

# **MBA in Food & Agribusiness**

## Financial Management

# *Long Term Liabilities*

# Financial statements real example

## – liabilities



### Non-current liabilities

Long term borrowings

24 22,662 17,798

### 24. Borrowings continued

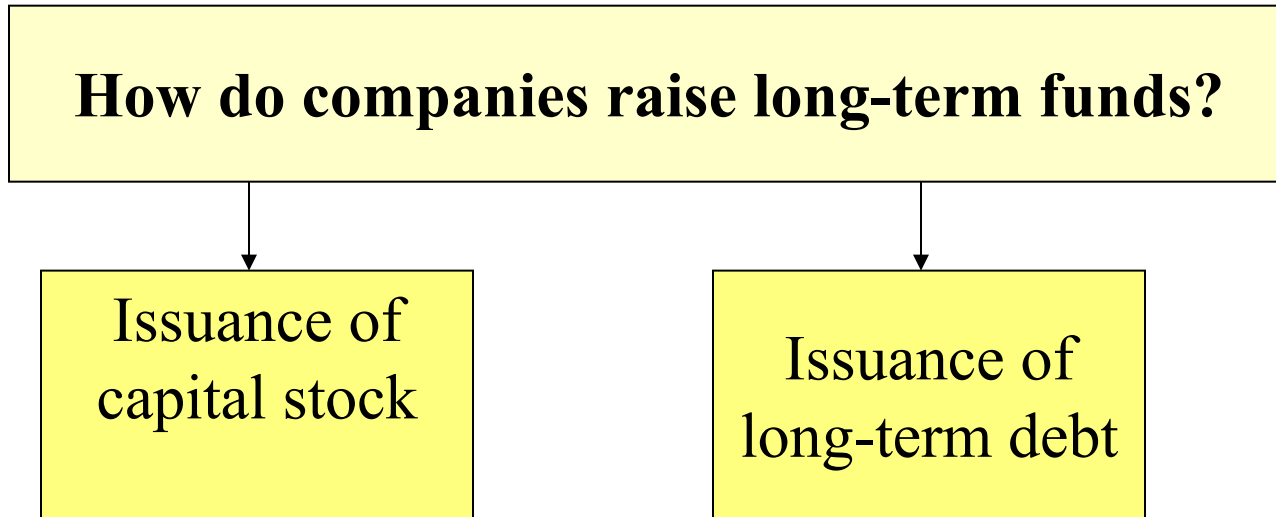
The fair value and carrying value of the Group's long term borrowings is as follows:

	Fair value	
	2008 €m	2007 €m
<b>Financial liabilities measured at amortised cost:</b>		
Bank loans	2,669	2,086
Redeemable preference shares	985	818
Finance lease obligations	60	59
Bonds:		
Euro FRN due July 2008	–	849
Euro FRN due February 2009	–	102
Euro FRN due February 2010	237	204
US dollar FRN due June 2011	227	224
Euro FRN due January 2012	775	683
Euro FRN due January 2012	232	205
US dollar FRN due February 2012	236	254
Euro FRN due September 2013	644	582
Euro FRN due June 2014	930	–
5.125% euro 500m bond due April 2015	397	350
5% euro 750m bond due June 2018	578	515
Other liabilities <sup>(1)</sup>	2,984	156

# Agenda

- Management issues related to Issuing long term debt
- The nature of bonds
- Accounting for the issuance of bonds
- Amortization of Bond discount and Bond Premium
- Retirement of bonds
- Other Bonds payable issues

# Deciding to issue Long term debt



# Types of Long-Term Debt

Bonds payable

Notes payable

Mortgages payable

Long-term leases

Pensions

Other postretirement benefits

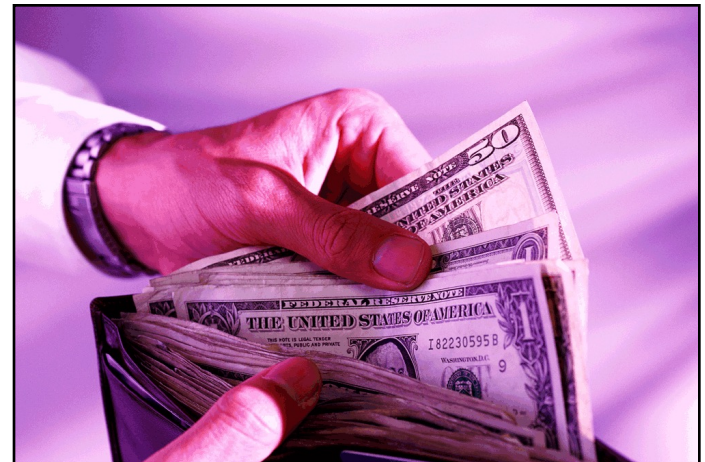
Deferred income taxes



# Bonds (IFRS9)

A security, usually long term, representing money that a corporation borrows **from the investing public**

