
Farmland Values & Rental Rates in Northwest Kansas

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We will discuss....

- I. How to Estimate the Current Market Value of Farmland

 - II. Farmland Prices & Rental Rates
 - Northwest Kansas (1976-2006)
 - West Central Kansas (1976-2006)
 - Southwest Nebraska (1978-2007)

 - III. An Example Analysis of Current Land Purchase Prices (KSU-Landbuy.xls)
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Q. How to Estimate Farmland's Present Market Value?

■ **Current FARMLAND Value =**

The Present Value of Expected Future After-Tax Net Income from....

- + Agricultural Use (Farming or Renting)
 - + Non-Agricultural Use Revenues/Fees
 - + Capital Gains from Future Land Sale
-

A. Expected Farm Profits

■ Net Farming Returns or “Rent”

□ Crop & Livestock Production

- *Weather, Yields, Pasture Conditions*
- *Legal Water Rights & Water Availability*

□ Farm Markets & Prices

- Bioenergy Demand, Feed Use, Grain Exports
- Cattle Cycles, Red Meat Demand, Beef Exports

□ Production Costs

- Inflation in cost to offset farm revenues

□ Farm Size Economies – Incentives to Expand

A. Expected Farm Profits (more)

■ USDA Farm Programs

□ Farm Program “Base Acreage” & “Proven Crop Yields”

- Critical in determination of level of farm income support from USDA Farm Programs

□ **Conservation Program Status?**

- Q. Are any limitations placed on the cropping system on this land by USDA Conservation Plans?
 - Q. Enrolled in CRP (Conservation Reserve Program)?
 - If so, what are terms of CRP Contract? \$/acre, years, etc.
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B. Non-Ag Market Factors

■ Urban Development or “Sprawl”

- “Parceling” or subdividing of farmland tracts for construction of country / rural homes, etc.
 - Zoning – Ag Land Use Issues

■ Recreational Uses / Non-Ag Demand

- Hunting Access-Leases &/or Agri-Tourism

■ Outside Investors

- Diversifying their portfolio of Financial Assets
 - Tax Management issues
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C. Financial & Tax Issues

- **Purchase Price of Farmland**
 - **Interest Rates & Terms of Loans**
 - Loan Equity Requirements – % Cash Upfront
 - **Expected Growth in Farmland Values & Net Farm Income/Rent over time**
 - **Tax Issues**
 - Taxes on Farm Income/Rent & Capital Gains
 - IRS Section 1031 Tax Exchanges
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Historic Land Price Growth %'s

(Kastens & Dhuyvetter – 2006)

- **Long Term: 3.9%** Average Annual Growth in Kansas Land Prices (1880-2005 = 126 years)
 - ≈ 2.4% Inflation Rate / yr
 - ≈ 1.6% Real Land Value Growth / yr

 - **Since 1951: 5.0%** Average Annual Growth in Kansas Land Prices (1951-2005 = 55 years)
 - ≈ 3.5% Inflation Rate / yr
 - ≈ 1.4% Real Land Value Growth /yr
-

Expected Growth Rates For Kansas Farmland (Kastens-Dhuyvetter 2006)

- **TOTAL Annual Growth in Kansas
Farmland Prices: *3% to 5% annually***
 - **AGRICULTURAL Income-Based Growth
in Kansas Farmland Prices:**
 - **Non-irrigated Cropland: *2.4% annually***
 - **Pastureland: *2.1% annually***
 - **Irrigated Cropland: *?? % annually***
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II. Farmland Prices & Cash Rental Rates

By Region:

Northwest & West Central Kansas

Southwest Nebraska

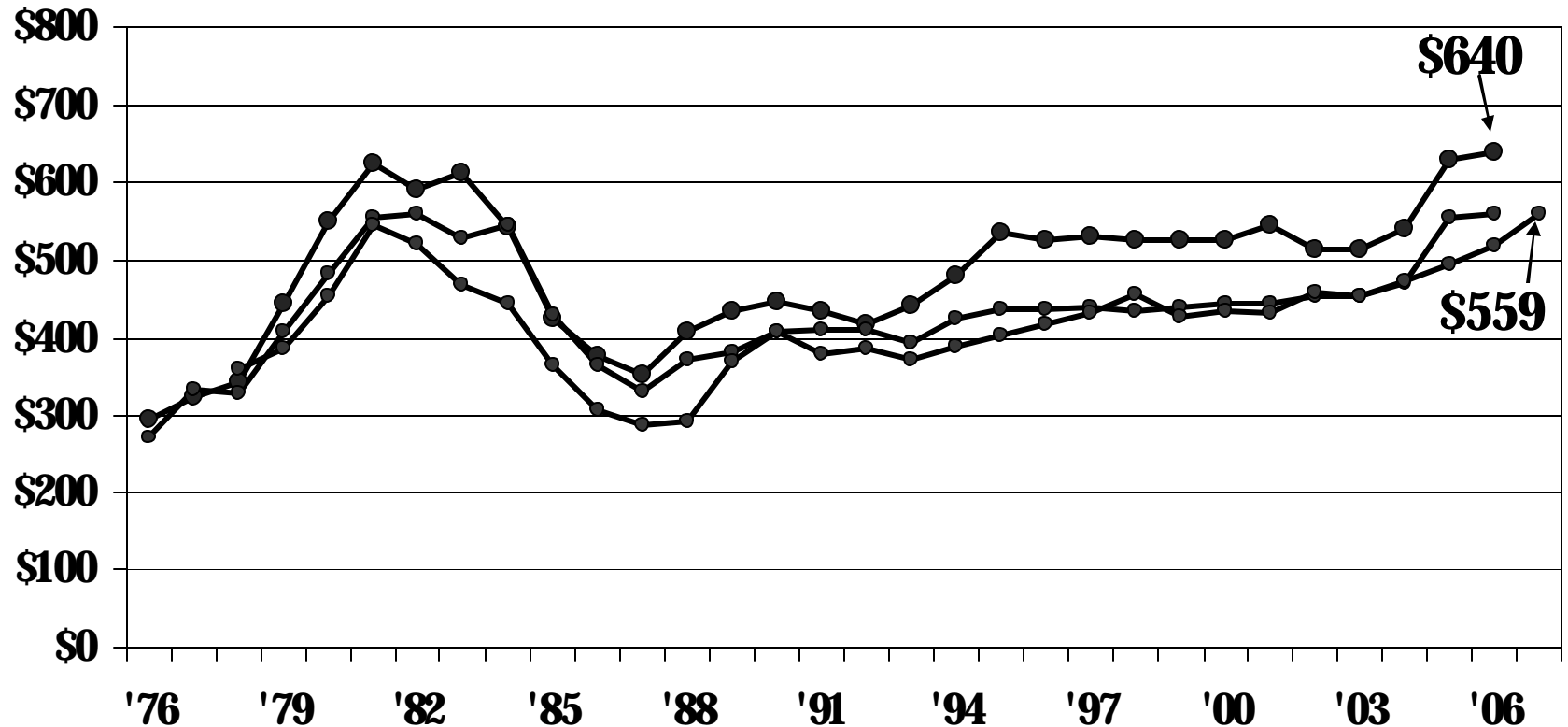
By Land Use:

