

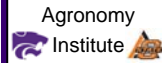
Effect of Increased Input Prices on Rental Arrangements

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K - State Research & Extension
 Oklahoma Cooperative Extension Service
Agronomy Institute
 Thursday, February 4, 2010
 Oswego Community Center
 6 blocks north of Hwy. 160 on Wisconsin Street, Oswego, KS

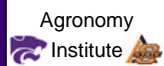
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Goal/objective of farming?

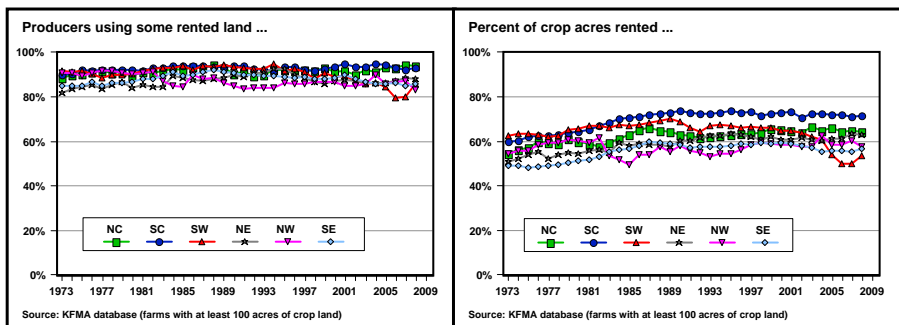
Kevin's assumption of your objective...

- Long-run profit maximization of crop enterprise (recognizing long-run and short-run trade-offs exist)
- Objective of leasing arrangement
 - Maximize returns to crop enterprise
 - Share returns of crop enterprise appropriately
 - Provides correct "signals" for optimal farming
- The terms of your lease should not interfere with farming in a way that is optimal (i.e., profit maximization)



Renting cropland in Kansas ...

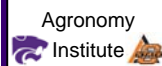
- Producers in Kansas rely heavily upon rented land in their operations



Almost everybody rents land...

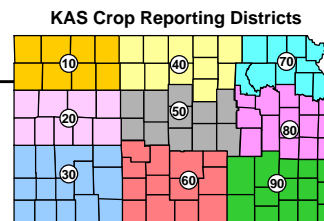
... and they rent the majority of their acres.

The result is that the market for rented land is very competitive, and thus our lease arrangements need to reflect market conditions.



Length of cropland leases ...

Region	Years rented
Northwest (10)	17.6
West Central (20)	21.0
Southwest (30)	20.0
North Central (40)	16.9
Central (50)	17.2
South Central (60)	15.5
Northeast (70)	17.2
East Central (80)	18.8
Southeast (90)	15.6
State	17.8



Producers tend to lease from the same landowner for a long time.

Long-term relationships can be good or bad...

Source: Schegel and Tsoodle -- 2007 KAS/KSU survey (2006 data)

Basic Lease Types

- **Crop-share**
 - Landowner shares in annual revenues and typically in certain annual costs
- **Cash rent**
 - Landowner gets a fixed annual cash payment for the use of their land
- Numerous variants around these two

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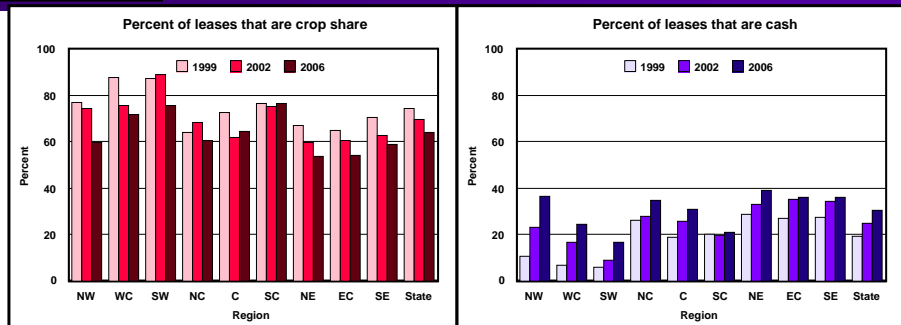
Percentage of leases by type of lease

Region	Cash	Share	Other
Northwest	36.3%	59.8%	3.9%
West Central	24.3	71.7	4.0
Southwest	16.5	75.5	8.0
North Central	34.9	60.5	4.6
Central	30.9	64.6	4.5
South Central	21.0	76.4	2.6
Northeast	38.8	53.5	7.7
East Central	36.0	54.3	9.6
Southeast	36.2	58.9	4.9
State	30.5	63.9	5.6

Source: Schlegel and Tsoodle -- 2007 KAS/KSU survey (2006 data)

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Lease types are changing over time...



Source: KSU and KS Ag Stat – Non-Irrigated Farm Lease Arrangement Surveys

Crop share continues to be the most prevalent, but the trend has been a shift from crop share arrangements towards more cash rent leases.

Questions to ask:

- 1) What factors have been behind this trend?
- 2) Do we expect this to continue in the future?

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Determining the terms of a lease...

How are cash lease rates or the terms of crop share leases established?



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Determining the terms of a lease...

Landowners and tenants in Kansas often claim to want a crop share or cash lease rate that is “fair” to both parties.

Economist’s definition of “FAIR” ...



Determining the terms of a crop lease...

- How are cash lease rates or the terms of crop share leases established?
 - Short answer is “the market”
- While landowners and tenants (i.e., the market) ultimately determine terms of crop share and cash leases, we use the equitable concept to arrive at a starting point for negotiations – and to better understand the market.

