Accounting for Bonds and Long-Term Notes

- Bond Premiums and Discounts
  - Effective interest method
  - Bond issuance
  - Interest expense

- Types of Debt Instruments
  - Zero-Coupon Bonds
  - Convertible Bonds
  - Detachable Warrants
  - Exchanges for assets or services
  - Installment notes

- Debt Extinguishment
  - Retirement of Debt prior to Maturity
  - Troubled Debt Restructuring

- Derivatives - Determination of Hedges
  - Financial Futures
  - Forward Contracts
  - Options
  - Swaps

Bond Premiums and Discounts

- Coupon Rate
  - Determines the amount of the interest **payment.**
  - Example: if a $1,000,000 face value bond has an annual coupon rate of 6%, the annual interest payment is $60,000.

- Historical Effective Interest Rate
  - Determines the amount of the interest **expense**.
  - Example: if a bond has a book (carrying) value of $950,000 and an annual historical effective rate of 7%, the annual interest expense is $66,500.

- Current Market Yield
  - Determines the current market (fair) value of the bond.
  - Example: A bond has a face value of $1,000,000 and an annual coupon rate of 6% and a 5-year maturity. If the current market yield of the bond is 7%, the value of the bond will be $958,998 (present value of all future payments discounted at 7%).

Journal Entries:

Assume that Firm A and Firm B issue bonds on 1/1/00 with the first interest payment due on 12/31/00.

	Firm A	Firm B
Face Value	$1,000,000	$1,000,000
Maturity	10 years	10 years
Coupon Rate	8%	8%
Effective Rate	7%	9%

The bonds have identical cash flow streams: $80,000 per year for 10 years and $1,000,000 at the end of 10 years.

PV@7%=($80,000 x 7.0236) + ($1,000,000 x 0.5083) = $1,070,188

PV@9%=($80,000 x 6.4177) + ($1,000,000 x 0.4224) = $935,816

Issuance of the Bonds:

Firm A Entry:

Dr. Cash	$1,070,188	
Cr. Bonds Payable		$1,000,000
Cr. Bond Premium		70,188

Firm B Entry:

Dr. Cash	$935,816	
Dr. Bond Discount	64,184	
Cr. Bonds Payable		$1,000,000

The entries for the interest payments are as follows:

12/31/00	Firm A		Firm B	
	Dr. Interest Expense	74,913	Dr. Interest Expense	84,223
	Dr. Bond Premium	5,087	Cr. Bond Discount	4,223
	Cr. Cash	80,000	Cr. Cash	80,000

$1,070,188 x 7% = $74,913; $935,816 x 9% = $84,223

The book value of each bond at 12/31/00 is equal to:

Bond Payable	$1,000,000	Bond Payable	$1,000,000
Bond Premium	65,101	Bond Discount	(59,961)
Carrying Value	$1,065,101	Carrying Value	$940,039

12/31/01	Firm A		Firm B	
	Dr. Interest Expense	74,557	Dr. Interest Expense	84,604
	Dr. Bond Premium	5,443	Cr. Bond Discount	4,604
	Cr. Cash	80,000	Cr. Cash	80,000

$1,065,101 x 7% = $74,557; $940,039 x 9% = $84,604

The book value of each bond at 12/31/00 is equal to:

Bond Payable	$1,000,000	Bond Payable	$1,000,000
Bond Premium	59,658	Bond Discount	(55,357)
Carrying Value	$1,065,101	Carrying Value	$944,643

How would the entries change if the bonds were issued on 7/1/00?

12/31/00	Firm A		Firm B	
	Dr. Interest Expense	37,457	Dr. Interest Expense	42,112
	Dr. Bond Premium	2,543	Cr. Bond Discount	2,112
	Cr. Interest payable	40,000	Cr. Cash	40,000

6/30/01	Firm A		Firm B	
	Dr. Interest Expense	37,456	Dr. Interest Expense	42,111
	Dr. Bond Premium	2,544	Cr. Bond Discount	2,111
	Dr. Interest payable	40,000	Dr. Interest Payable	40,000
	Cr. Cash	80,000	Cr. Cash	80,000

12/31/01	Firm A		Firm B	
	Dr. Interest Expense	37,278	Dr. Interest Expense	42,302
	Dr. Bond Premium	2,722	Cr. Bond Discount	2,302
	Cr. Interest payable	40,000	Cr. Cash	40,000

6/30/02	Firm A		Firm B	
	Dr. Interest Expense	37,279	Dr. Interest Expense	42,302
	Dr. Bond Premium	2,721	Cr. Bond Discount	2,302
	Dr. Interest payable	40,000	Dr. Interest Payable	40,000
	Cr. Cash	80,000	Cr. Cash	80,000

Test of Deep Understanding

- If a bond is issued at a premium why does interest expense decrease over time?

- If a bond is issued at a discount why does interest expense increase over time?

- Explain what a bond premium represents.

- Explain what a bond discount represents.

Fair Value of Debt

Return to the example where the bonds were issued on 1/1/00. Assume that interest rates decline by 50 basis points at the end of 2001. What is the fair value of each bond?

Firm A: Discount eight payments of $80,000 and one payment of $1,000,000 to be received after 8 years using a 6.5% rate.

