

WELCOME TO EVALUATING PROFITABLE AGRICULTURAL ENTERPRISES

A PROFESSIONAL DEVELOPMENT WEBINAR SERIES



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WEBINAR SCHEDULE

Date	Session Title
Wednesday December 1	Introduction to Economic Feasibility Assessment
Wednesday December 15	Market Feasibility Assessment
Wednesday January 12	Financial Feasibility Assessment – Budget and Profit Basics
Wednesday January 26	Financial Feasibility Assessment – Budgets and Financial Statements
Wednesday February 9	Financial Feasibility Assessment – Financial Analysis
Wednesday February 23	Enterprise Financing: Federal Grant and Loan Programs
Wednesday March 30	Enterprise Assessment Example – Drought Management
Wednesday April 13	Conducting Client Needs Assessments
Wednesday April 27	Evaluating Extension Programming
Wednesday May 11	Q&A Session



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TODAY

- Conducting financial analysis – Drs. Ryan Larsen and Ruby Ward
- Resources
- Guest speaker
- Thanks to WSARE for funding this webinar series - Western Sustainable Agriculture Research and Education



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FINANCIAL FEASIBILITY ASSESSMENT: FINANCIAL ANALYSIS

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RYAN.LARSEN@USU.EDU



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5 KEY RATIOS

- 1. Working Capital to Gross Revenue
- 2. Operating Profit Margin
- 3. Operating Expense Ratio
- 4. Return on Assets
- 5. Term Debt Coverage Ratio



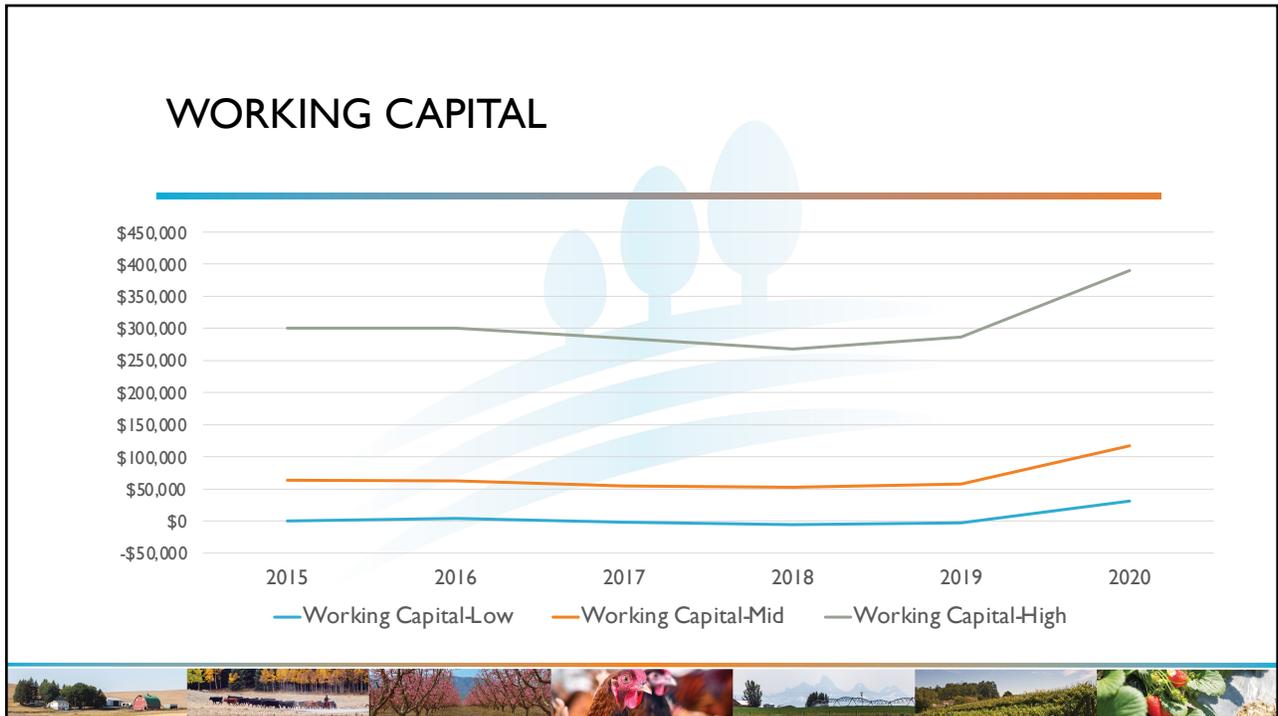
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RATIO I: WORKING CAPITAL TO GROSS REVENUE

- Working capital divided by Gross revenues gives a relationship of the working capital to the size of the farm business. The higher the ratio, the greater the liquidity.
- Working capital is defined by the difference between current assets and liabilities
- Gross revenues is defined simply as the price by quantity of output.