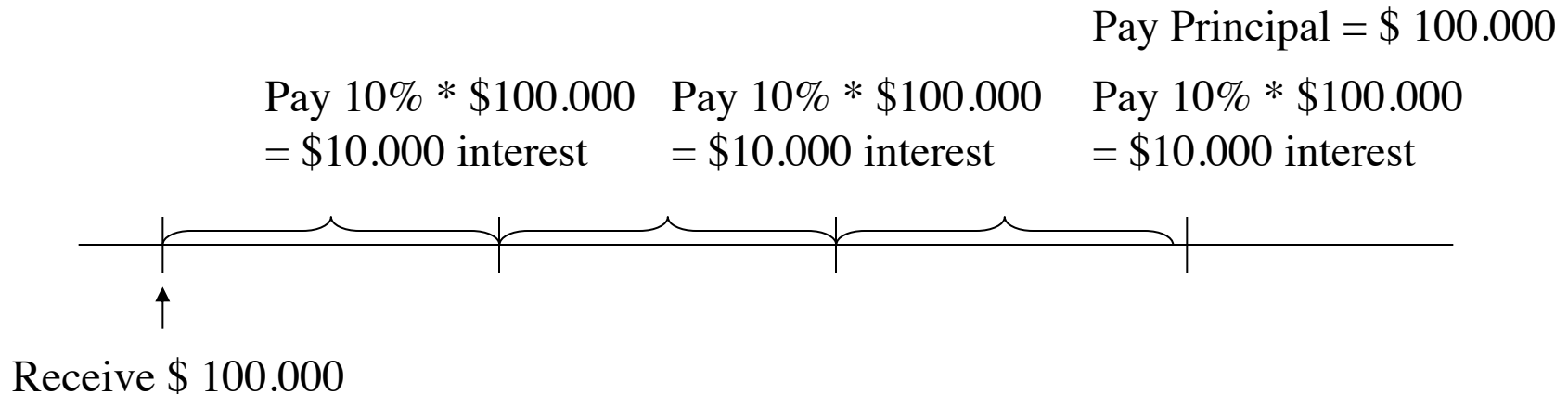
- ✓ *Principal* must be repaid at a specified time
- ✓ Periodic payments of *interest* at a specified rate at specified times



# Bonds

A security, usually long term, representing money that a corporation borrows **from the investing public**

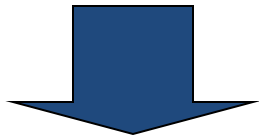
Example \$100.000, 10% 3 year bond





# What Is a Bond Issue?

A bond issue is the total value of bonds issued at one time



For example, a \$1,000,000 bond issue could consist of one thousand, \$1,000 bonds

## Prices of Bonds

Stated in terms of a percentage of **face value**

- Bonds selling **at 100**  
Sell at **face or par value**
- Bonds selling **above 100**  
Sell at a **premium**
- Bonds selling **below 100**  
Sell at a **discount**

Bond rate  
higher than  
Market rate

Bond rate  
below the  
Market rate

# Selling Price of Bond Illustrated

A bond issue is quoted at  $103 \frac{1}{2}$

What is the selling price of a \$1,000 bond?

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A bond issue quoted at  $103 \frac{1}{2}$  means that the bond sells at 103.5 percent of its face value

$$\begin{aligned}\text{Bond Selling Price} &= \text{Face Value} \times \text{Quoted Percentage of Face Value} \\ &= \$1,000 \times 1.035 \\ &= \$1,035\end{aligned}$$

This bond sells at a premium and would cost the buyer \$1,035

# Interest Rates

## Face Interest Rate

Fixed rate of interest paid to bondholders based on the face value of the bonds = *Interest rate the company quotes when they sell the bond*

## Market Interest Rate

Rate of interest paid in the market on bonds of similar risk, also called the *effective interest rate*



# Discounts and Premiums

## Discount

- Equals the excess of the face value over the issue price.
- **The issue price will be less than the face value when the market interest rate is higher than the face interest rate.**

## Premium

- Equals the excess of the issue price over the face value.
- **The issue price will be more than the face value when the market interest rate is lower than the face interest rate.**

# Bonds Issued at Face Value

Katakis Corporation issues \$100,000 of **9 percent**, 5-year bonds on January 1, 20x4 and sells them on the same date for their face value. The bond indenture states that interest is to be paid on January 1 and July 1 of each year.

