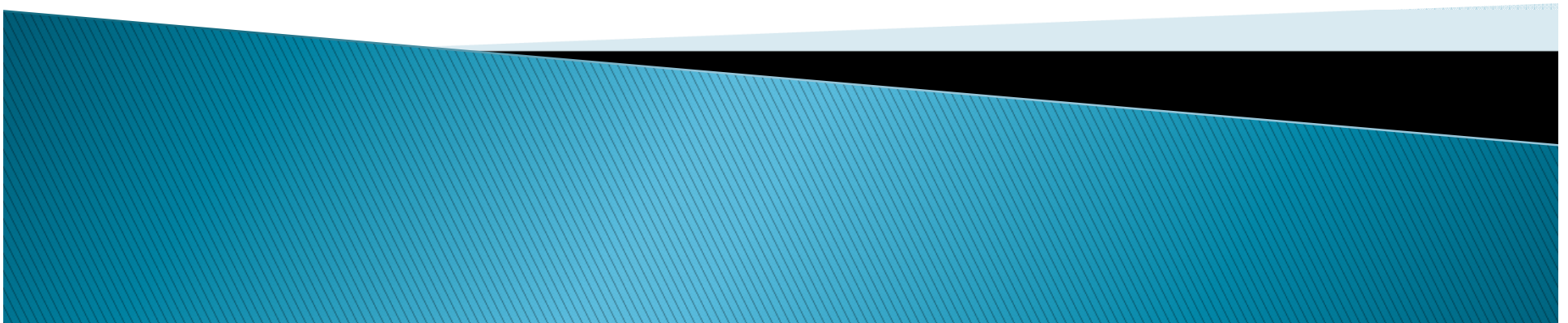


Yellowstone Valley Farmland Time to Buy?

By Nik Sian
AGEC 4960
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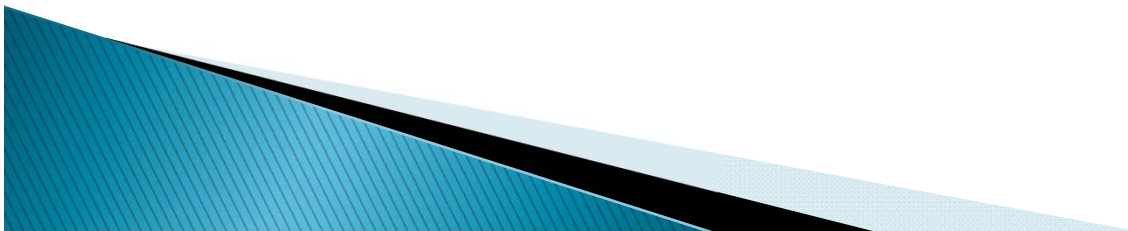
Introduction

- ▶ Search for steady Returns on Investment
- ▶ Why consider farmland
- ▶ Possible risk factors



Outline

- ▶ Introduce the problem statement
- ▶ Review of the current farmland market including the 1980's farm crisis
- ▶ Review methods and procedures
- ▶ Review results and findings
- ▶ Conclusion and recommendation



Problem Statement

- ▶ Do the current farmland market conditions offer the opportunity to return 4 percent on capital invested?



The Current Farmland Market

- ▶ Historically low interest rates
- ▶ High commodity prices
- ▶ High levels of appreciation



Possible Risk Factors

- ▶ Increasing interest rates
- ▶ Decreasing commodity values
- ▶ 1980's scenario