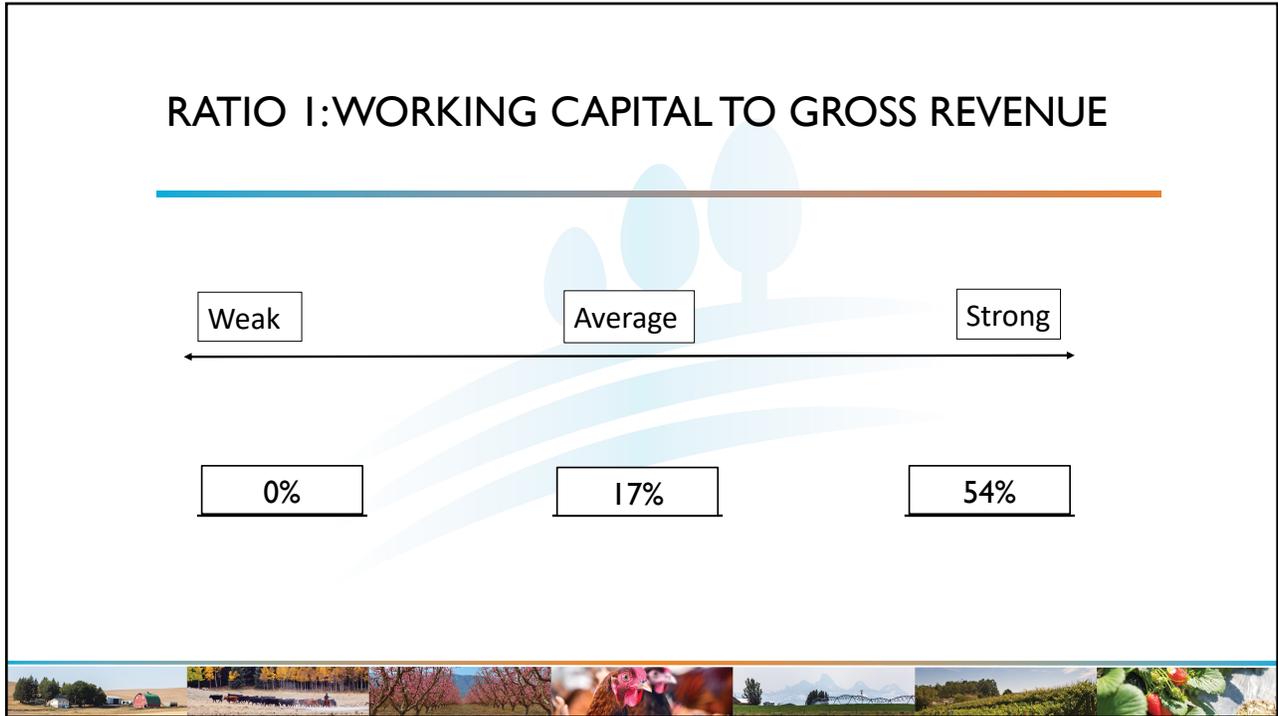
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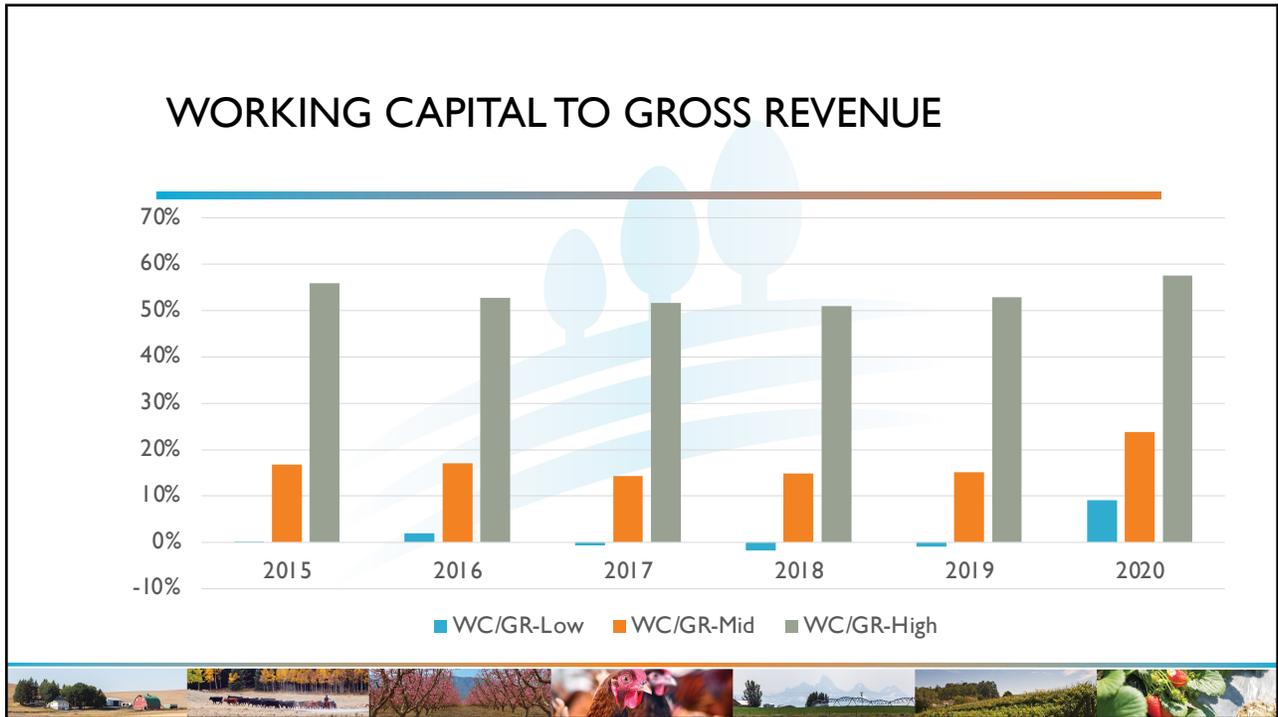
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RATIO 2: OPERATING PROFIT MARGIN

- This ratio measures profitability in terms of return per dollar of gross revenue. A farm business has two ways to increase profits—either by increasing the profit per unit produced or by increasing the volume of production (if the business is profitable).



