

Outlook for Irrigated and Non-Irrigated Cash Rents in Kansas

2023 Ag Lenders Conference

GREGG IBENDAHL

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First, an overview of KFMA farm financials

Debt levels

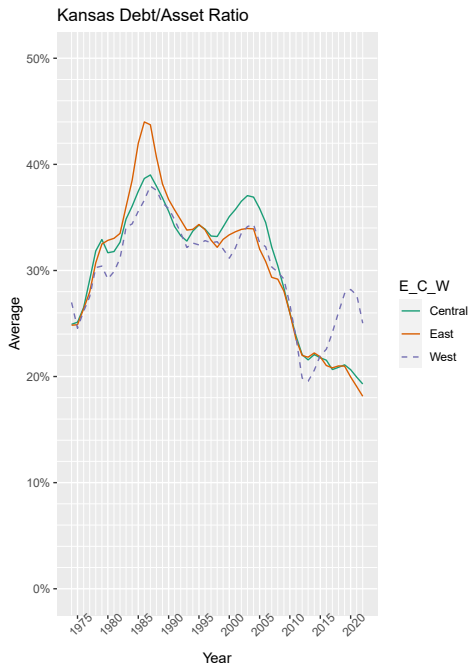
Interest costs

Net Farm Income

Farm Expenses



Debt/Asset Ratio



D/A ratios remain at historic lows (KFMA 50 year history)

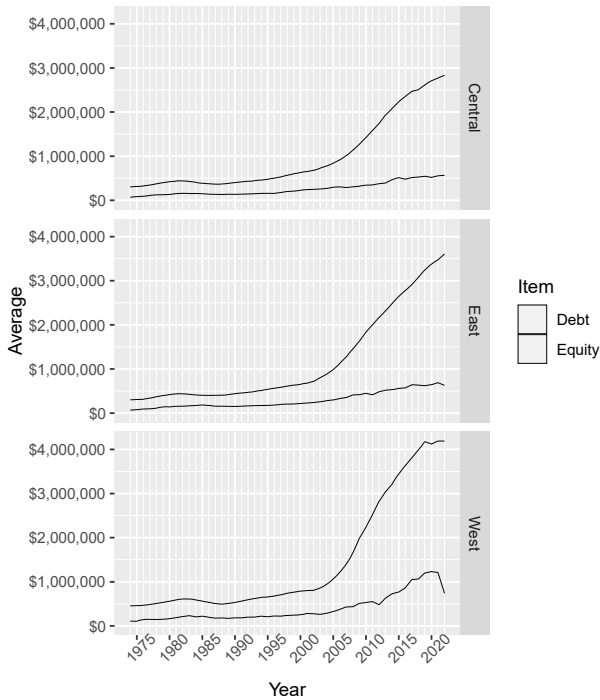
- Not quite the same in western Kansas

Possible explanations

- Increase in asset values?
- Decrease in debt?

Is the D/A ratio a leading or trailing indicator of farm financial problems?

Kansas Balance Sheet by Region



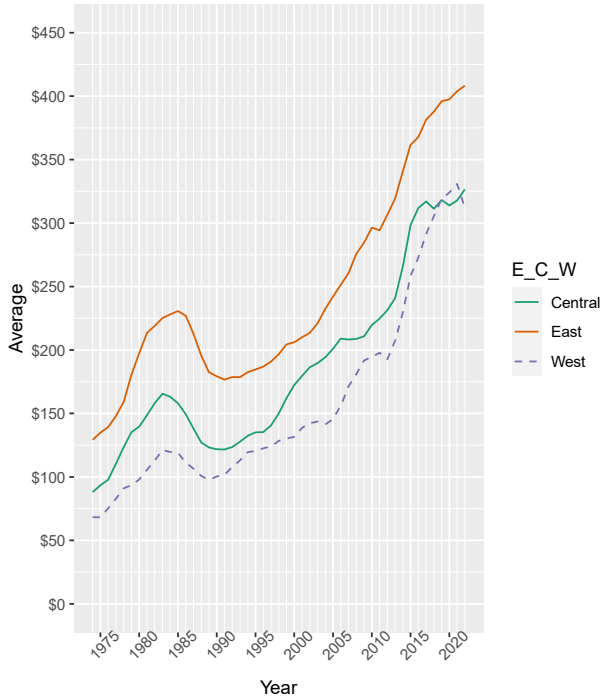
KFMA Balance Sheet

Most of improvement in D/A ratio can be attributed to increase in land values

Additional debt varies by region

- Some improvement in western Kansas

Kansas Farm Debt per Crop Acre



Farm Debt per Acre

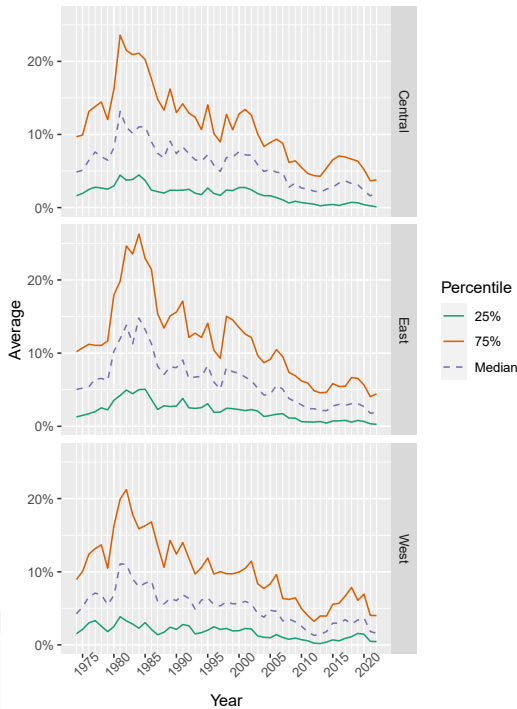
Farms have increased their debt levels on a per crop acre basis

- Decrease in western Kansas
- Leveling off in central Kansas

What are the consequences of higher debt?