Principles embodied in an equitable lease ...

- Profit maximization ($MR=MC$)
- Economic profits (expected profit = 0)
- Opportunity costs
- Risk across lease types
- Equal rates of return on annual investment (if economic profit = 0, then rate of return = 0)

Table 13. Southeast-90 Nonirrigated Crop-Share Arrangements

Crop	Landlord's Percent of Crop Received (or of Costs Paid)*			
	33% Share	40% Share	50% Share	Other % Share
Wheat (43 Leases)	43	0	0	0
% of Total Leases in Lease Arrangement	100.0%	No Responses	No Responses	No Responses
% of Leases Sharing Fertilizer Costs	79.1%			
% of Leases Sharing Herbicide Costs	46.5%			
% of Leases Sharing Insecticide Costs	34.9%			
Corn (36 Leases)	32	2	1	1
% of Total Leases in Lease Arrangement	88.8%	5.6%	2.8%	2.8%
% of Leases Sharing Fertilizer Costs	87.5%	100.0%	100.0%	100.0%
% of Leases Sharing Herbicide Costs	25.0%	50.0%	100.0%	100.0%
% of Leases Sharing Insecticide Costs	21.9%	100.0%	100.0%	100.0%
Sorghum (14 Leases)	14	0	0	0
% of Total Leases in Lease Arrangement	100.0%	No Responses	No Responses	No Responses
% of Leases Sharing Fertilizer Costs	85.7%			
% of Leases Sharing Herbicide Costs	42.9%			
% of Leases Sharing Insecticide Costs	35.7%			
Multiple Crops (23 Leases)	21	1	1	0
% of Total Leases in Lease Arrangement	91.4%	4.3%	4.3%	No Responses
% of Leases Sharing Fertilizer Costs	85.7%	100.0%	100.0%	
% of Leases Sharing Herbicide Costs	81.0%	100.0%	100.0%	
% of Leases Sharing Insecticide Costs	57.1%	100.0%	100.0%	

* The percentages calculated in this table represent the percent of landlords sharing the same percent of costs as they share of the crop. For example, 79.1% of landlords receiving 33% of the wheat crop paid 33% of the fertilizer expenses.

Source: Schlegel and Tsoodle -- 2007 KAS/KSU survey (2006 data)

A good crop share lease should follow five basic principles ...

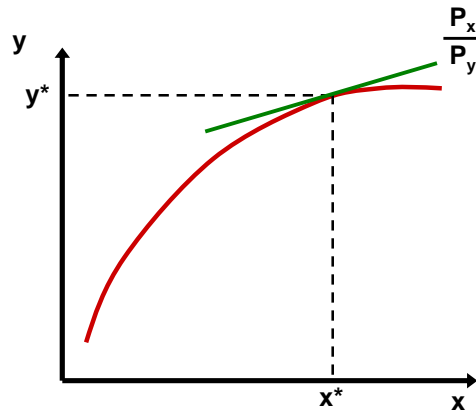
1. Yield increasing inputs should be shared
2. Share arrangements should be re-evaluated as technology changes
3. Total returns divided in same proportion as resources contributed
4. Compensation for unused long-term investments at termination
5. Good landlord/tenant communications

Principle #1

Yield increasing inputs should be shared

Examples of yield increasing inputs

- Fertilizer
- Irrigation water
- Seed ???
- Herbicides ???

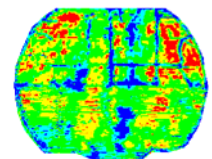


Principle #2

Technology may affect share arrangements

Examples of technological change

- Reduced-/no-till
- New crops and/or rotations
- Center pivot irrigation
- Hybrid seed
- Bio-technology
- Precision agriculture (GPS)



- Why do people adopt new technologies?
- What happens as “new” technologies become common practice?
- How does this impact relative contributions?

If the goal is to have an “equitable” lease ...

... then crops should be divided in the same proportion that inputs are provided, regardless of whether or not a particular cost is shared or not.

What is most important is communication.

Impact of adopting technologies that increase returns (either higher yields or lower costs)...

- ... “profit” associated with new technology is bid out of the market over time.
- ... as profit is bid out of the market (typically through higher land costs), relative contributions change.
- ... equitable lease is “dynamic” as market adjusts to new technologies.

Adoption of new technologies ...

- ... tends to cause problems because traditional arrangements or rules-of-thumb are often not appropriate.
- ... should not be a problem if we follow basic principles of a good lease.
- ... if problems persist as to what is equitable, can lead to alternative leasing arrangements (e.g., cash lease).

Principle #3

Returns divided in same proportion as resources contributed.

This requires annual contributions of both parties to be identified (budgeting type approach).

Base input values on expectations consistent with the time-frame of the lease (if expectations end up being significantly off, be willing to make adjustments).

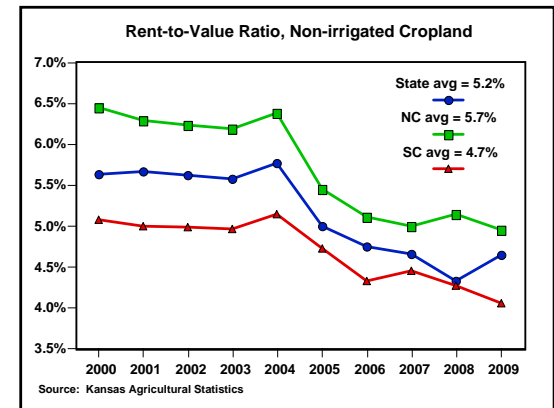


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Land contribution ...

