

# IS IT PROFITABLE TO RETURN TO THE FAMILY FARM?

4960 Senior Thesis

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# OVERVIEW



- Objective
- Background
- Business Plan
- Financial Data
- Results/  
Conclusion

# OBJECTIVE

- ◉ Develop a business plan to expand the farm
- ◉ Currently my parents operate the farm as there own operation
- ◉ I operate my cow/calf and few acres of crop land as my own operation
- ◉ This business plan will focus only on the expansion of these operations after they are combined



# OBJECTIVE

- ◉ Information to follow is solely based on projections of income and expenses that would associate with expanding the farm
- ◉ No real financial information about the existing farm operations will be relevant to the expansion plan for the purpose of this thesis



# BACKGROUND

- ◉ USDA census shows that operators from age 25-34 decreased 21% from 2002 to 2007
- ◉ 3<sup>rd</sup> generation family farm
- ◉ Located by Munden, Kansas near Belleville in Republic County

## BACKGROUND (cont.)

- ◉ No one else in the family shows interest in retuning
- ◉ Reduced to hobby farm
- ◉ Final decision can't be rushed



## BUSINESS PLAN

- Name of Business
- Mission statement
- Responsibilities
- SWOT Analysis
- SMART Goals

# NAME OF BUSINESS

- "Pierson Farms"





# MISSION STATEMENT

- “To conduct Agricultural Business in the Munden Kansas region by maintaining and developing friendships that will lead into partnerships with neighbors and land owners, so that we can operate a successful business to fulfill life’s needs for our families.”



# RESPONSIBILITIES

- ◉ Owner-  
Rick Pierson
- ◉ Manager-  
Eli Pierson
- ◉ Finances-  
Melinda Pierson



# SWOT

## Strengths

- Equipment already exists
  - 2 tractors
  - Grain drill
  - Sprayer
  - Combine
  - Grain cart
  - Grain truck
  - Stock trailer
  - Bale mover



# SWOT

## Strengths (cont.)

- ⦿ No tillage costs between crops
  - All crops are drilled directly into the previous crops residue in a no-till system
- ⦿ Cow/calf herd is already established
- ⦿ Winter feed
  - Alfalfa
  - Brome



# SWOT

## Weaknesses

- ⦿ Bank debt
- ⦿ No haying equipment
- ⦿ Harvest equipment repairs



# SWOT

## Weaknesses (cont.)

- ◉ Cattle quality
- ◉ Full time jobs will be held by all members of “Pierson Farms”
- ◉ Management



# SWOT

## Opportunities



### ○ Land availability

- Crop
- Pasture



# SWOT

## Threats

- ◉ Weather Risk
- ◉ Losing land lease
- ◉ Market Risk
- ◉ Financial Risk





# GOALS

## Short Term

- ◉ Improve cattle quality
  - Purchase heifers
- ◉ Finish cattle facilities
- ◉ Move closer to herd
- ◉ Rent 300 acres of farm ground each of the first 5 years



# GOALS

## Long Term

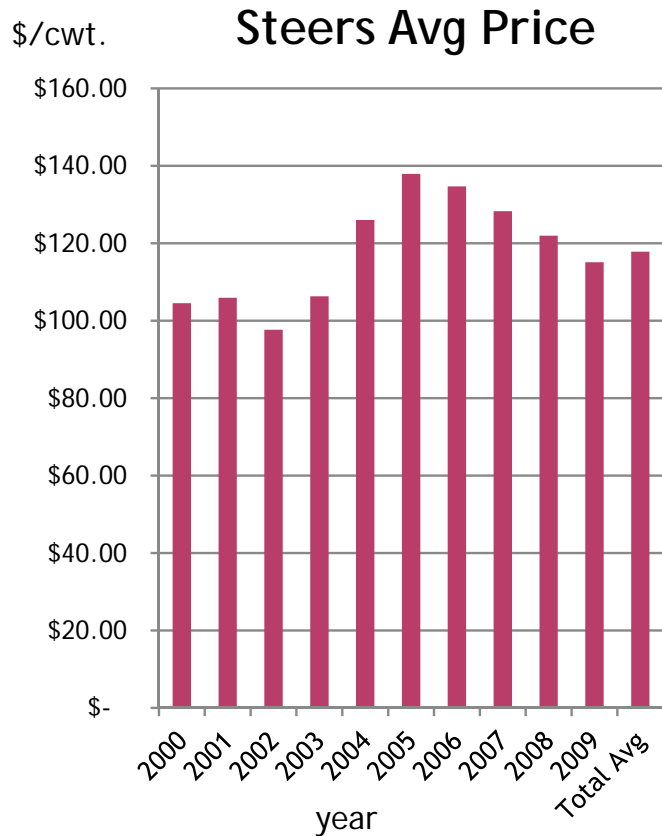
- ◉ Pay off land principal and interest
- ◉ 150 mother cows by 10<sup>th</sup> year
- ◉ Farm 1000 acres of cropland in the 6<sup>th</sup> year
- ◉ Ultimate objective is to buy the whole operation when parents retire