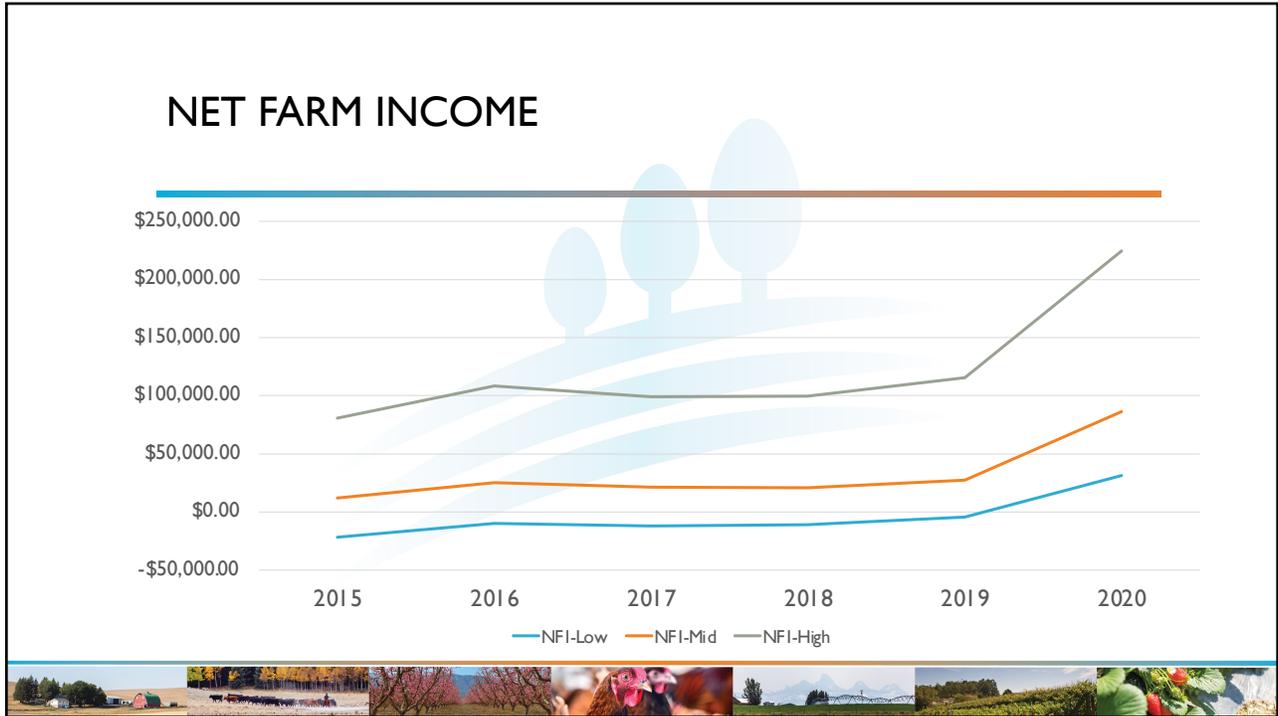
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RATIO 2: OPERATING PROFIT MARGIN

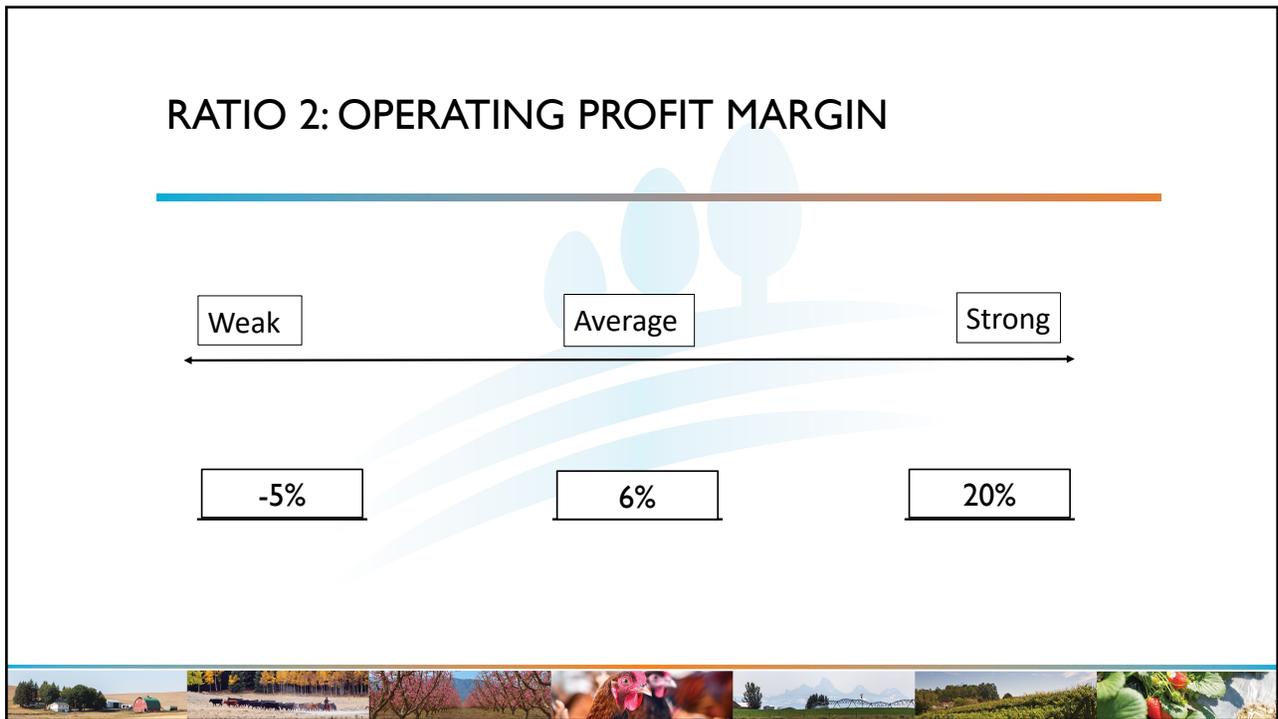
$$\frac{\left(\begin{array}{l} \text{Net Farm Income} + \\ \text{Farm interest expense} \\ - \text{Owner withdrawals} \end{array} \right)}{\text{Gross revenues}} = \text{Operating Profit Margin}$$