- Farming is more expensive than it's ever been so higher levels of debt might be needed
- Higher levels of debt can be supported if gross income is also higher
 - Interest expense ratio
- Lower interest rates allow for higher levels of debt

Interest Expense Ratio by Region



Interest expense ratio

Ratio is at lowest level in the history of KFMA farms

- Interest expense / VFP

10% is considered the red flag level

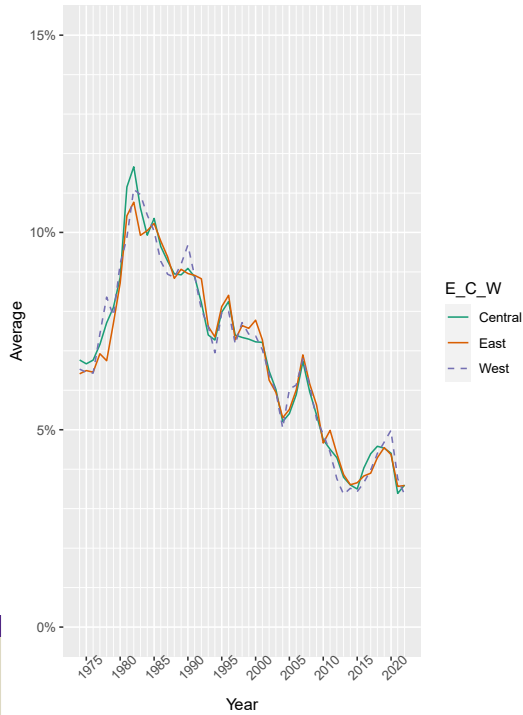
- Interest expense was a big problem in the 1980's farm crisis
 - Farms just couldn't make P and I payments when 10 cents of every dollar the farm produced went to pay interest
 - This is one of the reasons the FFSC set up financial statements the way they did

Ratio is strong because of:

- Low interest rates
- Strong farm revenue (VFP)

Rising interest rates are a concern

Interest Rate on Farm Debt



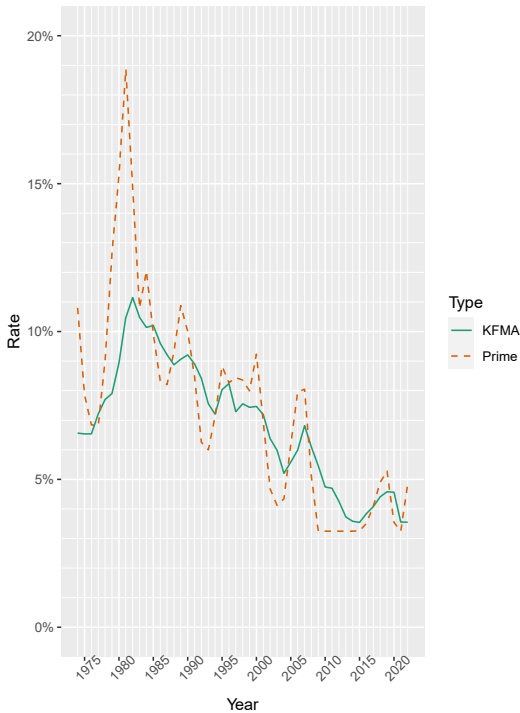
Average farm interest rates

Interest rates are still at historic lows on KFMA farms

Rising interest rates haven't affect the average rate paid by farmers

This number likely lags the current interest rate because of loans already in place with a fix interest rate

Comparison of Interest Rates

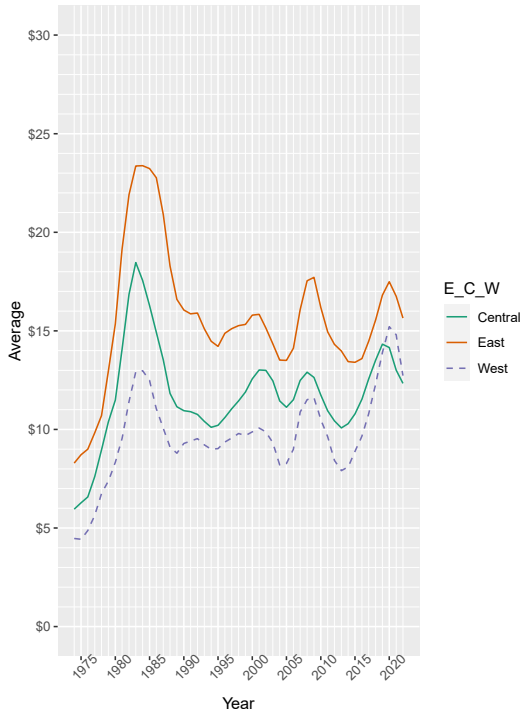


Comparison of KFMA interest cost and Prime

Very high correlations

The fixed debt on a farm reduces the interest rate volatility seen with the Prime rate