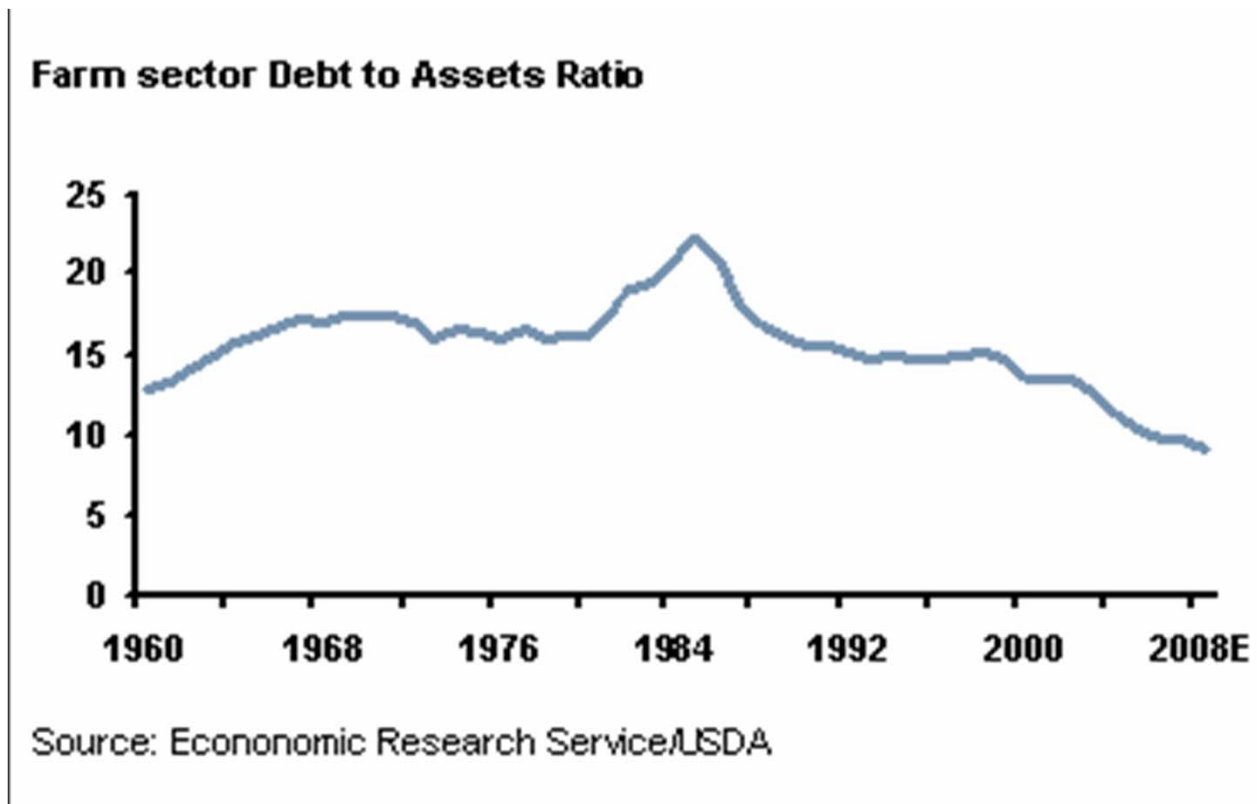
1980's Crisis

- ▶ Record purchases by the Soviets in the 1970's then a grain embargo was put into place in the 1980's
- ▶ Record yields led to increased supplies in the 1980's with a decreased demand.
- ▶ Interest rates increased and farmland values decreased
- ▶ Farmers were in a similar position that home owners recently experienced.



