CHAPTER 2

ANSWERS

2-1 Preferred stocks are similar to bonds because the preferred dividends that a company pays are constant like the interest it pays on its outstanding bonds. Preferred stock is similar to common stock because the firm cannot be forced into bankruptcy if it fails to pay a preferred dividend. In addition, like common stock, preferred stock has no maturity.

2-2 A bond represents a loan contract between the firm that issued the bond and the investors that purchased the bond. The bond contract, which is called an indenture, specifies the amount of interest that must be paid each year to ensure that the bond issuer is not in default of the contract. On the other hand, there is no legal contract associated with a stock issue. Equity issuers are not legally bound to pay dividends; the decision as to whether dividends are paid to stockholders is based on the firm's financial position, plans for future growth, and so forth. Factors that affect the decision to pay dividends are discussed in detail later in the text.

2-3 The dividend that is paid to preferred stockholders generally is stated as a percentage of the preferred stock's par value. The preferred stocks' par value also represents the per share dollar amount that will be paid to preferred stockholders in the event the firm is liquidated (assuming that all debt obligations are satisfied first). On the other hand, the par value of common stock has little significance to common stockholders. The par value of common stock represents the minimum liability of a common stockholder in the event the firm goes bankrupt. Generally, common stock is sold for greater than its par value, which means that common stockholders have no additional financial liability if the firm goes bankrupt.

2-4 a. 0 Bonds and term loans are equivalent debt instruments and should have about the same interest rate.

b. + Debentures are riskier than mortgage bonds and, hence, would require a higher interest rate.

c. – This would allow bondholders to reap the benefits of a stock price increase, so they would accept a lower interest rate.

d. (1) + Because the debentures will be subordinated to its bank debt, the debentures will have a higher interest rate.

(2) – Because the debentures will be subordinated to the bank debt, the bank debt will have a lower interest rate.

(3) 0 The net effect of (1) and (2) is indeterminant.

e. + Because income bonds are riskier, they would carry a higher rate of interest.

f. (1) – The more of the property that is mortgaged the weaker the claim of the debenture holders. Thus, going from $75 million to $50 million of first mortgage debt will *strengthen* the debentures and lower their interest rate.

(2) – The property will have a smaller mortgage; hence, each individual first mortgage bond will be better secured, less risky, and have a lower interest rate.

(3) 0 Debentures will cost less, as will mortgage bonds, but the *average cost* probably will be about the same—at least, it is not obvious that the cost will be higher or lower. This occurs because the rate on the mortgage bonds is lower than that on debentures, but the weights are shifting toward the riskier, higher rate debentures.

g. + A call provision increases the risk to the bondholders, so a higher rate would be required.

h. – The sinking fund calls for repayment over the life of the bond. This lowers somewhat the risk of the issue, hence leads to lower rates.

i. + This would raise the interest rate because a lower rating implies greater risk.

2-5

		Safety Rank
a.	Income bond	8
b.	Subordinated debenture—noncallable	6
c.	First mortgage bond—no sinking fund	3
d.	Common stock	9
e.	U.S. Treasury bond	1
f.	First mortgage bond—with sinking fund	2
g.	Subordinated debentures—callable	7
h.	Amortized term loan	4
i.	Term loan	5

2-6 From the corporation's viewpoint, one important factor in establishing a sinking fund is that its own bonds generally have a higher yield than do government bonds; hence, the company saves more interest by retiring its own bonds than it could earn by buying government bonds. This factor causes firms to favor the second procedure. Investors also would prefer the annual retirement procedure if they thought that interest rates were more likely to rise than to fall, but they would prefer the government bond purchases program if they thought rates were likely to fall. In addition, bondholders recognize that, under the government bond purchase scheme, each bondholder would be entitled to a given amount of cash from the liquidation of the sinking fund if the firm should go into default, whereas under the annual retirement plan, some of the holders would receive a cash benefit while others would benefit only indirectly from the fact that there would be fewer bonds outstanding.

On balance, investors seem to have little reason for choosing one method over the other, while the annual retirement method is clearly more beneficial to the firm. The consequence has been a pronounced trend toward annual retirement and away from the accumulation scheme.