Kansas Farm Interest per Crop Acre



Interest per crop acre

Despite debt levels per crop acre increasing, the interest per crop acre has remained more stable

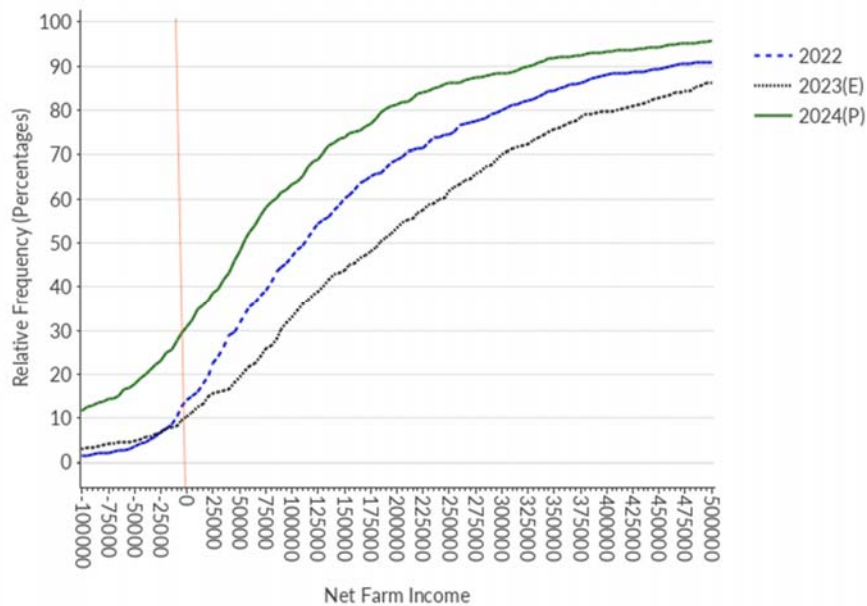
- Reflection of decreasing interest rates

Interest per crop acre is now higher than it was in the 1980's farm crisis

- Mitigated by higher levels of farm revenue

A rebound in NFI for 2023 but a downturn in 2024?

	Net Farm Income			
	2021	2022	2023(p)	Est 2024
NFI	\$ 342,936	\$ 190,336	\$ 250,238	\$ 72,513
% Change		-44%	31%	-71%



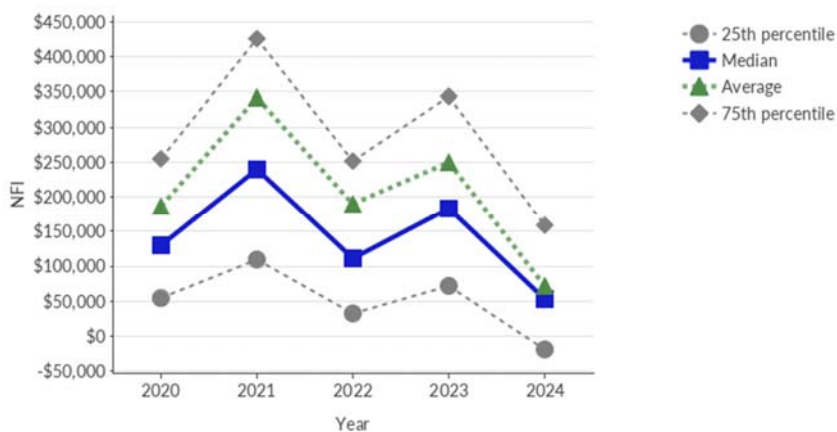
In 2022, 12% of farms earned negative NFI

In 2023, an expected 10% will have negative NFI

In 2024, 30% of farms may earn negative NFI

The median NFI is at the 50 point of the vertical axis

Curves to the right are better than curves to the left



25th percentile

- 25% of farms may earn less than this (with 75% above)

75th percentile

- 75% of farms may earn less than this (with 25% above)

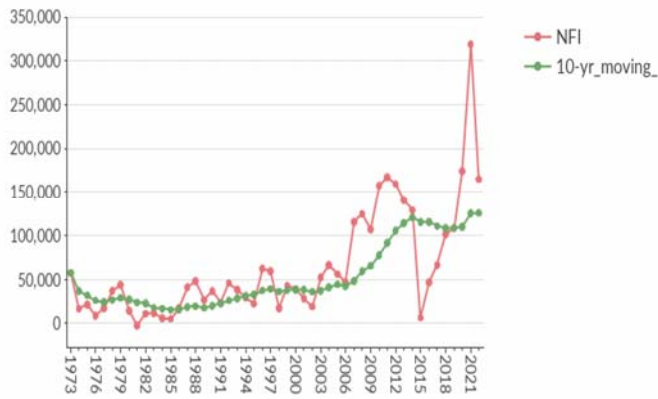
Median value is below average meaning some high earning farmers are helping to raise the average

