Financial Accounting

John J. Wild

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McGraw-Hill/Irwin

Chapter 10

Reporting and Analyzing Long-Term Liabilities

Conceptual Learning Objectives

C1: Explain the types and payment patterns of notes.

C2: Appendix 10A – Explain and compute the present value of an amount(s) to be paid at a future date(s).

C3: Appendix 10C – Describe interest accrual when bond payment periods differ from accounting periods.

C4: Appendix 10D – Describe the accounting for leases and pensions (see text for details).

Analytical Learning Objectives

A1: Compare bond financing with stock financing.

A2: Assess debt features and their implications.

A3: Compute the debt-to-equity ratio and explain its use.

Procedural Learning Objectives

P1: Prepare entries to record bond issuance and interest expense.

P2: Compute and record amortization of bond discount.

P3: Compute and record amortization of bond premium.

P4: Record the retirement of bonds.

P5: Prepare entries to account for notes.

A1

Advantages of Bonds

Bonds do not affect stockholder control.

Interest on bonds is tax deductible.

Bonds can increase return on equity.

A1

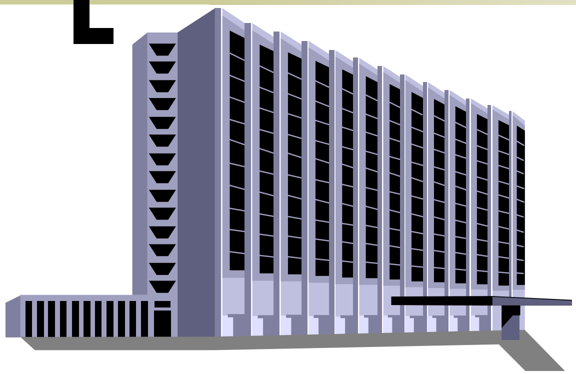
Disadvantages of Bonds

Bonds require payment of both periodic interest and par value at maturity.

Bonds can decrease return on equity when the company pays more in interest than it earns on the borrowed funds.

A1

Bond Issuing Procedures



A company sells the bonds to. . .

. . .an investment firm called an underwriter. The underwriter sells the bonds to. . .

. . . . investors

A trustee monitors the bond issue.

Basics of Bonds

A1

Corporation

Bond Interest Payments

Investors

Bond Interest Payments

Bond Issue Date

Interest payment =

Bond par value × Stated interest rate

P1

Issuing Bonds at Par

King Co. issues the following bonds on January 1, 2011
Par value = $1,000,000
Stated interest rate = 10%
Interest dates = 6/30 and 12/31
Bond date = Jan. 1, 2011
Maturity date = Dec. 31, 2030 (20 years)

			DR	CR
Jan. 1	Cash		1,000,000	
		Bonds Payable		1,000,000
		Issued bonds at par		

P1

Interest Expense on Bonds at Par

The entry on June 30, 2011, to record the first semiannual interest payment is . . .

		DR	CR
June 30	Bond Interest Expense	50,000	
	Cash		50,000
	Paid semiannual interest		

$1,000,000 × 10% × ½ year = $50,000

This entry is made every six months until the bonds mature.

P1

Issuing Bonds at Par

On Dec. 31, 2030, the bonds mature, King Co. makes the following entry . . .

		DR	CR
Dec. 31	Bonds Payable	1,000,000	
	Cash		1,000,000
	Paid bond principal at maturity		

The debt has now been extinguished.

P1

Bond Discount or Premium

Contract rate is:	Bond sells:
Above market rate	At a premium
Equal to market rate	At par value
Below market rate	At a discount

P2

Issuing Bonds at a Discount

Prepare the entry for Jan. 1, 2011, to record the following bond issue by Rose Co.

Par value = $1,000,000

Issue price = 92.6405% of par value

Stated interest rate = 10%

Market interest rate = 12%

Bond will sell at a discount.

Interest dates = 6/30 and 12/31

Bond date = Jan. 1, 2011

Maturity date = Dec. 31, 2015 (5 years)

P2

Issuing Bonds at a Discount

Par Value		Cash Proceeds		Discount
$1,000,000	-	$ 926,405	=	$ 73,595

$1,000,000 × 92.6405%

Amortizing the discount increases interest expense over the outstanding life of the bond.

P2

Issuing Bonds at a Discount

On Jan. 1, 2011, Rose Co. would record the bond issue as follows.