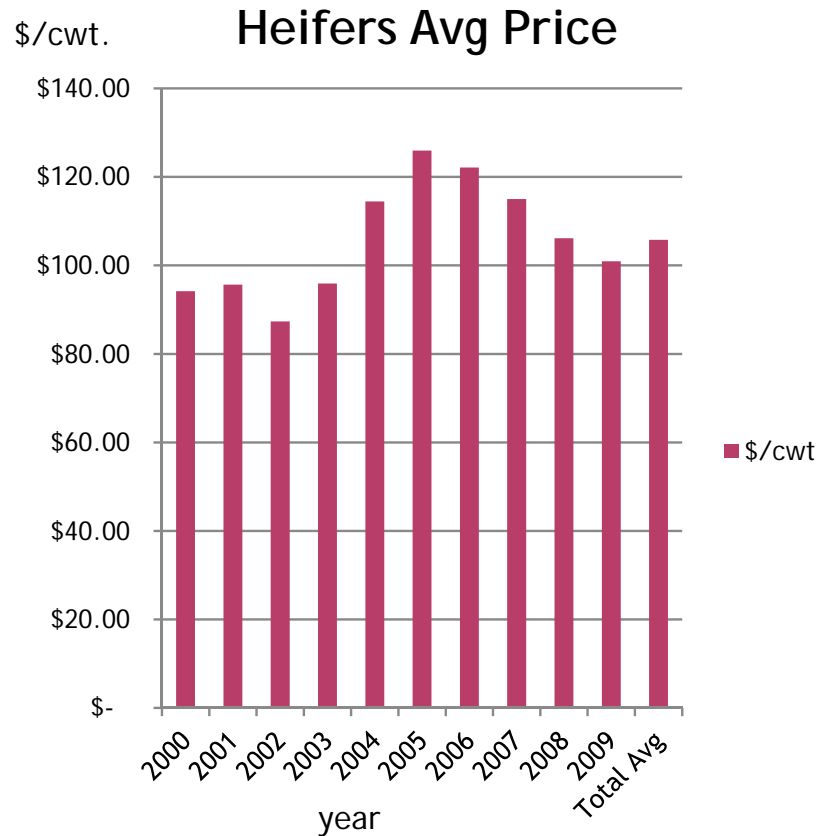
# FINANCIAL DATA

- Historical data
- Available for land analysis
- Pro forma income statement

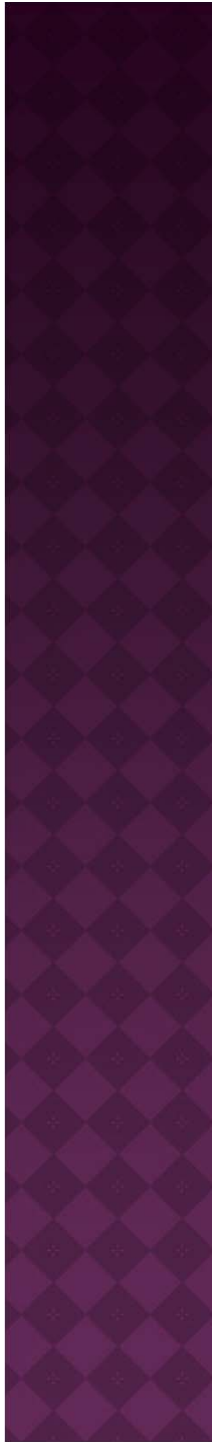