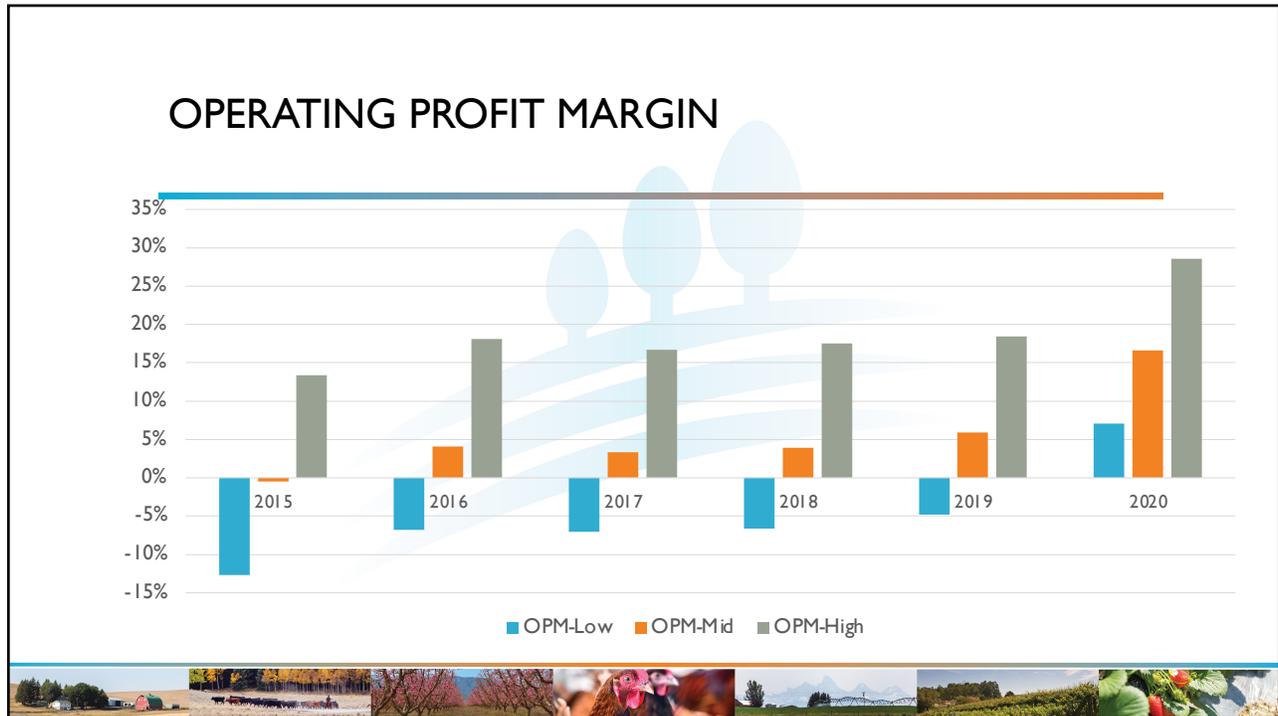
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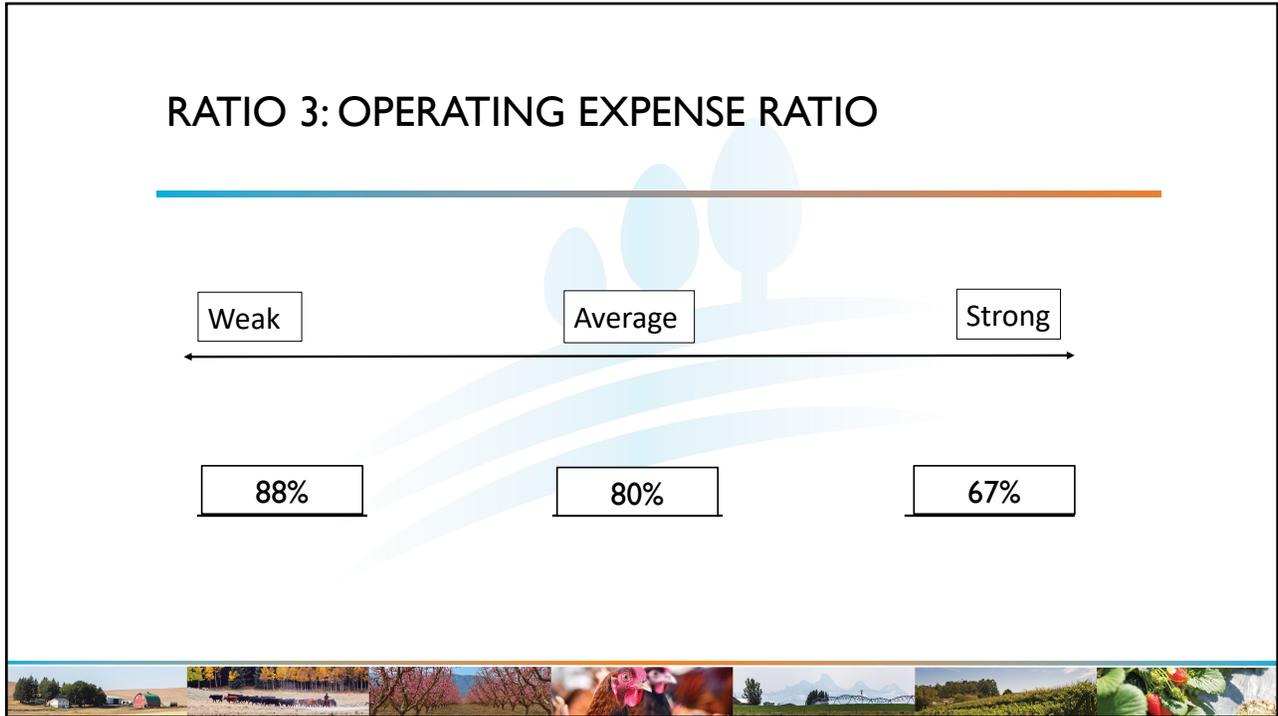