		DR	CR
Jan. 1	Cash	926,405	
	Discount on Bonds Payable	73,595	
	Bonds Payable		1,000,000
	Sold bonds at a discount on issue date		

Contra-Liability Account

P2

Issuing Bonds at a Discount

Partial Balance Sheet as of Jan. 1, 2011		
Long-Term Liabilities:		
Bonds Payable	$ 1,000,000	
Less: Discount on Bonds Payable	73,595	$ 926,405

Maturity Value

Carrying Value

Using the straight-line method, the discount amortization will be $7,360 every six months.

$73,595 ÷ 10 periods = $7,360*

*(rounded)

P2

Issuing Bonds at a Discount

Make the following entry every six months to record the cash interest payment and the amortization of the discount.

		DR	CR
June 30	Bond Interest Expense	57,360	
	Discount on Bonds Payable		7,360
	Cash		50,000
	Paid semiannual interest and amortized discount		

$73,595 ÷ 10 periods = $7,360 (rounded)

$1,000,000 × 10% × ½ = $50,000

P2

Straight-Line Amortization of Bond Discount

Straight-Line Amortization Table

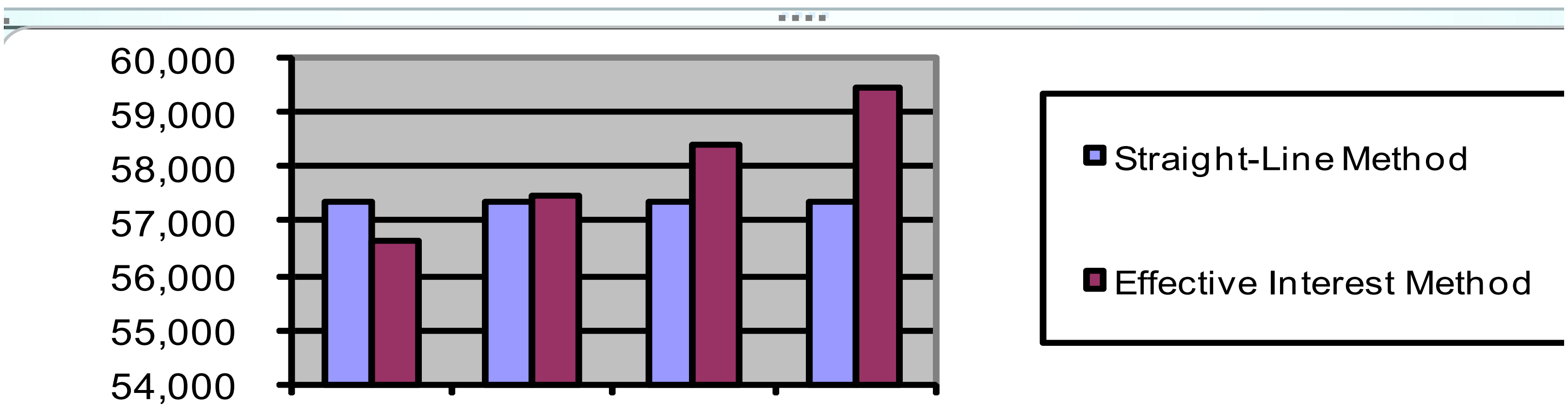
Date	Interest Payment	Interest Expense	Discount Amortization*	Unamortized Discount	Carrying Value
1/1/2011				$ 73,595	$ 926,405
6/30/2011	$ 50,000	$ 57,360	$ 7,360	66,235	933,765
12/31/2011	50,000	57,360	7,360	58,875	941,125
6/30/2012	50,000	57,360	7,360	51,515	948,485
12/31/2012	50,000	57,360	7,360	44,155	955,845
6/30/2013	50,000	57,360	7,360	36,795	963,205
12/31/2013	50,000	57,360	7,360	29,435	970,565
6/30/2014	50,000	57,360	7,360	22,075	977,925
12/31/2014	50,000	57,360	7,360	14,715	985,285
6/30/2015	50,000	57,360	7,360	7,355	992,645
12/31/2015	50,000	57,355	7,355	0	1,000,000
	$ 500,000	$ 573,595	$ 73,595		

* Rounded.

P2

Straight-Line and Effective Interest Methods

Both methods report the same amount of interest expense over the life of the bond.



P3

Issuing Bonds at a Premium

Prepare the entry for Jan. 1, 2011, to record the following bond issue by Rose Co.

Par value = $1,000,000

Issue price = 108.1145% of par value

Stated interest rate = 10%

Market interest rate = 8%

Bond will sell at a premium.