Jan. 1	Cash		100,000	
		Bonds Payable		100,000
		Sold \$100,000 of 9%, 5-year bonds at face value		

$$\begin{aligned}\text{Interest} &= \text{Principal} \times \text{Rate} \times \text{Time} \\ &= \$100,000 \times .09 \times 6/12 \text{ year} \\ &= \$4,500\end{aligned}$$

# Bonds Issued at Face Value

$$\begin{aligned}\text{Interest} &= \text{Principal} \times \text{Rate} \times \text{Time} \\ &= \$100,000 \times .09 \times 6/12 \text{ year} \\ &= \$4,500\end{aligned}$$

Record a semiannual interest payment:

Bond Interest Expense	4,500	
Cash (Interest Payable)		4,500
Paid (or accrued) semiannual interest to bondholders of 9%, 5-year bonds		

# Bonds Issued at a Discount

Katakis Corporation issues \$100,000 of **9 percent**, 5-year bonds at 96.149 on January 1, 20x4, when the market rate is **10 percent**.

Record the issuance of the bonds at a discount:

20x4			
Jan. 1	Cash	96,149	
	Unamortized Bond Discount	3,851	
	Bonds Payable		100,000
	Sold \$100,000 of 9%, 5-year bonds at 96.149		

# Bonds Issued at a Discount

Face amount of bonds	\$100,000
Less purchase price of bonds (\$100,000 x .96149)	<u>96,149</u>
Unamortized bond discount	<u><u>\$ 3,851</u></u>

Carrying Value of Bonds = Face Value – Unamortized Bond Discount



# Bonds Issued at a Premium

Katakis Corporation issues \$100,000 of **9 percent**, 5-year bonds for \$104,100 on January 1, 20x4, when the market rate is **8 percent**.

Record the issuance of the bonds at a premium:

20x4			
Jan. 1	Cash	104,100	
	Unamortized Bond Premium		4,100
	Bonds Payable		100,000
	Sold \$100,000 of 9%, 5-year bonds at 104.1 (\$100,000 x 1.041)		

# Bonds Issued at a Premium

<b>Purchase price of bonds</b>	<b>\$104,100</b>
<b>Less face amount of bonds</b>	<b>100,000</b>
<b>Unamortized bond premium</b>	<b><u>\$ 4,100</u></b>

Carrying Value of Bonds = Face Value + Unamortized Bond Premium

# Bond Discounts or Premiums

Amount by which the total interest cost is higher or lower than the total interest payments

Amortized over the life of the bonds

Use straight-line or effective interest method



# Calculating Total Interest Cost - discount

Cash to be paid to bondholders	
Face value at maturity	\$100,000
Interest payments ( $\$100,000 \times .09 \times 5$ years)	45,000
Total cash paid to bondholders	<u>\$145,000</u>
Less cash received from bondholders	96,149
Total interest cost	<u><u>\$ 48,851</u></u>

Katakis Corporation issues \$100,000 of **9 %**, 5-year bonds at 96.149 when the market rate is **10 percent**. The bonds sold for \$96,149, resulting in an unamortized bond discount of \$3,851.

# Calculating Total Interest Cost - discount

## Or, alternately

Interest payments ( $\$100,000 \times .09 \times 5$ years)	\$45,000
Bond discount	<u>3,851</u>
Total interest cost	<u><u>\$ 48,851</u></u>

The bond discount increases the interest paid on the bonds from the stated interest rate to the effective interest rate.

# Accounting for Total Interest Cost - discount

**Effective Interest Rate = Stated Rate + Discount**

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Amortization of the bond discount

- ✓ Must be allocated over the remaining life of the bonds as an increase in the interest expense each period
- ✓ Interest expense for each period will exceed the actual payment of interest by the amount of the bond discount amortized over the period

# Effective Interest Method

Applies a constant interest rate to the carrying value of bonds at the beginning of the interest period

- ✓ Rate equals the market, or effective, rate at the time the bonds were issued.
- ✓ Amount amortized is the difference between interest computed and actual interest paid to bondholders



# Interest and Amortization of a Bond Discount: Effective Interest Method

**TABLE 3. Interest and Amortization of a Bond Discount: Effective Interest Method**

Semiannual Interest Period	A Carrying Value at Beginning of Period	B Semiannual Interest Expense at 10% to Be Recorded* (5% × A)	C Semiannual Interest Payment to Bondholders (4½% × \$100,000)	D Amortization of Bond Discount (B – C)	E Unamortized Bond Discount at End of Period (E – D)	F Carrying Value at End of Period (A + D)
0					\$3,851	\$ 96,149
1	\$96,149	\$4,807	\$4,500	\$307	3,544	96,456
2	96,456	4,823	4,500	323	3,221	96,779
3	96,779	4,839	4,500	339	2,882	97,118
4	97,118	4,856	4,500	356	2,526	97,474
5	97,474	4,874	4,500	374	2,152	97,848
6	97,848	4,892	4,500	392	1,760	98,240
7	98,240	4,912	4,500	412	1,348	98,652
8	98,652	4,933	4,500	433	915	99,085
9	99,085	4,954	4,500	454	461	99,539
10	99,539	4,961†	4,500	461	—	100,000

\*Rounded to the nearest dollar.

