

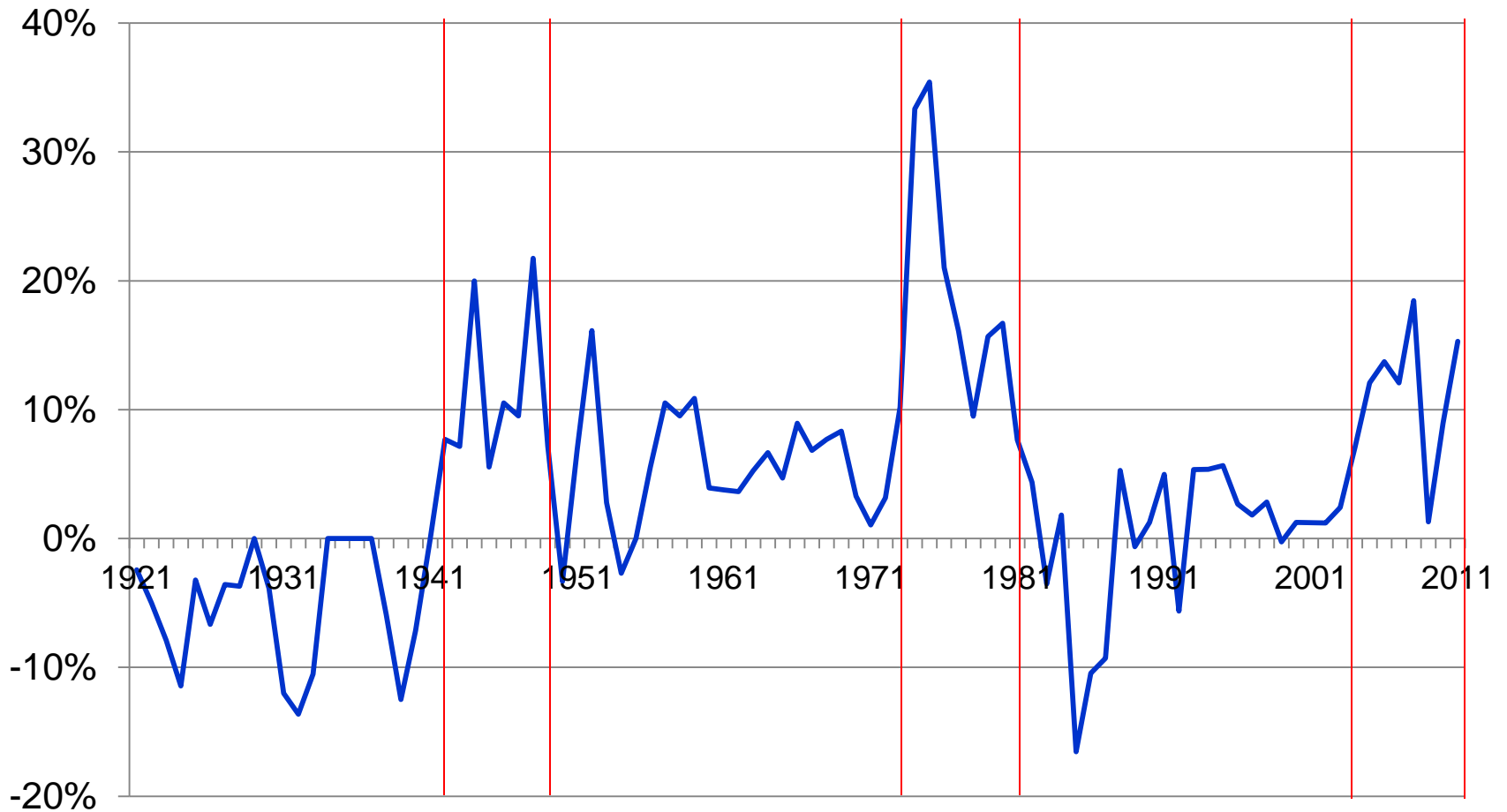
North Dakota Crop Land Values and Rents

October 4, 2011

Marketing Club Facilitators Conference
Carrington, ND

Andrew Swenson
Extension Farm Management Specialist
Department of Agribusiness and Applied Economics
North Dakota State University