Interest dates = 6/30 and 12/31

Bond date = Jan. 1, 2011

Maturity date = Dec. 31, 2015 (5 years)

P3

Issuing Bonds at a Premium

Cash Proceeds		Par Value		Premium
$1,081,145	-	$ 1,000,000	=	$ 81,145

$1,000,000 × 108.1145%

Amortizing the premium decreases interest expense over the life of the bond.

P3

Issuing Bonds at a Premium

On Jan. 1, 2011, Rose Co. would record the bond issue as follows.

		DR	CR
Jan. 1	Cash	1,081,145	
	Premium on Bonds Payable		81,145
	Bonds Payable		1,000,000
	Issued bonds at a premium on issue date		

Adjunct-Liability (or accretion) Account

P3

Issuing Bonds at a Premium

Partial Balance Sheet as of Jan. 1, 2011

Long-term Liabilities:	**DR**	**CR**
Bonds Payable	$1,000,000	
Add: Premium on Bonds Payable	81,145	$ 1,081,145

Using the straight-line method, the premium amortization will be $8,115 every six months.

$81,145 ÷ 10 periods = $8,115 (rounded)

P3

Issuing Bonds at a Premium

This entry is made every six months to record the cash interest payment and the amortization of the premium.

Bond Interest Expense	41,885	
Premium on Bonds Payable	8,115	
Cash		50,000
Paid semiannual interest and amortized premium		

$81,145 ÷ 10 periods = $8,115 (rounded)

$1,000,000 × 10% × ½ = $50,000

P4

Bond Retirement

		DR	CR
Dec. 31	Bonds Payable	1,000,000	
	Cash		1,000,000
	Retirement of bonds at maturity		

- Before Maturity
  - **Carrying value > Retirement price = Gain**
  - **Carrying value < Retirement price = Loss**

P3

Straight-Line Amortization of Bond Premium

Straight-Line Amortization Table

Date	Interest Payment	Interest Expense	Premium Amortization*	Unamortized Premium	Carrying Value
1/1/2011				$ 81,145	$ 1,081,145
6/30/2011	$ 50,000	$ 41,885	$ 8,115	73,030	1,073,030
12/31/2011	50,000	41,885	8,115	64,915	1,064,915
6/30/2012	50,000	41,885	8,115	56,800	1,056,800
12/31/2012	50,000	41,885	8,115	48,685	1,048,685
6/30/2013	50,000	41,885	8,115	40,570	1,040,570
12/31/2013	50,000	41,885	8,115	32,455	1,032,455
6/30/2014	50,000	41,885	8,115	24,340	1,024,340
12/31/2014	50,000	41,885	8,115	16,225	1,016,225
6/30/2015	50,000	41,885	8,115	8,110	1,008,110
12/31/2015	50,000	41,890	8,110	0	1,000,000
	$ 500,000	$ 418,855	$ 81,145		

* Rounded.