Non-Irrigated & Irrigated Cropland

Pastureland

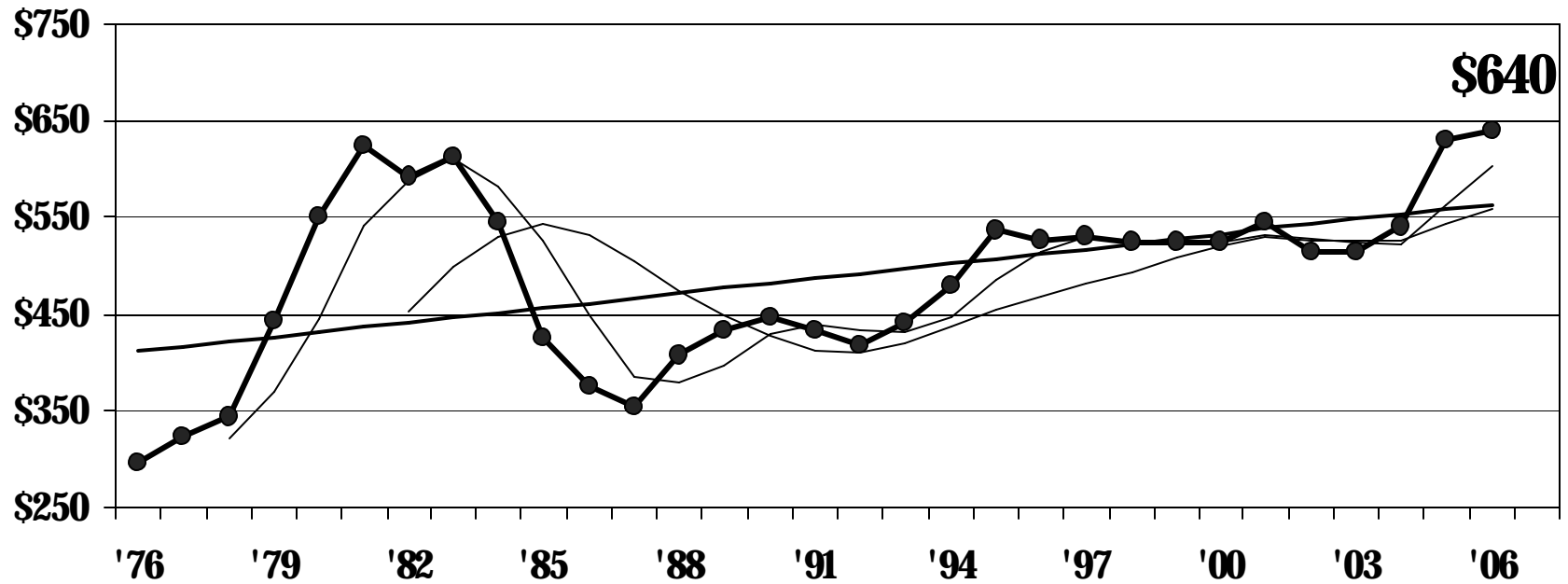
Non-Irrigated Farmland Prices

NW, WC Kansas (1976-2006), SW Nebraska (1978-2007)



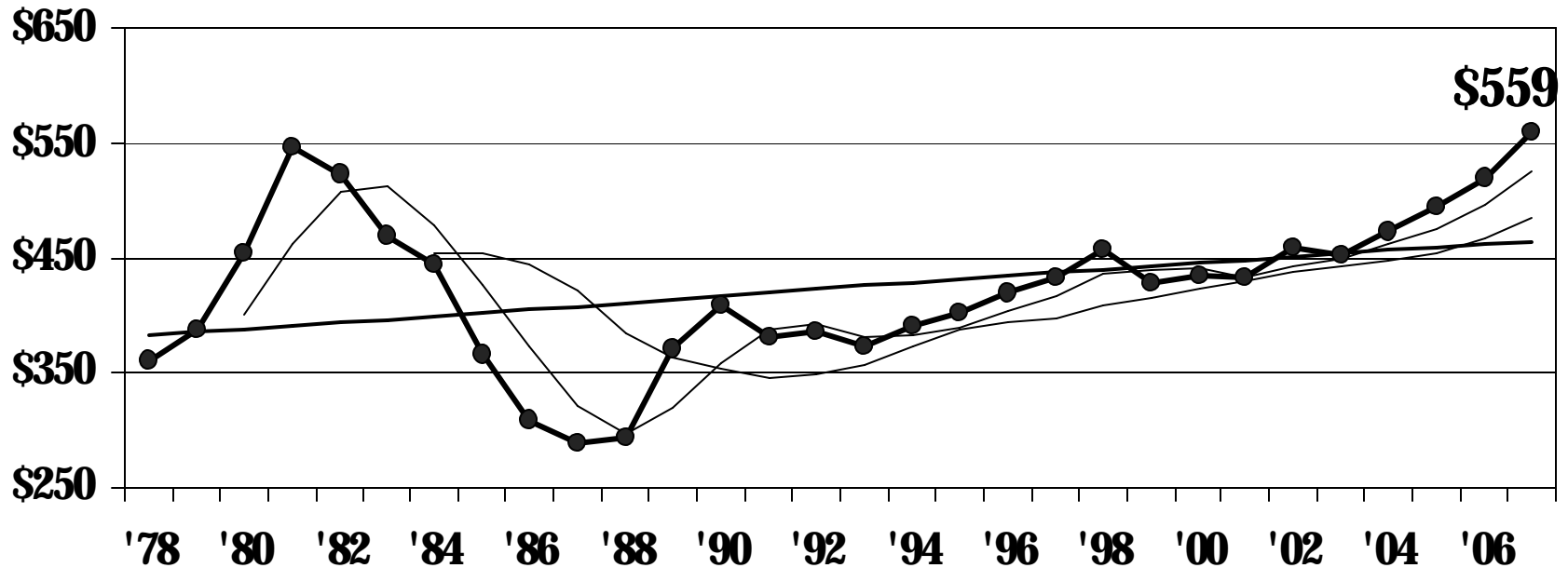
—●— Northwest KS —●— West Central KS —●— Southwest NE

Non-Irrigated Farmland \$ Trends Northwest Kansas (1976-2006)



- NW KS Dryland \$
- NW KS: +3.7% or \$5/acre per year ('76-'06)
- NW KS: 3 Yr Moving Ave.
- NW KS: 7 Yr Moving Ave.

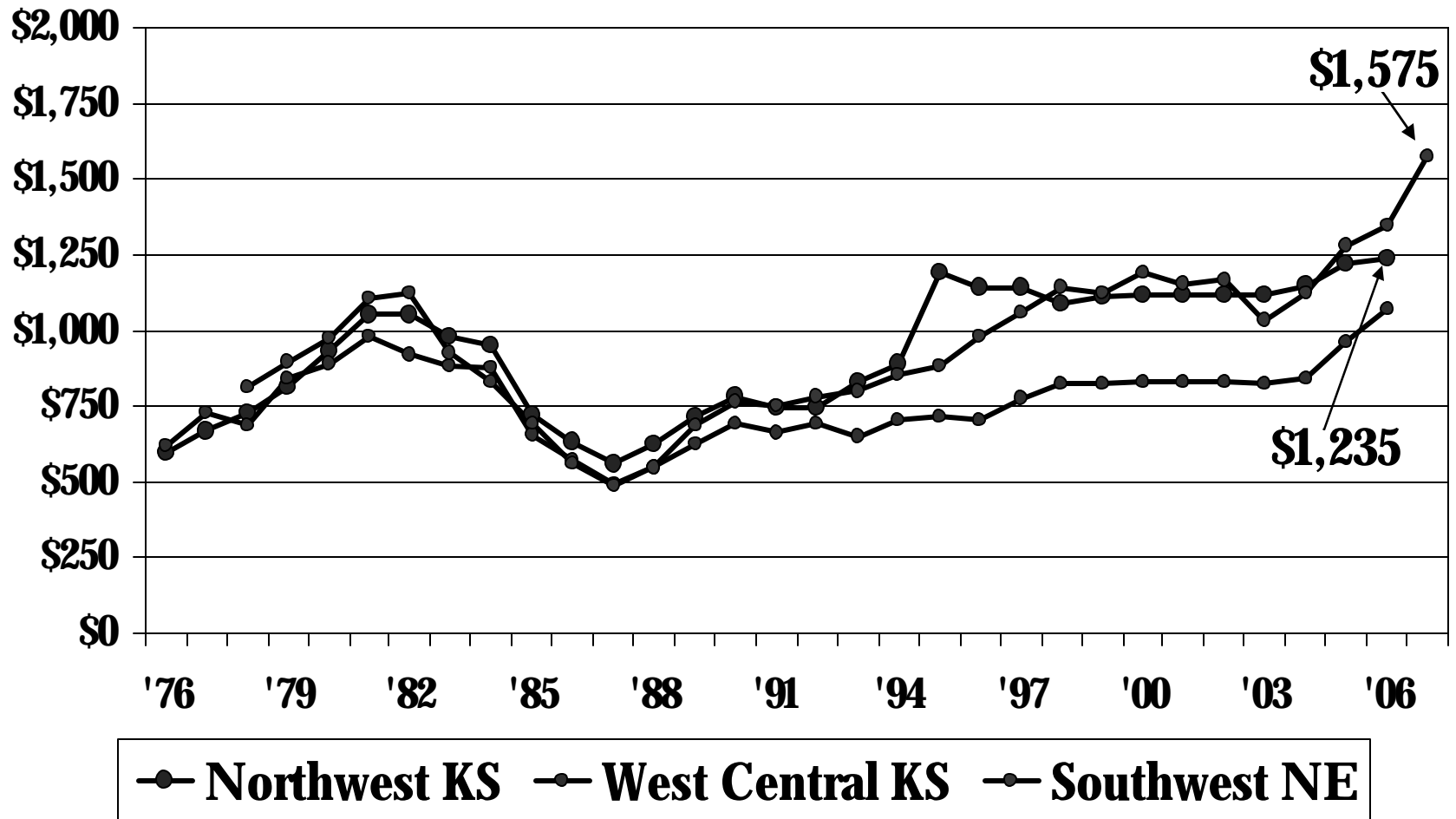
Non-Irrigated Farmland \$ Trends Southwest Nebraska (1978-2007)