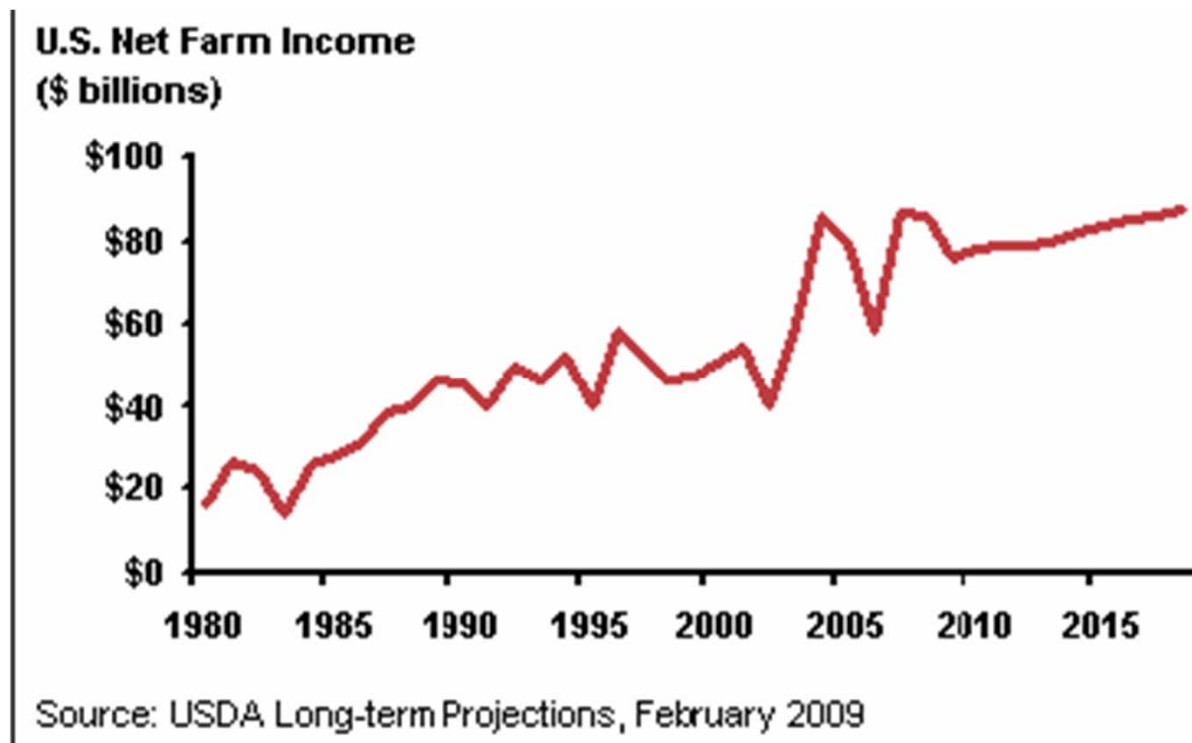
Bubble Watch

- ▶ Leverage Ratios



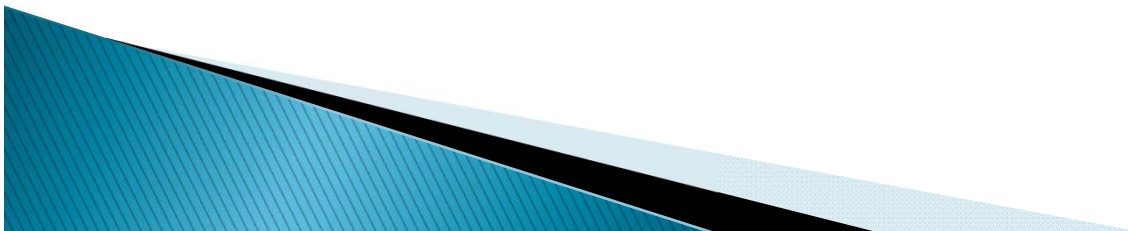
Bubble Watch

- ▶ Commodity prices



Key Differences From 1980's

- ▶ Low leverage ratios
- ▶ Steady world economic growth
- ▶ Biofuel demand



Area of Focus

- ▶ Yellowstone River Valley
- ▶ Corn Barley Sugar Beets



Methods

- ▶ Economically Feasibility Method
- ▶ Input cost were calculated. Both input cost and fixed cost were subtracted from gross revenues to yield a net return.
- ▶ Input cost included: tillage, fertilizing, spaying, and harvesting for each of the 3 crops
- ▶ The average price of Montana irrigated farmland was assumed to be 2700 per acre

Methods

(High Yield 2011 Expected Prices)