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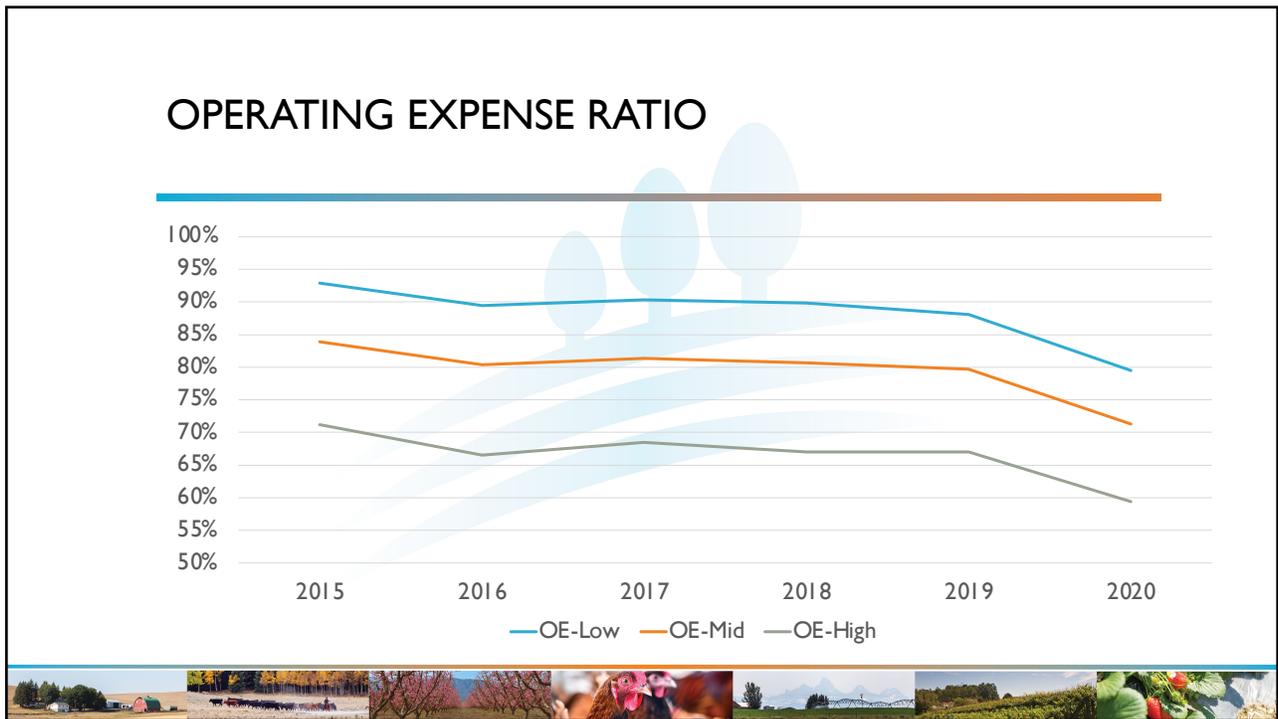
RATIO 3: OPERATING EXPENSE RATIO

- The operating expense ratio reflects the relationship of all operating expenses to gross revenues.
- $(\text{Total operating expenses} - \text{Depreciation/amortization expense}) \div \text{Gross revenues}$

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RATIO 4: MACHINERY VALUE PER ACRE

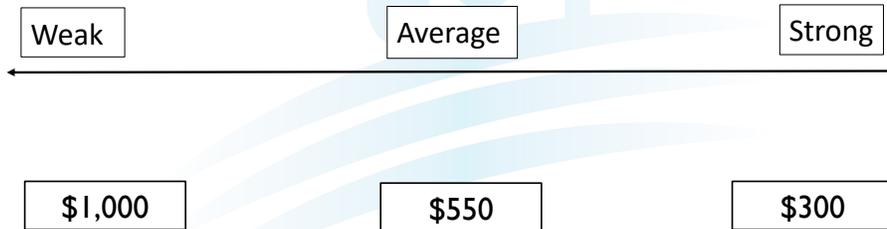
- Measures the value of machinery on a per acre basis. Used to analyze whether farm is over invested or under invested in machinery.

$$\frac{\text{Value of Machinery}}{\text{Acres}} = \text{Machinery Value per Acre}$$



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RATIO 4: MACHINERY VALUE PER ACRE



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RATIO 5: TERM DEBT COVERAGE RATIO

- The ratio provides a measure of the ability of the borrower to cover all term debt and capital lease payments before acquisition of unfunded assets. The greater the ratio, over 1:1, the greater the margin to cover the payments.
- **Capital debt repayment capacity ÷ Total principal and interest on term**



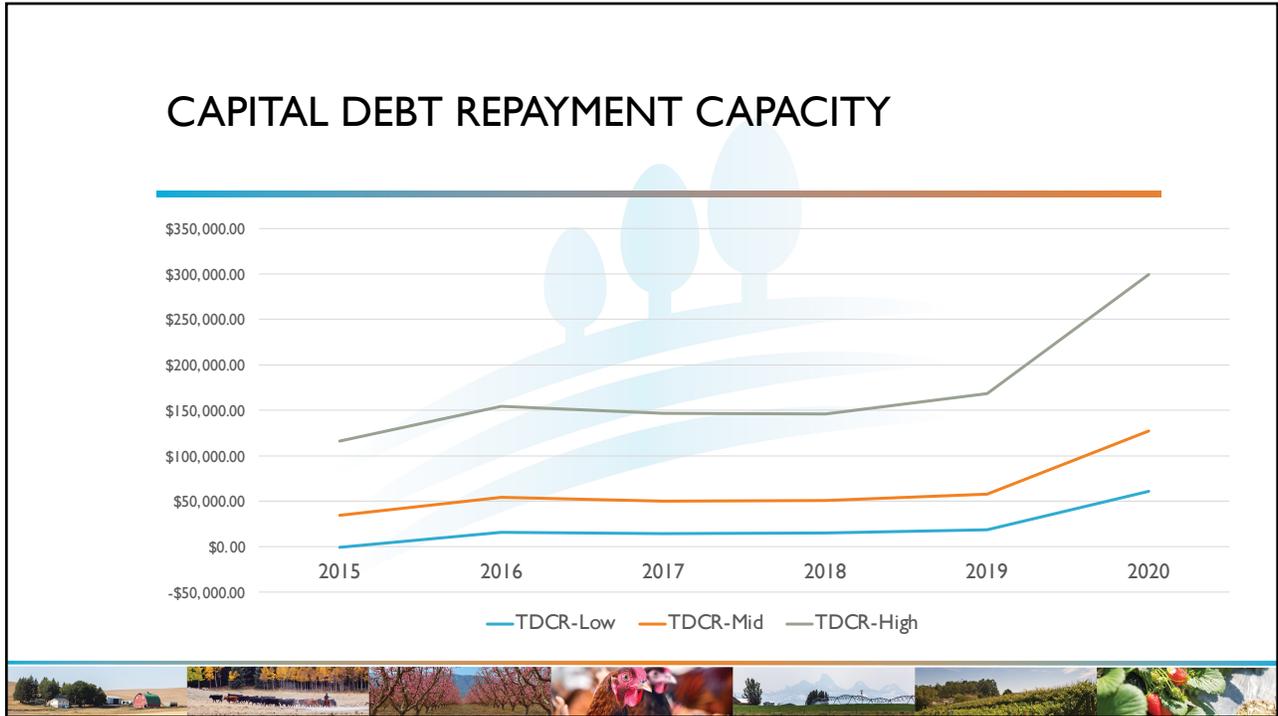
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RATIO 5: TERM DEBT COVERAGE RATIO