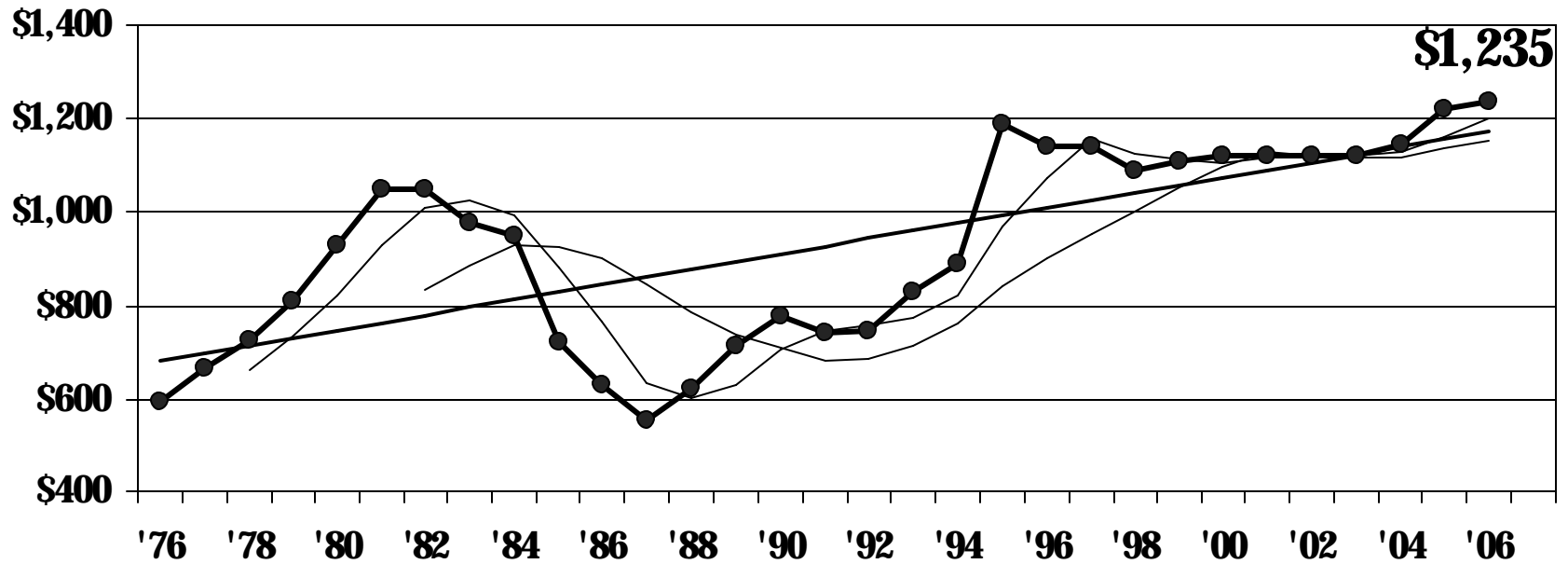
- SW NE Dryland \$
- SW NE: +1.8% or \$3/acre per year ('78-'07)
- NW KS: 3 Yr Moving Ave.
- NW KS: 7 Yr Moving Ave.

Irrigated Farmland Prices

NW, WC Kansas (1976-2006), SW Nebraska (1978-2007)

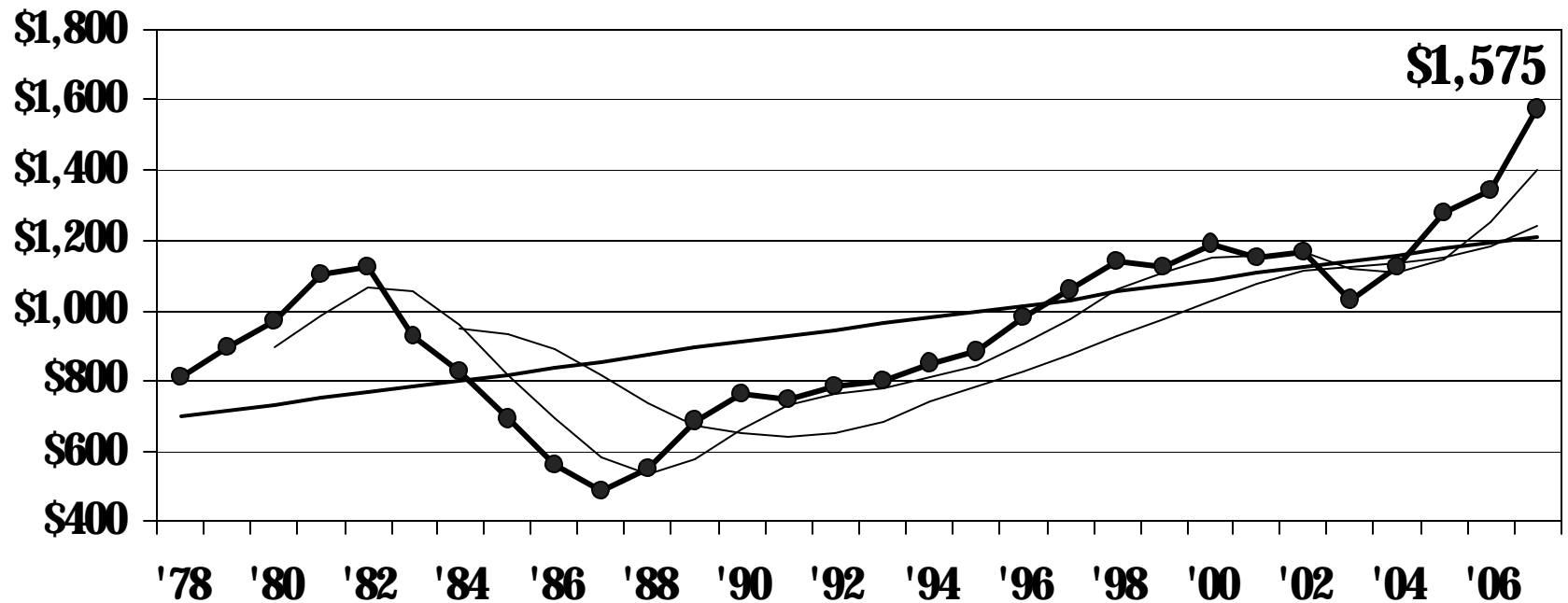


Irrigated Farmland \$ Trends Northwest Kansas (1976-2006)



- NW KS Irrigated \$
- NW KS: +3.5% or \$16/acre per year ('76-'06)
- NW KS: 3 Yr Moving Ave.
- NW KS: 7 Yr Moving Ave.

