Welcome to the Advance CBA Webinar:

Improving Financial Return

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11:00 a.m. – 12:00 p.m. EST

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SBA

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Improving Financial Performance

Using Return on Asset Investment Analysis

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Financial Analysis

- **ROE can be examined:**
  - Over time
  - Compared to standard

"ROE will change when net income changes at a different percentage rate than owner's equity."

ROE = Net Income ÷ Owner's Equity

Financial Analysis Steps

- **Normalize financial statements.**
- **Calculate return on Owner's Equity.**
  - ROE= Net Income ÷ Owner's Equity
    - Evaluate over time
    - Compare to a standard of target

Financial Analysis

- **ROE is a function of:**
  - Return on Asset Investment
  - Leverage (Debt ÷ Equity) Amount & Rate
  - Tax impact

ROE = Net Income ÷ Owner's Equity

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Example of ROE – Unleveraged Example

- **Buy $300,000 house for cash**
  - (Your Equity and Asset Investment = $300,000)
  - Leverage is zero (0 / $300,000)
- **Rent it for $2,000 per month**
  - (Your Return for the year is $24,000)
- **ROE is 24,000/300,000 = 8% ROE**

Example of ROE – Leveraged Example

- **Buy $300,000 house for $100,000 cash and a mortgage of $200,000**
  - Your Equity is $100,000 but Your Asset Investment is still $300,000 (Equity + Debt)
  - Your leverage is $200,000 / $100,000 = 2
- **Rent it for $24,000 for the year**
- **Interest rate is 10%, so pay $20,000 in interest**
- **Return = $24,000 – 20,000 = $4,000**
- **ROE is 4,000/100,000 = 4% ROE**

Example of ROE – Leveraged w/Taxes

- **Buy $300,000 house for $100,000 cash and a mortgage of $200,000**
  - Your Equity is $100,000 but Your Asset Investment is still $300,000 (Equity + Debt)
  - Your leverage is $200,000 / $100,000 = 2
- **Rent it for $24,000 for the year**
- **Interest rate is 10%, so pay $20,000 in interest**
- **Return = $24,000 – 20,000 = $4,000**
- **If Tax Rate is 20%, you pay $800 in Taxes**
- **ROE is 3,200/100,000 = 3.2% ROE**

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Financial Analysis Steps

- **Calculate return on asset invest (ROAI)**
  - ROAI = EBIT ÷ Asset Investment
  - Asset Investment = Interest-Bearing Debt + Owner's Equity
  - EBIT = Operating Income (Income before paying Interest or Taxes)

"ROAI is the measure of the earnings power of a business!"

Example of ROAI – Unleveraged Example

- Buy $300,000 house for $300,000 cash and no mortgage
- Equity plus Interest Bearing Debt (IBD) =
  Asset Investment (AI)
  - Your Equity is $300,000 and IBD = $0
  - Asset Investment = $300,000 AI
- Rent it for $24,000 for the year
- Interest rate is 10%, but there is no debt, so pay $0 in interest
- EBIT is the full $24,000
- ROAI is =EBIT / Asset Investment
- 24,000/300,000 =8% ROAI

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Example of ROAI – Leveraged Example

- **Buy $300,000 house for $100,000 cash and a mortgage of $200,000**
  - Equity plus Interest Bearing Debt (IBD) = Asset Investment (AI)
  - Your Equity is $100,000 and IBD = $200,000
  - Asset Investment = $300,000 AI
- **Rent it for $24,000 for the year**
- **Interest rate is 10%, so pay $20,000 in interest**
- **EBIT is the full $24,000 (it is *before* Interest is paid!)**
- **ROAI is =EBIT / Asset Investment**
- **24,000/300,000 =8% ROAI**
- **This is the same as the unleveraged example**