# HISTORICAL DATA



**Avg. \$/cwt: \$117.84**

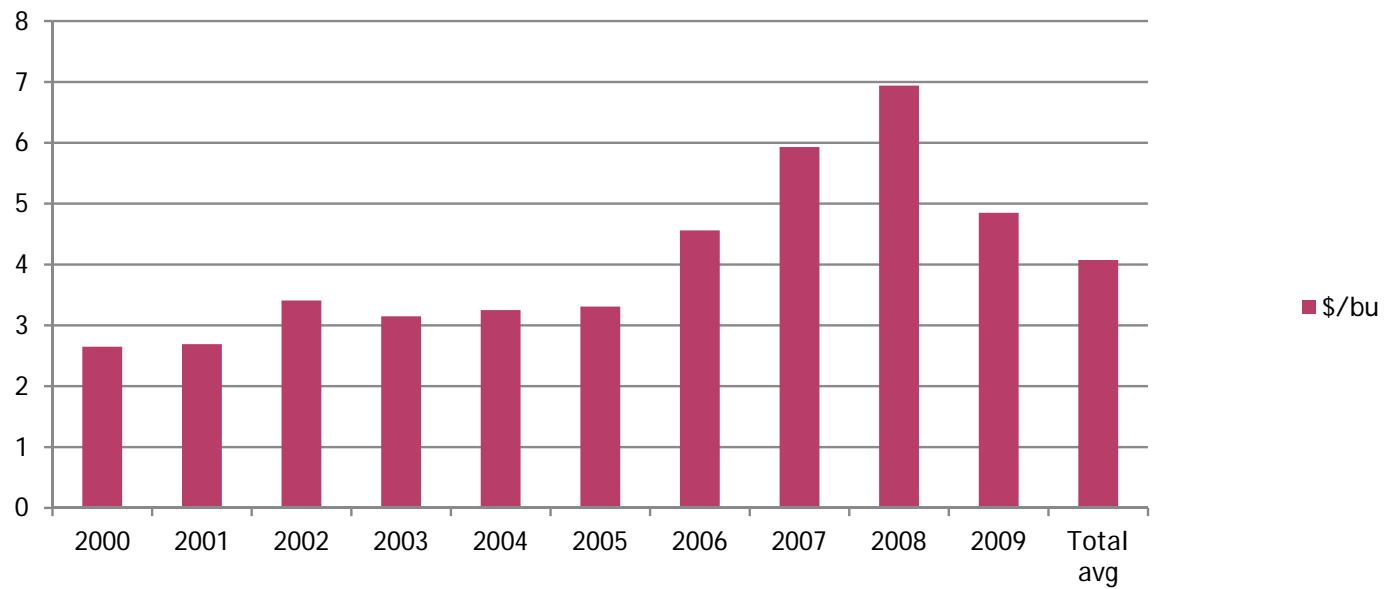


**Avg. \$/cwt: \$105.77**



# HISTORICAL DATA

Wheat \$/bu

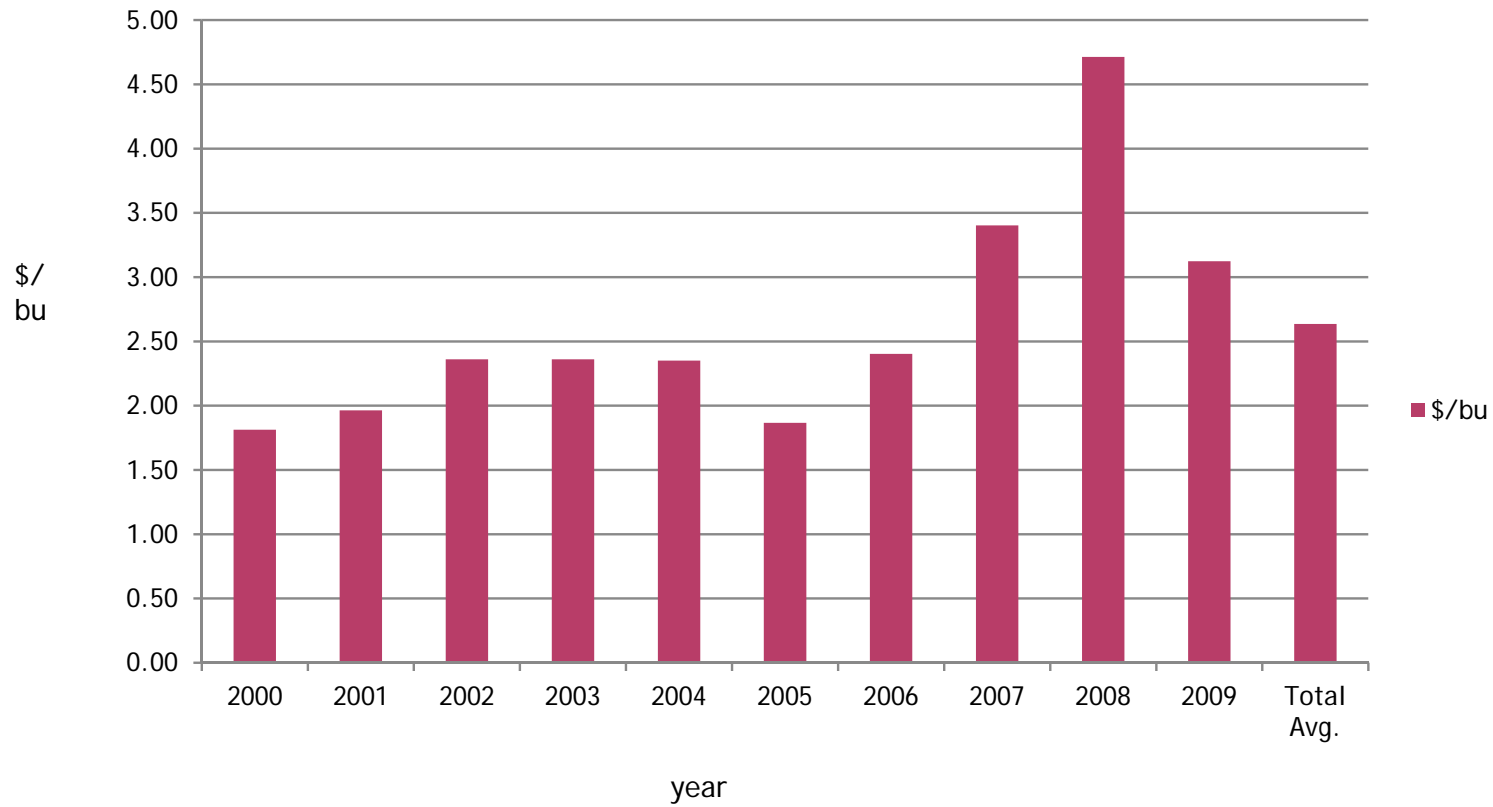