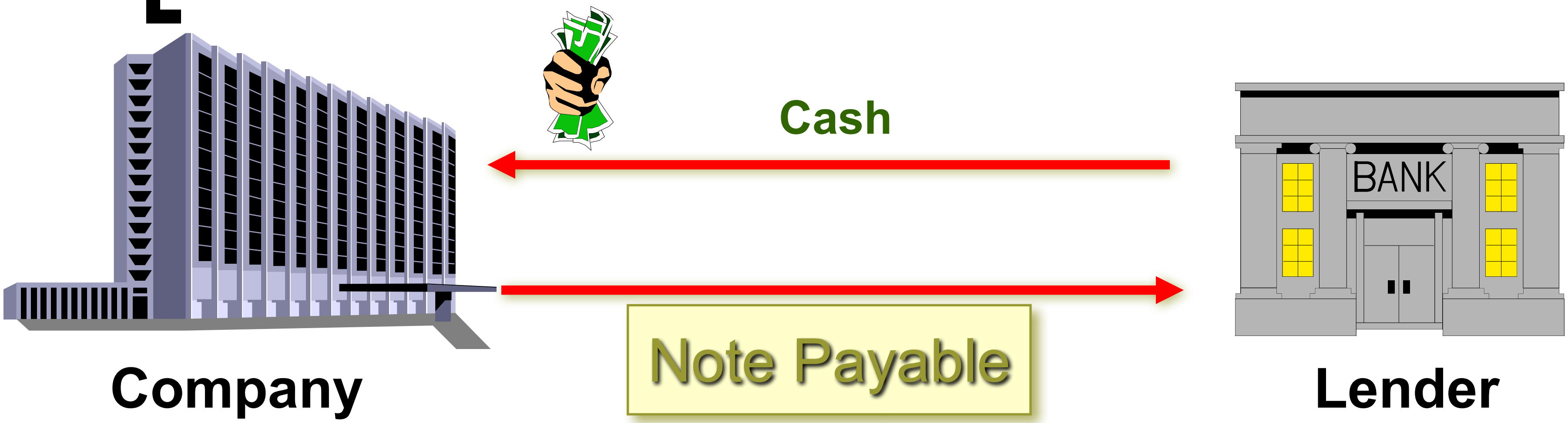
P4

Bond Retirement

- The carrying value of the bond at maturity should equal its par value.
- Sometimes bonds are retired prior to their maturity.
- Two common ways to retire bonds are through the exercise of a callable option or through purchasing them on the open market.
- Callable bonds present several accounting issues including calculating gains and losses.

C1

Long-Term Notes Payable

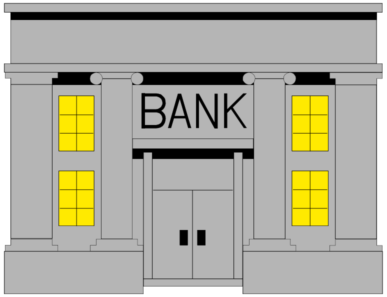


When is the repayment of the principal and interest going to be made?

C1

Long-Term Notes Payable

Single Payment of Principal plus Interest



Company

Lender

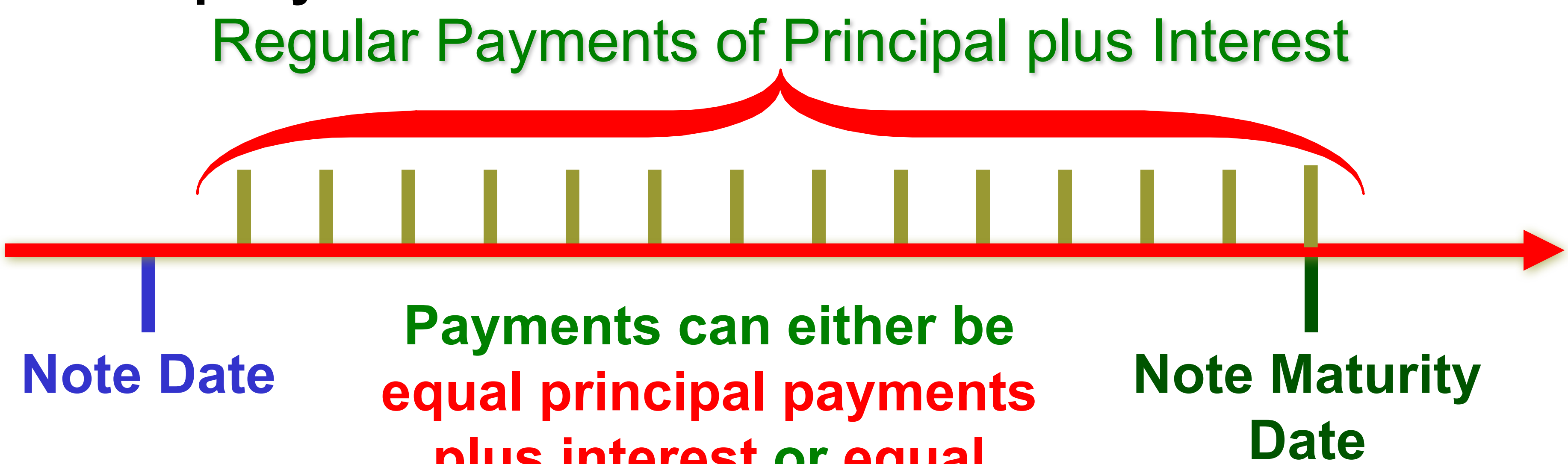
Single Payment of Principal plus Interest