Financial Analysis Steps

- ROAI removes effect of Interest, Taxes and Leverage
- ROE = (1 - Tax Rate) (ROAI + ((Leverage)(ROAI - COD))
- = (1 - .20) *(.08 + (2*(.08 - .10))
- = .80 * (.08 + (2*-.02)
- = .80 * (.08 + -.04)
- = .80 * .04 = 3.2%

Financial Analysis Steps

- **Calculate Leverage**
  - Leverage = Interest-Bearing Debt (IBD) ÷ Owner's Equity
- **Calculate Cost of Debt (COD)**
  - COD = Interest Expense ÷ IBD
- **Compare COD with ROAI**

Analyze the results

- Leverage = $200,000 / $100,000 = $2 Debt for every Dollar of Equity: D/E =2
- COD = 10%
- ROAI = 8%
- Spread = -2%
- That's Trouble!

Increasing ROAI

- **ROAI can be increased by:**
  - Increasing Revenues
  - Decreasing Expenses
  - Decreasing the amount invested

Increasing ROAI example

Asset Investment = $400,000
Income = $500,000 ($250 Average Invoice)
Expenses = $450,000 ($300,000 Variable Expenses
or 60% of Sales +
$150,000 Fixed Expenses)

EBIT = $50,000

ROAI = $50,000 ÷ $400,000 = 12.5%

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Determine the Increase in EBIT

Current EBIT	= $50,000
Desired ROAI	= 20%
Asset Investment	= $400,000
Required EBIT	= $400,000 * .20 = $80,000
Check	*$80,000 / $400,000 = 20%*
Required Increase	$80,000 - $50,000
In EBIT	**= $30,000**

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Increase Price *Method 1 of 5*

Increase Price by 6%

Required Increase in EBIT	= $30,000
Desired ROAI	= 20%
Sales	= $500,000
Required Increase in Price	= $500,000 + $30,000
New Level of Sales	= $530,000
Percent Increase in Price	= $30,000 / $500,000 = **6%**

ROAI = (530,000 - 450,000) ÷ 400,000
= 80,000 ÷ 400,000 = 20%

Increase Sales Volume *Method 2 of 5*

Increase Sales Volume by 15%

Required Increase in EBIT	= $30,000
Desired ROAI	= 20%
Sales	= $500,000
Variable Expenses	= $300,000
Contribution Margin	=1 – ($300,00 / $500,000) = 40%
Required Increase in Volume	= $30,000 / 40% = $75,000
New Level of Sales	= $575,000
New Variable Expenses	= $575,000 * 60% = 345,000
Percent Increase in Volume	= $75,000 / $500,000 = **15%**

ROAI = (575,000 – (345,000 ve + 150,000 fe)) ÷ 400,000
= (575,000 – 495,000) ÷ 400,000
= 80,000 ÷ 400,000 = 20%

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Decrease Variable Expenses *Method 3 of 5*

Decrease Variable Expenses by 10%

Required Increase in EBIT	= $30,000
Desired ROAI	= 20%
Variable Expenses	= $300,000
Required Decrease in VE	= $30,000
New Level VE	= $300,000 - 30,000 = $270,000
Percent Decrease in VE	= $30,000 ÷ $300,000 = **10%**

ROAI = (500,000 – (270,000 ve + 150,000 fe)) ÷ 400,000
= (500,000 – 420,000) ÷ 400,000
= 80,000 ÷ 400,000 = 20%

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Decrease Fixed Expenses *Method 4 of 5*

Required Increase in EBIT	= $30,000
Desired ROAI	= 20%
Fixed Expenses	= $150,000
Required Decrease in FE	= $30,000
New Level Fixed Expenses	= $150,000 - 30,000 = $120,000
Percent Decrease in FE	= $30,000 ÷ $150,000 = **20%**

ROAI = (500,000 – ($300,000 ve + 120,000 fe)) ÷ 400,000
= (500,000 – 420,000) ÷ 400,000
= 80,000 ÷ 400,000 = 20%

Decrease Asset Investment *Method 5 of 5*

Decrease Asset Investment by 37.5%

EBIT	= $50,000
Desired ROAI	= 20%
Required Level of Asset Investment	= $50,000 ÷ 20% = $250,000
Check	= *50,000 ÷ 250,000 = 20%*
Current Asset Investment	= $400,000
Decrease in Asset Investment	= $400,000 - 250,000 = $150,000
Percent Decrease in AI	= $150,000 ÷ $400,000 = 37.5%

ROAI = (500,000 – 450,000) ÷ 250,000
= 50,000 ÷ 250,000 = 20%

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The examples assume that only one item would be changed to reach the ROAI target of 20%. However, one or more items can change.