The land contribution has typically been based on an “average market value” for the land along with an historical average return to land.

As cash leases become more common, the land contribution can be set equal to the cash rent.



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Machinery contributions ...

Machinery contribution should be based on average costs. Two methods for estimating the machinery contribution:

1. Machinery investment approach - annual contribution is based on depreciation, interest, repairs, fuel and oil, and labor.
2. Custom rates approach - annual contribution is based on reported custom rates and the typical operations.



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Crop production input contributions ...

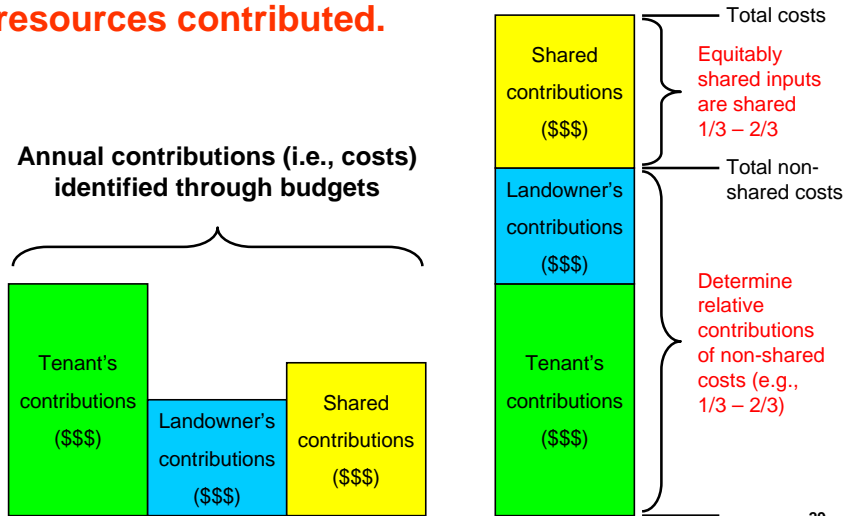
The value of contributions for input expenses such as seed, herbicides, insecticides, fertilizer, etc. are generally valued at current market prices and represent “typical” production practices.

How do we deal with input prices if they deviate significantly from historical averages (e.g., fertilizer, fuel)?

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Principle #3

Returns divided in same proportion as resources contributed.



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Principle #4

Compensation for unused long-term investments at lease termination.

It is generally recommended that landowners make long-term investments such as terraces, irrigation well, lime, alfalfa seed, etc.

If the tenant pays for long-term investments, or shares their cost, he should be compensated for his share of any value that remains when the lease is terminated

Lime, soil fertility (P), alfalfa stands, even no-till soil building (organic matter)

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Principle #5

Good communications between the landlord and the tenant.

Because so many of the terms of a lease are based on negotiation between the landowner and the tenant, good communications are critical.

A lease is a legal contract in Kansas, thus it is suggested that terms of the lease agreed upon by both parties be put in writing. This becomes more important as the complexity of leases increases – or as the volatility of crop and input prices increases.

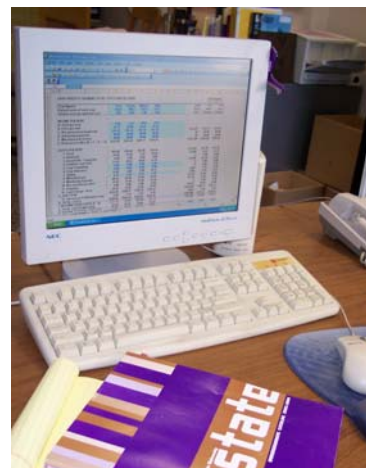
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Tests of a good crop share lease ...

- Are yield increasing inputs shared?
- Does it have flexibility to deal with change?
- Does it promote optimal management?
- Is income shared in same % as contributions?
- Is it written?
- Will it be reviewed periodically?
 - Keep the automatic rollover clauses out!
- Do all parties agree that lease is “fair”?

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- A what-if spreadsheet to analyze rents
- Delineates relative contributions
- Allows considering cash vs. crop-share
 - Can deal with a risk premium
- Very flexible; can handle
 - Net share leases
 - Fixed bushel rents
 - Cash transfers
- Important purpose is to allow people to move beyond traditional leases when they need to change (and to analyze impact of cash rent)



Information/data required:

1. Crop rotation/mix
2. Income information
3. Production inputs
4. Machinery costs
5. Land value
6. Irrigation equipment
-
7. Contributor of input
8. Risk adjustment

- **KSU-Lease** is extremely flexible and can be used to generate leases with terms that are quite simple to extremely complex
- For example equitable percentages for ...
 - net share lease (i.e., no inputs shared)
 - fertilizer shared equitably (i.e., same % as income)
 - fertilizer shared equitably, herbicides shared in some other proportion
 - different inputs shared differently for each crop
 - combination of crop share and cash rent

KSU Lease.xls ----- A spreadsheet budgeting program to determine equitable crop share and cash lease rental arrangements.

Version = 1.30.10

INPUTS vs CALCULATED VALUES
In the *Crop budgets*, *Shares*, and *Lease budgets* sheets all blue numbers are inputs and all black numbers are calculated from these inputs. The spreadsheet automatically recalculates every time an additional input is entered. Thus, it is important to wait until all data have been entered and reviewed before interpreting any of the calculated results (i.e., black numbers).

DESCRIPTION OF INPUTS
The paper titled *KSU Lease.pdf* serves as a "users guide" and provides a brief overview of this spreadsheet. Also, several of the input cells (i.e., blue number) have a red diamond in the upper right hand corner of the cell. By moving your mouse cursor over this diamond, a brief description of the input will be displayed on the screen.