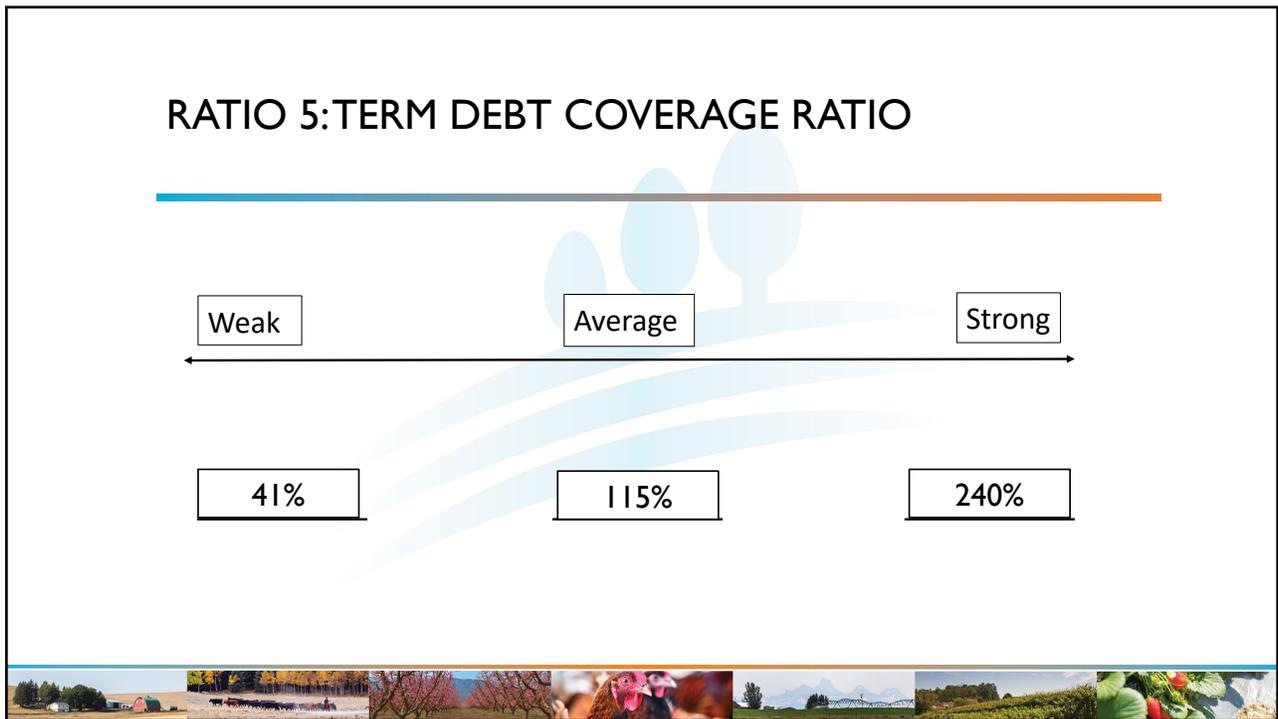
- + Net farm income from operations
- +/- Total miscellaneous revenues/expenses
- + Total non-farm income
- + Depreciation/amortization expense
- - Total income tax expense
- - Owner withdrawals (total)
- + Interest expense on term debt
- = **Capital debt repayment capacity**



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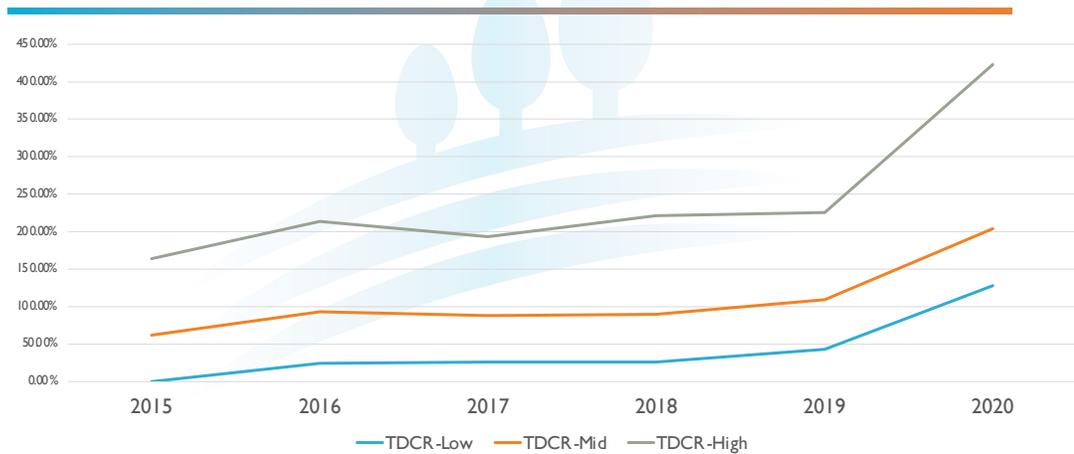


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RATIO 5: TERM DEBT COVERAGE RATIO



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DUPONT FINANCIAL ANALYSIS

- The DuPont system provides a straightforward method to analyze the financial strengths and weaknesses of a firm.
 - It takes into account the major levers of firm profitability
 - Efficiency or earnings
 - How efficiently the firm is using inputs to generate profits
 - Asset use
 - How well capital assets are being used to generate gross revenues
 - Debt leverage
 - How well the business is leveraging its debt capital

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DUPONT FINANCIAL ANALYSIS

$$\text{Total Assets} = \text{Total Liabilities} + \text{Total Equity}$$

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.