- Median is basically the 50% percentile

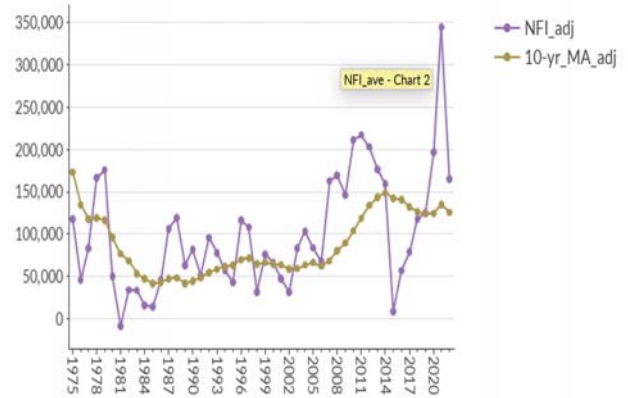


Historical NFI

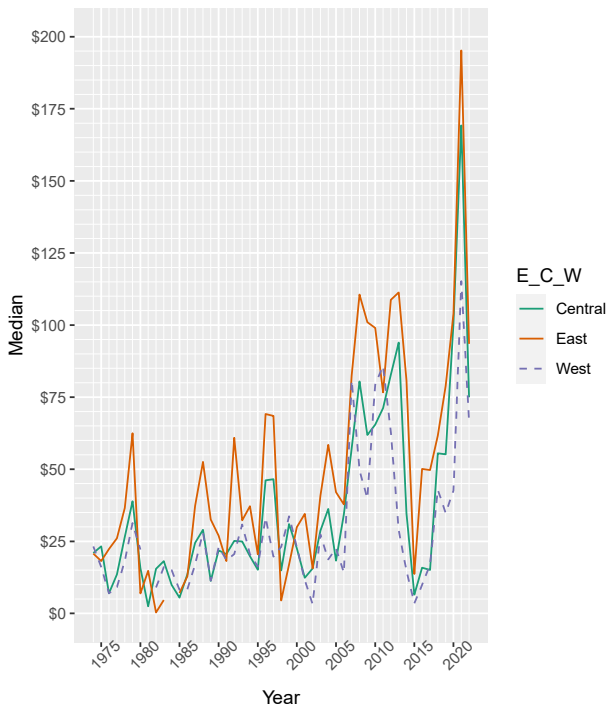
Actual \$



Inflation adjusted \$



Kansas Median NFI per Crop Acre



Median NFI of KFMA farms by crop acre

Eastern Kansas earns the most per crop acre

- Also the most volatile

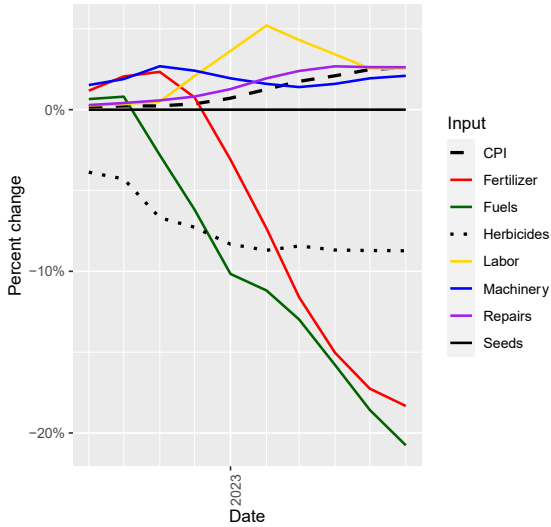
Even though 2022 saw a reduction in NFI, it was still a very profitable year

NFI per acre should correlate with cash rents

- Changes in cash rents likely lag
- Cash rents are not as volatile

Change in expenses since last year

USDA Price Indexes Relative to 2022-09-01



Inflation (the CPI index) is probably at a 4 to 5% rate now

- Cooling off some
- Is the official number low?

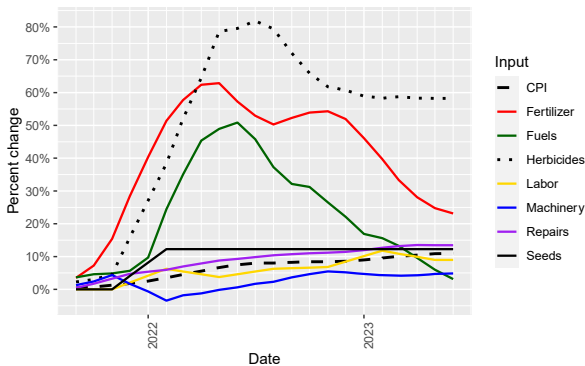
Big declines in fertilizers and fuels and herbicides

Most of the other categories follow a similar pattern to the CPI index



Change in expenses from 2 years ago

USDA Price Indexes Relative to 2021-09-01



Fertilizer prices peaked in mid 2022 and have been declining since

- Fertilizer is still 20% higher than 2 years ago

Herbicides prices are up 60% over 2 years

- Most of that increase happened in 2022

Fuel costs are about where they were 2 years ago.