Note Date

Note Maturity Date

C1

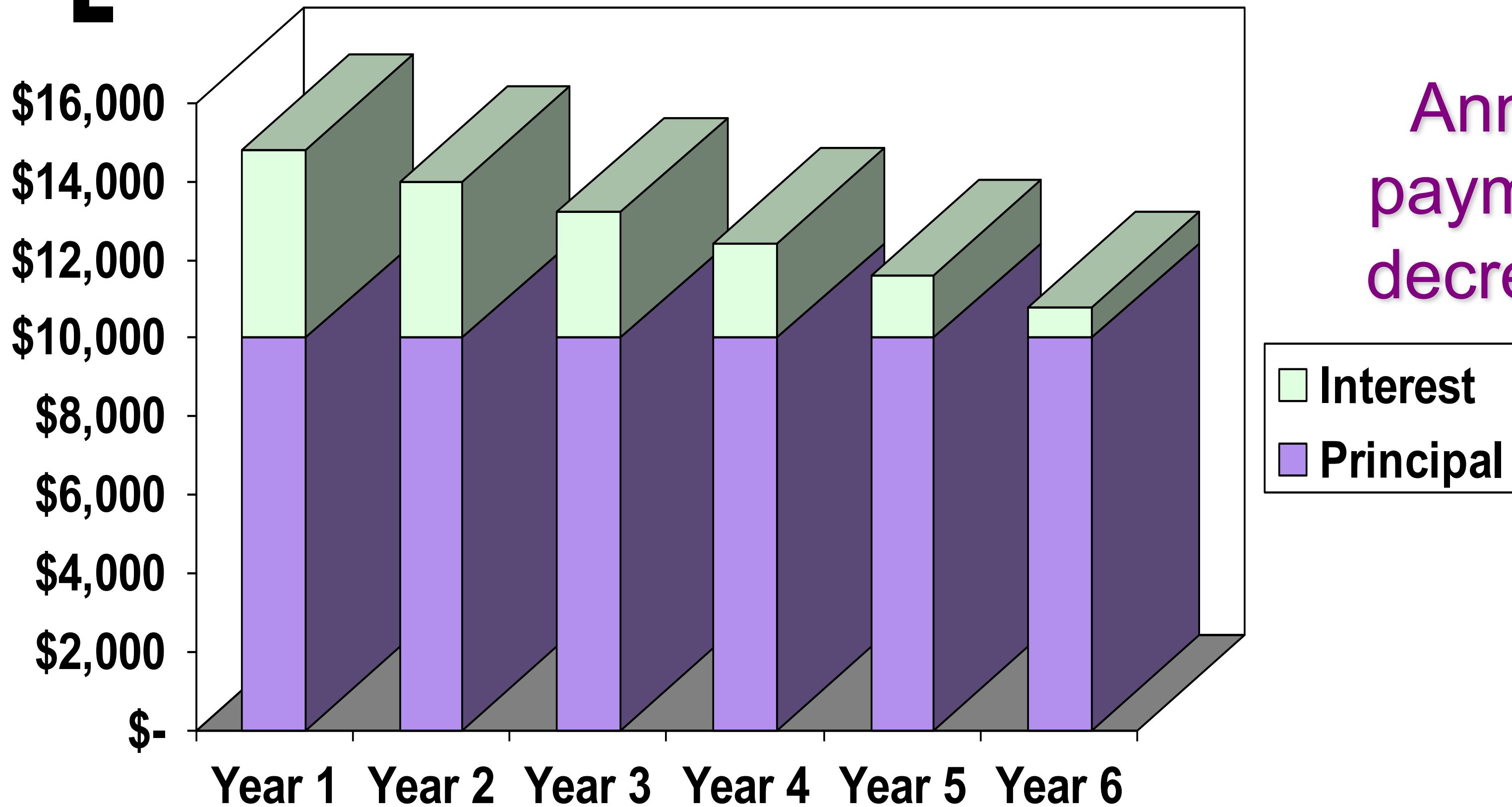
Long-Term Notes Payable



Payments can either be equal principal payments plus interest or equal payments.