†Last period's interest expense equals \$4,961 (\$4,500 + \$461); it does not equal \$4,977 (\$99,539 × .05) because of the cumulative effect of rounding.



# Bond Amortization – effective Interest Method

Column A  
Carrying value =  
Face value –  
Unamortized bond  
discount

Column B – Use market interest rate  
( $\$96,149 \times .10 \times 6/12 = \$4,807$ )

Column C – Use face interest rate on bond  
( $\$100,00 \times .09 \times 6/12 = \$4,500$ )

	A	B	C	D	E	F
Semiannual Interest Period	Carrying Value at Beginning of Period	Semiannual Interest Expense at 10% to be Recorded (5% x A)	Semiannual Interest to be Paid to Bondholders (4.5% x \$100,000)	Amortization of Bond Discount (B – C)	Unamortized Bond Discount at End of Period (E – D)	Carrying Value at End of Period (A + D)
0					\$3,851	\$96,149
1	\$96,149	\$4,807	\$4,500			

# Bond Amortization – effective Interest Method

Discount amortized =  
 Effective interest expense –  
 Actual interest payment to  
 bondholders  
 (\$4,807 – \$4,500 = \$307)

Carrying value at beg. of  
 period + Amort. during the period  
 (\$96,149 + \$307 = \$96,456)

	A	B	C	D	E	F
Semiannual Interest Period	Carrying Value at Beginning of Period	Semiannual Interest Expense at 10% to be Recorded (5% x A)	Semiannual Interest to be Paid to Bondholders (4.5% x \$100,000)	Amortization of Bond Discount (B – C)	Unamortized Bond Discount at End of Period (E – D)	Carrying Value at End of Period (A + D)
0					\$3,851	\$96,149
1	\$96,149	\$4,807	\$4,500	\$307	3,544	96,456

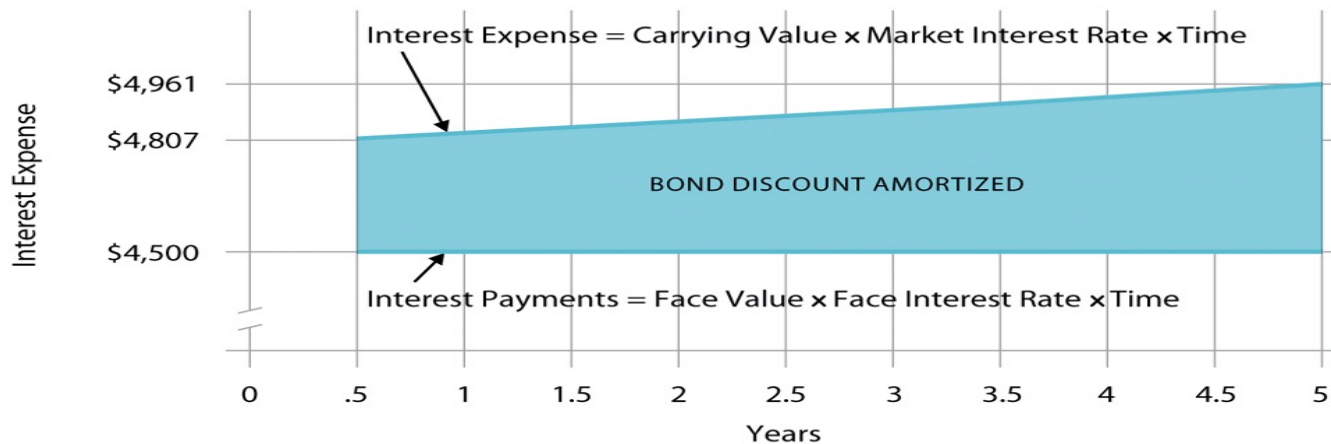
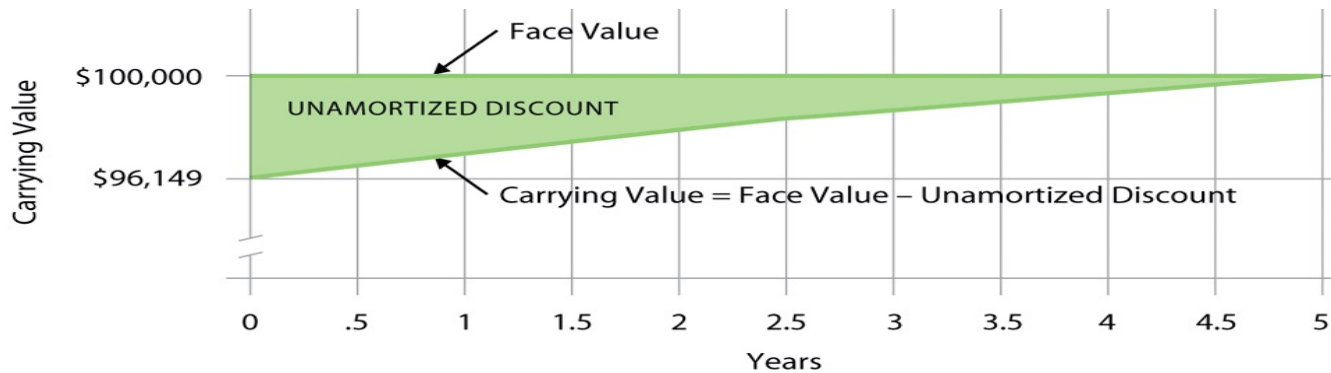
Bond discount at beg. of period –  
 Current pd amort. (\$3,851 – \$307 = \$3,544)