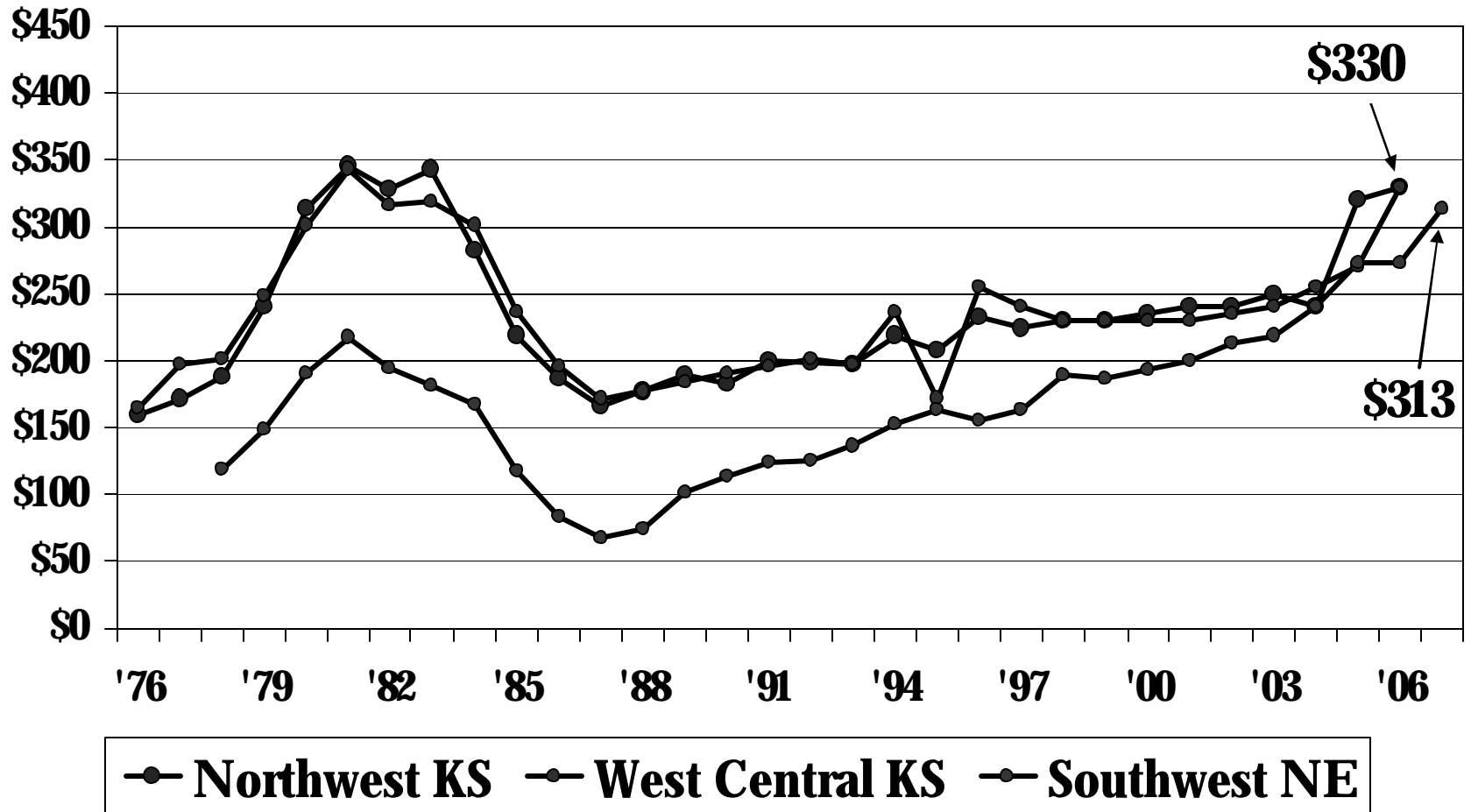
Irrigated Farmland \$ Trends Southwest Nebraska (1978-2007)



- SW NE CP Irrigated \$
- SW NE: +3.5% or \$16/acre per year ('78-'07)
- SW NE: 3 Yr Moving Ave.
- SW NE: 7 Yr Moving Ave.

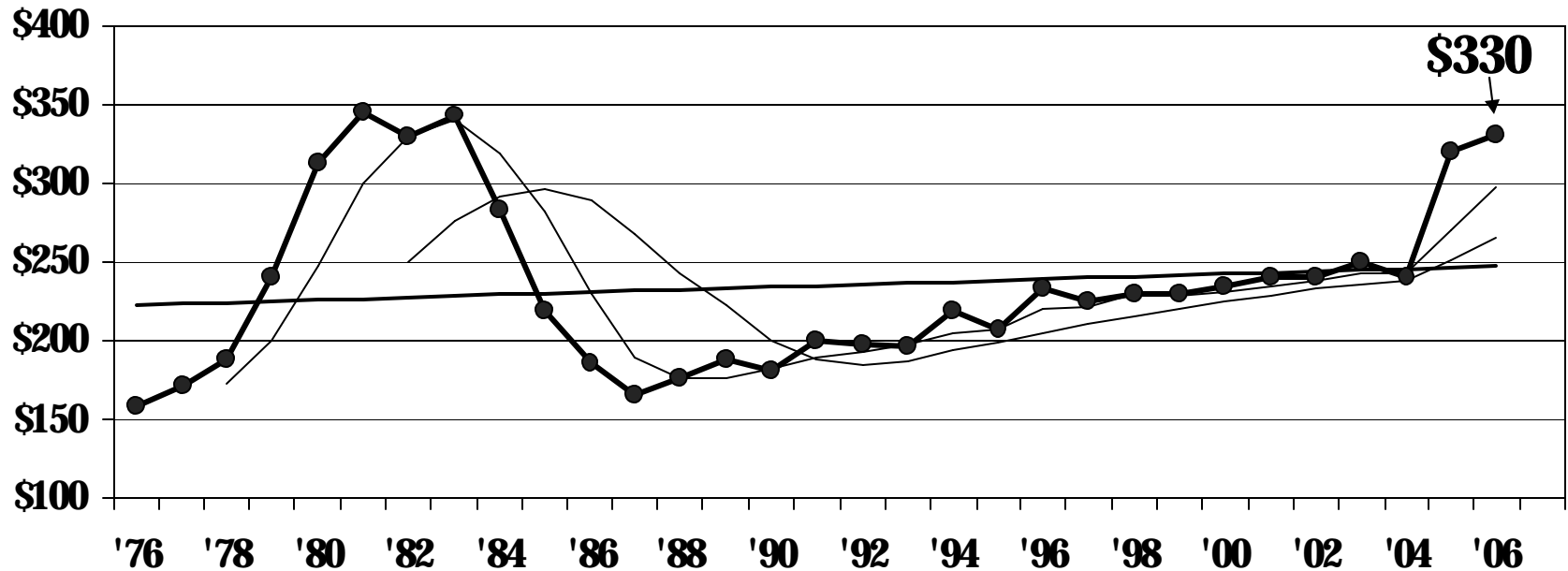
Pastureland Prices

NW, WC Kansas (1976-2006), SW Nebraska (1978-2007)