Avg. \$/bu: \$4.07



# HISTORICAL DATA

## Milo

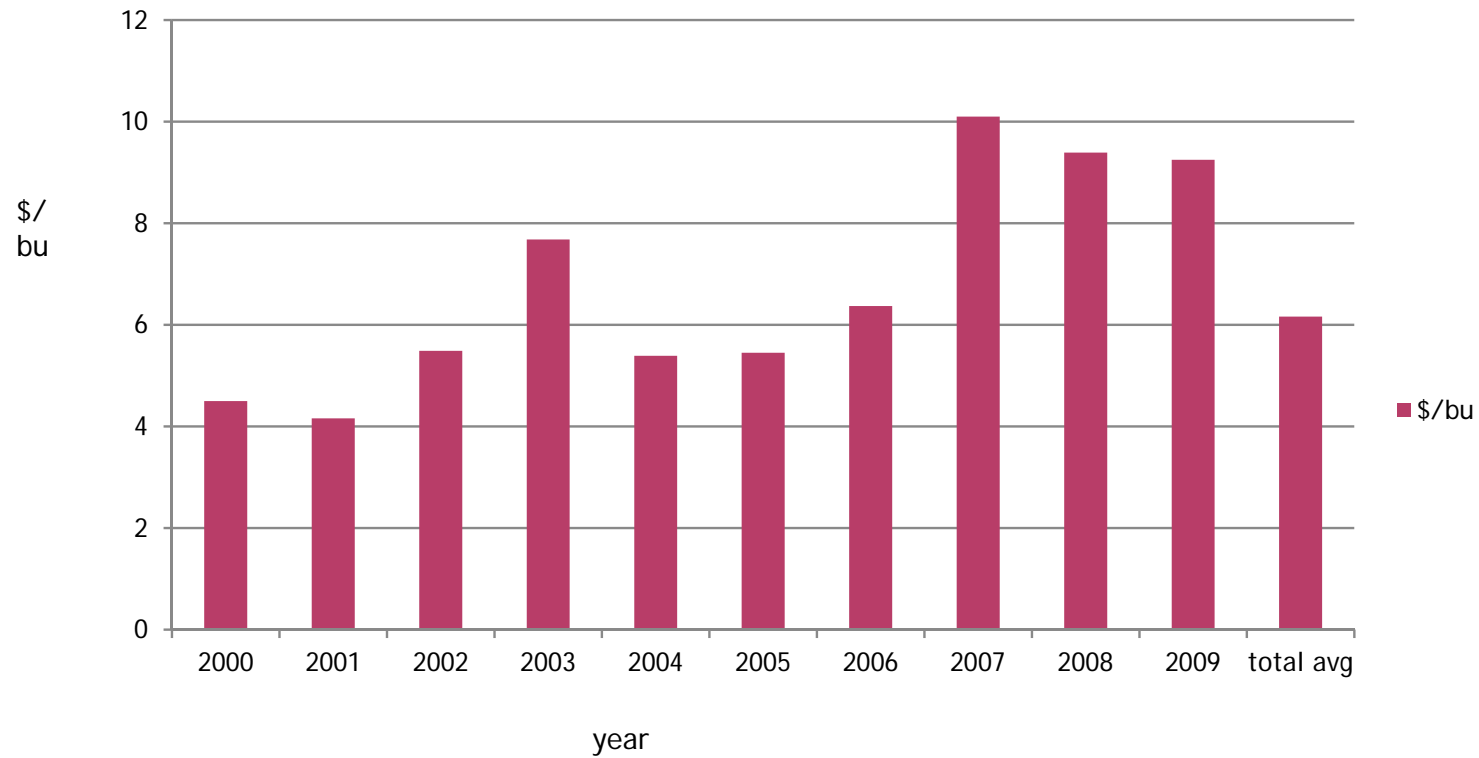


Avg. \$/bu: \$ 2.64



# HISTORICAL DATA

## Soybeans

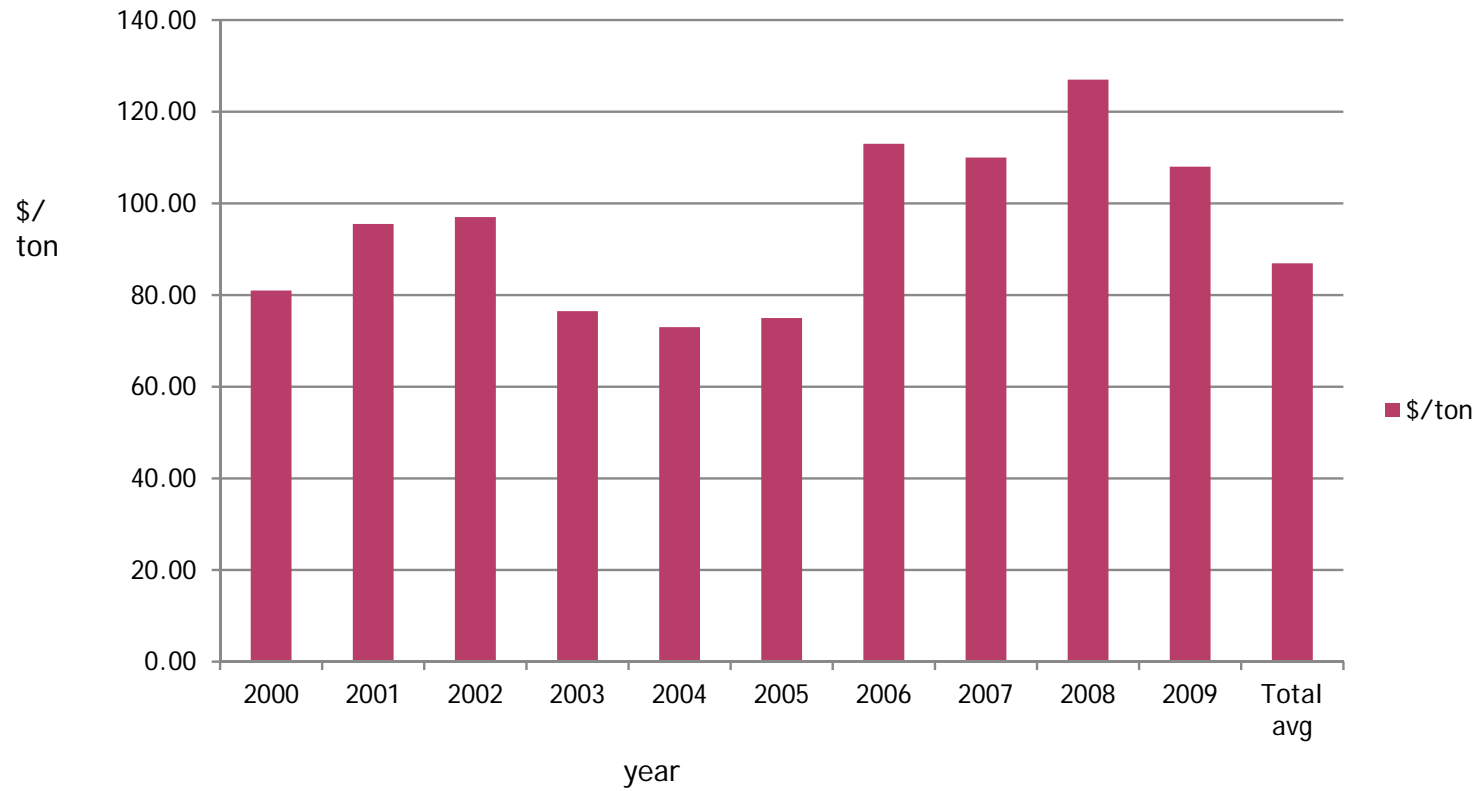