# Bond Amortization – effective Interest Method

**Record first semiannual interest payment and  
amortization of bond discount:**

20x4			
July 1	Bond Interest Expense	4,807	
	Unamortized Bond Discount		307
	Cash (or Interest Payable)		4,500
	Paid (or accrued) semiannual interest to bondholders and amortized discount on 9%, 5-year bonds		

# Carrying Value and Interest Expense – Bonds Issued at a Discount



# Total Interest Cost - premium

Cash to be paid to bondholders	
Face value at maturity	\$100,000
Interest payments ( $\$100,000 \times .09 \times 5$ years)	45,000
Total cash paid to bondholders	<u>\$145,000</u>
Less cash received from bondholders	104,100
Total interest cost	<u><u>\$ 40,900</u></u>

Katakis Corporation issues \$100,000 of **9 percent**, 5-year bonds at 104.1 on January 1, 20x4, when the market rate is **8 percent**. The bonds sold for \$104,100 resulting in an unamortized bond premium of \$4,100.

# Total Interest Cost- Premium

## Or, alternately

Interest payments ( $\$100,000 \times .09 \times 5$ years)	\$45,000
Less bond premium	<u>4,100</u>
Total interest cost	<u><u>\$ 40,900</u></u>

The bond premium decreases the interest paid on the bonds from the stated interest rate to the effective interest rate.

# Interest and Amortization of a Bond Premium: Effective Interest Method

**TABLE 4. Interest and Amortization of a Bond Premium: Effective Interest Method**

Semiannual Interest Period	A Carrying Value at Beginning of Period	B Semiannual Interest Expense at 8% to Be Recorded* (4% × A)	C Semiannual Interest Payment to Bondholders (4½% × \$100,000)	D Amortization of Bond Premium (C – B)	E Unamortized Bond Premium at End of Period (E – D)	F Carrying Value at End of Period (A – D)
0					\$4,100	\$104,100
1	\$104,100	\$4,164	\$4,500	\$336	3,764	103,764
2	103,764	4,151	4,500	349	3,415	103,415
3	103,415	4,137	4,500	363	3,052	103,052
4	103,052	4,122	4,500	378	2,674	102,674
5	102,674	4,107	4,500	393	2,281	102,281
6	102,281	4,091	4,500	409	1,872	101,872
7	101,872	4,075	4,500	425	1,447	101,447
8	101,447	4,058	4,500	442	1,005	101,005
9	101,005	4,040	4,500	460	545	100,545
10	100,545	3,955†	4,500	545	—	100,000

\*Rounded to the nearest dollar.

†Last period's interest expense equals \$3,955 (\$4,500 – \$545); it does not equal \$4,022 (\$100,545 × .04) because of the cumulative effect of rounding.

