

Chapter 3 - Financial Statements, Cash flow and Taxes

3-1 An investor recently purchased a corporate bond which yields 9%. The investor is in the 36% combined federal and state tax bracket. What is the bond's after-tax yield?

Corporate Bond yield is 9%

The after tax yield is the return after taxes are deducted

$$\therefore \text{The bond's after tax yield} = 9\%(1-T) = 9\%(1-.36)$$

or 5.76%

Alternatively \rightarrow you purchase a \$1000 Corporate bond at par value receiving annual
 Coupon interest = $\$1,000 \times 9\% = \90 you pay taxes of $\$90 \times .36 = \32.40
 you net after tax = $\$90 - \$32.40 = \$57.60$ \therefore your after tax rate of return is
 $\$57.60 / \$1,000 = 5.76\%$

3-2 Corporate bonds issued by Johnson Corporation currently yield 8%. Municipal bonds of equal risk current yield 6%. At what tax rate would an investor be indifferent between these two bonds?

you want The rate that equates the municipal (tax exempt) yield to
 The Corporate after tax yield

$$8\%(1-T) = \text{after tax corporate yield}$$

$$6\% = \text{municipal tax exempt yield}$$

$$8\%(1-T) = 6\% \quad \text{Solve for } T$$

$$8 - 8T = 6 \Rightarrow 2 = 8T \Rightarrow T = 2/8 \text{ or } 25\%$$

3-6 In its most recent financial statements, Newhouse Inc., reported \$50 million of net income and \$810 million in retained earnings. The previous retained earnings were \$780 million. How much in dividends was paid to shareholders during the year?

$$NI = 50 \text{ million}; RE_{\text{year end}} = \$810 \text{ million}; RE_{\text{beginning of year}} = \$780 \text{ million}$$

$$\Delta RE = \$810 - \$780 = \$30 \text{ million (the amt of RE generated during the year)}$$

$$NI \text{ or } \$50 \text{ million for the year} = \text{Dividends} + RE$$

$$50 = \text{Dividends} + 30$$

$$\text{Dividends} = 20 \text{ million}$$

3-9 The Shrieves Corporation has \$10,000 that it plans to invest in marketable securities. It is choosing among AT&T bonds, which yield 7.5%, state of Florida municipal bonds, which yield 5%, and AT&T preferred stock, with a dividend yield of 6%. Shrieves's corporate tax rate is 35%, and 70% of the dividends received are tax exempt. Find the after-tax returns on these securities.

The after tax yield on the Florida municipal bonds = 5%
 " " " on AT&T Corporate bonds = $7.5\% (1 - .35) = 4.875$

After tax yield on AT&T preferred:

you buy \$1,000 of the preferred, so the annual dividend is
 $\$1,000 \times 6\% = \60 $70\% \times \$60 = \42 is exempt from taxes
 $\$60 - \$42 = \$18$ is taxable, you tax is $\$18 \times .35 = \6.30
 Net after tax dividend = $\$60 - 6.30 = \53.70

your after tax yield on the preferred = $\frac{\$53.70}{1000} = 5.37\%$ Best Alternative

3-10 The Moore Corporation has operating income (EBIT) of \$750,000. The company's depreciation expense is \$200,000. Moore is 100% equity financed, and it faces a 40% tax rate. What is the company's net income? What is its net cash flow?

EBIT = \$750,000; DEP = \$200,000

100% Equity \Rightarrow No Debt, therefore no interest expense

Tax Rate = 40%

Determine Net Income by setting up Income Stmt.

EBIT	\$750,000
Less: Int. Expense, Depreciation	200,000
EBT	550,000
Less: Taxes	220,000
$.4 \times \$550,000 =$ NI	330,000

Net Cash Flow = $330,000 + 200,000 = \$530,000$
 NI + Dep

Note: Depreciation is a noncash operating expense

3-11 The Berndt Corporation expects to have sales of \$12 million. Costs other than depreciation are expected to be 75% of sales, and depreciation is expected to be \$1.5 million. All sales revenues will be collected in cash, and costs other than depreciation must be paid for during the year. Berndt's federal-plus-state tax rate is 40%. Berndt has no debt.

a. Set up an income statement – what is Berndt's expected net cash flow?

Sales (EBIT)	\$12 million	
Less: Costs w/o Dep.	(9 million)	(75% x \$12)
Dep.	(1.5 million)	
EBT	\$ 1.5 million	
Less Taxes @ 40%	.6	
NI	.9 million or \$900,000	

Net Cash Flow = \$900,000 + \$1,500,000 = \$2.4 million

b. Suppose Congress changed the tax laws so that Berndt's depreciation expenses doubled [e.g. similar to straight line \Rightarrow MACRS]. No changes in operations occurred. What would happen to reported profit and net cash flow?

If Depreciation doubled to \$3 million \Rightarrow EBT goes to 0 \Rightarrow taxes 0
 NI \rightarrow 0, but Net Cash Flow = \$3 million (NI + Dep)
 0 + 3

The firm would save \$600,000 on taxes
 \equiv increasing its Cash flow after tax. by
 $\Delta CF = T(\Delta D) = .4(\$1.5 \text{ million}) = \$600,000$

c. Now, suppose Congress instead of doubling Berndt's depreciation, reduced it by 50%. How would profit and net cash flow be affected?

If depreciation gets cut 50% EBT would increase by
 $50\% \times \$1.5 \text{ million} = \$750,000$

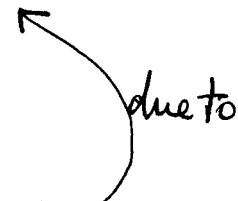
New EBT = 1.5 + .75 = 2.25 million

New Taxes = 40% x 2.25 million = .9 million or \$900,000

Δ Taxes = \$900,000 - \$600,000 = \$300,000 \uparrow

New Net Cash Flow = (2.25 - .9) + .75
 = 2.1 million

Δ Net Cash Flow = 2.4 - 2.1 = .3 million Decrease



d. If this were your company, would you prefer Congress to cause your depreciation expense to be doubled or halved? Why? More importantly, what would be the logic and rationale for either Congress doubling or having depreciation expenses?

Other Things being equal you (as an investor) should prefer to have higher depreciation rates and therefore higher net cash flows \Rightarrow Net cash flows are the funds available to the owners to withdraw from the firm and, therefore those cash flows can be used to stimulate further growth in revenues/net income to shareholders in the future.

\Rightarrow The logic & rationale for the benefit is that accelerating depreciation will free cash flows to allow firms to innovate, remain competitive, hire more workers, pay benefits (achieve peace in our time, solve global pollution, etc) not all companies will use the depreciation benefit to fund research, improve technology \Rightarrow the dollar savings may go to paying for the CEO's birthday party for his wife on the island of Sardinia.