Avg. \$/bu: \$ 6.78



# HISTORICAL DATA

## Alfalfa



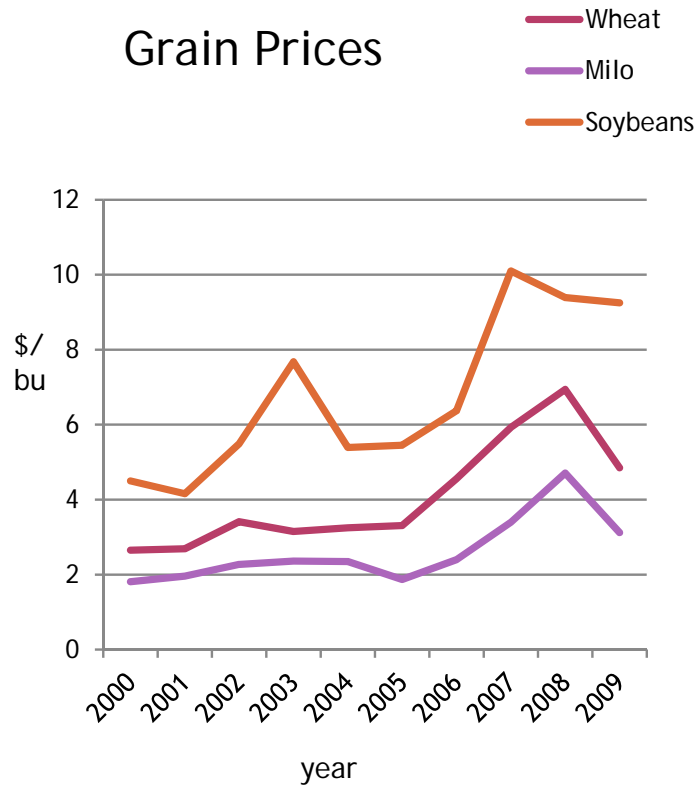
Avg. \$/ton: \$95.60



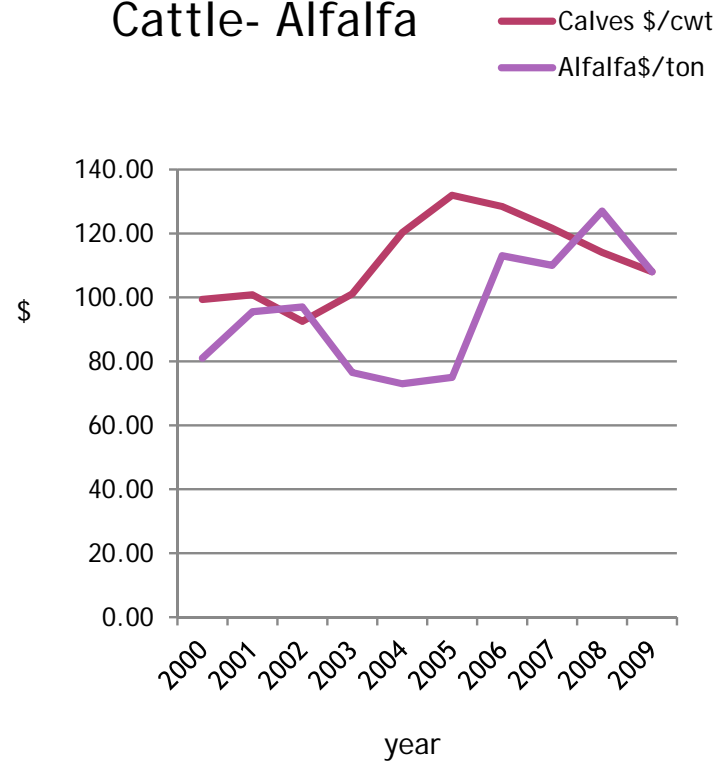


# HISTORICAL PRICES

## Grain Prices



## Cattle- Alfalfa



# HISTORICAL DATA

## Previous 10 years avg. price

- Cattle \$111.81
- Wheat \$4.07
- Milo \$ 2.64
- Soybeans \$ 6.78
- Alfalfa \$ 95.60