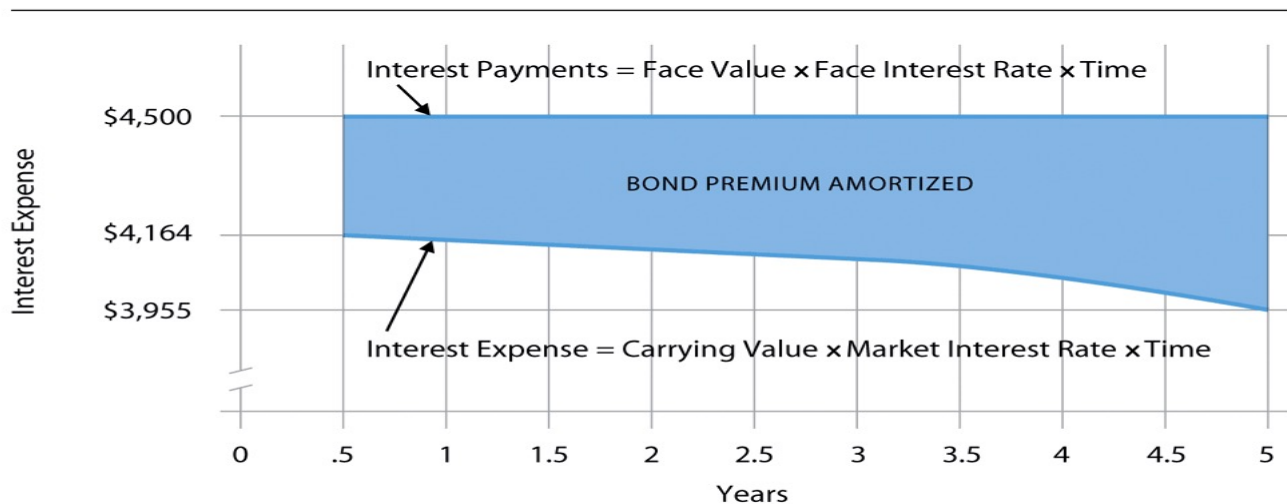
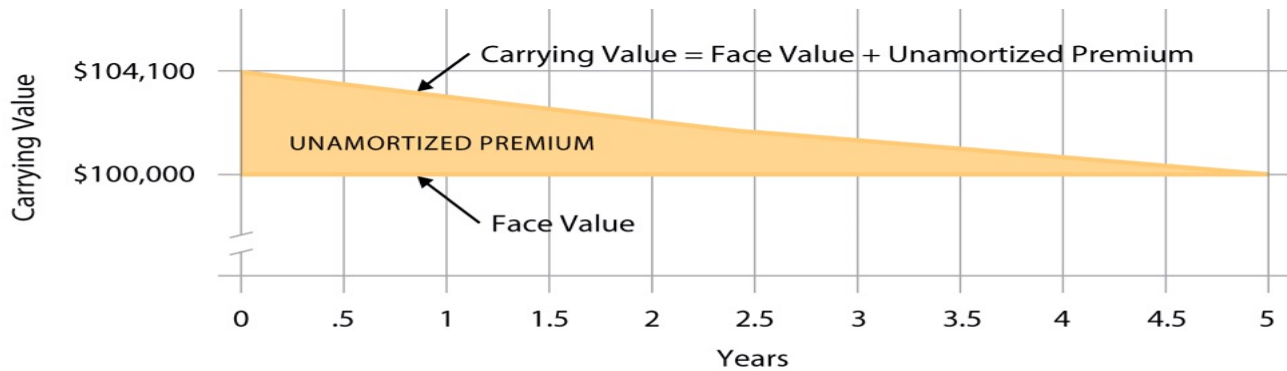
# Bond Amortization – Effective Interest Method

**Record first semiannual interest payment and amortization of bond premium:**

20x4				
July 1	Bond Interest Expense		4,164	
	Unamortized Bond Premium		336	
	Cash (or Interest Payable)			4,500
	Paid (or accrued) semiannual interest to bondholders and amortized premium on 9%, 5-year bonds			



# Carrying Value and Interest Expense – Bonds Issued at a Premium



# Straight-Line Method

**Equal amortization of the bond discount for each interest period**

Face value = \$100,000  
Face interest rate = 9%  
Life of bond = 5 years

Interest payments = Semiannual  
Bond discount = \$3,851

**Step 1: Determine the total number of interest payments**

Total Interest Payments = Interest Payments per Year  $\times$  Life of Bonds  
 $= 2 \times 5 = 10$  periods

# Straight-Line Method

**Equal amortization of the bond discount for each interest period**

**Step 2: Determine the amount of bond discount to amortize each interest period**

$$\begin{aligned}\text{Amortization of Bond Discount per Period} &= \frac{\text{Bond Discount}}{\text{Total Interest Payments}} \\ &= \frac{\$3,851}{10 \text{ periods}} = \$385 \text{ (rounded)}\end{aligned}$$

