# Managerial finance and team assignment 

Business, Company

## ASSIGN BUSTER

Principles of ManagerialFinanceFIN/419 P12. 4 Break even analysis. Barry Carter is considering opening amusicstore. He wants to estimate the number of CDs he must sell to break even. The CDs will be sold for \$13. 98 each, variable operating costs are $\$ 10.48$ per CD, and annual fixed operating costs are $\$ 73,500$. A) Find the operating breakeven point in number of CDs. $\mathrm{Q}=\mathrm{FC} / \mathrm{P}-\mathrm{VC} \mathrm{Q}=73,500 / 13.98-10.48 \mathrm{Q}=21,000 \mathrm{CDs} \mathrm{B})$ Calculate the total operating costs at the breakeven volume found in part a. EBIT=Q $\times(\mathrm{P}-$ $V C)-F C E B I T=21,000 \times(13.98-10.48)-73,500 E B I T=21,000 \times 3.5-$ 73, 500

EBIT $=0$ C) If Barry estimates that at a minimum he can sell 2, 000 CDs per month, should he go into the music business? 2, 000 CDs per month $\times 12$ months $=24,000$ CDs. Since the operating breakeven point in number of CDs is 21,000 , this means that Barry will sell 3,000 more CDs that will be a profit. Depending on Barry's outcome of the music store, if he were to go into the music business and sell 2,000 CDs a month, he would make a profit. The profit would not be that much more above the operating breakeven point; however, it will still be a profit. I would take the chance and go into the music business.
D) How much EBIT will Barry realize if he sells the minimum 2, 000 CDs per month noted in part $c$ ? EBIT $=\mathrm{Q} \times(\mathrm{P}-\mathrm{VC})-\mathrm{FC}$ EBIT $=24,000 \times(13.98-10$. 48) $-73,500 \mathrm{EBIT}=24,000 \times 3.5-73,500 \mathrm{EBIT}=10,500 \mathrm{P} 12-11$ a. \$0. 38 b. $\$ 1.28$ c. $\$ 1.94$ Ebit| ||| $\$ 24,600|\$ 30,600| \$ 35,000 \mid$ less interest||| $\$ 9,600|\$ 9,600| \$ 9,600 \mid$ Net profits before taxes| | $\$ 15,000|\$ 21,000|$ \$25, 400| Les Taxes| ||| \$6, 000| \$8, 400| \$10, 160| Net profits after taxes|| \$9, 000| \$12, 600| \$15, 240| Less preferred stock dividends| \$7,500|\$7,

500| $\$ 7,500$ | Earings available for common| | \$1,500| $\$ 5,100|\$ 7,740|$
 optimal capital structure Intermediate a. Debt Ratio 0\%|| 15\%|| 30\%|| $45 \%$ | | 60\%| EBIT| \$2, 000, 000| | \$2, 000, 000| | \$2, 000, 000| | \$2, 000, 000|| \$2, 000, 000 Less: Interest| 0 | | 120, 000|| 270, 000|| 540, 000| | 900, 000| EBT| \$2, 000, 000| | \$1, 880, 000| | 1, 730, 000| | \$1, 460, 000| | \$1, 100, 000| ? Taxes @40\%| 800, 000|| 752, 000| | 692, 000| | 584, 000| | $440,000 \mid$ Net profit| \$1, 200, 000| | \$1, 128, 000| | \$1, 038, 000| | \$ 876, 000||\$660, 000| Less: Preferred dividends| 200, 000|| 200, 000|| 200, 000| | 200, 000| | 200, 000| Profits available to ? common stock| \$1, 000, 000| | \$ 928, 000|| \$ 838, 000||\$676, 000|| \$ 460, 000| \# shares outstanding| 200, 000|| 170, 000|| 140, 000|| 110, 000|| 80, 000| EPS| \$ 5. 00||\$5. 46||\$ 5. $99||\$ 6.15|| \$ 5.75 \mid$ b. Debt: 0\%Debt: $15 \%$ Debt: $30 \%$ Debt: $45 \%$ Debt: $60 \%$ c. The optimal capital structure would be $30 \%$ debt and $70 \%$ equity because this is the debt/equity mix that maximizes the price of the common stock. Chapter 16 Problem 16. For each of the loan amounts, interest rates, annual payments, and loan terms shown in the following table, calculate the annual interest paid each year over the term of the loan, assuming that the payments are made at the end of each year. Loan| Amount| Rate| Annual Payment| Term (in years)| Interest Paid Year 1| Year 2| Year 3| Year 4| Year 5| Year 6| A| \$14, 000| 10\%| \$4, 416| 4 | \$1400| \$1098. 40| \$766. 64| \$401. $70|||B| 17,500| 12 \%| 10,355|2| 2100|1109.40|| || | C|2,400| 13 \% \mid 1$, 017| 3| 312| 220. 35| 116. 79|||| D| 49, 000| 14\%| 14, 273| 5| 6860| 5822. 18| 4639. 06| 3290. 31| 1752. 3|| 티 26, 500| 16\%| 7191| 6| 4240| 3767. 84| 3220. 13| 2584. 80| 1847. 80| 992. 89| Problem 16. 5 Lease versus purchase

Northwest Lumber Company needs to expand its facilities. To do so, the firm must acquire a machine costing $\$ 80,000$. The machine can be leased or purchased. The firm is in the 40\% tax bracket, and its after-tax cost of debt is $9 \%$. The terms of the lease and purchase plans are as follows: Lease The leasing arrangement requires end-of-year payments of $\$ 19,800$ over 5 years. All maintenance costs will be paid by the lessor; insurance and other costs will be borne by the lessee.

The lessee will exercise its option to purchase the asset for $\$ 24,000$ at termination of the lease. Purchase If the firm purchases the machine, its cost of $\$ 80,000$ will be financed with a 5 -year, $14 \%$ loan requiring equal end-ofyear payments of $\$ 23,302$. The machine will be depreciated under MACRS using a 5-year recovery period. (See Table 3.2 on page 108 for the applicable depreciation percentages. ) The firm will pay $\$ 2,000$ per year for a service contract that covers all maintenance costs; insurance and other costs will be borne by the firm.

The firm plans to keep the equipment and use it beyond its 5-year recovery period. a. Determine the after-tax cash outflows of Northwest Lumber under each alternative. Year| Lease after-tax outflows| Purchase after-tax outflows| $1|\$ 11,880| \$ 13,622|2| 11,880|10,459.71| 3|11,880| 15,391.10|4| 11$, 880| $18,512.89|5| 35,880|19,516.93|$ b. Find the present value of each after-tax cash outflow stream, using the after-tax cost of debt. Year| PV of outflows (Lease)| PV of outflows (Purchase)| 1| \$10, 893. 96| \$12, 491. 37| $2 \mid$ 10, 002. 96| 8, 807|3|9, 171. 6| 11, 881. 93| 4| 8, 411. 04| 13, 107. 13|5| 23, 322| 12, 686. 00| Total| $\$ 61,801.32|\$ 58,973.51| c$. Which alternative
-lease or purchase-would you recommend? Why? The alternative that I would recommend is the purchase option because it has the lower present value of after-tax cash outflows as well as the most desirable. It is the most desirable because by purchasing the machine would be a less costly alternative. References Gitman, L. J. (2009). Principles of Managerial Finance (12th ed. ). Retrieved from https://ecampus. phoenix. edu/content/eBookLibrary2/content/eReader. aspx.