2-7 ($ million)

Common stock (42 million shares outstanding At $1 par) = $40 + $2	$ 42
Additional paid-in capital = $120 + $48	168
Retained earnings	170
Total common stockholders' equity	$380

Total value of the issue = 2 million shares × $25 = $50 million
Added to Common stock account = 2 million shares × $1 par = $2 million
Added to Additional paid-in capital account = $50 million - $2 million = $48 million

2-8 a. The average investor in a listed firm is not really interested in maintaining his or her proportionate share of ownership and control. An investor could increase ownership by simply buying more stock on the open market. Consequently, most investors are not concerned with whether new shares are sold directly (at about market prices) or through rights offerings. However, if a rights offering is being used to effect a stock split, or if it is being used to reduce the underwriting cost of an issue (by substantial underpricing), the preemptive right might well be beneficial to the firm and its stockholders.

b. Clearly, the preemptive right is important to the stockholders of closely-held firms whose owners are interested in maintaining their relative control positions.

2-9 Preferred stock can be classified *only* when the one doing the classification is considered. From the standpoint of the firm, preferred stock is like equity in that it cannot force the firm into bankruptcy, but it is like debt in that it causes fluctuations in earnings available to the common stockholders. Consequently, if the firm is concerned primarily with survival, it probably would classify preferred stock as equity. However, if there is essentially no danger of bankruptcy, management would view preferred stock as simply another fixed charge security and treat it internally as debt. Equity investors would have a similar viewpoint, and in general they should treat preferred stock in much the same manner as debt. For creditors, the position is reversed. They take preference over preferred stockholders, and the preferred issues act as a cushion. Consequently, a bond analyst probably would want to treat preferred as equity. Obviously, in all these applications, there would have to be some qualifications; in a strict sense, preferred stock is neither debt nor equity, but a hybrid.

2-10 When the price of its stock is temporarily depressed and a firm wishes to raise funds via an equity issue, the company's investment banker probably will recommend convertible debt be issued. The firm can use convertible bonds if it is believed that the price of the stock will rise sufficiently in the future to make conversion attractive. Then, if conversion takes place when the stock price is higher, the firm will have essentially issued its stock at a price higher than existed when the convertible bond was issued.

2-11 The convertible bond has an expected return that consists of an interest yield (9 percent) plus an expected capital gain. We know the expected capital gain must be at least 3 percent, because the total expected return on the convertible must be at least equal to that on the nonconvertible bond, 12 percent. In all likelihood, the expected return on the convertible would be higher than that on the straight bond, because a capital gains yield is riskier than an interest yield. The convertible would, therefore, probably be regarded as being riskier than the straight bond. However, the convertible, with its interest yield, probably would be regarded as being less risky than common stock.

2-12 a. Most firms have a continuing need for long-term debt to finance operations (at least as long as they are still in business). It would make sense for a firm to issue bonds like the Canadian bonds. If you think about it, the most significant difference between a 30—year bond and a perpetual bond that is callable is that there is a refinancing requirement for the regular bond at the end of 30 years. This refinancing requirement probably will change the cost of the bond, because refinancing takes place at existing market rates.

b. The default risk will be negligible for each bond. The interest rate risk, however, will be greatest for the bond with the longest term to maturity. As a result, the perpetual bonds' interest rate risk will be greater than for the 5-year bond (which will have the lowest interest rate risk) and the 50-year bond. Because the Canadian bond will be called only if interest rates decline, it is considered the riskiest, and thus will have the highest expected interest rate. The order of the expected interest rate from lowest to highest would be:

5-year bond
50-year bond
regular perpetual bond
Canadian perpetual bond

c. Probably not. If rates had dropped so that bonds with a coupon rate equal to 3 percent could be sold, the Canadian government probably would have issued the 3-percent bonds to replace the more expensive bonds.

d. If the information bondholders used to reach their conclusion that the bonds would be called was unfounded, then there should be no reason to expect the Canadian government to foot the bill for investors' mistakes. At the same time, some might argue that the Canadian government has a moral obligation to ensure that any false information that it knows about is not passed on to investors. If the Canadian government originally sold the bonds to naïve investors and had somehow led them to think that the bonds would be called, the fairness might indicate that retirement is appropriate. But, if you think about it, the original investors

probably sold the bonds many years ago, so there no longer would be such an obligation to them. Educated investors should know that the government would not call the bonds when the interest rates were so high—in effect, the government would be wasting constituents' money.