## GDP inflated real price

- Cattle \$ 130.27
- Wheat \$ 4.74
- Milo \$ 3.06
- Soybeans \$ 7.90
- Alfalfa \$ 111.38

# AVAILABLE FOR LAND

## Cow/calf on a per head basis

### Expenses

mineral	\$	113.90
feed hay	\$	23.40
stocks	\$	20.00
vet	\$	20.00
breeding fees	\$	<u>80.00</u>
<i>Total</i>	\$	<i>257.30</i>

### Income

500 lb. calf @	\$	<u>130.27</u>	GDP inflated price
<i>Total</i>	\$	<i>651.33</i>	

Available for land      \$            394.03



# AVAILABLE FOR LAND

## Wheat on a per acre basis

### Expenses

Target yield	40 bu/ac	
Fall-Drilling	\$	41.75
Spring- Spraying	\$	46.19
Crop insurance	\$	11.00
Harvest	\$	8.14
Management	\$	<u>5.00</u>
Total	\$	112.08
<b>Income</b>		
Price	\$	4.74 GDP inflated price
Revenue	\$	189.60
<b>Available for Land</b>	\$	<b>77.52</b>



# AVAILABLE FOR LAND

## Milo on a per acre basis

### Expenses

Target Yield	80 bu/ac
Pre- plant	\$ 92.44
Drilling	\$ 46.05
Post emergence	\$ 7.74
Crop insurance	\$ 11.00
Harvest	\$ 8.94
Management	<u>\$ 5.00</u>
Total Expenses	\$ 171.16

### Income

Price	\$ 3.06 GDP inflated price
Revenue	\$ 244.80
Available for Land	\$ 73.64



# AVAILABLE FOR LAND

## Soybeans on a per acre basis

### Expenses

Target yield	35 bu/ac
Pre-plant	\$ 10.22
Drilling	\$ 100.37
Post emergence	\$ 7.92
Crop Insurance	\$ 11.00
Harvest	\$ 8.04
Management	<u>\$ 5.00</u>
Total	\$ 142.55

### Income

Price	\$ 7.90 GDP inflated price
Revenue	\$ 276.50
<b>Available for land</b>	<b>\$ 133.95</b>



# AVAILABLE FOR LAND

## Alfalfa on a per acre basis

### Expenses

Target yield		5.0 tons
Seed	\$	39.60
drill	\$	1.65

### Production

swath	\$	36.00
rake	\$	16.00
bale	\$	48.00
stack	\$	16.00
haul	\$	5.52
management	\$	5.00
Total expenses	\$	167.77

### Income

Price/ton	\$	111.38 GDP inflated price
Revenue	\$	556.90
Available for land	\$	389.13



# PRO-FORMA INCOME STATEMENT

- ◉ Estimated income and expense statement to project your bottom line
- ◉ Use available for land models to estimate income
- ◉ Consists only of business expansion information
- ◉ No off farm income
- ◉ No cost of living expenses





# PRO-FORMA INCOME STATEMENT

Income from available for land models

## ⦿ Crops

- Based on 311 acres of crop land
- 11 acres of alfalfa
- 100 acres each of wheat, milo, and soybeans every year

## ⦿ Cattle

- Increasing by 10 heifers every year



# PRO-FORMA INCOME STATEMENT

## Expenses

- ◉ Feed and mineral
- ◉ Vet
- ◉ Crop Land rent: \$65
- ◉ Pasture Rent: \$20
- ◉ Supplies



# PRO-FORMA INCOME STATEMENT

## Expenses (cont.)

- ⦿ Cattle purchased (heifers)
- ⦿ Equipment
- ⦿ Labor
- ⦿ Fuel
- ⦿ Repairs
- ⦿ Other