# Straight-Line Method

## **Step 3: Determine the cash interest payment amount**

Cash Interest Payment = Face Value  $\times$  Face Interest Rate  $\times$  Time

$$= \$100,000 \times .09 \times \frac{6}{12} = \$4,500$$

## **Step 4: Determine the total interest expense per interest period**

Interest Expense per Period = Interest Payment + Amortization of Bond Discount

$$= \$4,500 + \$385 = \$4,885$$

# Straight-Line Method

## Record first semiannual interest payment and amortization of bond discount

20x4

July 1	Bond Interest Expense	4,885	
	Unamortized Bond Discount		385
	Cash (or Interest Payable)		4,500
	Paid (or accrued) semiannual interest to bondholders and amortized discount on 9%, 5-year bonds		

# Calling Bonds

The issuer has the right to buy back and retire bonds at a specified call price

## **Why call bonds before their maturity date?**

- ✓ If bond interest rates drop, the company can call the bonds and reissue debt at a lower interest rate.
- ✓ Company has earned enough to pay off the debt.
- ✓ The reason for having the debt no longer exists.
- ✓ The company wants to restructure its debt to equity ratio.

# Callable Bonds Illustrated

Katakis Corporation can call or retire at 105 the \$100,000 of bonds it issued at a premium (104.1). It decides to do so on July 1, 20x7. The entry for the required interest payment and amortization of the premium has already been made.

## Record the retirement of the bonds:

20x7			
July 1	Bonds Payable	100,000	
	Unamortized Bond Premium	1,447	
	Loss on Retirement of Bonds	3,553	
	Cash		105,000
	Retired 9% bonds at 105		

The loss occurs because the call price of the bonds is greater than the carrying value

# Year-End Accrual of Bond Interest Expense

**TABLE 4. Interest and Amortization of a Bond Premium: Effective Interest Method**

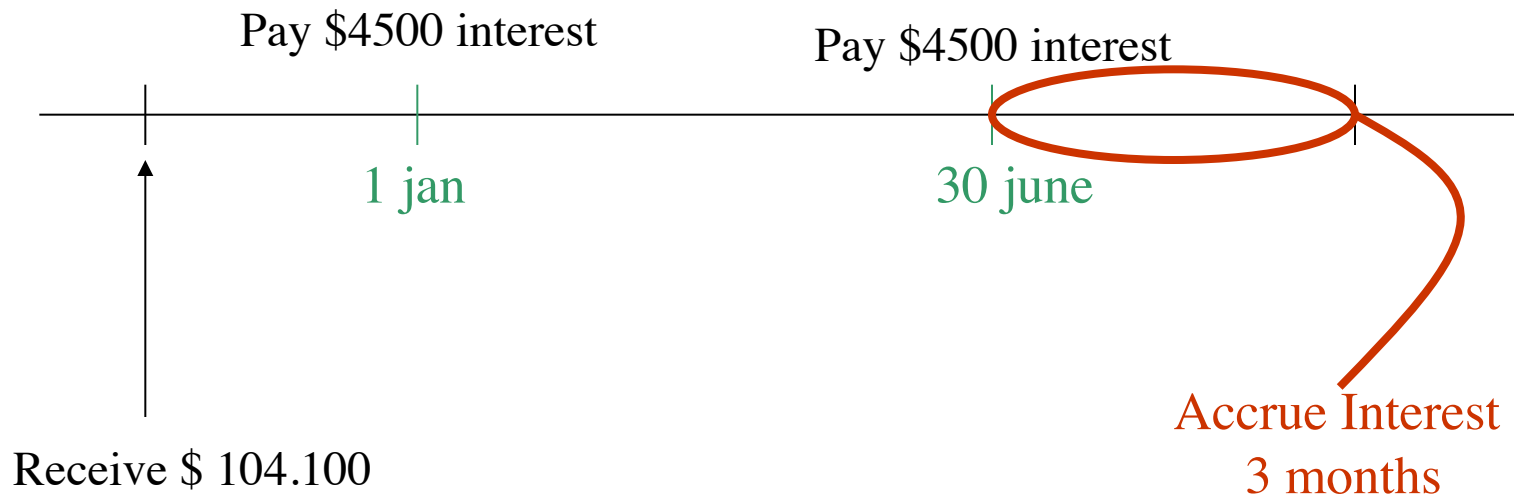
Semiannual Interest Period	A Carrying Value at Beginning of Period	B Semiannual Interest Expense at 8% to Be Recorded* (4% × A)	C Semiannual Interest Payment to Bondholders (4½% × \$100,000)	D Amortization of Bond Premium (C – B)	E Unamortized Bond Premium at End of Period (E – D)	F Carrying Value at End of Period (A – D)
0					\$4,100	\$104,100
1	\$104,100	\$4,164	\$4,500	\$336	3,764	103,764
2	103,764	4,151	4,500	349	3,415	103,415
3	103,415	4,137	4,500	363	3,052	103,052
4	103,052	4,122	4,500	378	2,674	102,674
5	102,674	4,107	4,500	393	2,281	102,281
6	102,281	4,091	4,500	409	1,872	101,872
7	101,872	4,075	4,500	425	1,447	101,447
8	101,447	4,058	4,500	442	1,005	101,005
9	101,005	4,040	4,500	460	545	100,545
10	100,545	3,955†	4,500	545	—	100,000

\*Rounded to the nearest dollar.