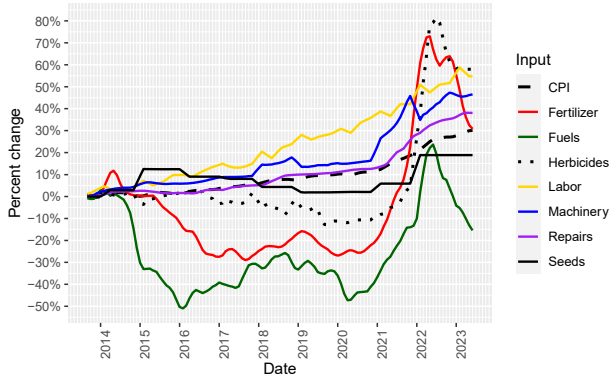
Machinery has not increased as much as inflation over the last 2 years

- It's all relative though



Change in expenses from 10 years ago

USDA Price Indexes Relative to 2013-09-01



It's all relative to the starting base year

Inflation (CPI index) was fairly low until the last 2 year

- Overall prices are now 30% higher than 10 years ago

Fertilizers and fuels are closely related (discussed later)

- Prices can be very volatile
- Will we ever have relatively cheap fertilizer like we did from 2017 to 2021 again?

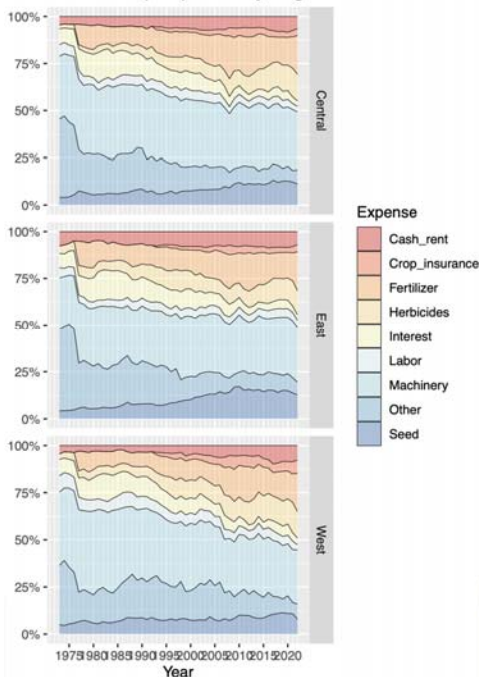
The bad news for farmers is that most inputs seem to increase faster than the inflation rate

- Exceptions include fuel and seeds



What is the allocation of farm expenses?

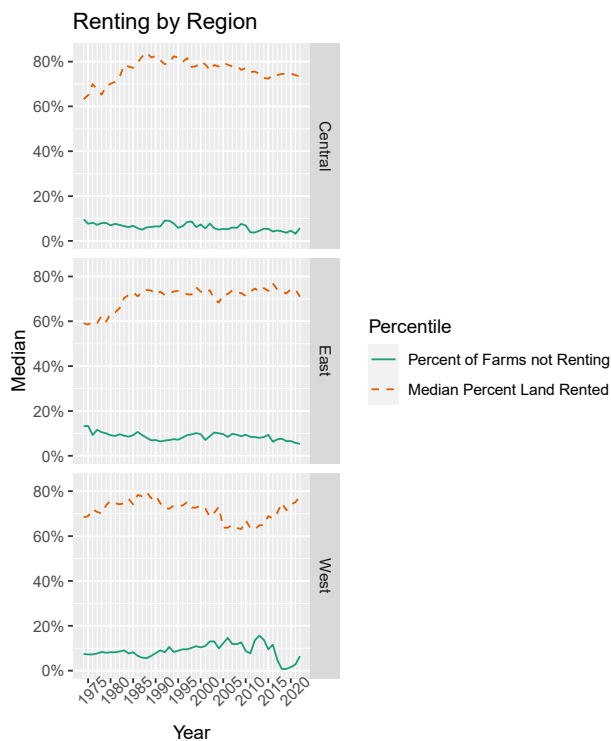
Percent Crop Expenses by Region



Comparison of Major Crop Expenses by Area
Percent of Total Expenses - 1978 and 2020

	Year	Machinery	Fertilizer	Seed	Labor	Herbicide	Interest	Cash rent	Crop insurance
Central									
	1978	36.5%	11.8%	6.8%	4.9%	2.4%	13.2%	4.4%	0.0%
	2022	30.7%	20.6%	11.2%	2.9%	14.1%	2.9%	6.5%	3.6%
East									
	1978	30.2%	13.3%	6.2%	3.8%	5.7%	10.6%	5.4%	0.0%
	2022	29.3%	20.8%	12.7%	3.8%	12.9%	2.9%	7.0%	3.8%
West									
	1978	41.8%	9.2%	7.3%	6.2%	4.4%	11.5%	3.2%	0.0%
	2022	28.7%	20.2%	8.0%	2.7%	14.2%	3.4%	7.7%	7.0%

Machinery is still the biggest expense category but getting smaller
Fertilizer expenses have increased greatly
Interest expense is relative small now but has been much higher in the past – One of the issues from the 1980's farm crisis



Renting of farmland

Over 90% of farms rent some amount of farmland

Of the land farmed, nearly 80% of it is rented

Even though land rental costs amount to 7% of total production costs, rent still is very important

- One of the few

Purpose of publications

NOT an endorsement for what a tenant should actually pay a landlord

Instead, they are provided to give a **starting point** in lease negotiations

What is a “fair” or “equitable” lease?