C1, P5

Installment Notes with Equal Principal Payments

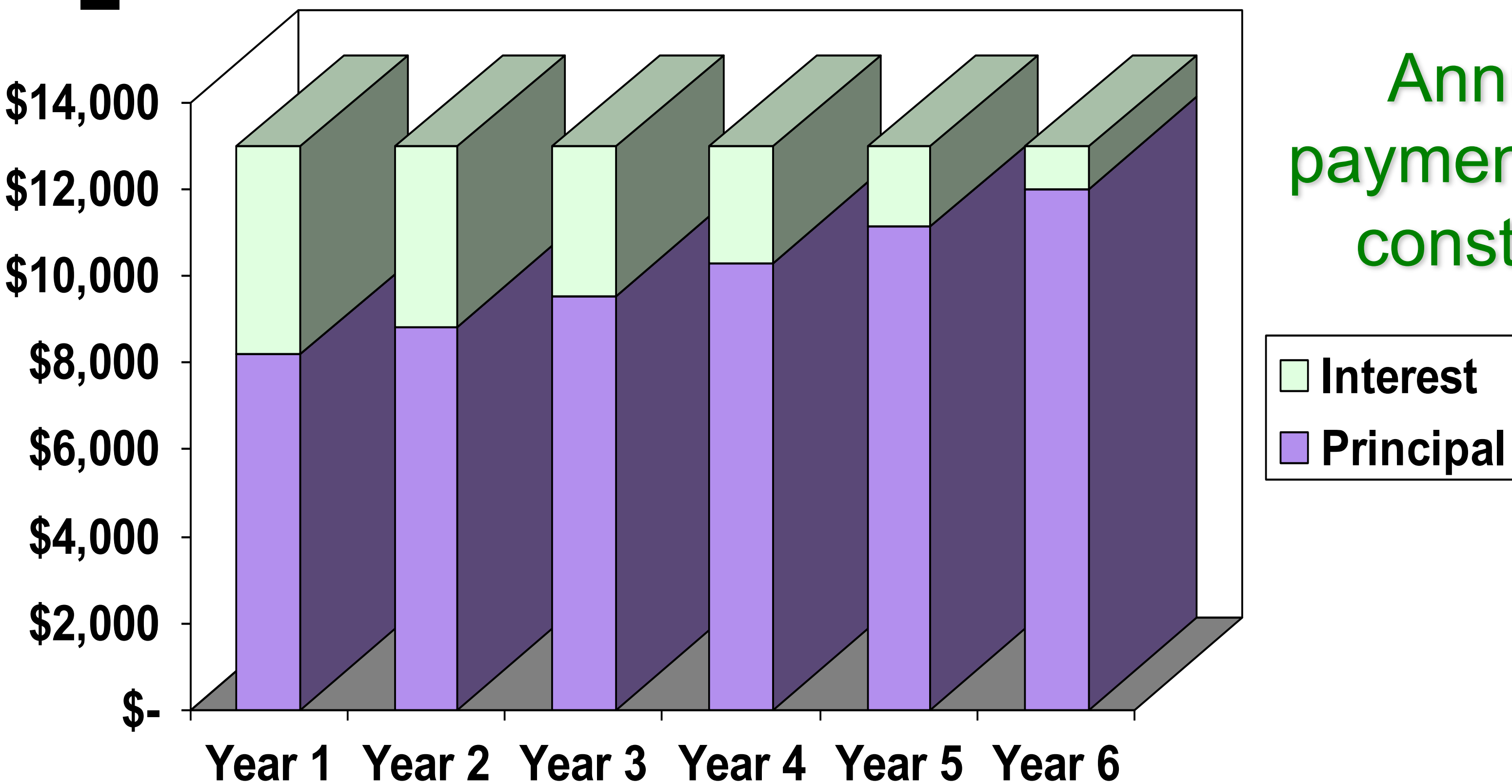


Annual payments decrease.

The principal payments are $10,000 each year. Interest expense decreases each year.

C1

Installment Notes with Equal Payments



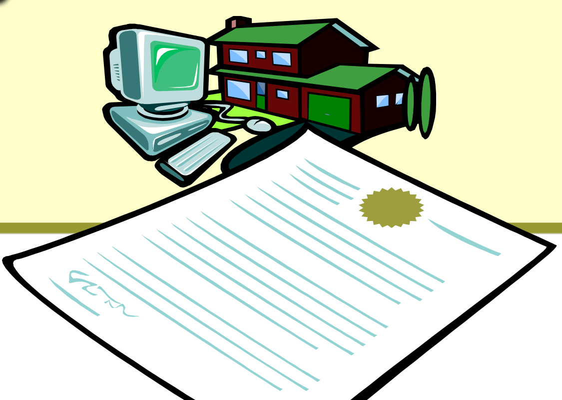
Annual payments are constant.

The principal payments increase each year.
Interest expense decreases each year.

P5

Mortgage Notes and Bonds

- A legal agreement that helps protect the lender if the borrower fails to make the required payments.
- Gives the lender the right to be paid out of the cash proceeds from the sale of the borrower's assets specifically identified in the mortgage contract.



A2

Types of Bonds

Secured and Unsecured

Convertible and Callable

Term and Serial

Registered and Bearer

A3

Debt-to-Equity Ratio

$$\text{Debt-to-equity ratio} = \frac{\text{Total liabilities}}{\text{Total equity}}$$

This ratio helps investors determine the risk of investing in a company by dividing its total liabilities by total equity.