Pastureland \$ Trends

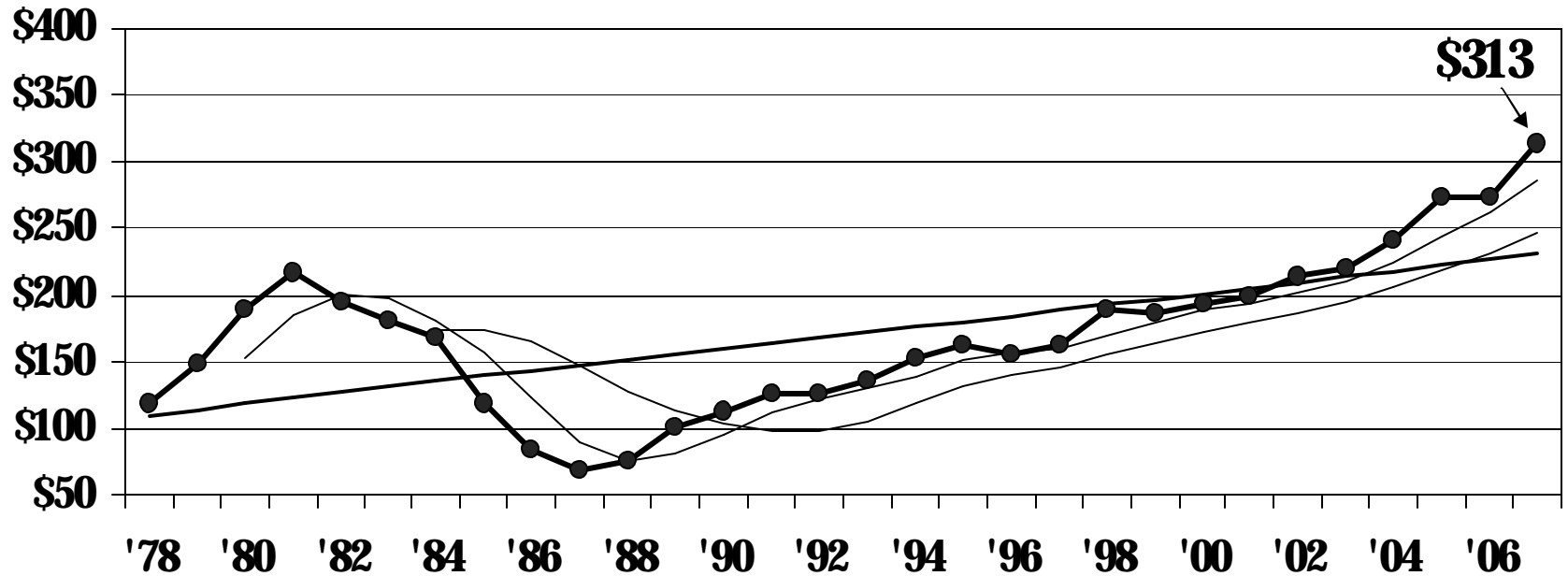
Northwest Kansas (1976-2006)



- NW KS Pastureland \$
- NW KS: +3.5% or \$0.82/ acre per year ('76-'06)
- NW KS: 3 Yr Moving Ave.
- NW KS: 7 Yr Moving Ave.

Pastureland \$ Trends

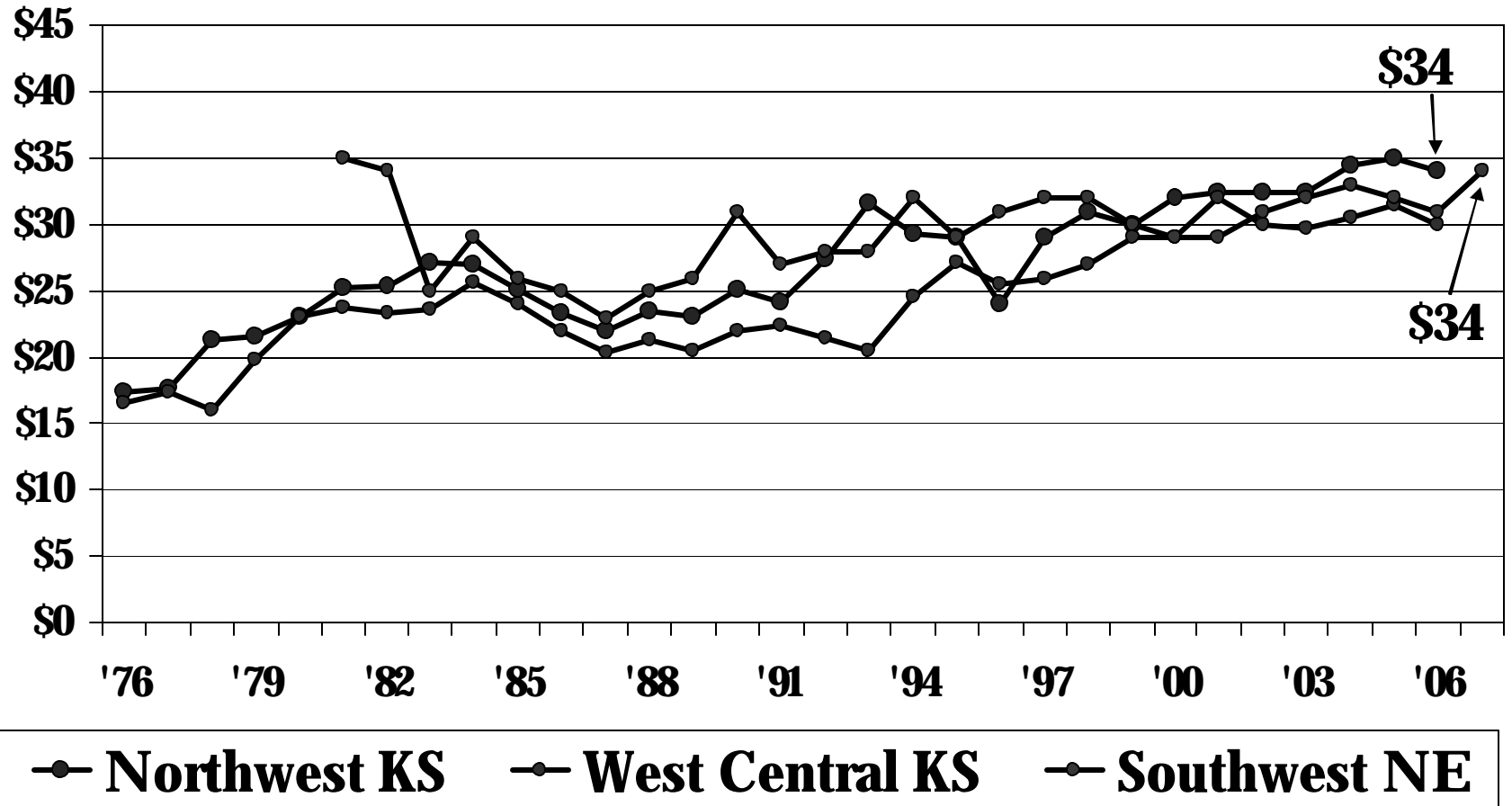
Southwest Nebraska (1978-2007)



- SW NE Pastureland \$
- SW NE: +5.4% or \$4/acre per year ('78-'07)
- SW NE: 3 Yr Moving Ave.
- SW NE: 7 Yr Moving Ave.

