





**Welcome to the Advance CBA Webinar:
Improving Financial Return
April 3, 2007
11:00 a.m. – 12:00 p.m. EST**

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- ✓ Un-plug PDAs (Personal Digital Assistants)
- ✓ Turn cell phone to off (not vibrate)
- ✓ Use chat feature to type in questions
- ✓ Presentation slides can be located at:
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SBDCEBA...the driving force behind small business success!



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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




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



Financial Analysis Steps


- ✓ Calculate return on asset invest (ROAI)
 - $ROAI = EBIT \div \text{Asset Investment}$
 - $\text{Asset Investment} = \text{Interest-Bearing Debt} + \text{Owner's Equity}$
 - $EBIT = \text{Operating Income (Income before paying Interest or Taxes)}$

"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
 - $\text{Asset Investment} = \$300,000 \text{ AI}$
- ✓ 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
- ✓ $ROAI = EBIT / \text{Asset Investment}$
- ✓ $24,000 / 300,000 = 8\% \text{ ROAI}$




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
 - $\text{Asset Investment} = \$300,000 \text{ AI}$
- ✓ 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!)
- ✓ $ROAI = EBIT / \text{Asset Investment}$
- ✓ $24,000 / 300,000 = 8\% \text{ ROAI}$
- ✓ This is the same as the unleveraged example




Financial Analysis Steps

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




Financial Analysis Steps

- ✓ Calculate Leverage
 - $\text{Leverage} = \text{Interest-Bearing Debt (IBD)} \div \text{Owner's Equity}$
- ✓ Calculate Cost of Debt (COD)
 - $\text{COD} = \text{Interest Expense} \div \text{IBD}$
- ✓ Compare COD with ROAI



Analyze the results


- ✓ $\text{Leverage} = \$200,000 / \$100,000 = 2$ Debt for every Dollar of Equity: $D/E = 2$
- ✓ $\text{COD} = 10\%$
- ✓ $\text{ROAI} = 8\%$
- ✓ $\text{Spread} = -2\%$
- ✓ 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%



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**




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 - (\$300,000 / \$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 fc)) ÷ 400,000	
= (575,000 - 495,000) ÷ 400,000	
= 80,000 ÷ 400,000 = 20%	




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 fc)) ÷ 400,000	
= (500,000 - 420,000) ÷ 400,000	
= 80,000 ÷ 400,000 = 20%	



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
<i>Check</i>	= 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%




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



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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