Annual Percent Change in N.D. Farm Real Estate Value

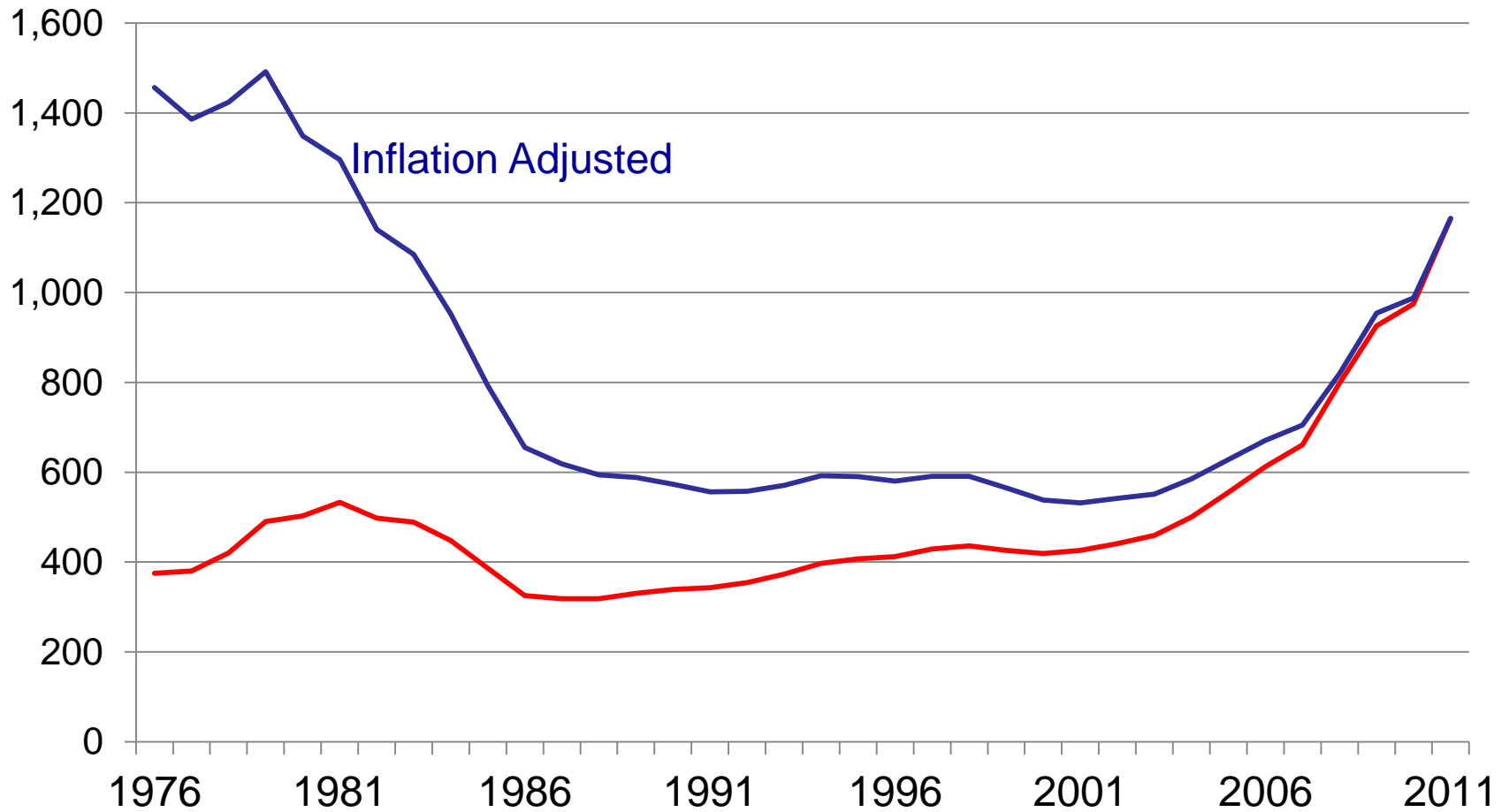


N.D. Land Values

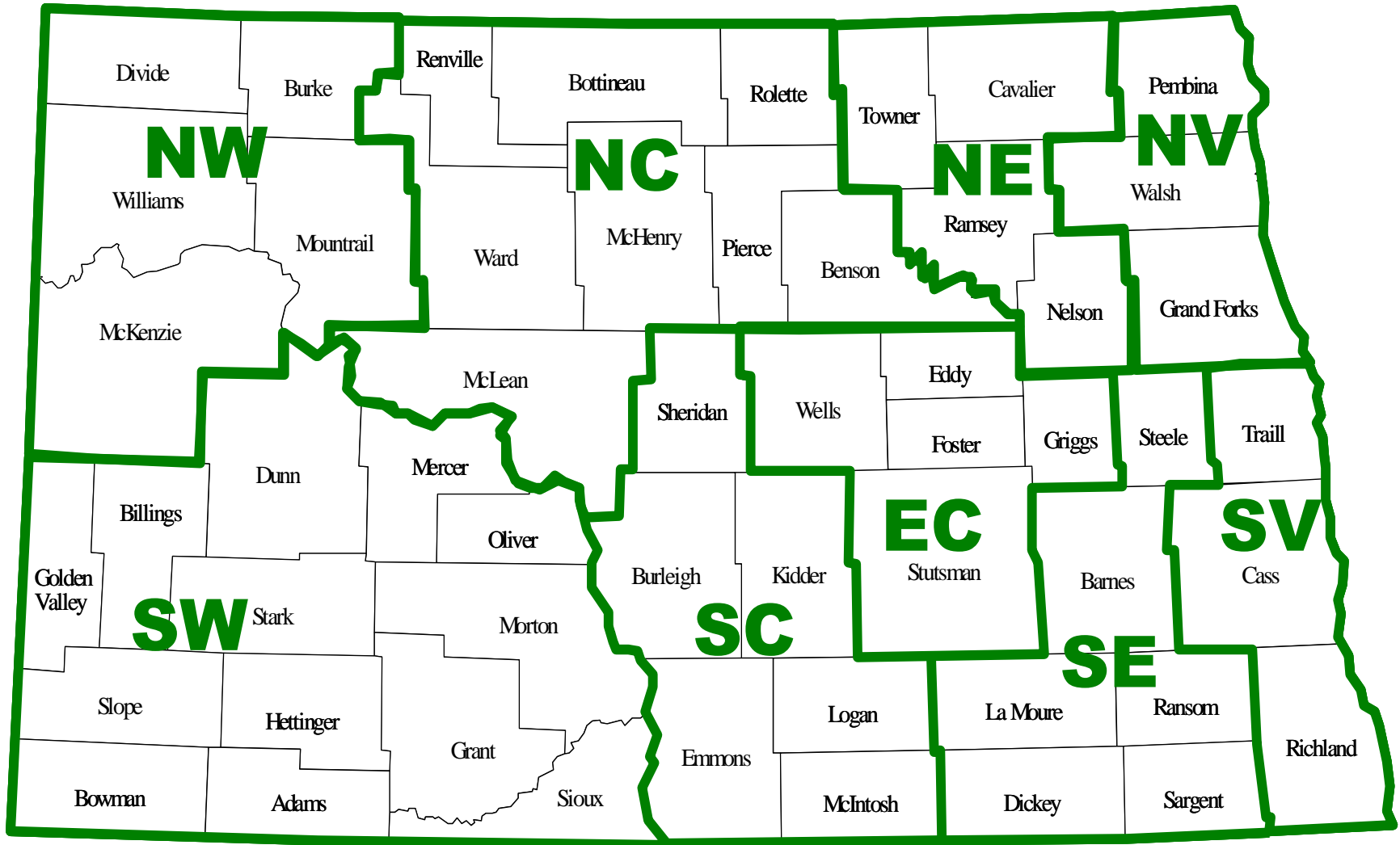
| | | USDA Farm RE (inc.bldg) | USDA Crop Land June Survey | NDASS Crop Land Jan. Co. Survey* |
|------|------|-------------------------------|----------------------------------|--|
| 2002 | Jan | | | 441 |
| | June | 415 | 450 | |
| 2003 | Jan | | | 459 |
| | June | 425 | 460 | |
| 2004 | Jan | | | 500 |
| | June | 455 | 490 | |
| 2005 | Jan | | | 555 |