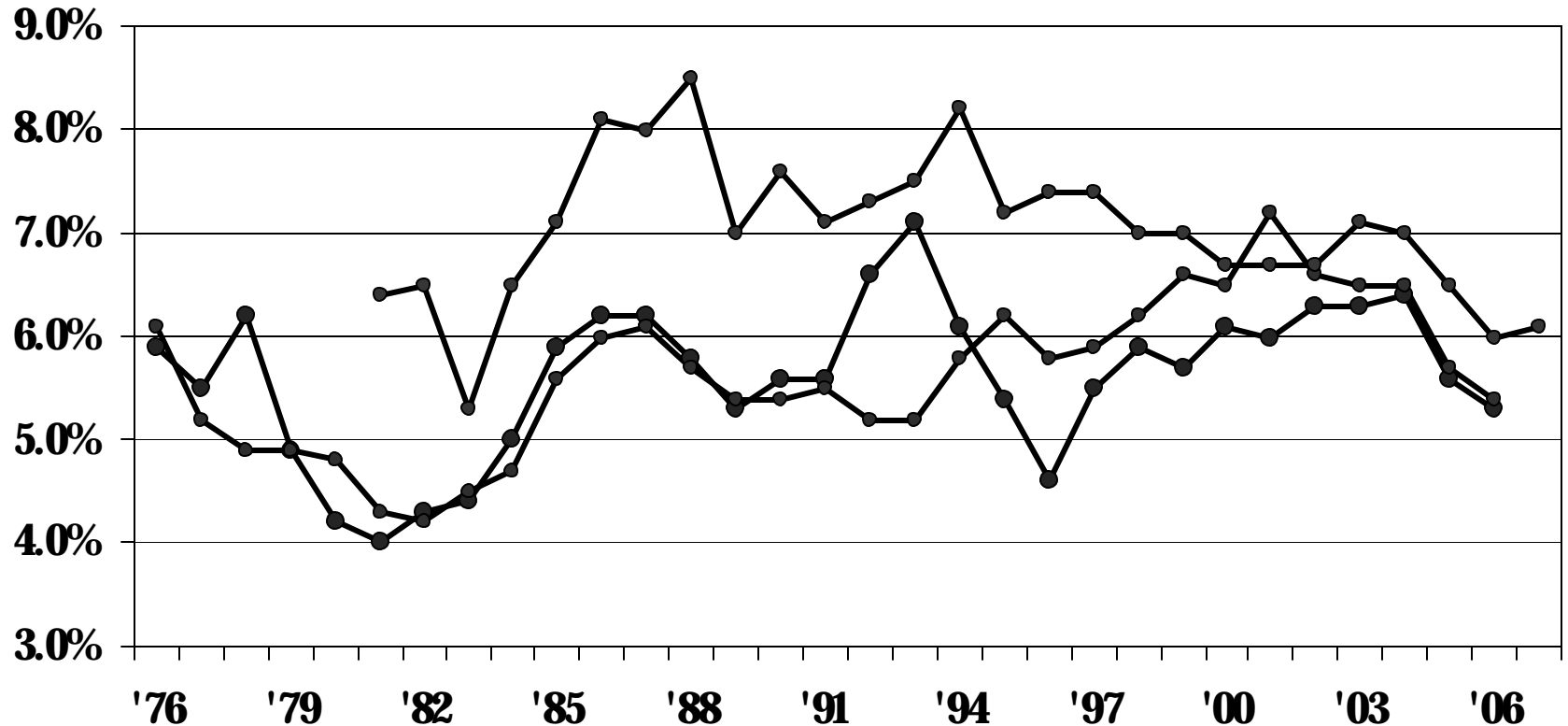
Non-Irrigated Farmland Cash Rent

NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)



Non-Irrigated Rent-to-Value

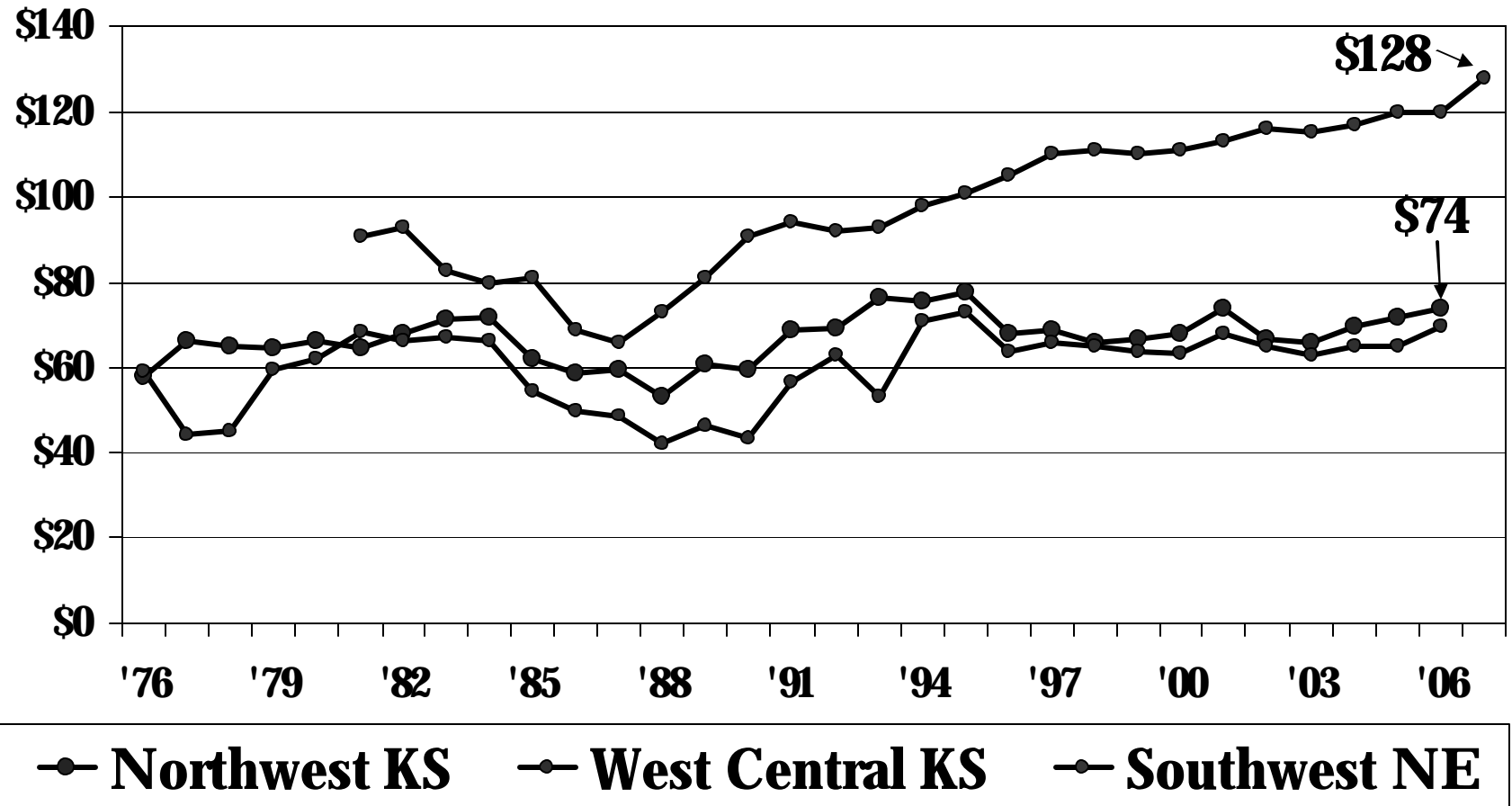
NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)



