This Thing Called Debt!

Kevin Bernhardt
UW-Extension
Farm Management Specialist
and
UW-Platteville
Professor of Agri-Business

Questions:
608-342-6121
bernhark@uwplatt.edu
Anatomy of Returns

Total Assets = Total Liabilities + Total Equity

- Total amount of stuff used in the business to make profits (supplies, inputs breeding stock, machinery, etc.).
- How much of that stuff is financed by the “bank”, that is, debt capital.
- How much of that stuff is financed by your own money, that is, equity capital.

When profits are made, those profits are a return to all the assets, some of which is a return to your money invested (equity capital) and some of which is a return to the bank’s money (debt capital).
John is interested in creating an add-on business for the farm to help support the return of his son. He has $60,000 of equity and is willing to borrow up to $40,000 more. Is it financially a good idea?
Case 1 (Equity Only)

John decides not to borrow, but does invest his $60,000 of equity in assets that are put to work and earns an 8% Rate of Return on Assets (ROROA)
Case 2 (Borrow $40,000 at 6%)

John decides to invest his $60,000 and borrow $40,000 more at 6 percent. The total $100,000 in assets is put to work and earns an 8% Rate of Return on Assets (ROROA)
Case 3 (Borrow $40,000 at 10%)

John decides to invest his $60,000 and borrow $40,000 more at 10% percent. The total $100,000 in assets is put to work and earns an 8% Rate of Return on Assets (ROROA).
### In Conclusion

<table>
<thead>
<tr>
<th>Case</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assets Invested</td>
<td>$60,000</td>
<td>$100,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Equity Capital</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Debt Capital</td>
<td>$0</td>
<td>$40,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>i-rate</td>
<td>irrelevant</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>Total Return After Interest Costs</td>
<td>$4,800</td>
<td>$5,600</td>
<td>$4,000</td>
</tr>
<tr>
<td>ROROA</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>ROROE</td>
<td>8%</td>
<td>9.3%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>
The End
Rate Of Return On Assets

\[ \text{ROROA} = \frac{\text{NFIFO} + \text{interest paid} - \text{unpaid labor/mgt}}{\text{Total Assets}} \]

Rate Of Return On Equity

\[ \text{ROROE} = \frac{\text{NFIFO} - \text{unpaid labor/mgt}}{\text{Total Equity}} \]