COMPANION PUBLICATIONS
This spreadsheet was developed as a decision-aid tool based on the principles of equitable leases outlined in several publications that can be found on the K-State Ag Econ departmental website (www.agecon.ksu.edu). Additionally, the budget format of this spreadsheet was designed to follow that of the K-State Farm Management Guide crop budgets, which are also available on the Ag Econ website, so they can also be a useful resource when analyzing leasing alternatives.

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Various tabs

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Department of Agricultural Economics

Agronomy Institute

Projected crop budgets are available on agmanager.info (serve as a good starting point)

Home **Farm Management** **FM Guides** Nonirrigated Crops

Non-irrigated Crops

Crop	Western	South Central	North Central	Northeast	Southeast	Southwest
Wheat	MF-993	MF-574	MF-2158	MF-572	MF-992	
Grain Sorghum	MF-904	MF-575	MF-2159	MF-573	MF-995	
Forage Sorghum Silage		MF-648				
Soybeans	MF-2366	MF-2156	MF-2160	MF-570	MF-994	
Double Crop Soybeans		MF-2537	MF-2537	MF-2537	MF-2537	
Corn	MF-2150	MF-2157	MF-2161	MF-571	MF-993	
Corn Silage				MF-2364		
Sunflower	MF-887		MF-2144	MF-2144		
Double Crop Sunflower		MF-2145	MF-2145	MF-2145	MF-2145	
Canola		MF-2421				
Cane Hay	MF-997					
Alfalfa	MF-2367	MF-363	MF-363	MF-363	MF-363	
Cotton		MF-939			MF-939	MF-2565
Brome Hay		MF-2143	MF-2143	MF-2143	MF-2143	
Fescue Hay		MF-2146	MF-2146	MF-2146	MF-2146	

Excel Version of Crop Budgets: [FM Guides - Crops - \(2009\).xls](#)

Microsoft Excel - KSU Lease - (SE KS).xls

CROP BUDGETS SHOWING TOTAL COSTS AND RETURNS

Link to KSU Farm Management Guides (crop budgets)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total	Per	Per
Planted acres of each crop	40.0	10.0	25.0	36.0	25.0	136.0	Acres	Acres
Tillable acres per planted acre	1.00	1.00	1.00	0.00	1.00	100.0	Planted	Tillable
INCOME PER ACRE								
A. Yield per acre	40.0	75.0	35.0	20.0	100.0	---	---	---
B. Price per unit	\$4.47	\$3.08	\$8.53	\$8.53	\$3.53	\$0.00	---	---
C. Net government payments	\$11.39	\$11.39	\$11.39	\$0.00	\$11.39	\$1,139	\$8.38	\$11.39
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
F. Returns/acre ((A x B) + C + D + E)	\$190.19	\$242.39	\$309.94	\$170.60	\$364.39	\$33,031	\$242.88	\$330.31
COSTS PER ACRE								
1. Seed	\$11.70	\$14.81	\$42.30	\$49.60	\$48.48	\$4,671	\$34.35	\$46.71
2. Herbicide	3.60	33.34	9.72	9.72	36.65	1,987	14.61	19.87
3. Insecticide / Fungicide	23.36	4.85	0.00	0.00	0.28	990	7.28	9.90
4. Fertilizer and Lime	57.42	52.26	31.23	18.60	52.47	5,581	41.04	55.81
5. Crop Consulting	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
6. Crop Insurance	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
7. Drying	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
8. Miscellaneous	7.00	7.00	7.00	6.81	7.00	945	6.95	9.45
9. Machinery Expense	70.84	102.66	79.72	52.24	118.45	10,695	78.64	106.95
10. Non-machinery Labor	7.54	10.92	8.19	5.33	12.61	1,123	8.26	11.23
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land Charge / Rent	50.00	50.00	50.00	0.00	50.00	5,000	36.76	50.00
G. SUB TOTAL	\$231.45	\$275.83	\$228.16	\$142.30	\$325.93	\$30,992	\$227.88	\$309.92
13. Interest on 1/2 Nonland Costs	5.83	7.06	5.59	4.62	8.73	828	6.09	8.28
H. TOTAL COSTS	\$237.29	\$282.89	\$233.75	\$146.92	\$334.66	\$31,820	\$233.97	\$318.20
I. RETURNS OVER COSTS (F - H)	(\$47.10)	(\$40.50)	\$76.19	\$23.68	\$29.73	\$1,211	\$8.91	\$12.11
J. TOTAL COSTS/UNIT (H/A)	\$5.93	\$3.77	\$6.68	\$7.35	\$3.35	---	---	---
K. RETURN TO TOTAL COST ((H13)/G)	-17.83%	-12.12%	35.84%	19.89%	11.80%	3.81%	3.81%	3.81%