	Corn	Barley	Sugar Beets
Revenue	1418.36	604.8	1440.00
Input cost	565.95	423.26	679.50
Loan repayment	175.64	175.64	175.64
Taxes	45	45	45
Total cost	(786.59)	(643.90)	(900.14)
Net Return	631.77	-39.10	539.86



Expected Returns

2011 expected prices

	Corn	Barley	Beets
High yield	852.41	181.54	760.50
Low yield	485.80	30.34	568.50
Average	669.11	105.94	664.5
(Fixed cost)	220.64	220.64	220.64
Return	448.47	-114.70	443.86

20% price decrease

	Corn	Barley	Beets
High yield	566.85	60.34	472.50
Low yield	274.05	-60.56	318.90
Average	420.45	-.11	395.70
(Fixed cost)	220.64	220.64	220.64
Return	199.81	-220.75	175.06

Average Expected Return

2011 expected prices
3 year rotation

	High	Low
Rotation	598.15	361.55
Loan	175.64	175.64
Taxes	45	45
Return	377.51	140.91
% Return	13.98%	5.21%

20% price decrease
3 year rotation

	High	Low
Rotation	366.56	177.46
Loan	175.64	175.64
Taxes	45	45
Return	145.92	43.18
% Return	5.4%	1.59%

Net Present Value of Returns

2011 expected prices
3 year rotation

	High Yield	Low Yield
Return	377.51	140.90
NPV	4704.61	1756.01
Average	3230.31	

20% price decrease
3 year rotation

	High Yield	Low Yield
Return	145.92	43.18
NPV	2243.20	663.73
Average	789.84	

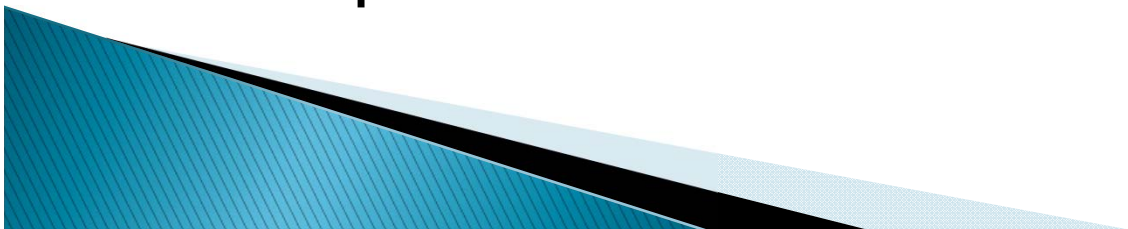
Capital Gains

- ▶ One reason to purchase land is to gain revenue from increasing land prices which is realized once the land is sold.
- ▶ While appreciating land is no guarantee farmland has appreciated by an average of 6.7% since 1970.



Capital Gains

- ▶ If Montana irrigated farmland were to appreciate by 6.7% for 30 years the future value of that land would be \$18,892.80
- ▶ By discounting the appreciation with a risk factor of 5% the appreciated farmland is worth \$4,371.37 in today's terms.
- ▶ This is a net gain of \$1671.37 if farmland was purchased for \$2700



Results

- ▶ All yields and prices met the minimum return of 4% except for the low yield low price scenario.
- ▶ Capital gains offer an exceptional means of return but do include a great deal of risk

Possibilities for Improvement

- ▶ Consider the purchase of crop insurance in order to minimize losses.
- ▶ Replace barley with spring or winter wheat to make the rotation more profitable.
- ▶ Determine an average land price for a corn barley beet rotation
- ▶ Consider variable input prices.



Recommendations

- ▶ Purchase farmland with no improvements for a maximum of \$3,000
- ▶ This will still allow for the minimum required rate of return of 4% for all scenarios except for the low yield low price year.



Recommendations

- ▶ Capital gains will be \$1,371.37 in today's terms if land appreciates by 6.7%
- ▶ Replace barley with wheat in order to maximize profits in the rotation.

