Student: Geoff Brown **Date:** 2/19/16 **Time:** 1:51 PM	**Instructor:** Susan Weiss **Course:** FIN-500-Q2346-16TW2-Weiss **Book:** Titman/Martin/Keown: Financial Management 12th ed.	**Assignment:** 9-3 MyFinanceLab: Homework 8

(Related to Checkpoint 15.2) (EBIT-EPS analysis) Abe Forrester and three of his friends from college have interested a group of venture capitalists in backing their business idea. The proposed operation would consist of a series of retail outlets to distribute and service a full line of vacuum cleaners and accessories. These stores would be located in Dallas, Houston, and San Antonio. To finance the new venture two plans have been proposed:

- Plan A is an all-common-equity structure in which $2.4 million dollars would be raised by selling 86,000 shares of common stock.
- Plan B would involve issuing $1.2 million in long-term bonds with an effective interest rate of 12.5 percent plus another $1.2 million would be raised by selling 43,000 shares of common stock. The debt funds raised under Plan B have no fixed maturity date, in that this amount of financial leverage is considered a permanent part of the firm's capital structure.

Abe and his partners plan to use a 36 percent tax rate in their analysis, and they have hired you on a consulting basis to do the following:

a. Find the EBIT indifference level associated with the two financing plans.
b. Prepare a pro forma income statement for the EBIT level solved for in part **a** that shows that EPS will be the same regardless whether Plan A or B is chosen.

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a. Find the EBIT indifference level associated with the two financing plans.

STEP 1: Picture the Problem

The EBIT-EPS chart (sometimes called the range of earnings chart) is the principal tool used to evaluate the effects of capital structure choices on earnings per share. The point of intersection of the two capital structu lines is sometimes called the EBIT-EPS indifference point. This point identifies the EBIT level at which the EPS will be the same regardless of the financing plan chosen by the firm. This indifference point has major implications for financial planning. At EBIT amounts in excess of the EBIT indifference level, the financing plan with more leverage will generate a higher EPS. At EBIT amounts below the EBIT indifference level, th financing plan involving less leverage will generate a higher EPS.

STEP 2: Decide on a Solution Strategy

To find the break-even level of EBIT, we can modify our interpretation of the equation below; instead of considering each side of the equation to represent a financing plan we're evaluating, we will consider each to a description of one of our firms:

$$\underbrace{\frac{(\text{EBIT} - \text{Interest Expense}_{\text{Stock Plan}}) \times (1 - \text{Tax Rate})}{\text{Shares Outstanding (Stock Plan)}}}_{\textbf{EPS for Stock Plan}} = \underbrace{\frac{(\text{EBIT} - \text{Interest Expense}_{\text{Bond Plan}}) \times (1 - \text{Tax R}}{\text{Shares Outstanding (Bond Plan)}}}_{\textbf{EPS for Bond/Stock Plan}}$$

STEP 3: Solve

We substitute the appropriate values in the expression below and solve for EBIT:

$$\frac{(\text{EBIT} - \text{Interest Expense}_{\text{Stock Plan}}) \times (1 - \text{Tax Rate})}{\text{Shares Outstanding (Stock Plan)}} = \frac{(\text{EBIT} - \text{Interest Expense}_{\text{Bond Plan}}) \times (1 - \text{Tax Ra}}{\text{Shares Outstanding (Bond Plan)}}$$

$$\frac{(\text{EBIT} - \$0) \times (1 - 0.36)}{86{,}000} = \frac{(\text{EBIT} - \$150{,}000) \times (1 - 0.36)}{43{,}000}$$

$$\text{EBIT} = \$300{,}000$$

b. Prepare a pro forma income statement for the EBIT level solved for in part **a** that shows that EPS will be same regardless whether Plan A or B is chosen.

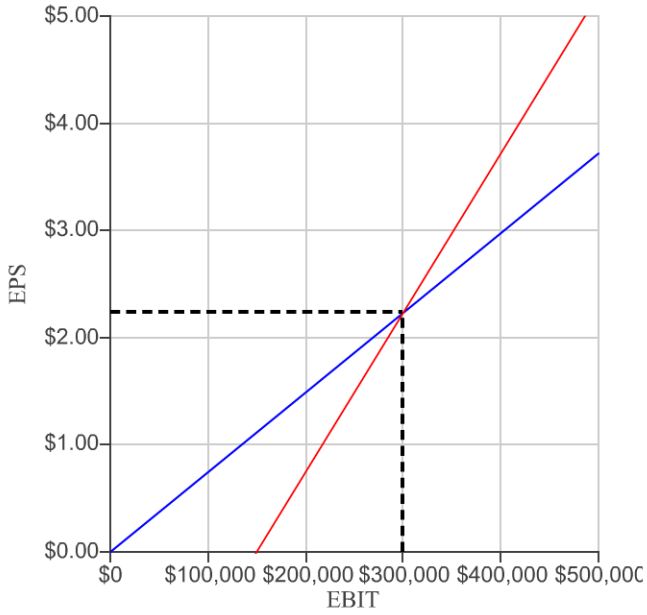
Stock Plan		
EBIT	$	300,000
Less: Interest Expense		0
Earnings Before Taxes	$	300,000
Less: Taxes at 36%		(108,000)
Net Income	$	192,000
Number of Common Shares		86,000
EPS	$	2.23

Bond/Stock Plan		
EBIT	$	300,000
Less: Interest Expense		(150,000)
Earnings Before Taxes	$	150,000
Less: Taxes at 36%		(54,000)
Net Income	$	96,000
Number of Common Shares		43,000
EPS	$	2.23

STEP 4: Analyze

Solving for the EBIT indifference level yields $300,000. We can prove this by looking at the pro forma inco

statements for each plan. We can also see this by using a chart:



The black dashed lines show that the two plans' schedules cross when EBIT is $300,000; at that level of operating earnings, the two plans generate the same EPS, $2.23.