| | June | 510 | 550 | |
| 2006 | Jan | | | 612 |
| | June | 580 | 610 | |
| 2007 | Jan | | | 661 |
| | June | 650 | 670 | |
| 2008 | Jan | | | 798 |
| | June | 770 | 810 | |
| 2009 | Jan | | | 926 |
| | June | 780 | 800 | |
| 2010 | Jan | | | 975 |
| | June | 850 | 870 | |
| 2011 | Jan | | | 1165 |
| | June | 980 | 1040 | |

*Note: State averages are from county values weighted by crop land acreage.

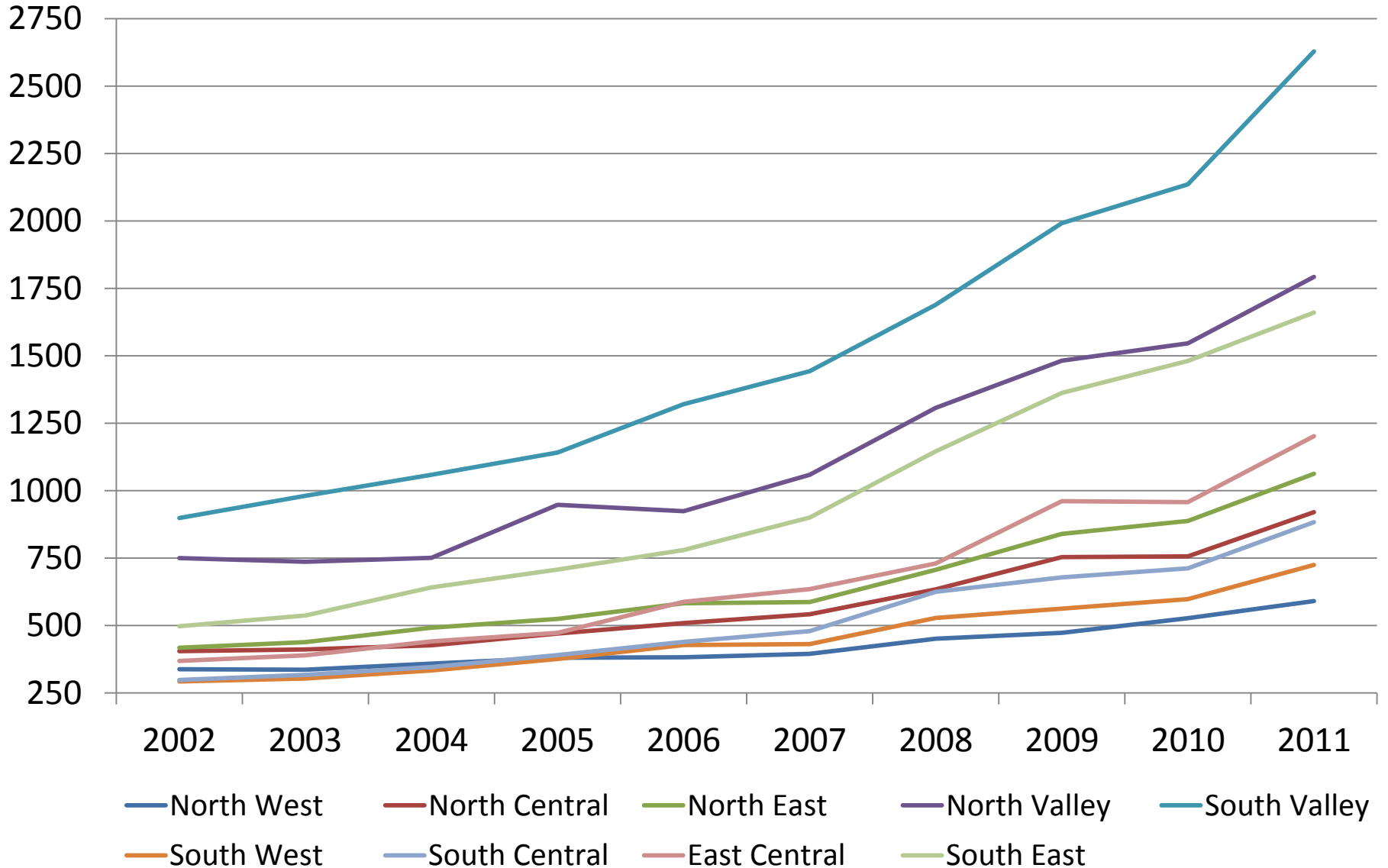
N.D. Cropland Values in Nominal and Constant (2011) Dollars