SOLUTIONS

2-1 a. The conversion price simply is the face (par) value of the bond divided by the conversion ratio—the conversion price for this issue is $1,000/25 = $40. Therefore, it would be beneficial for investors to convert their bonds into common stock when the price of the stock is greater than $40 per share.

b. The conversion feature would add some flexibility to the bonds as an investment. Investors might find it attractive to buy the bonds because they can later decide whether they prefer to remain bondholders or to convert and become stockholders. Adding a call provision will help the firm, because the firm can "force" bondholders to convert by calling the bond when the stock price is greater than $40. For example, if the stock price is $45 and the bond's call price is $1,100 when the firm calls the bond, it would be better for bondholders to convert the bond into common stock because the value of the common stock would be $1,125 = 25 x $45, which is greater than the $1,100 call price.

2-2 a. Dividend = $50(0.08) =$4

b. Conversion price = $50/4 = $12.50; an investor should consider converting when the price of the stock exceeds this price.

c. Shares currently outstanding = ($2.5 million)/$50 = 50,000 shares

New shares of common stock if all preferred stockholders convert = 4(50,000) = 200,000 shares

2-3 a. Number of zeros = Amount needed/Price per bond
= $4,500,000/$567.44 = 7,930.35
= 7,931 bonds.

b. Filkins will have to repay $4.5 million when the bond matures in five years. But because the debt is a zero-coupon bond, there will no interest payments in the meantime. Thus, the annual debt service costs are $0.

2-4 a. If P_0 = $18, the option is exercised, and the stock is sold immediately, the gain would be ($18 - $15) x 100 = $300. Therefore, it would be beneficial to exercise the option.

b. If P_0 = $13, the option is exercised, and the stock is sold immediately, the loss would be ($13 - $15) x 100 = -$200. Therefore, it would not be beneficial to exercise the option.

c. The answers in part (a) and part (b) would be reversed if the option were a put with the same exercise price:

If the stock is purchased for $18 and sold to the option writer by exercising the option, the loss would be ($15 - $18) x 100 = -$300. The option holder would have to buy the stock at $18 per share to exercise the put and sell the stock at $15 to the option writer. Therefore, it would not be beneficial to exercise the option.

If the stock is purchased for $13 and sold to the option writer by exercising the option, the gain would be ($15 - $13) x 100 = $200. In this case, the option holder would be able to buy the stock at $13 per share and then sell it to the option writer at $15 by exercising the option. Therefore, it would be beneficial to exercise the option.

2-5 a. If the stock is purchased for $26 per share and sold to the option writer by exercising the option, the gain/loss would be ($25 - $26) x 200 = –$200.

b. If the stock is purchased for $30 per share and sold to the option writer by exercising the option, the loss would be ($25 - $30) x 200 = –$1,000. Therefore, it would not be beneficial to exercise the option.

c. If the stock is purchased for $20 per share and sold to the option writer by exercising the option, the loss would be ($25 - $20) x 200 = $1,000. Therefore, it would be beneficial to exercise the option.

2-6 a. Balance sheets:

Meyer Balance Sheet ($ thousands):

		Debt	$400
		Equity	200
Total assets	$600	Total liabilities and equity	$600

Haugen Balance Sheet ($ thousands):

		Debt	$200
		Equity	400
Total assets	$600	Total liabilities and equity	$600

b. Haugen sold $200,000/$50 = 4,000 shares to raise the funds needed to purchase the new machine. Therefore, because the stock issue increased the number of existing shares by 20 percent, the number of shares Haugen had outstanding before the issue was

$$0.20 \times \begin{pmatrix}\text{Number of outstanding}\\ \text{shares before the issue}\end{pmatrix} = 4{,}000 \text{ new shares}$$

$$\begin{pmatrix}\text{Number of outstanding}\\ \text{shares before the issue}\end{pmatrix} = \frac{4{,}000 \text{ new shares}}{0.20} = 20{,}000 \text{ shares}$$

Thus, the number of shares that are outstanding after the stock issue equal 24,000.

c. *Income Statement for Meyer Manufacturing ($ thousands):*

ΔEBIT	$100.0
ΔInterest = $200 x 0.08	(16.0)
ΔEarnings before taxes	84.0
ΔTaxes (40%)	(33.6)
ΔNet income (earnings available to pay to common stockholders)	$ 50.4

Income Statement for Haugen Mills ($ thousands):