Microsoft Excel - KSU Lease - (SE KS).xls

TABLE 1. Production Inputs Used for Budgets

ITEM	Wheat	Sorghum	Soybean	DC SB	Corn	\$/unit
Seeding rate (lbs, seeds, etc)	90	4.5	130	160	24	\$21.84 /ac
Seed price, \$/unit	\$0.13	\$3.29	\$0.33	\$0.31	\$2.02	+ 0 x 0.440
Fertilizer:						
82-0-0	0	75	0	0	91	+ 32 x 0.430
N (dry/liquld)	62	0	0	0	0	\$0.440 /lb
P	31	31	30	20	32	\$0.430 /lb
K	27	35	30	20	27	\$0.500 /lb
Lime	333	333	333	0	333	\$0.010 /lb
Herbicide						
Finesse	0.2					\$18.00 /oz
+ Surfactant						\$1.00 /ac
Spirit					1	\$12.50 /oz
Bicep II Magnum		2			2.3	\$10.50 /qt
Buctril + Atrazine						\$6.17 /pt
Glyphosate			64	64		\$0.12 /oz
+ Ammonium Sulfate			6	6		\$0.34 /lb
Roundup Weather Max						\$0.52 /oz
Glyphosate						\$0.12 /oz
xxx						\$0.12 /oz
Insecticide / Fungicide						
Headline	8					\$2.92 /oz
Warrior		2.5				\$1.94 /oz
Pounce					0.32	\$0.86 /oz
xxx						
Irrigation water, inches/acre						\$4.50 /in
Irrigation repairs, \$/acre-inch						\$0.33 /in
Drying cost, \$/unit (bu, cwt, etc)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

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Link to KSU Farm Management Guides (crop budgets)

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11. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land Charge / Rent	50.00	50.00	50.00	0.00	50.00	5,000	36.76	50.00
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Microsoft Excel - KSU Lease - (SE KS).xls

TABLE 2. Machinery and Land Resources Used for Budgets

ITEM	Wheat	Sorghum	Soybean	DC SB	Corn	\$/unit
Drill/Plant, \$/acre	\$10.66	\$11.83	\$12.38	\$13.53	\$12.02	\$0.00
Tillage and Chemical Applications:						
Chisel	0	0	1	0	1	\$10.76 /ac
Disk	1	1	0	0	1	\$8.67 /ac
Field cultivate	0	1	1	0	1	\$8.60 /ac
Cultivate with sidedress	0	0	0	0	0	\$8.09 /ac
Anhydrous application	0	1	0	0	1	\$9.80 /ac
Fertilizer application	2	1	1	0	1	\$4.77 /ac
Herbicide application	1	2	2	2	2	\$4.82 /ac
Insecticide/fungicide application	1	1	0	0	1	\$4.87 /ac
Harvest						
Base charge, \$/acre	\$20.81	\$22.10	\$25.44	\$25.44	\$25.49	
Charge for high yields, \$/unit	\$0.202	\$0.208	\$0.198	\$0.198	\$0.195	
High yield	21	36	26	26	68	
Hauling, \$/unit	\$0.190	\$0.190	\$0.182	\$0.182	\$0.176	
Non-machinery labor, hr/acre	0.58	0.84	0.63	0.41	0.97	\$13.00 /hr
Irrigation labor, hr/acre	0.00	0.00	0.00	0.00	0.00	\$13.00 /hr
Average land value, \$/acre IA	\$50	\$50	\$50	\$50	\$50	
Annual return to land, % IA						100.0%
Interest on capital, %						7.5%
Irrigation Equipment						
Well, pump and gearhead value	\$0	n/a		25		0%
Power unit and meter	\$0	n/a		7		0%
Irrigation system	\$0	n/a				0%
Price scenarios to consider						Use (Y=1, N=0)
MF-1013 short run	\$4.81	\$3.87	\$8.86	\$8.86	\$3.66	0
Forward bids (1-29-10 -- SEK)	\$4.30	\$2.97	\$8.31	\$8.31	\$3.42	0
Forward bids (10-day avg -- SEK)	\$4.47	\$3.08	\$8.53	\$8.53	\$3.53	1

Non-machinery costs have been estimated to be 10-13% of total machinery costs for non-irrigated crops in Kansas.

Land "cost" is often determined based on what "works" in the budget.

Up to three price scenarios can be entered, "Pick" one or more using 1/0.

Microsoft Excel - KSU Lease - (SE KS).xls

CROP BUDGETS SHOWING TOTAL COSTS AND RETURNS

Link to KSU Farm Management Guides (crop budgets)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total	Per Acre	Per Acre	
Planted acres of each crop	40.0	10.0	25.0	36.0	25.0	136.0	Planted	Tillable	
Tillable acres per planted acre	1.00	1.00	1.00	0.00	1.00				
INCOME PER ACRE									
A. Yield per acre	40.0	75.0	35.0	20.0	100.0				
B. Price per unit	\$4.47	\$3.08	\$8.53	\$8.53	\$3.53	\$0.00	\$1.1		
C. Net government payments	\$11.39	\$11.39	\$11.39	\$0.00	\$11.39				
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
F. Returns/acre ((A x B) + C + D + E)	\$190.19	\$242.39	\$309.94	\$170.60	\$364.39	\$334.11			
COSTS PER ACRE									
1. Seed	\$11.70	\$14.81	\$42.30	\$49.60	\$48.48	\$4,671	\$34.35	\$46.71	
2. Herbicide / Fungicide	23.36	4.85	0.00	0.00	0.28	1,987	14.61	19.87	
3. Fertilizer and Lime	57.42	52.26	31.23	18.60	52.47	5,581	41.04	55.81	
4. Crop Consulting	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	
5. Crop Insurance	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	
6. Drying	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	
7. Miscellaneous	7.00	7.00	7.00	6.81	7.00	945	6.95	9.45	
8. Machinery Expense	70.84	102.66	79.72	52.24	118.45	10,695	78.64	106.95	
9. Non-machinery Labor	7.54	10.92	8.19	5.33	12.61	1,123	8.26	11.23	
10. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	
11. Land Charge / Rent	50.00	50.00	50.00	0.00	50.00	5,000	36.76	50.00	
G. SUB TOTAL	\$231.45	\$275.83	\$228.16	\$142.30	\$325.93	\$30,992	\$227.88	\$309.92	
H. TOTAL COSTS	\$231.45	\$275.83	\$228.16	\$142.30	\$325.93	\$31,820	\$233.97	\$318.20	
I. RETURNS OVER COSTS (F - H)	(\$47.10)	(\$40.50)	\$76.19	\$23.68	\$29.73	\$1,211	\$8.91	\$12.11	
J. TOTAL COSTS/UNIT (H/A)	\$5.93	\$3.77	\$6.68	\$7.35	\$3.35				
K. RETURN TO TOTAL COST ((H13)/G)	-17.83%	-12.12%	35.84%	19.89%	11.80%	3.81%	3.81%	3.81%	
M. Breakeven price (w/ base crop)	\$4.47	\$2.99	\$5.01	\$4.99	\$2.76	n/a			