†Last period's interest expense equals \$3,955 (\$4,500 – \$545); it does not equal \$4,022 (\$100,545 × .04) because of the cumulative effect of rounding.



# Year-End Accrual of Bond Interest Expense



# Year-End Accrual of Bond Interest Expense

Katakis Corporation issues \$100,000 of 9 percent, 5-year bonds at 104.1 on January 1, 20x4. The company's fiscal year ends September 31, 20x4

Interest and amortization were recorded on July 1, 20x4. Three months of interest has accrued since then.

## Record the year-end accrual of bond interest expense:

20x4

Sept. 30	Bond Interest Expense	2,075.50	
	Unamortized Bond Premium	174.50	
	Interest Payable		2,250.00

To record accrual of interest on 9% bonds payable for 3 months and amortization of  $\frac{1}{2}$  of premium for the second interest payment period

# Year-End Accrual of Bond Interest Expense

## Record second semiannual interest payment and amortization of bond premium:

20x5

Jan. 1	Bond Interest Expense	2,075.50	
	Interest Payable	2,250.00	
	Unamortized Bond Premium	174.50	
	Cash		4,500.00

Paid semiannual interest, including interest previously accrued, and amortized the premium for the period since the end of the fiscal year

# Evaluating Long-Term Debt

Measures how much risk a company is undertaking with its long-term debt

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$\text{McDonald's Debt to Equity Ratio} = \frac{\$3,520.5 + \$10,115.5}{\$14,201.5} = 1.0$$

# Interest Coverage Ratio

Measures the degree of protection a company has from default on interest payments

$$\text{Interest Coverage Ratio} = \frac{\text{Income Before Income Taxes} + \text{Interest Expense}}{\text{Interest Expense}}$$

# Leases (Old standard: IAS 17 vs New Standard: IFRS 16)

Companies may obtain an operating asset in three ways:

- ✓ Borrow the money and buy the asset
- ✓ Rent the asset on a short-term lease (operating lease; payments are treated as rent expense)
- ✓ **Obtain the asset on a long-term lease (may be structured as a capital lease or an operating lease)**

# Capital Leases

(Old) accounting standard (IAS17) require that a lease be treated as a capital lease if the lease:

- ✓ Cannot be cancelled
- ✓ Has about the same duration as the useful life of the asset
- ✓ Stipulates that the lessee has the option to buy the asset at a nominal price at the end of the lease

## **Accounting for a Capital Lease**

The lessee should:

- 1) Record the asset
- 2) Record depreciation on the asset
- 3) Record a liability equal to the present value of the total lease payments during the lease term

# Capital Lease Illustrated

Glenellen Manufacturing Company enters into a long-term lease for a machine. The lease terms call for an annual payment of \$4,000 for six years, which approximates the useful life of the machine. At the end of the lease period, the title to the machine passes to Glenellen. The value of the machine is \$ 14,740.

Capital Lease Equipment	14,740	
<b>Capital Lease Obligations</b>		<b>14,740</b>
To record capital lease on machinery		



# Capital Lease Illustrated

Each year, Glenellen must record depreciation on the leased asset. Assume the company uses the straight-line method and no salvage value.

Depreciation Expense, Capital Lease Equipment	2,457	
Accum. Depreciation, Capital Lease Equip.		2,457
To record depr. expense on capital lease machinery		

# Capital Lease Illustrated

Year	A Lease Payment	B Interest of Unpaid Obligation (D x 16%)	C Reduction of Lease Obligation (A - B)	D Balance of Lease Obligation (D - C)
Beginning				14,740
1	4,000	2,358	1,642	13,098
2	4,000	2,096	1,904	11,194
3	4,000	1,791	2,209	8,985
4	4,000	1,438	2,562	6,423
5	4,000	1,028	2,972	3,450
6	4,000	550	3,450	-
	<b>24,000</b>	<b>9,260</b>	<b>14,740</b>	

# Capital Lease Illustrated

Glenellen must also record interest expense for the lease. The interest expense for each year is computed by multiplying the interest rate of 16% (which is the effective interest rate) by the amount of remaining lease obligation.

Interest Expense	2,358	
Capital Lease Obligations	1,642	
Cash		4,000
Made payment on capital lease		
\$14,740 x 16% = \$2,358		