ΔEBIT	$100.0

ΔInterest = $0 x 0.08	(0.0)
ΔEarnings before taxes	100.0
ΔTaxes (40%)	(40.0)
ΔNet income (earnings available to pay to common stockholders	$ 60.0

d. Meyer issued bonds, not stock, so it has 20,000 shares of common stock outstanding. Therefore, Meyer's earnings per share, EPS, is

$$EPS_{Meyer} = \frac{\$50,400}{20,000} = \$2.52$$

Haugen issued stock and its shares outstanding increased to 24,000. Therefore, Haugen's earnings per share, EPS, is

$$EPS_{Haugen} = \frac{\$60,000}{24,000} = \$2.50$$

If we use the EPS to evaluate both companies, we would conclude Meyer's decision to issue debt was better than Haugen's decision to issue stock. We will discuss this concept further in later chapters in the book.

2-7 a. Cox Computer Company Balance Sheet:

Alternative 1:

		Short-term debt	$ 25,000
		Long-term debt	25,000
		Common stock, par $1	75,000*
		Paid-in capital	225,000*
		Retained earnings	25,000
Total assets	$375,000	Total liabilities and equity	$375,000

*At $10 per share, $250,000/$10 = 25,000 shares would have to be sold to raise the $250,000. Therefore, at $1 par value, the Common stock account will increase by $1 x 25,000 = $25,000, and the remaining $225,000 is Paid-in capital. Because $150,000 is used to pay some of the bank debt, assets increase by only $100,000. Total shares outstanding after the issue: 75,000 = 50,000 + 25,000.

Alternative 2:

		Short-term debt	$ 25,000
		Long-term debt	25,000
		Common stock, par $1	70,000*
		Paid-in capital	230,000*
		Retained earnings	25,000
Total assets	$375,000	Total liabilities and equity	$375,000

*To raise $250,000, the firm would have to sell $250,000/$1,000 = 250 bonds. Each bond is convertible into 80 shares of common stock; thus, conversion will increase the number of shares outstanding by 20,000. Therefore, at $1 par value, the Common stock account will increase by $1 x 20,000 = $20,000, and the remaining $230,000 is Paid-in capital. Total shares outstanding after the conversion: 70,000 = 50,000 + 20,000.

Alternative 3:

		Short-term debt	$ 25,000
		Long-term debt	275,000
		Common stock, par $1	50,000
		Retained earnings	25,000
Total assets	$ 375,000	Total liabilities and equity	$ 375,000

b.

	Original	Alt. 1	Alt. 2	Alt. 3
Number of Charles Cox's shares	40,000	40,000	40,000	40,000
Total shares	50,000	75,000	70,000	50,000
Percent ownership	80%	53%	57%	80%

c.

	Original	Alt. 1	Alt. 2	Alt. 3
Total assets	$275,000	$375,000	$375,000	$375,000
EBIT	$ 55,000	$ 75,000	$ 75,000	$ 75,000
Interest*	(17,500)	(2,500)	(2,500)	(32,500)
EBT	$ 37,500	$ 72,500	$ 72,500	$ 42,500
Taxes (40%)	(15,000)	(29,000)	(29,000)	(17,000)
Net income	$ 22,500	$ 43,500	$ 43,500	$ 25,500
Number of shares	50,000	75,000	70,000	50,000
Earnings per share	$0.45	$0.58	$0.62	$0.51

*Both the bank loans and the long-term debt require interest payments; the amount of short-term debt that is not a bank loan does not require interest payments. Before new financing is obtained, the amount of the bank loan is $150,000 and the amount of long-term debt is $25,000—at 10 percent, the total interest is ($150,000 + $25,000) x 0.10 = $17,500. The financing plans eliminate the bank loans, so the interest payment for each plan is: (1) Alternative 1 has $25,000 long-term debt with interest payments equal to $2,500; (2) Alternative 2 has $25,000 long-term debt with interest payments equal to $2,500; and, (3) Alternative 3 has $275,000 long-term debt with interest payments equal to ($25,000 x 0.10) + ($250,000 x 0.12) = $$32,500.

d. Each alternative permits Charles Cox to maintain control of the firm (more than 50 percent ownership). In addition, each alternative results in an increase in EPS. But, because Plan 2 results in the greatest increase in EPS, it would be preferred.