Prices reflect current bids (had a "1" been entered in all three rows, this would be an average of the three).

Microsoft Excel - KSU Lease - (SE KS).xls

Landowner: Average landowner, Southeast KS, 555-987-6543 (01/30/10)

Operator: Average farmer, Southeast KS, 555-123-4567 (1:19 PM)

Basis for equitable share calculations: For the entire rotation (L4 = 0), Crop-by-crop (L4 = 1)

OPERATOR'S share of production inputs (enter -100% if equitably shared)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total
Planted acres	40.0	10.0	25.0	36.0	25.0	136.0
Seed	100%	100%	-100%	-100%	-100%	
Fertilizer:						
S2-0-0	-100%	-100%	-100%	-100%	-100%	
N (dry/liquid)	-100%	-100%	-100%	-100%	-100%	
P	-100%	-100%	-100%	-100%	-100%	
K	-100%	-100%	-100%	-100%	-100%	
Lime	0%	0%	0%	0%	0%	
Herbicide						
Finesse	-100%					
+ Surfactant	-100%					
Spirit					-100%	
Bicep II Magnum			-100%		-100%	
Buctril + Atrazine			-100%			
Glyphosate				-100%	-100%	
+ Ammonium Sulfate				-100%	-100%	
Roundup Weather Max						
Glyphosate						
xxx						
Insecticide / Fungicide						
Headline	-100%					
Warrior		-100%				
Pounce					-100%	
xxx						
Crop consulting	100%	100%	100%	100%	100%	
Crop Insurance	-100%	-100%	-100%	-100%	-100%	
Drying cost	-100%	-100%	-100%	-100%	-100%	
Operator's equitable share (OS%)	58.9%	66.3%	59.7%	97.5%	66.8%	66.5%

Entering a number between 0-100% (or a -100%) by crop and by input provides flexibility to handle most any situation.

Microsoft Excel - KSU Lease - (SE KS).xls

OPERATOR'S share of machinery, labor, irrigation, and land (enter -100% if shared equitably)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total
Planted acres	40.0	10.0	25.0	36.0	25.0	136.0
Tillage and Chemical Applications:						
Chisel	100%	100%	100%	100%	100%	
Disk	100%	100%	100%	100%	100%	
Field cultivate	100%	100%	100%	100%	100%	
Cultivate with sidedress	100%	100%	100%	100%	100%	
Anhydrous application	-100%	-100%	-100%	-100%	-100%	
Fertilizer application	-100%	-100%	-100%	-100%	-100%	
Herbicide application	-100%	-100%	-100%	-100%	-100%	
Insecticide/fungicide application	-100%	-100%	-100%	-100%	-100%	
Harvest						
Harvest	100%	100%	100%	100%	100%	
Hauling	100%	100%	100%	100%	100%	
Miscellaneous	80%	80%	80%	80%	80%	
Non-machinery labor	100%	100%	100%	100%	100%	
Irrigation expenses						
Labor	100%	100%	100%	100%	100%	
Fuel and oil	100%	100%	100%	100%	100%	
Repair and maintenance	100%	100%	100%	100%	100%	
Irrigation investment						
Well, pump and gearhead	0%	0%	0%	0%	0%	
Motor	0%	0%	0%	0%	0%	
Irrigation system	0%	0%	0%	0%	0%	
Land	0%	0%	0%	0%	0%	
Cash payment to landowner, \$/acre	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0
Operator's equitable share (OS%)	58.9%	66.3%	59.7%	97.5%	66.8%	66.5%
Landowner's equitable share (LS%)	41.1%	33.7%	40.3%	2.5%	33.2%	33.5%

What is the interpretation of inputs and calculated share in this example?

Impact on shares from changing... fertilizer prices? seed prices? herbicide prices? diesel fuel prices?