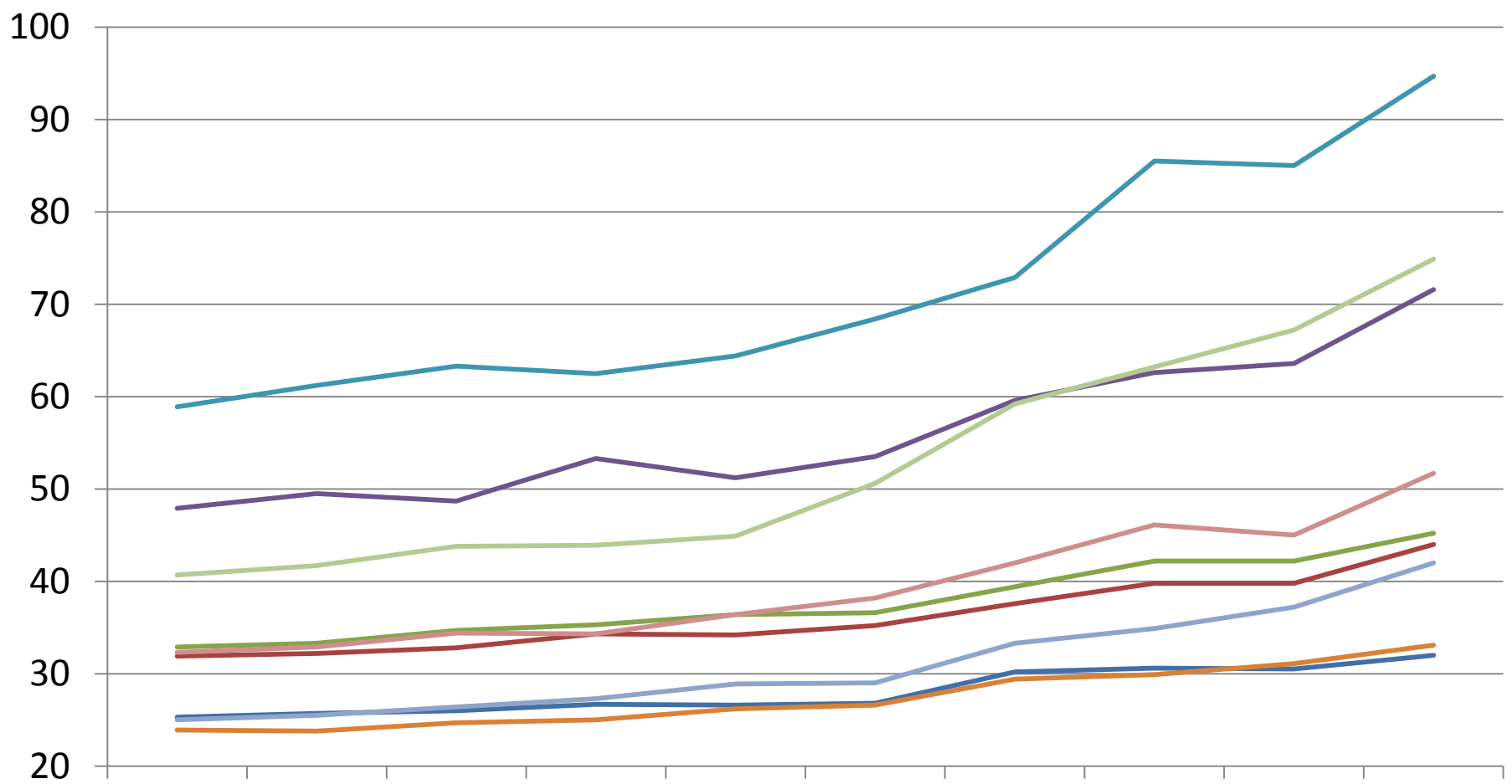
NDSU Crop Budget Regions



North Dakota Cropland Values by Region

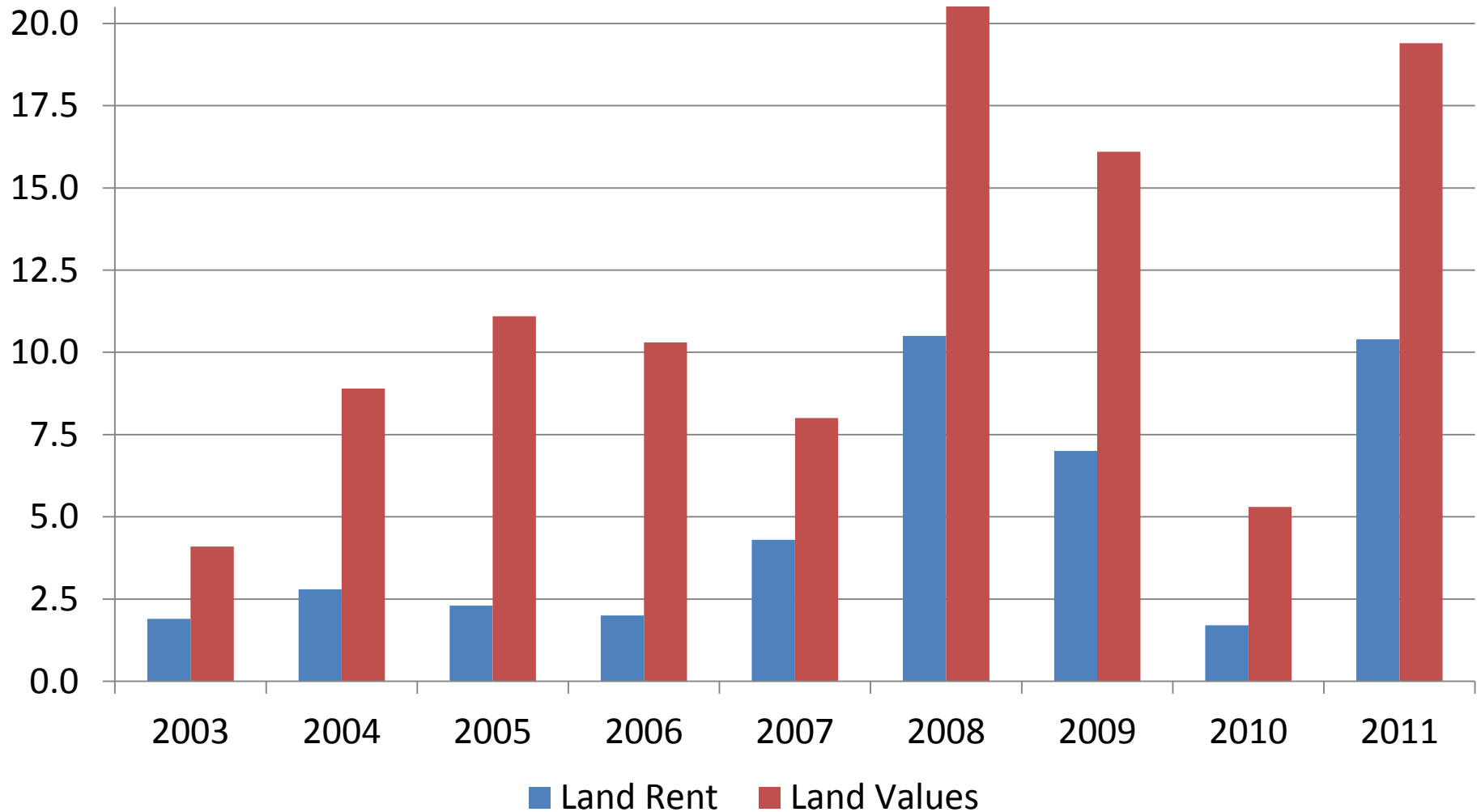


North Dakota Crop Rents by Region

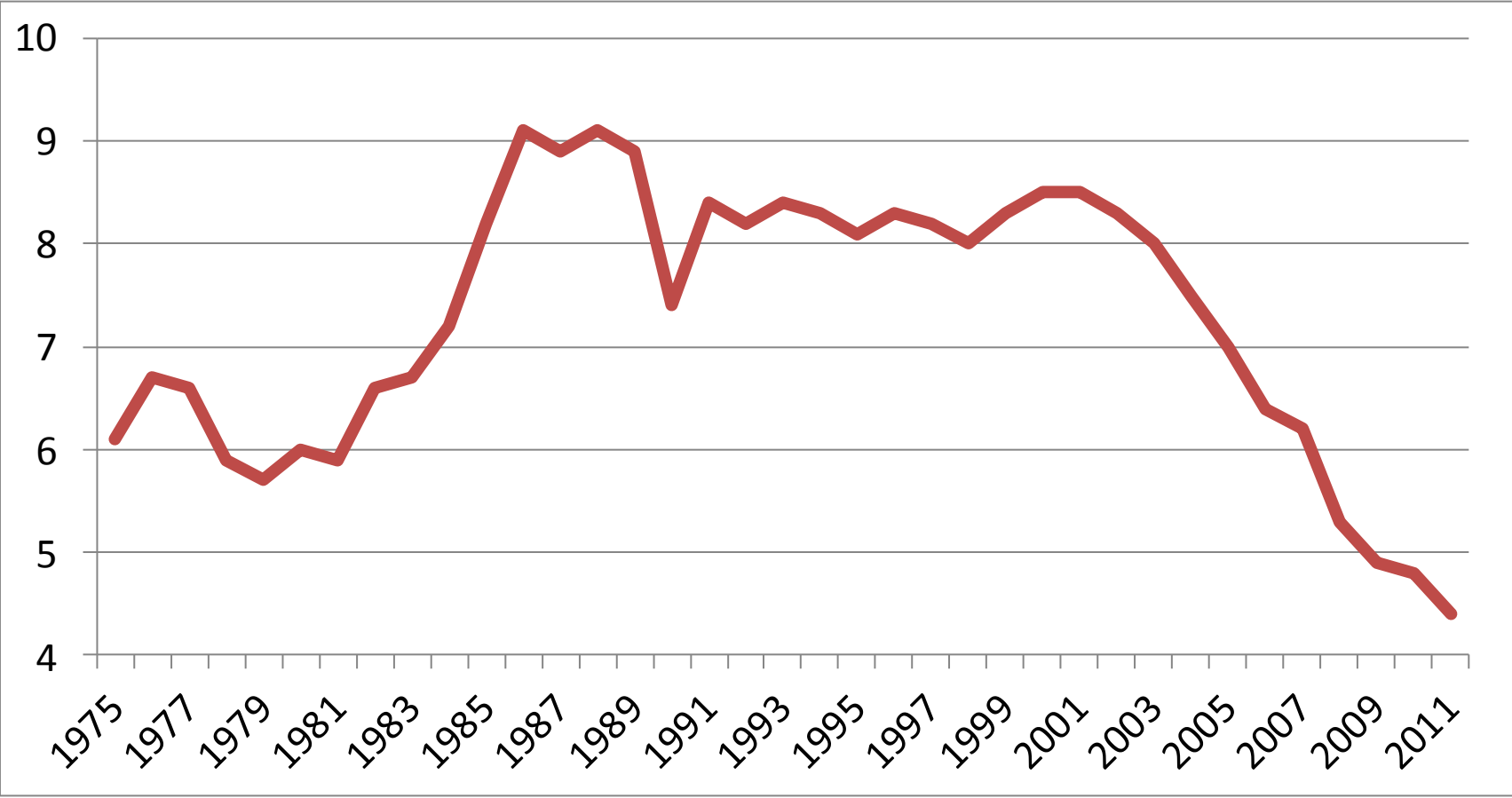


- North West
- North Central
- North East
- North Valley
- South Valley
- South West
- South Central
- East Central
- South East