- Any lease that a tenant and landlord willingly agree to in which they have both utilized the best information they have available to them in making a decision, is considered here to be a “fair” and/or “equitable” lease.

Why produce these publications

Nearly every farm leases some land

Local rental rates may not reflect the ability of the land to support going market rental rates

Issues from surveys of county rental rates

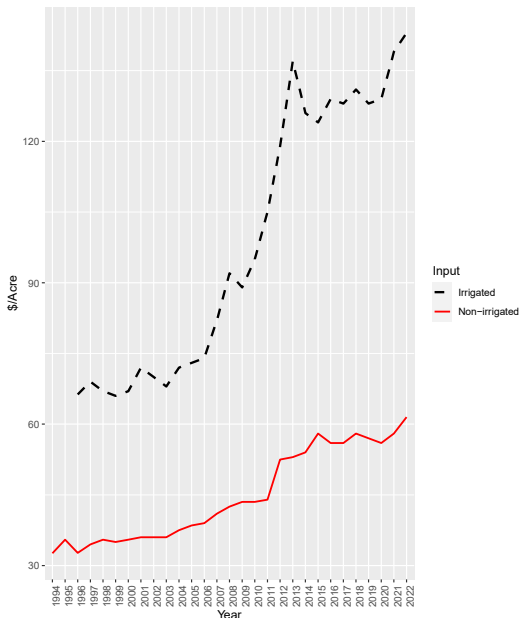
- Information may be outdated – time from survey until reported
- Truthfulness in survey responses
- Surveys could reflect multi-year leases from previous year

A lack of information about lease rates that incorporate land productivity into the rate calculation

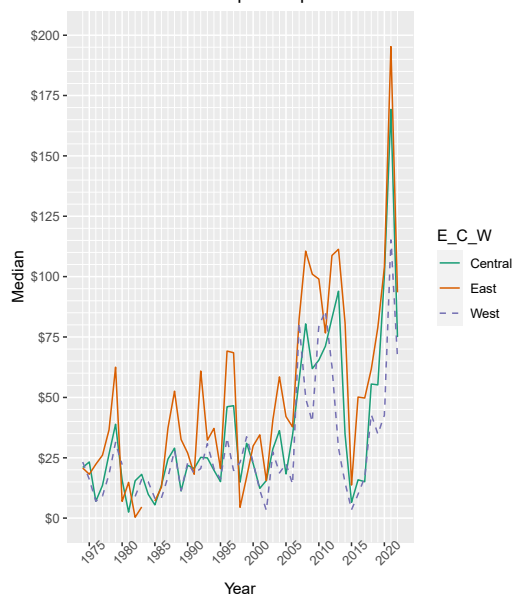


Why survey data may not be the best

Kansas Cash Rents – USDA



Kansas Median NFI per Crop Acre



1. Survey reflects both old and new leases
2. Survey reflects conditions at least a year in the past
3. Tendency to underreport rates
4. Not reflective of actual profitability

Why leasing is important to farmers

Farmland will never cashflow

- Land is non-depreciable
- Typically, half of a farm's real net returns occur as land appreciation

Because land will not cashflow, land income will not cover principle and interest payments

- Rented land is thus needed to help cover cashflow needs from purchased land.



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Our approach

Tenant's residual method

- County yield history
- Recent grain prices
- KFMA farm expenses

Covers all expenses

- Cash or direct cost of production
- Includes fixed costs on machinery
- Includes unpaid operator labor
- Includes overhead and management fees

FULL ECONOMIC COSTS



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Details of tenant's residual approach

Income – yields, prices, and government payments

- Yields – NASS no longer provides separate irrigated and non-irrigated yields
 - FSA does have this info and also number of crop acres in a county
 - Use of last 5 years of data
- Prices – Use of weighted average with more weight being given to most recent years

Expenses

- Use of KFMA data
- Developed at the enterprise level to account for different crop mixes each year
- Only corn, soybeans, wheat, and grain sorghum used
- Developed at the farm level but then aggregated up to the Crop Reporting District level
 - This might account for some of the differences you see on the graphs



Other details

75% of unpaid operator labor is included

- This allows for farm activities not related to crop production

2% management fee based on gross revenue

- This includes management and also the interest charge for any owned machinery equity on the farm.

Weights used for the estimates

- 2023 – 30% (this also includes future years)
- 2022 – 25%
- 2021 – 20%
- 2020 – 15%
- 2019 – 10%
- Shifting of yearly weighting to put more emphasis on more recent years



Other details

Adjustment to NASS reported cash rent

- Helps to smooth the estimate
- Averaging the NASS estimate into the tenant's residual calculation
 - 60% weighting to NASS –
 - Capping the difference from NASS at 40%
 - This provides a smoothing effect