Firm B: Discount eight payments of $80,000 and one payment of $1,000,000 to be received after 8 years using a 8.5% rate.

PV@6.5%=($80,000 x 6.089) + ($1,000,000 x 0.604) = $1,091,120
PV@8.5%=($80,000 x 5.639) + ($1,000,000 x 0.521) = $972,120

This gives us the following:

	Firm A	Firm B
Fair Value	$1,091,120	$972,120
Carrying Value	1,065,101	944,643

Does this represent an unrealized gain or an unrealized loss? Explain.

Early Extinguishment of Debt

What entry would each firm record if they paid fair value to retire the debt on 12/31/01 (after making the interest payment)?

12/31/01	Firm A		Firm B	
	Dr. Bond Premium	65,101	Dr. Bond Payable	1,000,000
	Dr. Bond Payable	1,000,000	Cr. Bond Discount	55,357
	Cr. Cash	1,091,120	Cr. Cash	972,120
	Dr. Extraordinary Loss	26,019	Dr. Extraordinary Loss	27,477

Remember that the difference between the Book Value of the bonds retired and the amount paid to retire the bonds is defined as an extraordinary gain or loss.

Example: Unisys Corporation
Consolidated Statement of Income
Year Ended December 31 (Millions, except per share data)

	1999	1998
Revenue	**$**7,544.6	**$**7,243.9
Costs and expenses		
Cost of revenue	4,859.9	4,775.9
Selling, general and administrative expenses	1,384.6	1,360.7
Research and development expenses	339.4	308.3
	6,583.9	6,444.9
Operating income (loss)	960.7	799.0
Interest expense	127.8	171.7
Other income (expense), net	(62.6)	(33.1)
Income (loss) before income taxes	770.3	594.2
Estimated income taxes	247.5	217.8
Income (loss) before **extraordinary** item	522.8	376.4
Extraordinary item	(12.1)	
Net income (loss)	510.7	376.4
Dividends on preferred shares	36.7	106.5
Earnings (loss) on common shares	**$** 474.0	**$** 269.9

During 1999, the company repurchased **$**115.8 million principal amount of its 11 3/4% senior notes due 2004 and **$**25.5 million principal amount of its 12% senior notes due 2003 at a cost of **$**157.4 million. As a result, the company recorded an **extraordinary** charge of **$**12.1 million, net of **$**6.5 million of income tax benefits, or **$**.04 per diluted common share.

Troubled Debt Restructuring

Sometimes firms who are facing financial difficulty are able to negotiate revised terms with their lender to reduce their financial burden.

Example: On 1/1/00, GHI had an 8% annual coupon (payable annually on 12/31) note that was issued at its face value of $1,000,000 and a 5-year remaining life. GHI is current on the loan (has paid all accrued interest). GHI is in financial distress and renegotiates the contract. Under the new contract GHI agrees to make annual payments of $215,250 at the end of each of the remaining 5 years. All other interest and principal payments are forgiven.

- Why would the lender agree to such a contract?
- Should GHI record a reduction in its debt obligation?
- If we fix the present value of the obligation, what is the new implicit rate on the loan?

Present Value factors for n = 5

$1				Ordinary Annuity			
2%	2.5%	3%	3.5%	2%	2.5%	3%	3.5%
0.9057	0.8839	0.8626	0.8420	4.7135	4.6458	4.5797	4.5151

General Procedure

- Set the current book value of the loan as the present value
- Use the current book value and the new payment stream to calculate a new implicit rate on the loan.
- The implicit rate is used as the effective rate for calculating interest.

For the preceding example, record the appropriate entries for 1/1/00, 12/31/00 and 12/31/01

Date	Account	Dr	Cr

Assume the same facts as above, except that the new annual payment is $155,250.

· Why can't I use the same procedure?

Record the appropriate entries for 1/1/00, 12/31/00 and 12/31/01.

Date	Account	Dr	Cr

A Few Comments: Derivatives

Derivative contracts are financial instruments whose value is "derived" from the value of some underlying security. Examples include options, swaps, forward contracts, etc.

SFAS #133 sets out the following general rules for accounting for derivatives.

- All derivatives are listed on the balance sheet at fair value.
- If the derivatives do not qualify as hedges, the changes in fair value are reflected in income.
- If the derivative is a hedge, the treatment of the change in fair value depends upon the type of hedge.
  - Fair Value Hedge - Changes in the value of the derivative and the value of the item being hedged are both reflected in income.
  - Cash Flow Hedge - Changes in the value of the derivative are deferred and included in "Other Comprehensive Income."
  - Foreign Currency Hedge - Accounting for changes in the value of the derivative depend upon the nature of the foreign currency contract being hedged.

For the Next Class Session

- Examine the long-term debt footnote for your company. What types of long-term debt do they list?
- Provide the following numbers for collection:
  - Carrying value of long-term debt (you can get this from the balance sheet). Do not include other non-current obligations, except for capital leases.
  - Book value of total assets (also from the balance sheet).
  - Fair value of long-term debt (this should be included in a footnote disclosure).

Suggested Problems:
P14-4, P14-6 (issuer entries only)
P14-14, P14-18