C2

Present Value of a Discount Bond

Calculate the issue price of Rose Inc.'s bonds.

Par value = $1,000,000

Issue price = ?

Stated interest rate = 10%

Market interest rate = 12%

Interest dates = 6/30 and 12/31

Bond date = Jan. 1, 2011

Maturity date = Dec. 31, 2015 (5 years)

C2

Present Value of a Discount Bond

Cash Flow	Table	Table Value	Amount	Present Value
Par value of the bond	PV of $1	0.5584	$ 1,000,000	$ 558,400
Interest (annuity)	PV of an Annuity of $1	7.3601	50,000	368,005
Price of bond				$ 926,405

1. Semiannual rate = 6% (Market rate 12% ÷ 2)
2. Semiannual periods = 10 (Bond life 5 years × 2)

$1,000,000 × 10% × ½ = $50,000

C3

Issuing Bonds between Interest Dates

Apr. 1, 2011
Bond Issue Date

Jan. 1, 2011
Bond Date

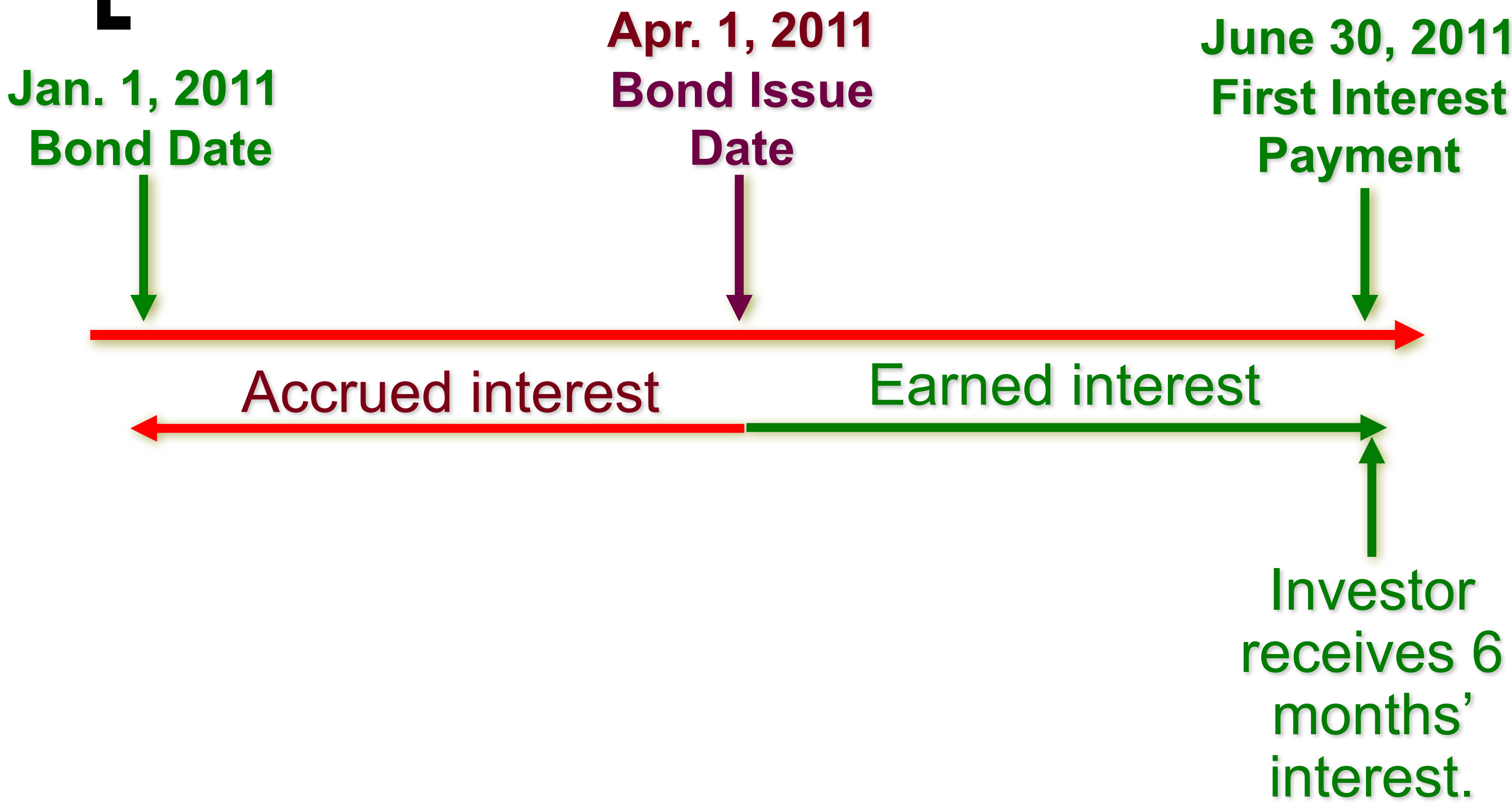
June 30, 2011
First Interest Payment

Accrued interest

Investor pays bond purchase price + accrued interest.

