/08	Interest Expense	41,284	
	Discount on Notes Payable		41,284
	458,716 X .09		
1/1/09	Notes Payable	500,000	
	Cash		500,000

Bonds Payable

- Bonds are structured so that interest is paid regularly (typically on a semiannual basis) to the bond holder with principal paid back at the end
- Bonds carry a stated rate of interest (sometimes called the coupon rate)
- When bonds are issued the market sets a second rate, called the effective rate which reflects the market's assessment of the unique risk of the company and other market wide factors that affect interest rates
- Bonds that issue for less than their maturity value are said to issue at a *discount*
- Bonds that issue for more than their maturity value are said to issue at a *premium*

Relationship of Stated Rate and Effective Rate	Bond Issue Price
SR < ER	Discount
SR = ER	Maturity Value (Par)
SR > ER	Premium

Example 1: Blanco Corp. issued at par \$1,000,000 of 8 year, 8% bonds on January 1, 2007. Interest was payable semiannually on June 30 and December 31.

Date	Accounts	Debit	Credit
1/1/07	Cash	1,000,000	
	Bonds Payable		1,000,000
Each Year During the Life of the Bonds			
6/30	Bond Interest Expense	40,000	
	Cash		40,000
	$1,000,000 \times .08 \times 6/12$		
12/31	Bond Interest Expense	40,000	
	Cash		40,000
At Maturity			
12/31/14	Bonds Payable	1,000,000	
	Cash		1,000,000

Example 2: Negro Corp. issued at par \$1,000,000 of 8 year, 8% bonds on January 1, 2007. Interest was payable semiannually on June 30 and December 31. The company received \$891,618 resulting in an effective interest rate of 10%.

Date	Accounts	Debit	Credit
1/1/07	Cash	891,618	
	Discount on Bonds Payable	108,382	
	Bonds Payable		1,000,000
6/30/07	Bond Interest Expense	44,581	
	Cash		40,000
	Discount on Bonds Payable		4,581
	(1) $1,000,000 \times .08 \times 6/12$		
	(2) $891,618 \times .10 \times 6/12$		
12/31	Bond Interest Expense	44,810	
	Cash		40,000
	Discount on Bonds Payable		4,810
	(1) $1,000,000 \times .08 \times 6/12$		
	(2) $896,199 \times .10 \times 6/12$		
At Maturity			
12/31/14	Bonds Payable	1,000,000	
	Cash		1,000,000

An amortization table is a useful tool to compute interest expense for each period.

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
1/1/07				891,618.00
6/30/07	40,000.00	44,580.90	4,580.90	896,198.90
12/31/07	40,000.00	44,809.95	4,809.95	901,008.85
6/30/08	40,000.00	45,050.44	5,050.44	906,059.29
12/31/08	40,000.00	45,302.96	5,302.96	911,362.25
6/30/09	40,000.00	45,568.11	5,568.11	916,930.36
12/31/09	40,000.00	45,846.52	5,846.52	922,776.88
6/30/10	40,000.00	46,138.84	6,138.84	928,915.73
12/31/10	40,000.00	46,445.79	6,445.79	935,361.51
6/30/11	40,000.00	46,768.08	6,768.08	942,129.59
12/31/11	40,000.00	47,106.48	7,106.48	949,236.07
6/30/12	40,000.00	47,461.80	7,461.80	956,697.87
12/31/12	40,000.00	47,834.89	7,834.89	964,532.76
6/30/13	40,000.00	48,226.64	8,226.64	972,759.40
12/31/13	40,000.00	48,637.97	8,637.97	981,397.37
6/30/14	40,000.00	49,069.87	9,069.87	990,467.24
12/31/14	40,000.00	49,532.76	9,532.76	1,000,000.00
	<u>640,000.00</u>	<u>748,382.00</u>	<u>108,382.00</u>	

Economic Gains and Losses from Borrowing – the current accounting for borrowing determines the effective interest rate when bonds are issued. Subsequent changes in interest rates are ignored which means in most cases the economic gains and losses from borrowing will not be recognized in the financial statements.