Annual Percent Change in N.D. Cropland Rents and Values



Crop Land Rent as a Percent of Value in North Dakota

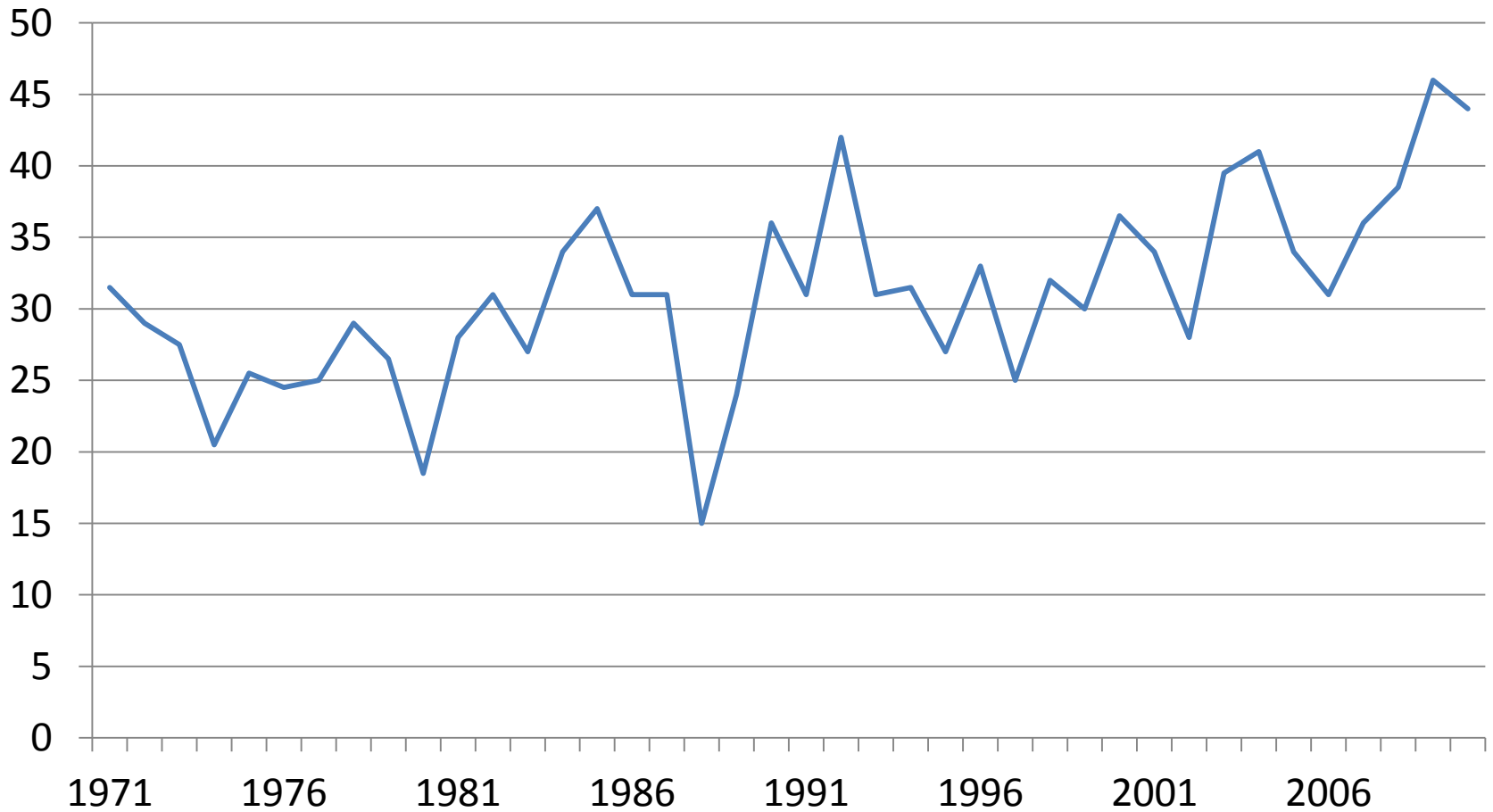


In recent years many N.D. crop producers have experienced a near “perfect storm” of revenue.

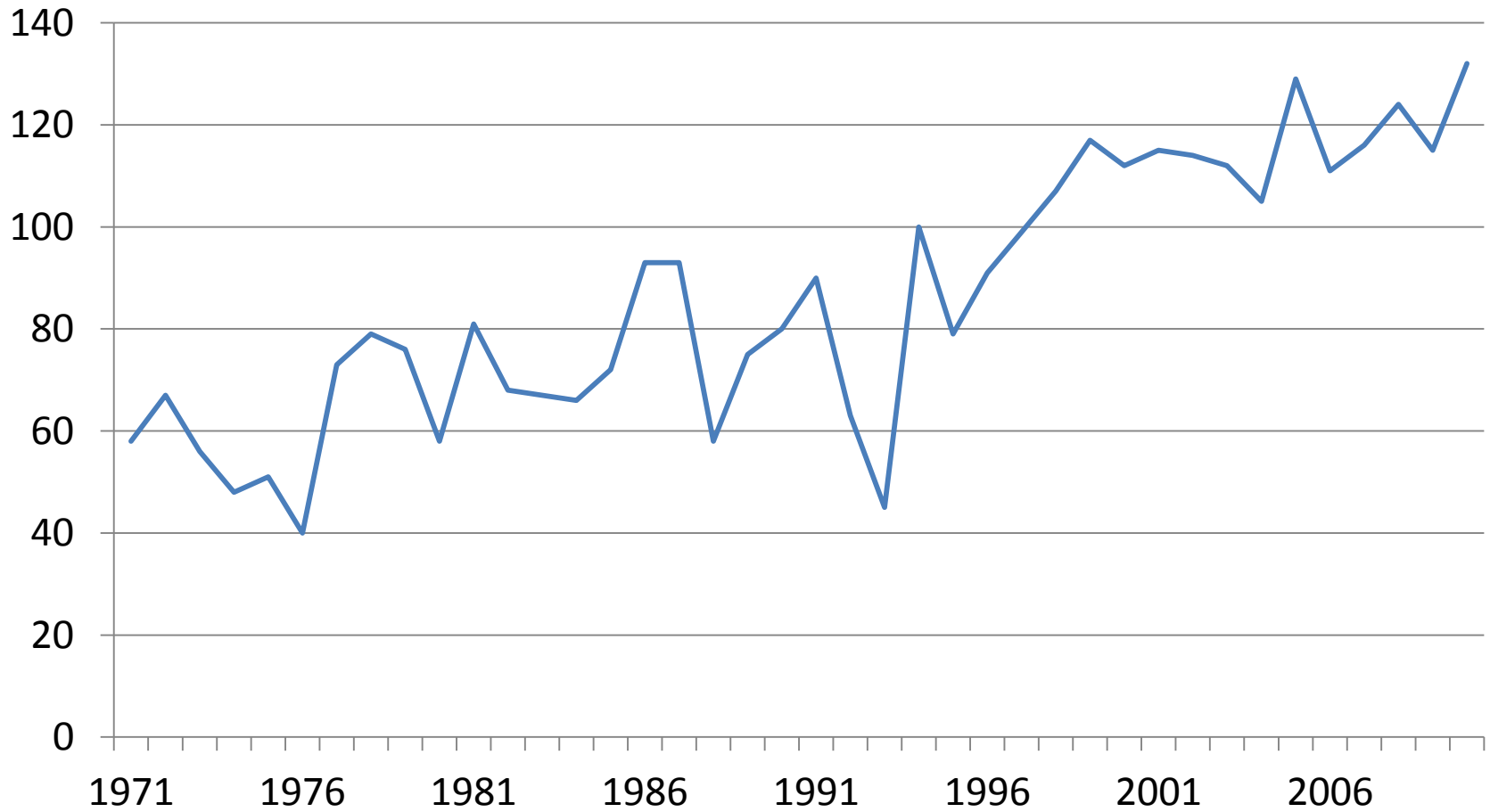
North Dakota Marketing Year Average Price Range 1971-2006 and 2007-2010 Yearly Prices

| Year | Spring Wheat | Soybean | Corn |
|-----------|--------------|-------------|-------------|
| 1971-2006 | 1.30 - 4.71 | 2.87 - 7.37 | 1.00 - 3.16 |
| 2007 | 7.45 | 9.63 | 4.06 |
| 2008 | 7.19 | 9.71 | 3.74 |
| 2009 | 4.90 | 9.26 | 3.18 |
| 2010 | 6.70 | 11.30 | 5.35 |