2-8 a. Book value per share = ($364,000 + $336,000)/20,000 = $35.00

b. Total amount of issue = 10,000 x $32.55 = $325,500
Book value after issue = ($364,000 + $336,000) + $325,500
= $1,025,500

Book value per share = $1,025,500/30,000 = $34.18

2-9 a. Today, the amount Fibertech has to pay today is known with certainty because the current exchange rate is known. In other words, if Fibertech decides to pay the bill today, it needs $500,000 to purchase 5,500,000 yen. However, if Fibertech waits to pay the bill when it is due in 90 days, the exchange rate might be different and thus the company might have to pay more than $510,000 to purchase the 5,500,000 yen (it also might be able to pay less).

The primary advantage to waiting to pay the bill is that Fibertech can use the funds for other purposes. In addition, it can avoid the high cost of borrowing funds to pay the bill today.

b. Cost to Fibertech = 5,500,000 x $0.095 = $522,500 in 90 days when the bill is due.

c. At $0.100 per yen, the cost to purchase the needed amount of yen would be:

5,500,000 x $0.100 = $550,000

At $0.085 per yen, the cost to purchase the needed amount of yen would be:

5,500,000 x $0.085 = $467,500

d. The primary benefit Fibertech would receive by entering a futures contract is that it would be able to "lock in" today the price of the yen needed in 90 days. For example, if the futures contract in part (b) was entered, then Fibertech knows that it needs $522,500 in 90 days to pay the debt it owes the Japanese manufacturer, regardless of what the actual exchange rate is at that time—the futures contract has "locked in" the price today.

2-10 ***Integrative Problem***

Part I: Initial Expansion

a. Financing with stock offers several advantages over debt, but there are also disadvantages. The major advantages and disadvantages are discussed below.

ADVANTAGES:
(1) Common stock will not obligate Gonzales to make fixed payments. Gonzales's managers can choose to pay dividends if earnings are sufficient. If Gonzales sells bonds, it will be required to make interest payments on fixed dates.
(2) Common stock never matures and never has to be repaid.
(3) The use of common stock will improve Gonzales's debt ratio and increase its future ability to use debt.

DISADVANTAGES:
(1) The Gonzales family might have to give up some voting control if it sells common stock.
(2) The Gonzales family will have to share the earnings of the business with the new stockholders.
(3) Because common stock is riskier than debt, the issuing cost will be higher than it would be if debt were used.
(4) Common stock dividends are not tax deductible, as are interest payments.

b. Because all of Gonzales's stock is owned by family members, the stock is said to be privately owned, or closely held. If some stock is sold to the public, the stock will then be publicly held.

c. Classified stock is stock that is given some special designation. Those designations typically are class a, class b, and so on, but any designation can be used. "founders' shares" is the name given to classified stock that is owned by the firm's founders. Founders' shares generally have sole voting rights, but restricted dividends for a number of years. Because the Gonzales family wants to maintain control of its company, the firm might designate the shares owned by family members as founders' shares. Then, class b stock, which would have the right to receive dividends but not to vote, would be sold to the public.

d. Yes, it would, although this might make the selling job more difficult both because more shares would be involved and also because some potential investors might be concerned to see family members unloading shares. Still, it is not at all uncommon for founding stockholders to sell some of their shares as a part of the initial offering in order to diversify

their personal holdings. Indeed, some companies go public using only already-issued shares, that is, where the company receives none of the money raised.

Part II: Subsequent Expansions

a. Bonds and term loans both are long-term debt contracts under which a borrower agrees to make a series of interest and principal payments on specified dates to the lender(s). The main difference is that a term loan usually is placed with one or more financial institutions (a bank, an insurance company, or a pension fund), while a bond typically is sold to the public. Term loans often are used (1) by financially weaker companies or (2) to finance specialized projects, because in both cases the borrower must tell a relatively complicated "story" as to why the lender should make the loan, and it is more difficult and expensive "to tell the story" to a large number of lenders, as would be necessary in a bond issue.

b. (1) If Gonzales uses the manufacturing facility as collateral for its debt, the bonds would be mortgage bonds, and presumably first mortgage bonds. Because this is secured debt, the interest rate on mortgage bonds is lower than on most other types of long-term debt. (The exception is floating rate debt.) (2) Had Gonzales used unsecured debentures, the risk to investors would have been higher; consequently, the interest rate required on debentures would have been higher.

c. A bond indenture is a formal agreement between the issuer of the bond and the investors who buy the bonds. It is designed to keep the issuing firm from doing something to cause the quality of the bonds to deteriorate after they have been sold. A trustee is assigned to insure that the provisions of the indenture are carried out and that the interests of the bondholders are protected.