Making Multiple Adjustments

Sales	500,000		Target ROAI	20%
Variable Expenses	300,000		Required EBIT	80,000
Fixed Expenses	150,000		**Difference**	**30,000**
EBIT	50,000		Required AI	250,000
Asset Investment	400,000		**Difference**	**150,000**
ROAI	12.50%			
COD	12.00%			
Spread	0.50%			
			ROAI	**20.04%**
Price	530,000		Sales	522,753
Volume	575,000		Variable Expenses	300,615
Variable Expense	270,000		Fixed Expenses	150,000
Fixed Expense	120,000		EBIT	72,138
Asset Investment	250,000		Asset Investment	360,000
% Changes				
Price	6.00%		Price	2.25%
Volume	15.00%		Volume	2.25%
Variable Expense	-10.00%		Variable Expense	-2.00%
Fixed Expense	-20.00%		Fixed Expense	0.00%
Asset Investment	-37.50%		Asset Investment	-10.00%

Engineering Firm Example

Income Statement	
Net Sales	22,380
Less Cost of Goods Sold	12,533
Gross Profit	***9,847***
Less SGA	7,979
Less Depreciation	397
Earnings Before Interest and Taxes	***1,471***
Less Interest Expense	781
Earnings Before Taxes	690
Less Taxes	193
Net Income	***497***

Balance Sheet			
Current Assets		Current Liabilities	
Cash	24	Accounts Payable	1,471
Accounts Receivable	3,137	Accrued Expenses	764
Inventory	4,533	Current Portion Long Term Debt	313
Other Current Assets	734	*Total Current Liabilities*	*2,548*
Total Current Assets	*8,428*		
		Long-Term Debt	6,195
Fixed Assets		Total Liabilities	8,743
Land, Bldg., Mach., Equip.	6,721		
Less Accumulated Depreciation	4,061	Shareholders (Owners) Equity	
Other Fixed Assets	1,314	Common Stock	340
Total Fixed Assets	*3,974*	Retained Earnings	3,319
		Less Dividends	
		Total Equity	3,659
		Total Liabilities & Equity	**12,402**
Total Assets	**12,402**		

ROAI Solutions

Sales	22,380			
Variable Expenses	16,523		Target ROAI	20%
Fixed Expenses	4,387		Required EBIT	2,033
EBIT	1,471		Difference	562
Asset Investment	10,167		Required AI	7,355
ROAI	14.47%		Difference	2,812
COD	12.00%			
Spread	2.47%		**ROAI**	**20.57%**
Price	22,942		**Sales**	**23,282**
Volume	24,529		**Variable Expenses**	**16,848**
Variable Expense	15,960		**Fixed Expenses**	**4,343**
Fixed Expense	3,824		**EBIT**	**2,091**
Asset Investment	7,355		**Asset Investment**	**10,167**
% Changes				
Price	2.51%		**Price**	**1.00%**
Volume	9.60%		**Volume**	**3.00%**
Variable Expense	-3.40%		**Variable Expense**	**-1.00%**
Fixed Expense	-12.82%		**Fixed Expense**	**-1.00%**
Asset Investment	-27.66%		**Asset Investment**	**0.00%**

Conclusion

- While it may seem simple to raise revenue or lower costs, using a tool like ROAI analysis allows small business owners to conceptualize how little changes could have potentially large impacts.

For answers to questions, please contact:

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