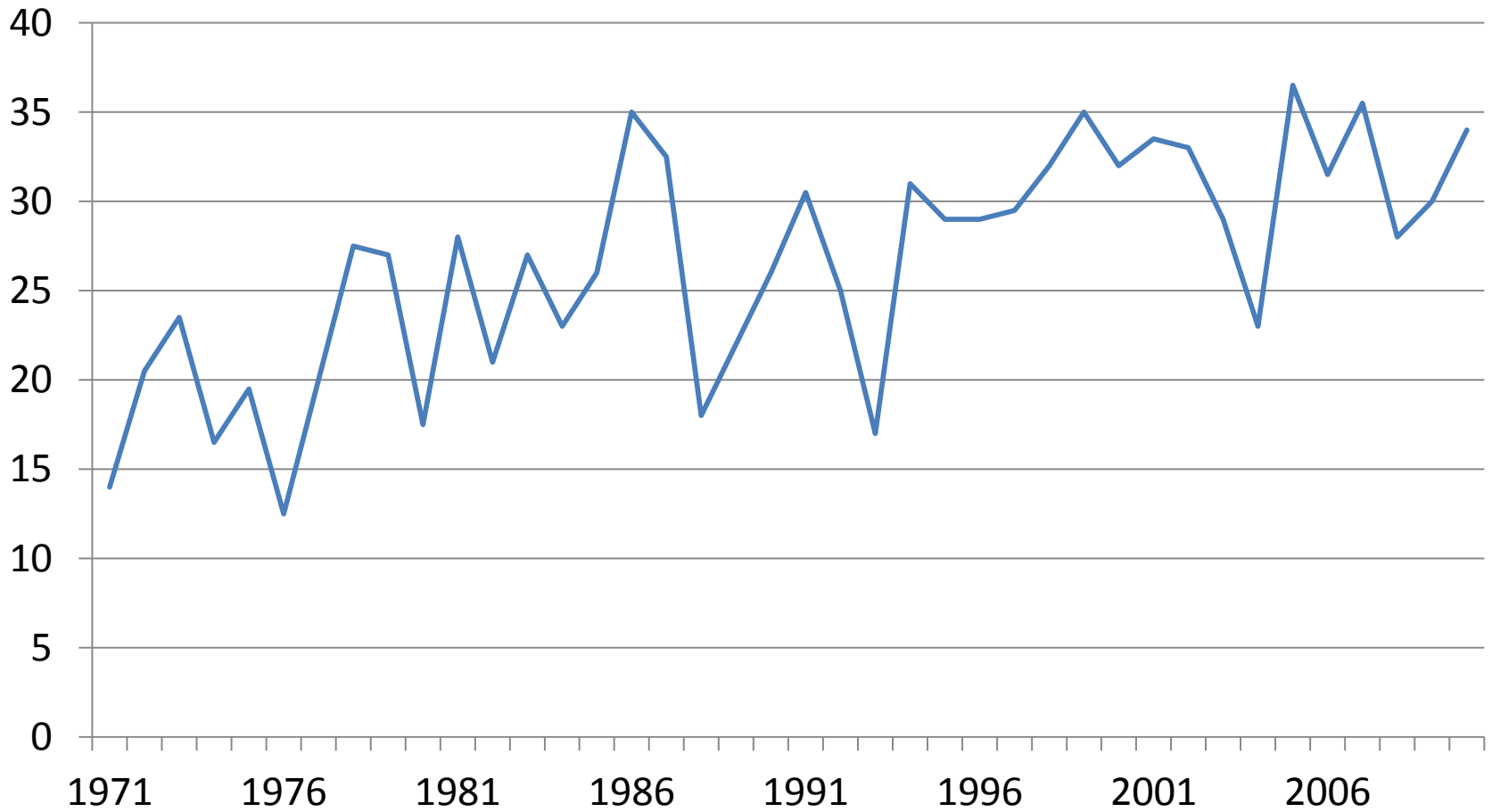
North Dakota Spring Wheat Yields, 1971-2010



North Dakota Corn Yields, 1971-2010



North Dakota Soybean Yields, 1971-2010



Currently,

- a) what can we afford to pay, and
- b) what is land worth?

2011 Projected South East ND Budgets (Dec. 2010)

| | Wheat | Corn | Soybeans |
|-------------------------------------|-----------------|-----------------|-----------------|
| | Per Acre | Per Acre | Per Acre |
| Market Yield | 48 | 124 | 33 |
| Market Price | 7.24 | 4.37 | 11.58 |
| Market Income | \$347.52 | \$541.88 | \$382.14 |
| Direct Payment | 11.50 | 11.50 | 11.50 |
| Total Income | \$359.02 | \$553.38 | \$393.64 |
| DIRECT COSTS | | | |
| Seed | 19.25 | 81.43 | 51.63 |
| Herbicides | 19.00 | 18.00 | 18.00 |
| Fungicides | 5.50 | 0.00 | 0.00 |
| Insecticides | 0.00 | 0.00 | 7.00 |
| Fertilizer | 74.49 | 101.92 | 3.60 |
| Crop Insurance | 13.20 | 26.40 | 13.60 |
| Fuel & Lubrication | 17.58 | 26.97 | 15.24 |
| Repairs | 15.57 | 19.19 | 15.31 |
| Drying | 0.00 | 24.80 | 0.00 |
| Miscellaneous | 1.50 | 1.50 | 6.50 |
| Operating Interest | 4.15 | 7.51 | 3.27 |
| Sum of Listed Direct Costs | \$170.24 | \$307.72 | \$134.15 |
| INDIRECT COSTS | | | |
| Misc Overhead | 6.54 | 8.89 | 6.37 |
| Machinery Depreciation | 17.66 | 27.61 | 17.51 |
| Machinery Investment | 10.35 | 16.13 | 10.23 |
| Labor & Management Charge | 30.00 | 30.00 | 30.00 |
| Sum of Listed Indirect Costs | \$64.55 | \$82.63 | \$64.11 |
| Sum of all Listed Costs | \$234.79 | \$390.35 | \$198.26 |
| LAND RETURN | \$124.23 | \$163.03 | \$195.38 |
| Percent of Rotation | 20.00% | 30.00% | 50.00% |
| WEIGHTED RETURN TO LAND | | \$171.45 | |

2011 Projected South East ND Budgets (Dec. 2010, yield & price Oct. 2011)

| | Wheat | Corn | Soybeans |
|-------------------------------------|-----------------|-----------------|-----------------|
| | Per Acre | Per Acre | Per Acre |
| Market Yield | 38 | 124 | 33 |
| Market Price | 8.30 | 5.20 | 10.50 |
| Market Income | \$315.40 | \$644.80 | \$346.50 |
| Direct Payment | 11.50 | 11.50 | 11.50 |
| Total Income | \$326.90 | \$656.30 | \$358.00 |
| DIRECT COSTS | | | |
| Seed | 19.25 | 81.43 | 51.63 |
| Herbicides | 19.00 | 18.00 | 18.00 |
| Fungicides | 5.50 | 0.00 | 0.00 |
| Insecticides | 0.00 | 0.00 | 7.00 |
| Fertilizer | 74.49 | 101.92 | 3.60 |
| Crop Insurance | 13.20 | 26.40 | 13.60 |
| Fuel & Lubrication | 17.58 | 26.97 | 15.24 |
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| Machinery Investment | 10.35 | 16.13 | 10.23 |
| Labor & Management Charge | 30.00 | 30.00 | 30.00 |
| Sum of Listed Indirect Costs | \$64.55 | \$82.63 | \$64.11 |
| Sum of all Listed Costs | \$234.79 | \$390.35 | \$198.26 |
| LAND RETURN | \$92.11 | \$265.95 | \$159.74 |
| Percent of Rotation | 20.00% | 30.00% | 50.00% |
| WEIGHTED RETURN TO LAND | | \$178.08 | |

Land Purchase Cashflow Requirements

\$2,000 Land Price
65% Percent Debt
\$1,300 Land Debt
20 Term of Loan (years)
6.0% Interest Rate
\$8.00 Real Estate Tax
=\$121.34 Loan payment & RE Tax

Land Loan P&I plus RE Tax, at Various Purchase Prices and Interest Rates, assuming 65% Debt, 20 Year Term and \$8 RE Tax.

| | Land Purchase Price | | | | | |
|------|---------------------|---------|---------|---------|---------|---------|
| | \$1,000 | \$1,500 | \$2,000 | \$2,500 | \$3,000 | \$3,500 |
| 4.0% | 56 | 80 | 104 | 128 | 151 | 175 |
| 5.0% | 60 | 86 | 112 | 138 | 164 | 191 |
| 6.0% | 65 | 93 | 121 | 150 | 178 | 206 |
| 7.0% | 69 | 100 | 131 | 161 | 192 | 223 |
| 8.0% | 74 | 107 | 140 | 174 | 207 | 240 |