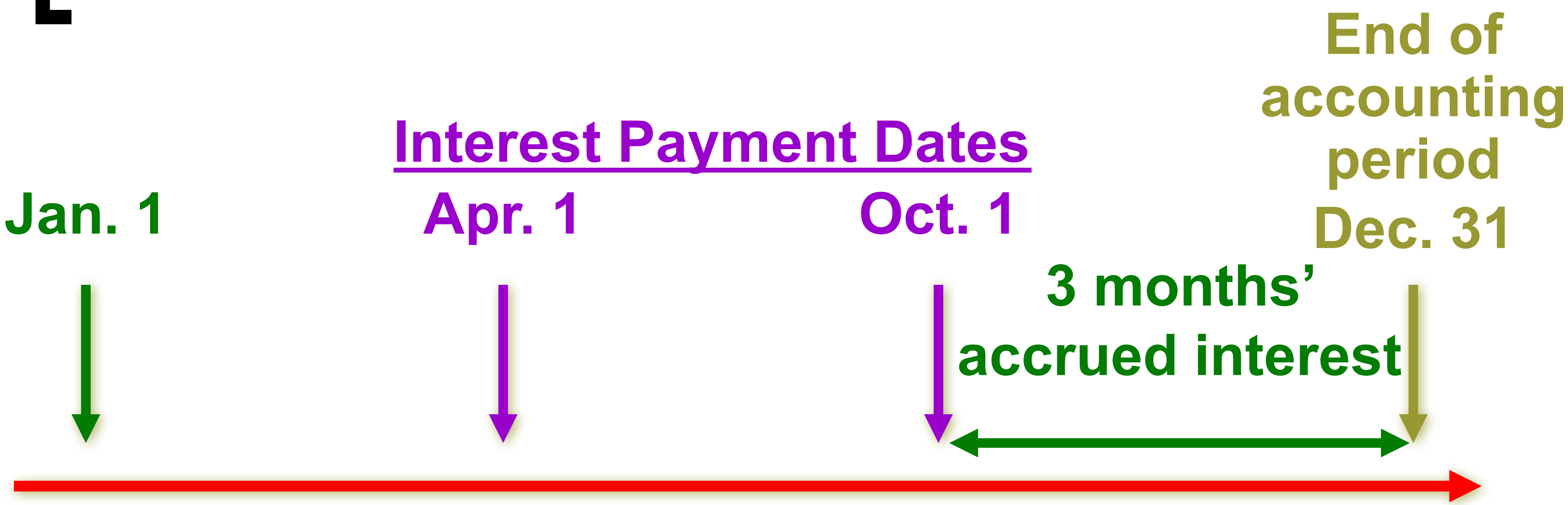
C3

Issuing Bonds Between Interest Dates



C3

Accruing Bond Interest Expense



At year-end, an adjusting entry is necessary to recognize bond interest expense accrued since the most recent interest payment.

C3

Issuing Bonds Between Interest Dates

Prepare the entry to record the following bond issue by King Co. on Apr. 1, 2011.

Par value = $1,000,000

Stated interest rate = 10%

Market interest rate = 10%

Interest dates = 6/30 and 12/31

Bond date = Jan. 1, 2011

Maturity date = Dec. 31, 2015 (5 years)

Issue price of bonds	$ 1,000,000
Accrued interest	
$1,000,000 × 10% × 3/12 =	25,000
Total cash received	$ 1,025,000

C3

Issuing Bonds Between Interest Dates

At the date of issue the following entry is made:

		DR	CR
Apr. 1	Cash	1,025,000	
	Interest Payable		25,000
	Bonds Payable		1,000,000
	Issued bonds at par plus accrued interest		

The first interest payment on June 30, 2011 is:

		DR	CR
June 30	Interest Payable	25,000	
	Bond Interest Expense	25,000	
	Cash		50,000
	Paid semiannual interest		

End of Chapter 10