Microsoft Excel - KSU Lease - (SI KS).xls

CROP BUDGETS SHOWING TOTAL COSTS AND RETURNS [Link to KSU Farm Management Guides \(crop budgets\)](#)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total	Per	Per
Planted acres of each crop	40.0	10.0	25.0	36.0	25.0	136.0	Acres	Acres
Tillable acres per planted acre	1.00	1.00	1.00	0.00	1.00	100.0	Planted	Tillable
INCOME PER ACRE								
A. Yield per acre	40.0	75.0	35.0	20.0	100.0	---	---	---
B. Price per unit	\$4.47	\$3.08	\$8.53	\$8.53	\$3.53	\$0.00	---	---
C. Net government payments	\$11.39	\$11.39	\$11.39	\$0.00	\$11.39	\$1,139	\$8.38	\$11.39
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
F. Returns/acre ((A x B) + C + D + E)	\$190.19	\$242.39	\$309.94	\$170.60	\$364.39	\$33,031	\$242.88	\$330.31
COSTS PER ACRE								
1. Seed	\$11.70	\$14.81	\$42.30	\$49.60	\$48.48	---	---	---
2. Herbicide	3.60	33.34	9.72	9.72	36.65	---	---	---
3. Insecticide / Fungicide	23.36	4.85	0.00	0.00	0.28	---	---	---
4. Fertilizer and Lime	57.42	52.26	31.23	18.60	52.47	---	---	---
5. Crop Consulting	0.00	0.00	0.00	0.00	0.00	---	---	---
6. Crop Insurance	0.00	0.00	0.00	0.00	0.00	---	---	---
7. Drying	0.00	0.00	0.00	0.00	0.00	---	---	---
8. Miscellaneous	7.00	7.00	7.00	6.81	7.00	945	6.95	9.45
9. Machinery Expense	70.84	102.66	79.72	52.24	118.45	10,695	78.64	106.95
10. Non-machinery Labor	7.54	10.92	8.19	5.33	12.61	1,123	8.26	11.23
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land Charge / Rent	50.00	50.00	50.00	0.00	50.00	5,000	36.76	50.00
G. SUB TOTAL	\$231.45	\$275.83	\$228.16	\$142.30	\$325.93	\$30,992	\$227.88	\$309.92
13. Interest on 1/2 Nonland Costs	5.83	7.06	5.59	4.62	8.73	828	6.09	8.28
H. TOTAL COSTS	\$237.29	\$282.89	\$233.75	\$146.92	\$334.66	\$31,820	\$233.97	\$318.20
I. RETURNS OVER COSTS (F - H)	(\$47.10)	(\$40.50)	\$76.19	\$23.68	\$29.73	\$1,211	\$8.91	\$12.11
J. TOTAL COSTS/UNIT (H/A)	\$5.93	\$3.77	\$6.68	\$7.35	\$3.35	---	---	---
K. RETURN TO TOTAL COST ((H+I)/G)	-17.83%	-12.12%	35.84%	19.89%	11.80%	3.81%	3.81%	3.81%

What happens if corn seed cost is increased from \$48.48/ac (24K x \$2.02/K) to \$84.84 (24K x \$3.54/K) - all else equal?

Microsoft Excel - KSU Lease - (SI KS).xls

CROP BUDGETS SHOWING TOTAL COSTS AND RETURNS [Link to KSU Farm Management Guides \(crop budgets\)](#)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total	Per	Per
Planted acres of each crop	40.0	10.0	25.0	36.0	25.0	136.0	Acres	Acres
Tillable acres per planted acre	1.00	1.00	1.00	0.00	1.00	100.0	Planted	Tillable
INCOME PER ACRE								
A. Yield per acre	40.0	75.0	35.0	20.0	100.0	---	---	---
B. Price per unit	\$4.47	\$3.08	\$8.53	\$8.53	\$3.53	\$0.00	---	---
C. Net government payments	\$11.39	\$11.39	\$11.39	\$0.00	\$11.39	\$1,139	\$8.38	\$11.39
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
F. Returns/acre ((A x B) + C + D + E)	\$190.19	\$242.39	\$309.94	\$170.60	\$364.39	\$33,031	\$242.88	\$330.31
COSTS PER ACRE								
1. Seed	\$11.70	\$14.81	\$42.30	\$49.60	\$84.84	---	---	---
2. Herbicide	3.60	33.34	9.72	9.72	36.65	---	---	---
3. Insecticide / Fungicide	23.36	4.85	0.00	0.00	0.28	---	---	---
4. Fertilizer and Lime	57.42	52.26	31.23	18.60	52.47	---	---	---
5. Crop Consulting	0.00	0.00	0.00	0.00	0.00	---	---	---
6. Crop Insurance	0.00	0.00	0.00	0.00	0.00	---	---	---
7. Drying	0.00	0.00	0.00	0.00	0.00	---	---	---
8. Miscellaneous	7.00	7.00	7.00	6.81	7.00	945	6.95	9.45
9. Machinery Expense	70.84	102.66	79.72	52.24	118.45	10,695	78.64	106.95
10. Non-machinery Labor	7.54	10.92	8.19	5.33	12.61	1,123	8.26	11.23
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land Charge / Rent	50.00	50.00	50.00	0.00	50.00	5,000	36.76	50.00
G. SUB TOTAL	\$231.45	\$275.83	\$228.16	\$142.30	\$362.29	\$30,992	\$227.88	\$309.92
13. Interest on 1/2 Nonland Costs	5.83	7.06	5.59	4.62	10.09	828	6.09	8.28
H. TOTAL COSTS	\$237.29	\$282.89	\$233.75	\$146.92	\$372.38	\$31,820	\$233.97	\$318.20
I. RETURNS OVER COSTS (F - H)	(\$47.10)	(\$40.50)	\$76.19	\$23.68	(\$7.99)	\$1,211	\$8.91	\$12.11
J. TOTAL COSTS/UNIT (H/A)	\$5.93	\$3.77	\$6.68	\$7.35	\$3.72	---	---	---
K. RETURN TO TOTAL COST ((H+I)/G)	-17.83%	-12.12%	35.84%	19.89%	0.58%	0.82%	0.82%	0.82%
M. Breakeven price (w/ base crop)	\$4.47	\$2.99	\$5.01	\$4.99	\$3.14	n/a	---	---

What happens if corn seed cost is increased from \$48.48/ac (24K x \$2.02/K) to \$84.84 (24K x \$3.54/K) - all else equal?