2011 Projected South Central ND Budgets (Dec. 2010)

| | Wheat | Corn | Sunflower |
|-------------------------------------|-----------------|-----------------|------------------|
| | Per Acre | Per Acre | Per Acre |
| Market Yield | 35 | 79 | 1350 |
| Market Price | 7.12 | 4.34 | 0.197 |
| Market Income | \$249.20 | \$342.86 | \$265.95 |
| Direct Payment | 6.50 | 6.50 | 6.50 |
| Total Income | \$255.70 | \$349.36 | \$272.45 |
| DIRECT COSTS | | | |
| Seed | 16.50 | 58.05 | 28.60 |
| Herbicides | 20.00 | 14.50 | 27.50 |
| Fungicides | 5.50 | 0.00 | 0.00 |
| Insecticides | 0.00 | 0.00 | 6.00 |
| Fertilizer | 49.72 | 59.84 | 35.05 |
| Crop Insurance | 11.80 | 29.20 | 21.80 |
| Fuel & Lubrication | 12.17 | 18.21 | 14.10 |
| Repairs | 13.54 | 15.35 | 12.75 |
| Drying | 0.00 | 15.80 | 2.70 |
| Miscellaneous | 6.50 | 6.50 | 13.50 |
| Operating Interest | 3.39 | 5.44 | 4.05 |
| Sum of Listed Direct Costs | \$139.12 | \$222.89 | \$166.05 |
| INDIRECT COSTS | | | |
| Misc Overhead | 5.96 | 7.50 | 6.32 |
| Machinery Depreciation | 15.29 | 22.71 | 16.70 |
| Machinery Investment | 8.80 | 12.76 | 9.78 |
| Labor & Management Charge | 30.00 | 30.00 | 30.00 |
| Sum of Listed Indirect Costs | \$60.05 | \$72.97 | \$62.80 |
| Sum of all Listed Costs | \$199.17 | \$295.86 | \$228.85 |
| LAND RETURN | \$56.53 | \$53.50 | \$43.60 |
| Percent of Rotation | 50.00% | 20.00% | 30.00% |
| WEIGHTED RETURN TO LAND | | \$52.05 | |

2011 Projected South Central ND Budgets (Dec. 2010, yield & price Oct. 2011)

| | Wheat | Corn | Sunflower |
|-------------------------------------|-----------------|-----------------|------------------|
| | Per Acre | Per Acre | Per Acre |
| Market Yield | 28 | 79 | 1350 |
| Market Price | 8.30 | 5.00 | 0.260 |
| Market Income | \$232.40 | \$395.00 | \$351.00 |
| Direct Payment | 6.50 | 6.50 | 6.50 |
| Total Income | \$238.90 | \$401.50 | \$357.50 |
| DIRECT COSTS | | | |
| Seed | 16.50 | 58.05 | 28.60 |
| Herbicides | 20.00 | 14.50 | 27.50 |
| Fungicides | 5.50 | 0.00 | 0.00 |
| Insecticides | 0.00 | 0.00 | 6.00 |
| Fertilizer | 49.72 | 59.84 | 35.05 |
| Crop Insurance | 11.80 | 29.20 | 21.80 |
| Fuel & Lubrication | 12.17 | 18.21 | 14.10 |
| Repairs | 13.54 | 15.35 | 12.75 |
| Drying | 0.00 | 15.80 | 2.70 |
| Miscellaneous | 6.50 | 6.50 | 13.50 |
| Operating Interest | 3.39 | 5.44 | 4.05 |
| Sum of Listed Direct Costs | \$139.12 | \$222.89 | \$166.05 |
| INDIRECT COSTS | | | |
| Misc Overhead | 5.96 | 7.50 | 6.32 |
| Machinery Depreciation | 15.29 | 22.71 | 16.70 |
| Machinery Investment | 8.80 | 12.76 | 9.78 |
| Labor & Management Charge | 30.00 | 30.00 | 30.00 |
| Sum of Listed Indirect Costs | \$60.05 | \$72.97 | \$62.80 |
| Sum of all Listed Costs | \$199.17 | \$295.86 | \$228.85 |
| LAND RETURN | \$39.73 | \$105.64 | \$128.65 |
| Percent of Rotation | 50.00% | 20.00% | 30.00% |
| WEIGHTED RETURN TO LAND | | \$79.59 | |

Land Purchase Cashflow Requirements

\$1,000 Land Price
65% Percent Debt
\$650 Land Debt
20 Term of Loan (years)
6.0% Interest Rate
\$4.50 Real Estate Tax
=\$61.17 Loan payment & RE Tax

Land Loan P&I plus RE Tax, at Various Purchase Prices and Interest Rates, assuming 65% Debt, 20 Year Term and \$4.50 RE Tax.

| | Land Purchase Price | | | | | |
|------|---------------------|-------|---------|---------|---------|---------|
| | \$500 | \$750 | \$1,000 | \$1,250 | \$1,500 | \$1,750 |
| 4.0% | 28 | 40 | 52 | 64 | 76 | 88 |
| 5.0% | 31 | 44 | 57 | 70 | 83 | 96 |
| 6.0% | 33 | 47 | 61 | 75 | 90 | 104 |
| 7.0% | 35 | 51 | 66 | 81 | 97 | 112 |
| 8.0% | 38 | 54 | 71 | 87 | 104 | 120 |

Land Values per Acre at Various Revenues and Capitalization Rates

| Capitalization Rate | Land Rent - RE Tax | | | | |
|------------------------|--------------------|-------|-------|-------|-------|
| | \$30 | \$50 | \$70 | \$90 | \$110 |
| 3.00% | 1,000 | 1,667 | 2,333 | 3,000 | 3,667 |
| 3.50% | 857 | 1,429 | 2,000 | 2,571 | 3,143 |
| 4.00% | 750 | 1,250 | 1,750 | 2,250 | 2,750 |
| 4.50% | 667 | 1,111 | 1,556 | 2,000 | 2,444 |
| 5.00% | 600 | 1,000 | 1,400 | 1,800 | 2,200 |

Will crop prices continue to fuel land values?

Demand concerns:

- Ethanol profitability, it will use ~40% of U.S. corn crop in 2011
- Global economy
- Exchange rates

Supply concerns:

- Strong supply response to high prices (FSU, South America)
- Technological improvements
- Good weather around the world

Potential Impact on Land Values from Reductions in Gov't Payments

| Capitalization Rate | Loss of Direct Gov't Payment per Acre | | | | |
|------------------------|---------------------------------------|------|------|------|------|
| | \$5 | \$7 | \$9 | \$11 | \$13 |
| 3.00% | -167 | -233 | -300 | -367 | -433 |
| 3.50% | -143 | -200 | -257 | -314 | -371 |
| 4.00% | -125 | -175 | -225 | -275 | -325 |
| 4.50% | -111 | -156 | -200 | -244 | -289 |
| 5.00% | -100 | -140 | -180 | -220 | -260 |