   Indentures contain restrictive covenants that constrain the actions of the issuing firm. Included are such points as (1) the conditions under which the issuer can refund or call the issue (call provisions), (2) whether the firm is required to set up a sinking fund to retire a portion of the issue each year, (3) the levels at which key financial ratios must be maintained, and (4) the level of earnings that must be met before dividends can be paid to stockholders.

d. A company will only call a bond issue if interest rates have fallen, and, if the bond is called, the bondholders will have to reinvest their money at the then prevailing lower interest rate. Therefore, the inclusion of a call provision increases the reinvestment risk that the bondholders face, and this increased risk causes them to raise their required return on the bond, which in turn raises the interest rate the company must pay.

   If Gonzales did not include a call provision, it would be able to sell the issue at a rate somewhat below 12 percent. By delaying the call, Gonzales guarantees investors the promised rate for at least 3 years, so the interest rate is lower than it would have been if the issue is immediately callable.

   The advantage to Gonzales of including a call provision is that if interest rates should fall after 3 years, the company would be able to refund the issue and sell a new issue at the lower interest rate.

e. (1) If Gonzales included a sinking fund provision in the contract, the interest rate would decline. A sinking fund protects the bondholders by insuring that the firm will be able to retire the issue in an orderly manner when the maturity date is reached. This lowers the bond's riskiness and, consequently, the required interest rate.

   (2) A sinking fund provision generally requires the firm to retire a specified percentage of the bond issue each year. Gonzales would probably be given the option of purchasing bonds on the open market at the prevailing market price or calling in randomly selected bonds at par. Because the sinking fund is designed to protect the bondholders, Gonzales would not pay a premium to the holders of the called bonds. The company would choose the method (call or market purchase) that had the lowest cost. Therefore,

if interest rates had fallen, and the bonds were selling at a premium, Gonzales would call bonds. However, if interest rates had increased, the bonds would be selling at a discount, and Gonzales would buy bonds in the open market.

(3) The longer the maturity of a bond, the more logical it is to include a sinking fund provision, and the more likely one is to be found on a bond. Thus, "sinkers" are common on 30-year bonds but rare on 5-year issues. The reason is that the longer the maturity, the greater the probability that something will go wrong, hence the greater the need to assure orderly repayment.

(4) Because Gonzales's bond matures in only 10 years, it is not likely to include a sinker. Note also that the money raised will be used to build and "break in" a new manufacturing facility. Because properties do not generate cash until they are operational, and sinking funds normally are paid out of operating cash, there is further reason to doubt that a sinking fund would be used in this instance.

f. If Gonzales's bond rating were lowered by various bond rating agencies (such as Moody's and standard & Poor's), investors would demand a higher return on its debt. This would (1) raise the cost of new debt and (2) lower the value of Gonzales's outstanding debt. An increase in Gonzales's bond rating to double-A would lower the rate required on Gonzales's debt and increase the market value of the outstanding debt.

Note these additional points regarding bond ratings:
(1) Moody's and standard & Poor's are the major rating agencies. Corporations pay the agencies to have their debt rated prior to a new offering, and to have a continuing evaluation after the issuance.

(2) Investment bankers (firms that help issue stocks and bonds) generally insist that bonds be rated as a condition for selling new bonds, because (a) purchasers want to know how risky a bond is, (b) investors don't want to try to analyze the bond's risk, so (c) it is more efficient to have the agencies rate the bond and then provide this information to investors (economies of scale).

(3) The ratings serve as a qualitative guide to the probability of default. In a sense, ratings reflect the probability distribution of the expected rate of return for the remaining life of the bond. Bond rating analysts do not use a strict formula when they make ratings, but people have used statistical techniques to predict (a) bond ratings, (b) changes in ratings, and (c) actual probabilities of bankruptcy.

g. Here are some factors that influence financing decisions:
(1) The target capital structure
(2) Maturity matching: use debt that has a maturity equal to the asset's life.
(3) Interest rate levels and the yield curve
(4) Relative costs of different types of securities
(5) Restrictive covenants that would be required
(6) The firm's financial condition, especially the tie ratio
(7) The firm's investment opportunities (asymmetric information and signaling effects)
(8) The availability of collateral

Note that if markets were truly efficient, and conditions were stable, the type of security used would be immaterial, because the cost of each security would be commensurate with its risk. However, if markets are not totally efficient (perhaps because management has information that investors do not have), if the company's tax position changes, or if some new type of security is introduced, then some types of securities might be truly less expensive, on a risk-adjusted basis, than others.