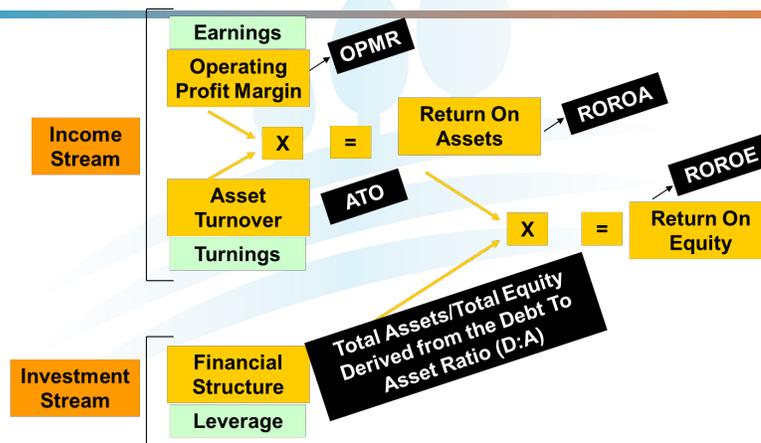
How much of that stuff is financed by your own money, that is, equity capital.

So, when you make profits, 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).



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DUPONT FINANCIAL ANALYSIS



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DuPont Financial Analysis			
	Operation 1	Operation 2	Operation 3
Net Farm Income from Operations	\$282,577	\$115,728	\$191,590
Unpaid Labor & Mgmt	\$100,000	\$50,000	\$75,000
Interest Paid	\$116,159	\$57,065	\$64,972
Gross Revenue	\$5,741,727	\$579,258	\$871,460
Total Assets	\$18,377,052	\$3,844,722	\$3,182,920
Net Worth	\$13,971,621	\$2,655,607	\$2,275,056
Operating Profit Margin			
Asset Turnover Ratio			
Rate of Return on Assets			
Leverage Ratio			
Rate of Return on Equity			

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KEY TAKEAWAYS

- Need to understand these ratios
 - Help with management decisions
 - Identify strengths and weaknesses in the operation
 - Manage expenses and benchmark operation

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MyFi Assist App



- MyFi Assist – an app for “My Financial Assistant”
 - Free
 - Available in IOS and Android
 - Can be personalized to your situation

More information about the app and other materials are available at

DiverseAg.org/Money



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 A screenshot of the MyFi Financial Assistant app interface. At the top, it says "MyFi Financial Assistant" and "USU Extension". Below that is a yellow button labeled "Personal Preferences". The main heading is "Choose or change your item and its value below:". There is a toggle switch for "Turn Preferences on/off" with "On" and "Off" options. The first question is "1. What is your item?" with a text input field containing "calves" and a list icon to the left. Below the input field is the text "Examples: hours worked, head of calves, bales of hay, etc.". The second question is "2. What is the value of this item?" with a text input field containing "500". Below the input field is the text "Example: the value of each hour worked is \$10". At the bottom is a yellow button labeled "Menu". At the very bottom, it says "Visit: DiverseAg.org/money for more information".

Personal Preferences – Ranch Example

- Input calves as the item of interest
- In this example, each calf is valued at \$500
- What is the monthly payment of a truck bought for \$30,000?
- The interest on the loan is 6%, and there is no down payment
- Plan to pay the loan off in 4 years



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- Personal Preferences – Ranch Example
- You would like to purchase a pickup and need to borrow \$30,000 now. You will pay it off with monthly payments over 4 years. The interest rate is 6% annually.
- Use MyFi Assist, “Paying for a Loan”
 - Calculate the monthly payment
 - Calculate how many calves you would have to sell to make the truck payment
 - What is the total you will pay for the pickup?

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Your monthly payment will be	\$704.55
The total amount you will pay in interest is	3,818.44
After making all your payments you will pay	33,818.44
Your interest cost is equivalent to 13% of the original cost	
You will need	1.4 calves each month
	16.9 calves each year
	The total amount is equivalent to 67.6 calves
	The total interest is equivalent to 7.6 calves

Menu

- Can the business justify buying this truck?
- How many more bales of hay or calves will you need to sell to cover it?
- Think about not just this decision but potential effect on other decisions

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MyFi Financial Assistant
USU Extension

How long will it take to pay off my debt?

Sometimes rather than purchasing products for cash, we charge them on credit cards or take out a loan. If not watched, credit card balances can get pretty big. Often we want to know how long (how many payments) it will take to pay off a loan or credit card balance. This can also be used to find out how long it will take to pay if you increased your payment each month. Fill in the information in the gray boxes below to find out how long it will take to pay off the credit card balance.

What is the annual interest rate?

What's the balance you owe today?

How much will you pay each month?

Calculate

Time to pay off balance 0

The total amount you will pay in interest is \$0
 After making all your payments you will pay \$0

Your interest is equivalent to 0% of the original cost

You will need \$0
\$0

Menu

Credit Card

- You want to pay off a credit card with a balance of \$1,800. The interest rate on the credit card is 12%.
- If you were to make the minimum monthly payments of \$25, how long would it take for you to pay it off?
- How long would it take to pay it off if you increased the monthly payments to \$75?

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MyFi Financial Assistant
USU Extension

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What is the annual interest rate?

What's the balance you owe today?

How much will you pay each month?

Calculate

Time to pay off balance 127.93 Months

The total amount you will pay in interest is 1,398.25
 After making all your payments you will pay 3,198.25

Your interest cost is equivalent to 88% of the original cost

You will need 2.1 hours worked each month
25 hours worked each year
The total amount is equivalent to 266.5 hours worked
The total interest is equivalent to 116.5 hours worked

Menu

Credit Card Cont.

- If you were to make the minimum monthly payments of \$25, how long would it take to have you pay it off?
 - 128 months and \$1,398 in interest on the original balance**
- How long would it take to pay it off if you increased the monthly payments to \$75?
 - 28 months and \$269 in interest on the original balance**

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Paying for Home Loans

- MyFi Assist can also be used to look at home loans
- Use “Paying for a Loan” to look at how much monthly payments would change with different interest rates and different down payment amounts
- Use “Pay Off Credit Card” to look at how making larger payments can reduce the amount of time to pay off the mortgage



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RESOURCES

- MyFi Financial Assistant at: <https://diverseag.org/money/index>
- Quick Books at: <https://quickbooks.intuit.com>
- USU Extension Enterprise Budgets at: <https://extension.usu.edu/apec/agribusiness-food/enterprise-budgets>
- USU Extension Farm Analysis at: <https://farmanalysis.usu.edu/>
- The Farm Financial Management Database at: <https://finbin.umn.edu/>
- Center for Farm Financial Management at: <https://www.cffm.umn.edu/>
- The 5 C's Of Credit at: <https://www.forbes.com/advisor/credit-score/5-cs-of-credit/>



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QUESTIONS SO FAR?