⊙ Land Buyers

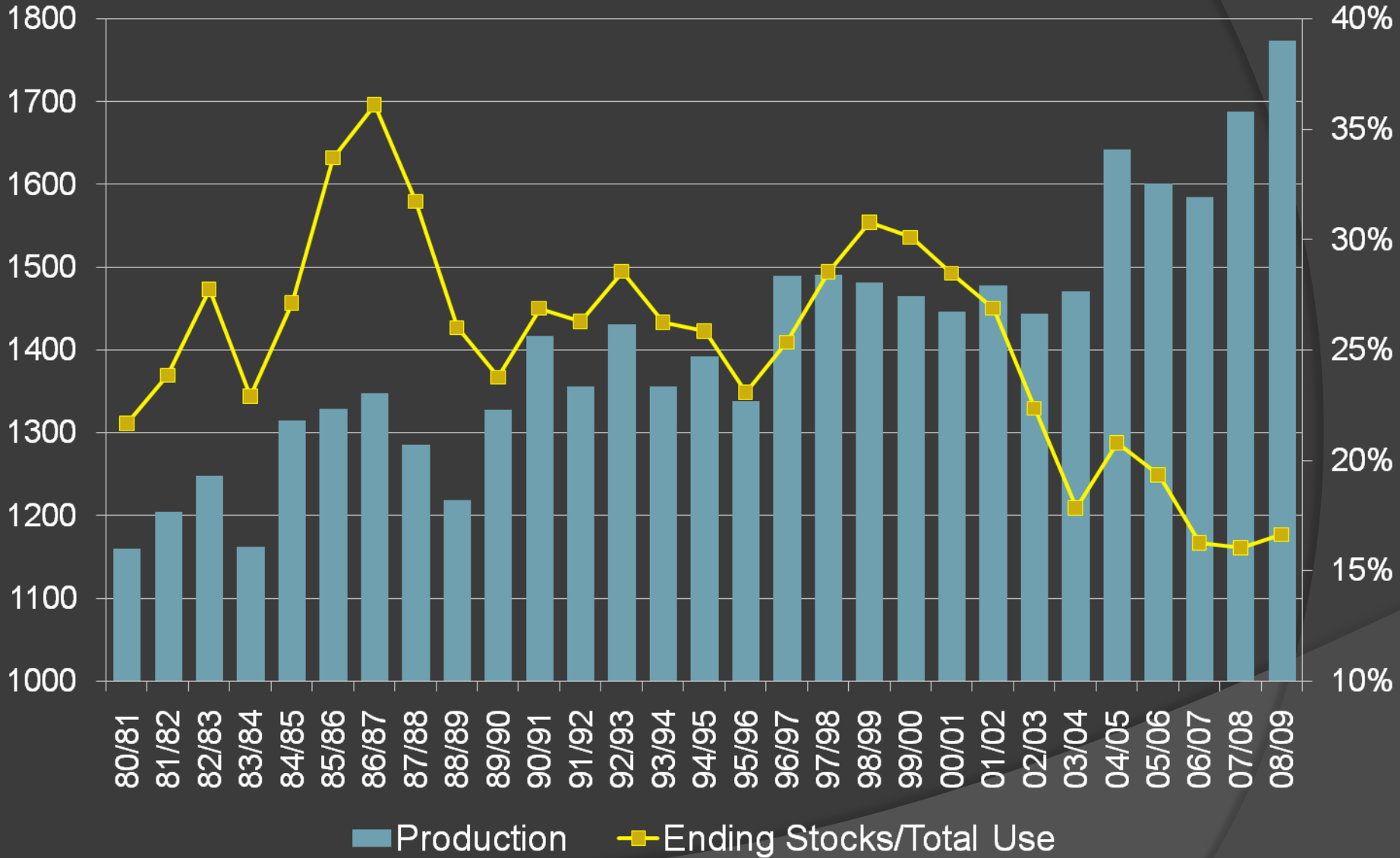
- Producers
- Investors
- Recreators

⊙ Considerations

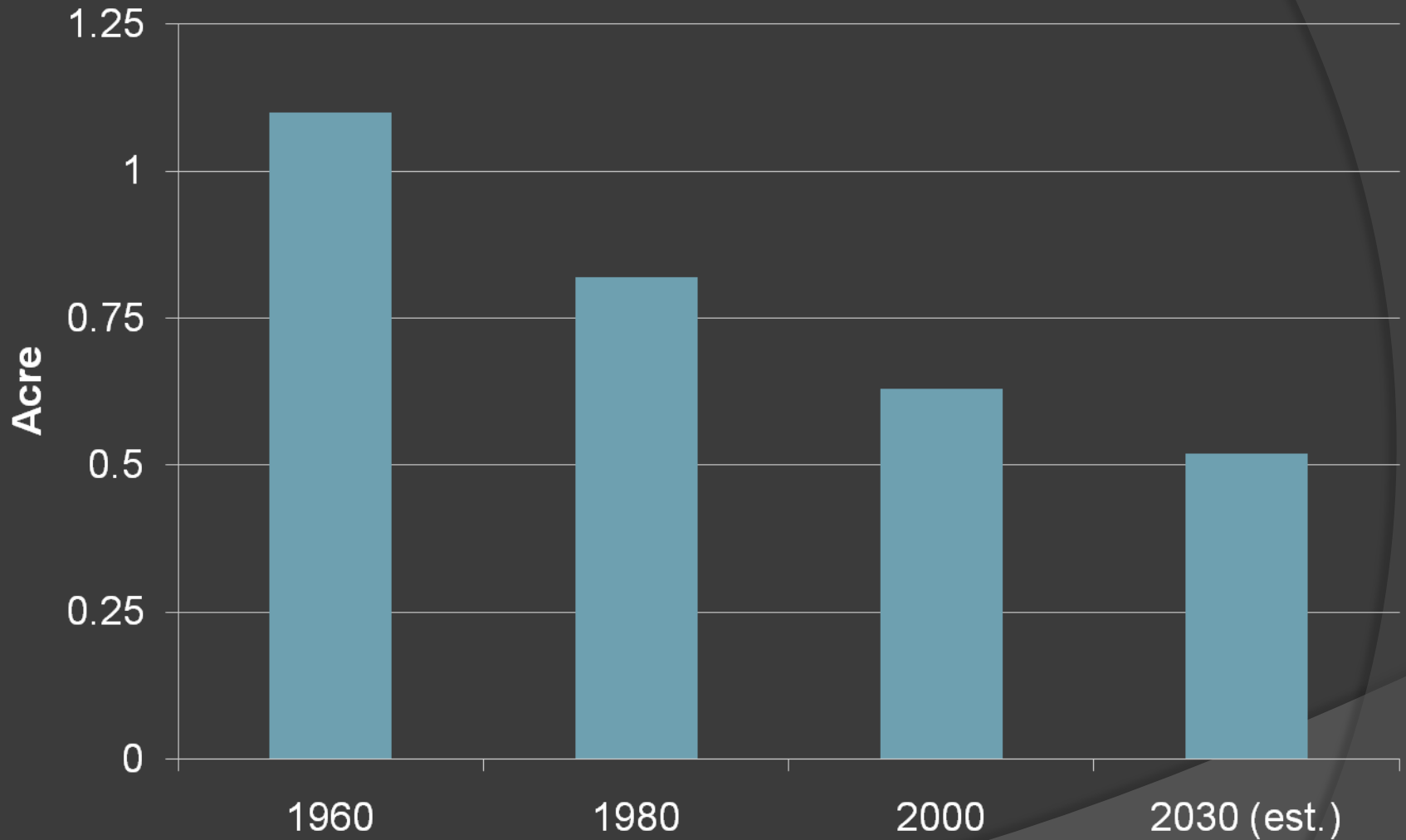
- Ability to pay
- Projected profitability
- Interest rates
- Section 1031 & Capital gains tax
- Psychology (outlook, attitude)

World Wheat and Coarse Grains

Mil Metric Tons



Arable Land Per Capita Worldwide



Source: Food and Agriculture Organization of the United Nations

NDSU Projected Crop Budgets

- www.ext.nodak.edu/extpubs/ecguides.htm

Crop Compare

- www.ag.ndsu.edu/farmmanagement/tools

ND Farm Business Management Education Program reports

- www.ndfarmmanagement.com