Adjustment for land use intensity

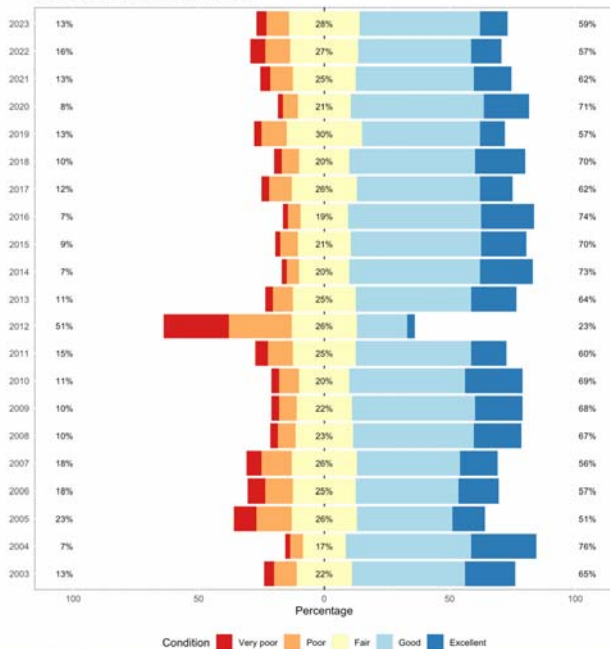
- Needed to account for fallow and double cropping

Incorporating a range of values

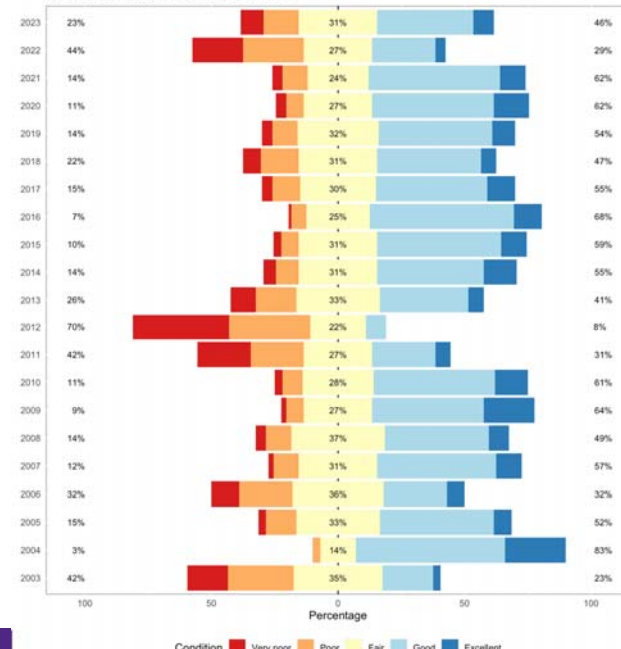
- 25th and 75th percentile



Condition of US Corn as of 8/13/23



Condition of Kansas Corn as of 8/13/23



Total Corn Production by State - 8/13/23

1,000,000 bushels

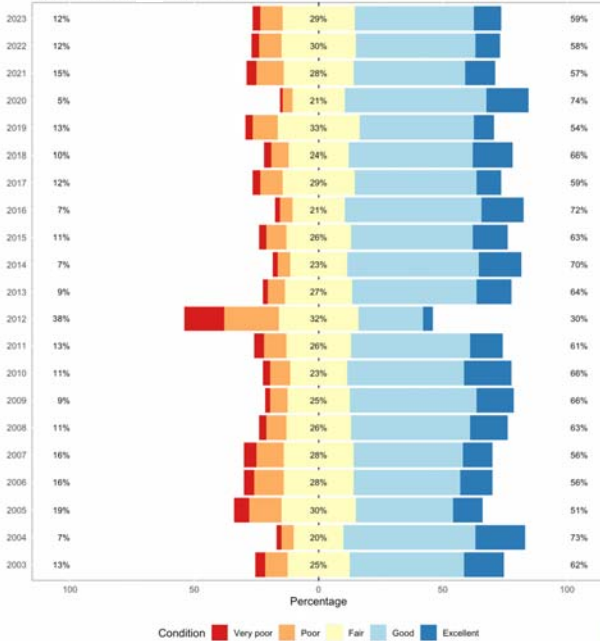
State	Last year	2023 prediction			
		Lower CI	Predicted	Upper CI	
Colorado	119	135	143	151	
Illinois	2,268	2,246	2,297	2,350	
Indiana	975	1,009	1,031	1,052	
Iowa	2,480	2,528	2,594	2,660	
Kansas	511	595	621	647	
Kentucky	211	257	263	270	
Michigan	336	346	355	364	
Minnesota	1,461	1,353	1,413	1,475	
Missouri	502	487	508	531	
Nebraska	1,455	1,680	1,714	1,748	
North_Carolina	99	125	130	135	
North_Dakota	350	458	493	530	
Ohio	595	623	638	654	
Pennsylvania	118	139	145	150	
South_Dakota	661	841	876	913	
Tennessee	103	153	159	164	
Texas	153	272	285	299	
Wisconsin	545	512	531	551	
sum	—	12,941	13,759	14,198	14,644