Leases

Operating vs. Capital Leases

- Operating – you are renting the asset
- Capital – you are buying the asset and financing it through the lease

A lease must be treated as a **capital lease** if any of the following are true:

- The lease transfers ownership of the property at the end of the lease term
- The lease contains an option to purchase the property at a bargain price
- The lease term is 75% or more of the estimated economic life of the asset
- The present value of the minimum lease payments is 90% or more of the fair market value of the leased asset at the inception of the lease

If none of the above is true the lease is treated as an **operating lease**.

Event	Operating Lease	Capital Lease
At lease inception	No entry required	Leased Asset Lease Obligation
Each period during the life of the lease	Rent Expense Cash	Interest Expense Lease Obligation Cash Depreciation Expense Accumulated Deprec.

Example

1. United Cellular Systems leased a satellite transmission device from Pinnacle Leasing Services on January 1, 2007 under the following terms:
2. The lease is noncancelable and the term is for three years.
3. Annual lease payments of \$120,000 were due at the end of each year.
4. The fair value of the device at the inception of the lease was \$288,219.60 and it has a 3 year economic life.
5. Pinnacle established the lease payment based on a 12% interest rate and this fact is known to United Cellular.
6. At the end of the lease term the device returns to Pinnacle.
7. Similar equipment owned by United Cellular is depreciated on a straight-line basis.

Lease is noncancelable

	Capital?
Title does not transfer	No
No bargain purchase option	No
Lease term 3 years > 75% of useful life (3 years)	Yes
PV of Lease payment* > 90% of FV (\$288,219.60)	Yes

$$* PV = \$120,000 \times (PVOA_{i=6\%,n=5}) = \$120,000 \times 2.40183 = \$288,219.60$$

Date	Cash Paid	Interest Expense	Principle Reduction	Lease Liability
1/1/2007				288,219.60
12/31/2007	120,000.00	34,586.35	85,413.65	202,805.95
12/31/2008	120,000.00	24,336.71	95,663.29	107,142.66
12/31/2009	120,000.00	12,857.34	107,142.66	-
	<u>360,000.00</u>	<u>71,780.40</u>	<u>288,219.60</u>	

2007			
1/1/07	Leased Satellite	288,219.60	
	Lease Liability		288,219.60
7/1/07	Lease Liability	89,413.65	
	Interest Expense	34,586.35	
	Cash		120,000.00
12/31/07	Depreciation Expense (288,219.60/3)	96,073.20	
	Accumulated Depreciation		96,073.20
2008			
12/1/08	Lease Liability	95,663.29	
	Interest Expense	24,336.71	
	Cash		120,000.00
12/31/08	Depreciation Expense	96,073.20	
	Accumulated Depreciation		96,073.20
2009			
1/1/09	Lease Liability	107,142.66	
	Interest Expense	12,857.34	
	Cash		120,000.00
12/31/09	Depreciation Expense	96,073.20	
	Accumulated Depreciation		96,073.20

If the lease had been treated as an operating lease instead of a capital lease the following entries would have been made.

2007			
1/1/07	No entry required		
12/31/07	Rent Expense	120,000.00	
	Cash		120,000.00
2008			
12/31/07	Rent Expense	120,000.00	
	Cash		120,000.00
2009			
12/31/07	Rent Expense	120,000.00	
	Cash		120,000.00

Summary of the Income Statement Impact of Capital vs. Operating Leases

Year	Operating Lease	Capital Lease		
	Rent Expense	Interest Expense	Depreciation Expense	Total Expense
2007	120,000.00	34,586.35	96,073.20	130,659.55
2008	120,000.00	24,336.71	96,073.20	120,409.91
2009	120,000.00	12,857.34	96,073.20	108,930.54
	<u>360,000.00</u>	<u>71,780.40</u>	<u>288,219.60</u>	<u>360,000.00</u>

Summary of the Balance Sheet Impact of a Capital Leases

Year	Cash	Leased Asset	Lease Liability	Equity
1/1/2007	0.00	288,219.60	288,219.60	0.00
12/31/2007	(120,000.00)	192,146.40	202,805.95	(130,659.55)
12/31/2008	(120,000.00)	96,073.20	107,142.66	(120,409.91)
12/31/2009	(120,000.00)	0.00	0.00	(108,930.54)