Corn returns go from +\$29.73/ac to -\$7.99/ac and returns per tillable acre drop from \$12.11 to \$2.68 (\$9.43/ac)

Microsoft Excel - KSU Lease - (SI KS).xls

Landowner -----> Average landowner, Southeast KS, 555-987-6543 01/30/10
Operator -----> Average farmer, Southeast KS, 555-123-4567 1:19 PM
Basis for equitable share calculations: For the entire rotation (L4 = 0), Crop-by-crop (L4 = 1) L4 ==> 0

OPERATOR'S share of production inputs (enter -100% if equitably shared)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total
Planted acres	40.0	10.0	25.0	36.0	25.0	136.0
Seed	100%	100%	-100%	-100%	-100%	---
Fertilizer:						Print operator's shares
82-0-0	-100%	-100%	-100%	-100%	-100%	---
N (dry/liquid)	-100%	-100%	-100%	-100%	-100%	---
P	-100%	-100%	-100%	-100%	-100%	---
K	-100%	-100%	-100%	-100%	-100%	---
Lime	0%	0%	0%	0%	0%	---
Herbicide						---
Finesse	-100%	-100%	-100%	-100%	-100%	---
+ Surfactant	-100%	-100%	-100%	-100%	-100%	---
Spirit	-100%	-100%	-100%	-100%	-100%	---
Bicep II Magnum	-100%	-100%	-100%	-100%	-100%	---
Buctril + Atrazine	-100%	-100%	-100%	-100%	-100%	---
Glyphosate	-100%	-100%	-100%	-100%	-100%	---
+ Ammonium Sulfate	-100%	-100%	-100%	-100%	-100%	---
Roundup Weather Max	-100%	-100%	-100%	-100%	-100%	---
Glyphosate	-100%	-100%	-100%	-100%	-100%	---
xxx	-100%	-100%	-100%	-100%	-100%	---
Insecticide / Fungicide						---
Headline	-100%	-100%	-100%	-100%	-100%	---
Warrior	-100%	-100%	-100%	-100%	-100%	---
Pounce	-100%	-100%	-100%	-100%	-100%	---
xxx	-100%	-100%	-100%	-100%	-100%	---
Crop consulting	100%	100%	100%	100%	100%	---
Crop insurance	-100%	-100%	-100%	-100%	-100%	---
Drying cost	-100%	-100%	-100%	-100%	-100%	---
Operator's equitable share (OS%)	58.9%	66.3%	59.7%	97.5%	66.8%	66.5%

But, if land values (i.e., cash rents) do not change, the equitable share terms remain unchanged!

Microsoft Excel - KSU Lease - (SI KS).xls

Landowner -----> Average landowner, Southeast KS, 555-987-6543 01/30/10
Operator -----> Average farmer, Southeast KS, 555-123-4567 1:41 PM
Basis for equitable share calculations: For the entire rotation (L4 = 0), Crop-by-crop (L4 = 1) L4 ==> 0

OPERATOR'S share of production inputs (enter -100% if equitably shared)

Crop/System	Wheat	Sorghum	Soybean	DC SB	Corn	Total
Planted acres	40.0	10.0	25.0	36.0	25.0	136.0
Seed	100%	100%	100%	100%	100%	---
Fertilizer:						Print operator's shares
82-0-0	-100%	-100%	-100%	-100%	-100%	---
N (dry/liquid)	-100%	-100%	-100%	-100%	-100%	---
P	-100%	-100%	-100%	-100%	-100%	---
K	-100%	-100%	-100%	-100%	-100%	---
Lime	0%	0%	0%	0%	0%	---
Herbicide						---
Finesse	-100%	-100%	-100%	-100%	-100%	---
+ Surfactant	-100%	-100%	-100%	-100%	-100%	---
Spirit	-100%	-100%	-100%	-100%	-100%	---
Bicep II Magnum	-100%	-100%	-100%	-100%	-100%	---
Buctril + Atrazine	-100%	-100%	-100%	-100%	-100%	---
Glyphosate	-100%	-100%	-100%	-100%	-100%	---
+ Ammonium Sulfate	-100%	-100%	-100%	-100%	-100%	---
Roundup Weather Max	-100%	-100%	-100%	-100%	-100%	---
Glyphosate	-100%	-100%	-100%	-100%	-100%	---
xxx	-100%	-100%	-100%	-100%	-100%	---
Insecticide / Fungicide						---
Headline	-100%	-100%	-100%	-100%	-100%	---
Warrior	-100%	-100%	-100%	-100%	-100%	---
Pounce	-100%	-100%	-100%	-100%	-100%	---
xxx	-100%	-100%	-100%	-100%	-100%	---
Crop consulting	100%	100%	100%	100%	100%	---
Crop insurance	-100%	-100%	-100%	-100%	-100%	---
Drying cost	-100%	-100%	-100%	-100%	-100%	---
Operator's equitable share (OS%)	58.9%	66.3%	69.5%	98.7%	74.5%	73.3%

If corn and soybean seed costs are not shared in this example, the equitable lease is closer to a 75% / 25%.

If corn seed cost increases from \$48.48 to \$84.84/ac, the equitable shares change from 73.3 / 26.7 to 74.4 / 25.6.

Would the terms of the lease change?

When thinking about how changing input prices will impact lease arrangements, we need to ask the following questions...

- Is the input in question already being shared?
- Will this impact the use and costs of other inputs?
- What affect does this have on overall profitability?
- How important is this input to the entire farming operation?
- If lease arrangement is not modified, will this change my farming practices?

Answers to these questions will determine if the lease arrangement should be modified.

Questions ???



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