# RESULTS/ CONCLUSION



- Review of analysis
- Final decision
- Questions

# PRO-FORMA INCOME STATEMENT- FIRST 5 YEARS

Income Statement	2011	2012	2013	2014	2015
<i>Income</i>					
Cattle:	\$6,361.93	\$12,072.53	\$17,783.13	\$23,493.73	\$30,284.33
Crops:	\$32,791.76	\$32,791.76	\$32,791.76	\$32,791.76	\$32,791.76
<b>Total Income:</b>	<b>\$39,153.68</b>	<b>\$44,864.28</b>	<b>\$50,574.88</b>	<b>\$56,285.48</b>	<b>\$63,076.08</b>
<i>Expense</i>					
Feed and mineral:	\$1,734.96	\$3,469.92	\$5,204.88	\$7,539.84	\$10,370.80
Vet:	\$160.00	\$320.00	\$480.00	\$640.00	\$800.00
Crop Land rent:	\$19,500.00	\$19,500.00	\$19,500.00	\$19,500.00	\$19,500.00
Pasture Rent:	\$1,200.00	\$2,400.00	\$3,600.00	\$4,800.00	\$6,000.00
Supplies:	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00
Heifers purchased:	\$3,204.00	\$6,193.33	\$8,982.38	\$11,584.56	\$14,012.39
Bulls purchased:	\$2,000.00	\$0.00	\$2,000.00	\$0.00	\$2,000.00
Equipment:	\$9,936.00	\$9,240.48	\$8,593.65	\$7,992.09	\$7,432.64
Labor:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fuel:	\$4,000.00	\$4,500.00	\$5,000.00	\$5,500.00	\$6,000.00
Repairs:	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00
Other:	\$500.00	\$1,000.00	\$1,500.00	\$2,000.00	\$2,500.00
<b>Total Expenses:</b>	<b>\$43,334.96</b>	<b>\$47,923.73</b>	<b>\$56,360.91</b>	<b>\$61,256.49</b>	<b>\$70,515.84</b>
<b>Profit:</b>	<b>-\$4,181.28</b>	<b>-\$3,059.45</b>	<b>-\$5,786.02</b>	<b>-\$4,971.01</b>	<b>-\$7,439.76</b>

# PRO-FORMA INCOME STATEMENT- NEXT 5 YEARS

Income Statement	2016	2017	2018	2019	2020
<i>Income</i>					
Cattle:	\$35,414.93	\$47,416.13	\$58,408.65	\$70,909.85	\$82,331.05
Crops:	\$113,543.91	\$113,543.91	\$113,543.91	\$113,543.91	\$113,543.91
<b>Total Income:</b>	<b>\$148,958.83</b>	<b>\$160,960.03</b>	<b>\$171,952.56</b>	<b>\$184,453.76</b>	<b>\$195,874.96</b>
<i>Expense</i>					
Feed and mineral:	\$13,840.72	\$17,310.64	\$20,780.56	\$24,250.48	\$27,720.40
Vet:	\$1,120.00	\$1,440.00	\$1,760.00	\$2,080.00	\$2,400.00
Crop Land rent:	\$65,000.00	\$65,000.00	\$65,000.00	\$65,000.00	\$65,000.00
Pasture Rent:	\$8,400.00	\$10,800.00	\$13,200.00	\$15,600.00	\$18,000.00
Supplies:	\$2,000.00	\$3,000.00	\$4,000.00	\$5,000.00	\$6,000.00
Heifers purchased:	\$14,012.39	\$14,012.39	\$14,012.39	\$14,012.39	\$14,012.39
Bulls purchased:	\$2,000.00	\$2,000.00	\$2,000.00	\$4,000.00	\$2,000.00
Equipment:	\$16,200.00	\$15,066.00	\$14,011.38	\$13,030.58	\$12,118.44
Labor:	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00
Fuel:	\$10,000.00	\$10,500.00	\$11,000.00	\$11,500.00	\$12,000.00
Repairs:	\$2,000.00	\$3,000.00	\$4,000.00	\$5,000.00	\$6,000.00
Other:	\$1,000.00	\$1,500.00	\$2,000.00	\$2,500.00	\$3,000.00
<b>Total Expenses:</b>	<b>\$145,573.11</b>	<b>\$153,629.03</b>	<b>\$161,764.33</b>	<b>\$171,973.46</b>	<b>\$178,251.24</b>
<b>Profit:</b>	<b>\$3,385.72</b>	<b>\$7,331.00</b>	<b>\$10,188.22</b>	<b>\$12,480.30</b>	<b>\$17,623.72</b>

# RESULTS

- First 5 years show increasing loss for the business
  - Due to equipment loans, and cattle loans
  - No off farm income
- Next 5 years show increasing profits
  - Increasing crop land and cow herd



## RESULTS (cont.)

- ◉ Income and expenses from the existing farm balance sheet may help the bottom line when the new business plan is added
- ◉ The amount of debt shows that a second job will have to be held at least until the 6<sup>th</sup> year to supplement cost of living expenses



# CONCLUSION

- ◉ Yes the business plan will be successful after off farm income is added into the business
- ◉ Off farm income is key to making the business plan work
- ◉ Pleased with the results

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QUESTIONS?