—●— Northwest KS - - - ● - - - West Central KS —●— Southwest NE

Irrigated Farmland Cash Rent

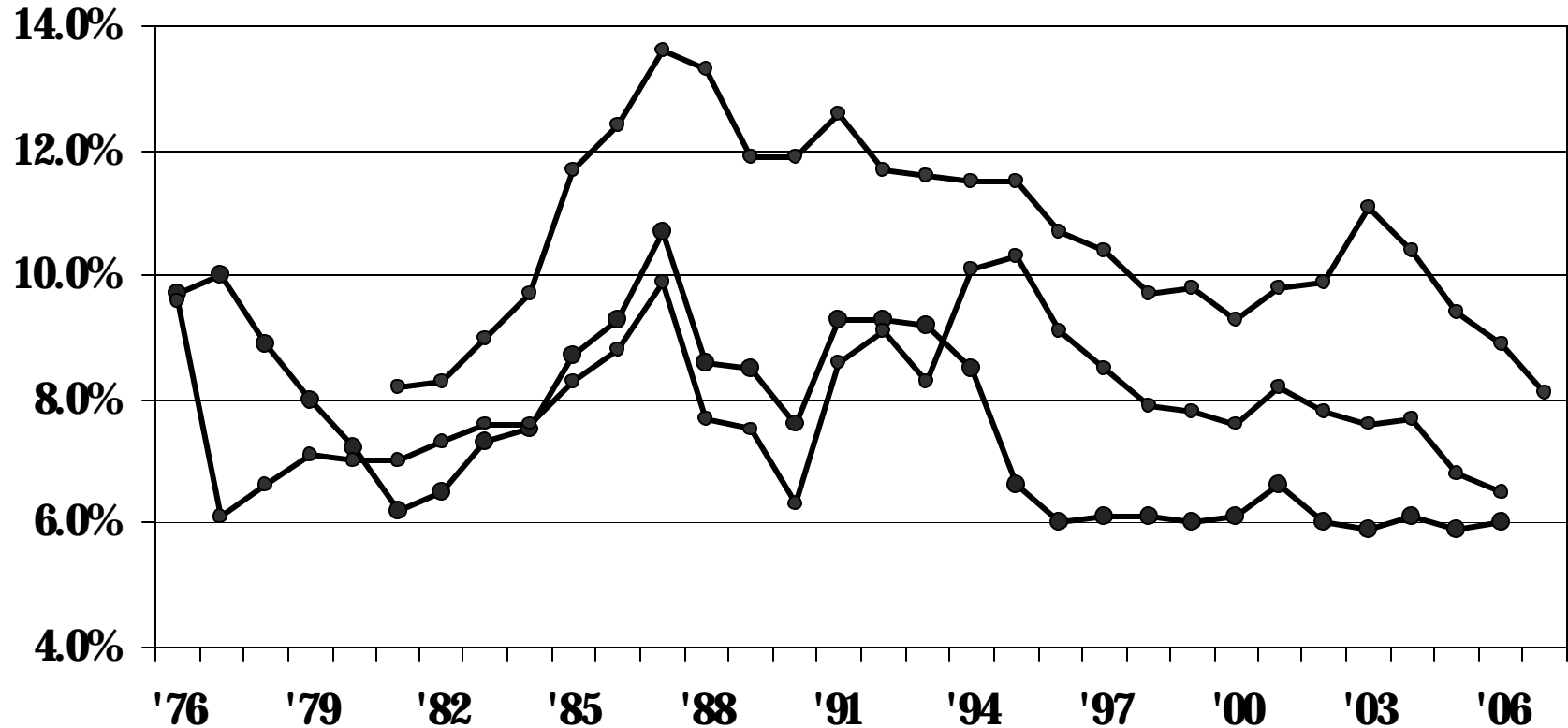
NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)



Irrigated Cropland Rent-to-Value

NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)

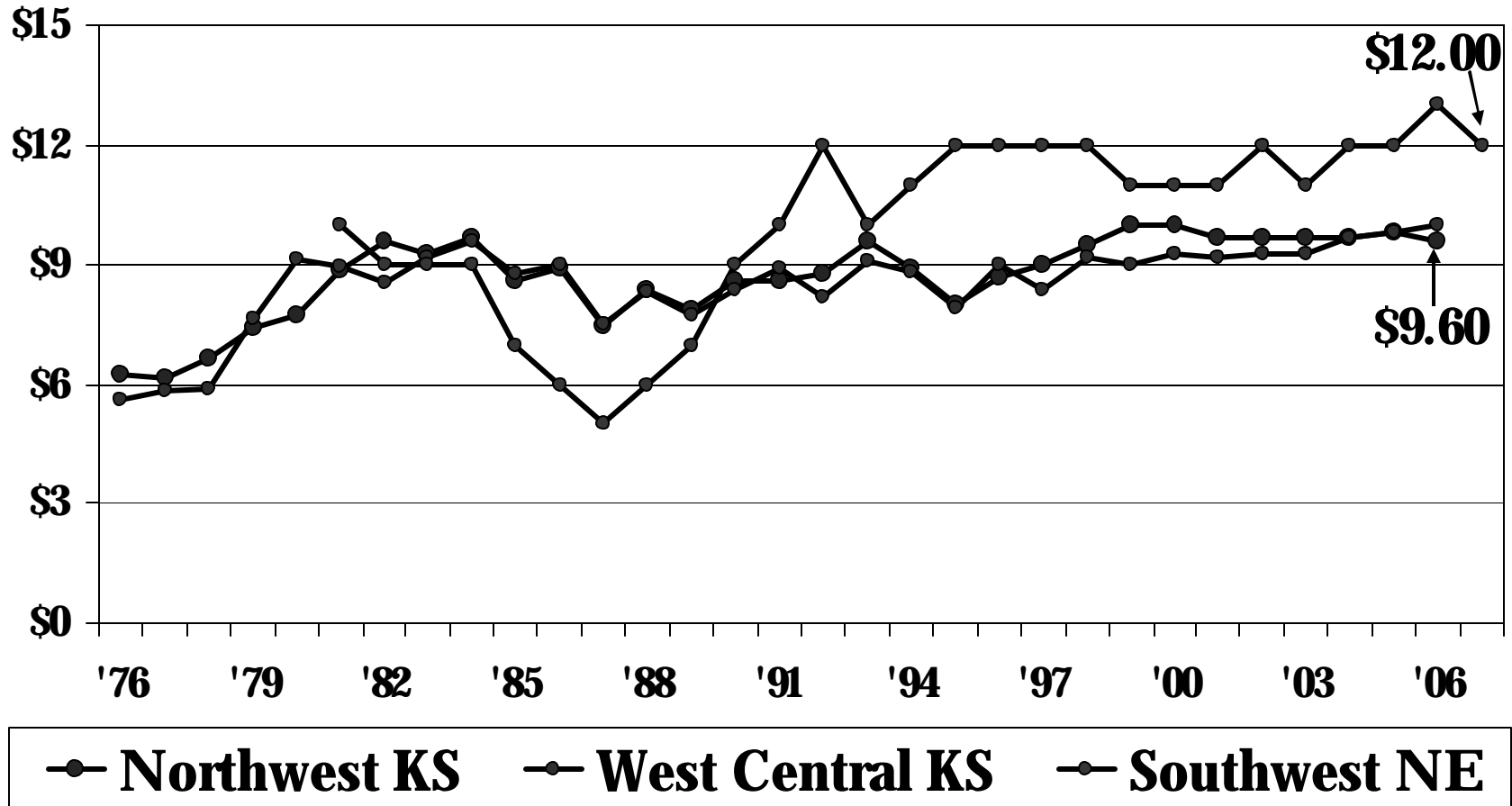
At Issue: Investment-Upkeep of Irrigation System + Cropland