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GUEST SPEAKER – ADAM BUNKER

- Adam Bunker is the operation's manager at Papa Joe's Produce, a grower of fresh vegetables and maker of value-added food products in northeast Wyoming. The operation uses high tunnels and vertical growing systems to raise lettuce, kale, basil, peppers and tomatoes. In addition, they create homemade foods like pesto, salad dressings, hummus, and infused olive oils. Adam came to the business with a background in marketing, strategic planning, and financial modeling, all of which he has relentlessly applied to improving Papa Joe's.



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ADAM BUNKER- PAPA JOE'S PRODUCE, SHERIDAN, WY

- Producer of fresh vegetables (leafy greens) and value-added products (jams, oils, pesto, hummus, salad dressings)
- Products sold direct (at a farmer's markets), through own website, and local partners
- Established in 2016



HOME OUR PRODUCTS GROWTH METHODS VIRTUAL M



Vertical Hydroponic Greenhouse

papajoesproduce.com



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Papa Joe's
Produce

WEBINAR: FINANCIAL ANALYSIS

Joe Wesnitzer
Adam Bunker

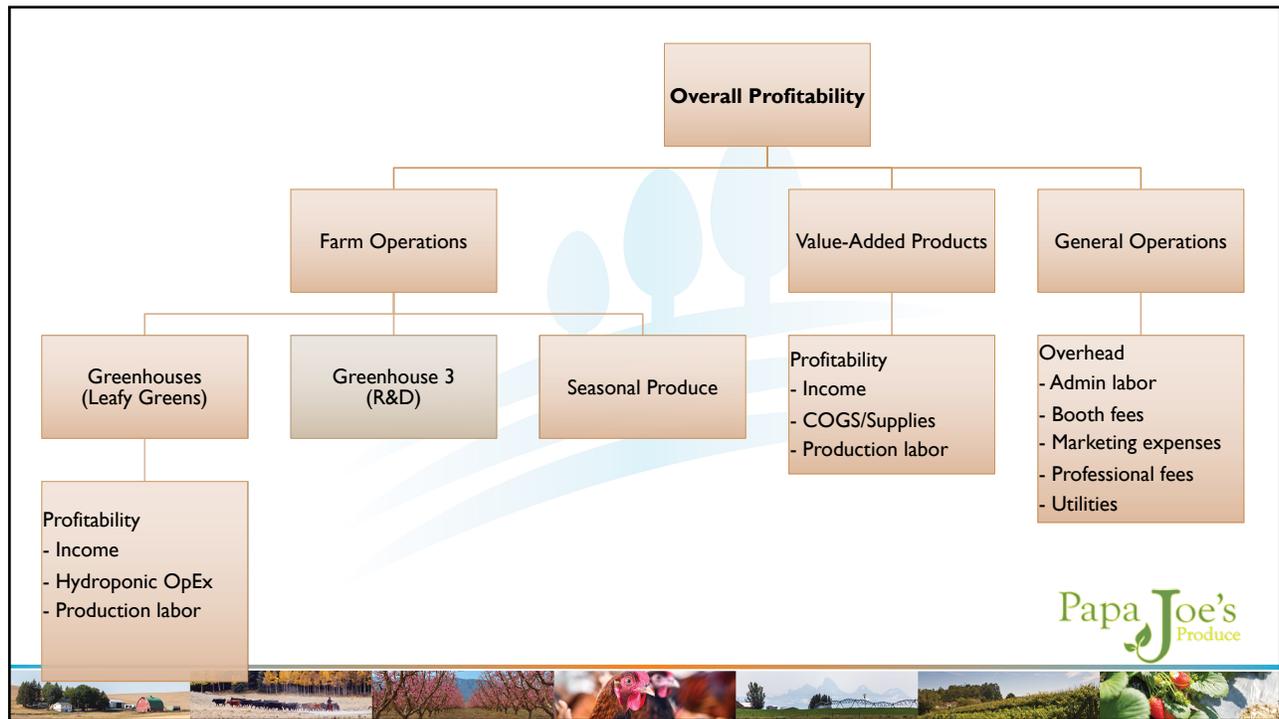
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OVERALL PROFITABILITY

- Key Strategies
- Set up accounting categories for each profit center and/or operational area
 - Farm operations
 - Value-added products
 - General operations (overhead)
- Set up time tracking along these categories
- Assign a category to every income or expense transaction



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	Greenhouses	GH3 R&D	Seasonal Produce	Value-Added Products	General Ops	Total
Income						
Produce Income	\$40,000	\$5,000	\$2,000			\$47,000
VAP Income				\$7,500		\$7,500
Total Income	\$40,000	\$5,000	\$2,000	\$7,500		\$54,500
Expenses						
Hydroponic OpEx (Nutrients, seeds, etc)	\$5,000					\$5,000
Soil and Fertilizer		\$500	\$500			\$1,000
VAP Supplies				\$2,500		\$2,500
Location fees					\$1,000	\$1,000
Marketing					\$600	\$600
Utilities					\$4,500	\$4,500
Labor	\$25,000	\$9,000	\$1,750	\$2,500	\$2,000	\$40,250
Total Expenses	\$30,000	\$9,500	\$2,250	\$5,000	\$8,100	\$54,850
Net	\$10,000	(\$4,500)	(\$250)	\$2,500	(\$8,100)	(\$350)

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THANK YOU!

- For additional questions, to arrange a tour, or to buy produce:
- (307) 751-7422
- papajoesproduce@gmail.com
- [Facebook.com/papajoesproduce](https://www.facebook.com/papajoesproduce)
- PapaJoesProduce.com



Papa Joe's
Produce



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NEXT WEBINAR: WEDNESDAY FEBRUARY 23

- Evaluation Federal Grant and Loan Programs – USDA agency speakers
- Guest speaker on using FSA loans



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THANK YOU!

QUESTIONS?



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