Gonzales probably should use 10-year debt rather than shorter- or longer-term debt to finance the manufacturing facility. This would mean matching the maturity of the asset with the maturity of the debt. Because Gonzales will receive little or no cash flows from the

manufacturing facility for 10 year, it would be logical for Gonzales to use a zero coupon bond in order to match its outflows and inflows from the project.

ETHICAL DILEMMA

Should Maria Take A SINful Cruise?

Ethical dilemma:

Maria must decide how to raise $400 million that is needed for capital investments. Because the CFO of Paradise Environmental Designs (PED) wants to decrease the firm's cost of capital, Maria is considering raising the needed funds by issuing convertible bonds. But, Maria doesn't know much about these types of financial assets, other than the fact that they can be quite complex. As a result, she is determined to get more information about convertible securities before she makes a decision as to whether it would be wise for PED to use such instruments to raise funds. Roger, who is Maria's friend, suggested that she attend a conference that the investment banking firm for which he works is sponsoring. The problem is that the conference will be presented aboard a cruise ship while it travels to various countries in the Mediterranean Sea, and all expenses will be paid by Superior Investment Networks (SIN), which is the firm for which Roger works. It appears that the information Maria seeks will be presented at the conference, and that she will get sufficient information to make informed decisions about whether/how convertible bonds should be used to finance PED's investments. However, she is concerned that the information provided at the conference might be one-sided—that is, the information might be biased toward the beliefs that SIN has about convertibles. In addition, because SIN is sponsoring the conference and it is one of the investment banking firms that PED uses to issue new securities, Maria might be accused of taking a payoff to use SIN's services. Further, Roger, her friend who works at SIN, would benefit handsomely if PED uses SIN to issues convertible bonds.

Discussion questions:

- *What is the ethical dilemma?*

  If she attends SIN's conference, it appears that Maria might find herself in a situation where she has a conflict of interest. Even if it is in the best interests of PED to issue convertible bonds, there will be an appearance of a conflict if SIN is the investment banking firm that handles the issue. Adding to the appearance of impropriety is the fact that Maria's friend Roger will receive a handsome financial benefit if SIN handles the issue.

- *Do you think that PED should issue convertible bonds?*

  This question can only be answered after evaluating financial information to determine the advantages and disadvantages that PED faces if it issues convertible bonds. Clearly, if the company's value can be increased through a decrease in the firm's cost of capital, then this financial instrument should be used.

- *Should Maria take the SINful cruise?*

  The advantage of taking the cruise is that Maria will have the opportunity to learn much more about convertible bonds than she now knows. Further, because the date of the conference is not far away, Maria can get the information about convertibles much more quickly than if she waited to attend a conference that is sponsored by a professional organization. But, attending the conference will put Maria in a "sticky" position, because she might be accused of taking payoffs for directing business to SIN. When considering whether to take the cruise, Maria must consider the future ramifications of her decision. She should answer two important questions: How will participation in the conference affect the future business relationship of PED and SIN? How will PED's reputation be affected in the

financial markets? Remember that PED will have to visit the financial markets in the future to raise needed funds.

- *What would you do if you were Maria?*

  The simple answer is to attend the conference and enjoy the cruise. Maria probably will get the information that she needs to make an informed decision about the advantages and disadvantages of using convertible bonds to raise capital. However, if Maria is considering using SIN as PED's investment banker to raise funds through a convertible issue, it might be wise for her to turn down Roger's offer to attend the conference. In any event, Maria should investigate alternative methods to obtain the information she needs. Perhaps other conferences that are not sponsored by investment banking organizations offer the same information. If so, Maria can be assured that the information she receives is not slanted toward a particular investment banking firm. In addition the appearance of a conflict of interest that exists with the SINful conference will not exist.

  If Maria finds that she can only get the information she needs by attending the conference, it might be a good idea for her to make arrangements for PED to pay for all of her expenses rather allowing SIN to "pick up the tab." In this case the appearance of impropriety will be significantly reduced.

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