—●— Northwest KS —●— West Central KS —●— Southwest NE

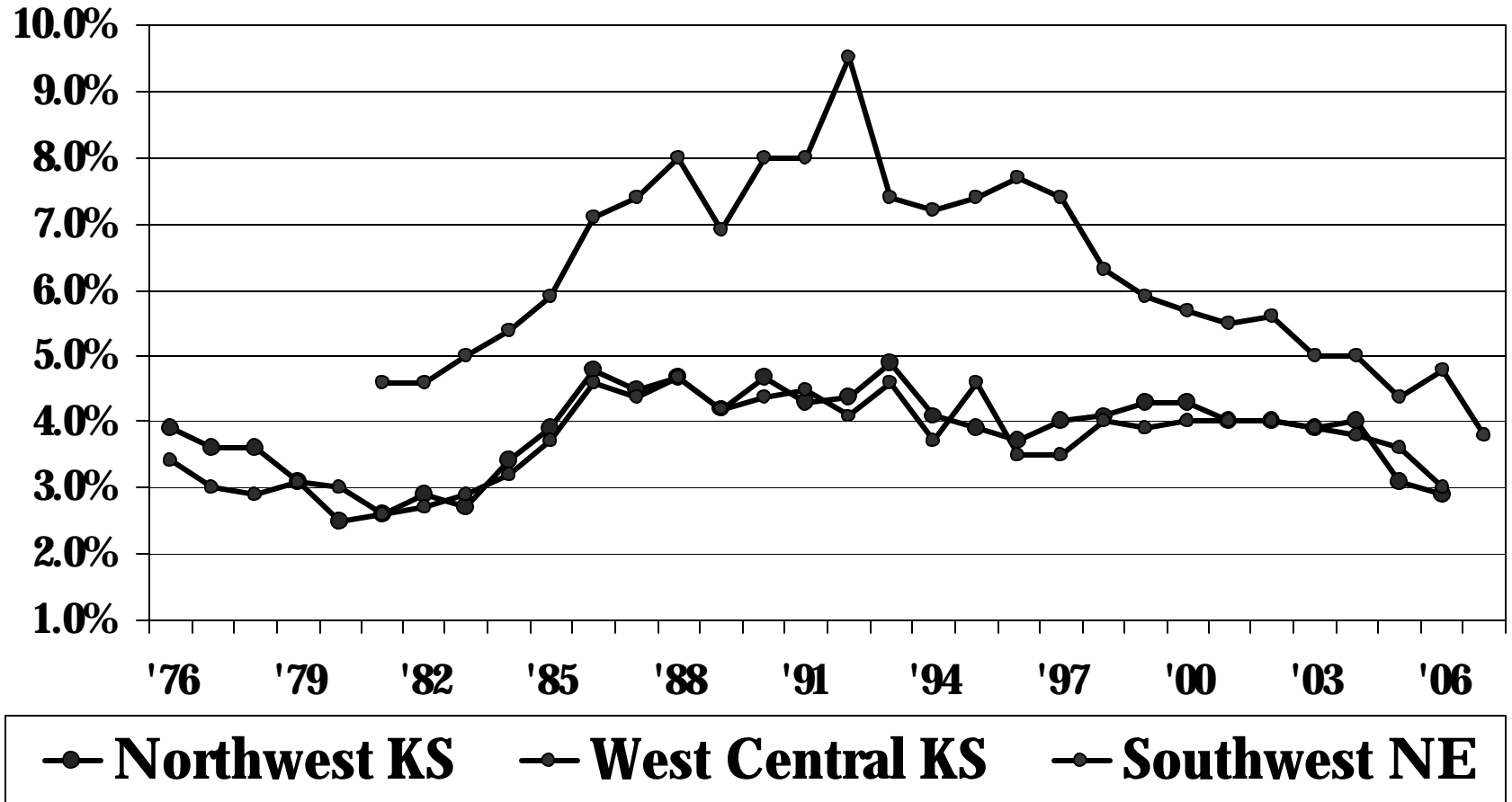
Pastureland Cash Rents

NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)



Pastureland Rent-to-Value

NW, WC Kansas (1976-2006), SW Nebraska (1981-2007)



III. An Example Analysis of Current Land Purchase Prices

Three (3) Scenarios (each 160 acres):

1. Center Pivot Irrigated Cropland
2. Non-Irrigated Cropland
3. Pastureland

Source: KSU-Landbuy.xls

(Kastens & Dhuyvetter, K-State Research & Extension, 2006)

Example: NW KS Irrigated Cropland

■ Cropland Acreage:

- 125 acres Irrigated – Center Pivot
- 30 acres Dryland – Corners
- 5 acres Waste, Roads, Margins, etc.
- Total: 160 acres

■ Market / Purchase Price:

- Irrigated Cropland: \$1,500 /acre
 - Non-Irrigated Cropland: \$ 640 /acre
 - Price for All Acres: \$1,312 /acre
-

Example: Irrigated Cropland (more)

■ Cash Rent:

- Irrigated Cropland: \$120 /acre
- Non-Irrigated Cropland: \$ 34 /acre
- Cash Rent for All Acres: \$101 /acre

■ Non-Ag Rent Income: \$0 /acre

■ No. Years Land to be Owned: 30 years

■ Tax Rates:

- Income Tax Rate: 35%
 - Capital Gains Tax Rate: 15%
-

Ex: Irrigated Cropland (still more)

- Financial / Lending Requirements:
 - Interest Rate: 8%
 - % Purchase price financed: 90%
 - Ag-Related Land\$ & Rent Growth: 2.4%/yr
 - Total Land Price & Cash Rent Growth Rate (Ag + Non-Ag Related):
 - Scenario #1: 3.0%
 - Scenario #2: 4.0%
 - Scenario #3: 5.0%
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Results: NW KS Irrigated Cropland

■ Original Market / Purchase Price:

- Irrigated Cropland: \$1,500 /acre
- Non-Irrigated Cropland: \$ 640 /acre
- **Price for All Acres: \$1,312 /acre**

■ Present Value of Purchase (+/- Purchase \$)

- @ 3.0% Growth \Rightarrow PV = \$1,893 /ac (+\$ 581 /ac)
 - @ 4.0% Growth \Rightarrow PV = \$2,092 /ac (+\$ 780 /ac)
 - @ 5.0% Growth \Rightarrow PV = \$2,355 /ac (+\$1043 /ac)
-

Ex. 2: Northwest Kansas Dryland

- Cropland Acreage:
 - 155 acres Non-irrigated Cropland + 5 ac Other
 - Market / Purchase Price: \$640 /acre
 - Cash Rent: \$ 34 /acre
 - Non-Ag Rent Income: \$ 0 /acre
 - No. Years Land to be Owned: 30 years
 - All Other assumptions the same
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Ex. 2 Results: NW Kansas Dryland

- Original Market / Purchase Price:
 - Non-Irrigated Cropland: \$640 /acre
 - Present Value of Purchase (+/- Purchase \$)
 - @ 3.0% Growth \Rightarrow PV = \$721 /ac (+\$ 81 /ac)
 - @ 4.0% Growth \Rightarrow PV = \$818 /ac (+\$178 /ac)
 - @ 5.0% Growth \Rightarrow PV = \$946 /ac (+\$306 /ac)
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Ex. 3: Northwest Kansas Pasture

- Pastureland Acreage:
 - 155 acres Pastureland + 5 ac Other
 - Market / Purchase Price: \$330 /acre
 - Cash Rent: \$9.60 /acre
 - Ag-Related Land\$ & Rent Growth: 2.1%/yr
 - **Non-Ag Rent Income: \$ 0 /acre**
 - No. Years Land to be Owned: 30 years
 - All Other assumptions the same
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Ex. 3 Results: NW Kansas Pasture

- Original Market / Purchase Price:
 - Non-Irrigated Cropland: \$330 /acre

 - Present Value of Purchase (+/- Purchase \$)
 - @ 3.0% Growth \Rightarrow PV = \$268 /ac (-\$62 /ac)
 - @ 4.0% Growth \Rightarrow PV = \$318 /ac (-\$12 /ac)
 - @ 5.0% Growth \Rightarrow PV = \$384 /ac (+\$54 /ac)

 - Results likely to be more positive IF add in additional Non-Ag Income (Recreation, etc.)
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Comments or Questions?

- Email: dobrien@ksu.edu
 - KSU Ag Economics Website:
<http://www.agmanager.info>
 - Northwest Research Extension Center
Website:
<http://www.oznet.ksu.edu/nwao/>
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