Total Corn Production

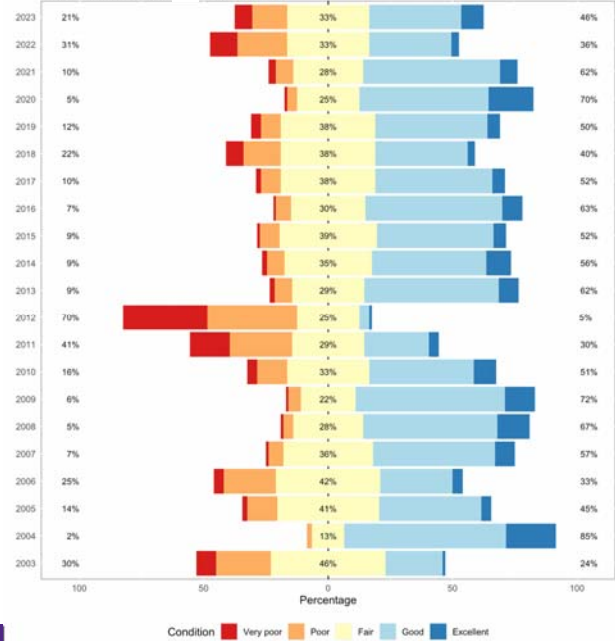
Estimate from 18 leading corn states

Based on planted acres

Condition of US SB as of 8/13/23



Condition of Kansas SB as of 8/13/23



Total Soybean Production by State - 8/13/23

1,000,000 bushels

State	Last year	2023 prediction			
		Lower CI	Predicted	Upper CI	
Arkansas	164	155	160	165	
Illinois	677	596	611	626	
Indiana	335	314	321	328	
Iowa	587	535	553	570	
Kansas	132	144	154	164	
Kentucky	99	99	103	106	
Louisiana	57	51	54	58	
Michigan	105	94	97	101	
Minnesota	370	336	350	364	
Mississippi	124	127	130	133	
Missouri	276	244	253	263	
Nebraska	278	317	324	331	
North_Carolina	65	60	62	64	
North_Dakota	198	173	186	199	
Ohio	282	274	282	289	
South_Dakota	193	224	233	241	
Tennessee	78	79	82	85	
Wisconsin	116	92	99	105	
sum	—	4,136	3,916	4,053	4,192

Total Soybean Production

Estimate from 18 leading soybean states

Based on planted acres

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Region	County	2022 NASS	2023 KSU	2023 NASS	2024 KSU	25th Percentile	75th Percentile
Northeast	Atchison	118	135	122	171	132	219
	Brown	181	181	193	244	188	312
	Doniphan	189	220	193	270	209	346
	Jackson	87	94	91	127	98	162
	Jefferson	72	95	81	113	88	145
	Leavenworth	68	78	73	102	78	130
	Marshall	127	127	119	143	110	183
	Nemaha	139	139	139	160	124	206
	Pottawatomie	76	88	81	113	88	145
	Riley	82	85	80	108	84	139
	Wyandotte	0	121	0	189	146	242
	East Central	Anderson	59	79	65	91	72
Chase		55	68	62	86	68	103
Coffey		62	68	57	77	61	92
Douglas		77	89	78	109	87	130
Franklin		74	91	76	106	84	126
Geary		76	89	80	112	89	134
Johnson		56	76	57	80	63	95
Linn		70	81	71	96	76	114
Lyon		68	68	78	85	68	102
Miami		91	105	68	95	75	113
Morris		57	65	65	84	66	100
Osage		65	79	51	71	57	85
Shawnee		66	78	68	95	75	113
Wabauensee		62	72	70	97	77	116
Southeast	Allen	56	70	62	87	63	115
	Bourbon	52	65	59	79	58	105
	Butler	45	63	50	69	51	92
	Chautauqua	37	37	41	41	30	54
	Cherokee	64	78	65	90	66	120
	Cowley	63	63	53	62	45	82
	Crawford	66	69	57	79	58	105
	Elk	53	53	46	46	34	61
	Greenwood	52	52	51	65	47	86
	Labbette	48	48	54	54	39	72
	Montgomery	57	57	63	63	46	84
	Neosho	47	54	50	65	48	87
	Wilson	78	79	76	89	65	118
	Woodson	54	74	48	67	49	88

Region	County	2022 NASS	2023 KSU	2023 NASS	2024 KSU	25th Percentile	75th Percentile	
North Central	Clay	86	102	95	128	108	149	
	Cloud	93	116	97	136	114	157	
	Jewell	76	106	76	106	89	123	
	Mitchell	72	88	75	103	86	119	
	Osborne	53	65	54	73	61	84	
	Ottawa	64	78	66	92	77	106	
	Phillips	57	80	51	71	59	82	
	Republic	96	134	88	123	103	143	
	Rooks	44	62	45	62	52	72	
	Smith	77	108	74	104	87	120	
	Washington	83	105	86	120	100	139	
Central	Barton	51	61	54	75	60	92	
	Dickinson	61	77	68	94	76	116	
	Ellis	38	53	42	58	47	71	
	Ellsworth	54	60	47	66	53	81	
	Lincoln	62	72	60	84	67	103	
	Marion	57	60	53	63	50	77	
	McPherson	66	66	68	75	60	92	
	Rice	54	61	54	75	60	92	
	Rush	44	61	45	62	50	76	
	Russell	39	48	42	58	47	71	
	Saline	63	63	68	73	58	89	
	South Central	Barber	45	45	47	47	39	59
		Comanche	30	30	31	40	33	50
		Edwards	38	48	41	57	47	71
Harper		44	44	43	43	35	54	
Harvey		62	62	62	74	61	93	
Kingman		43	43	44	44	36	55	
Kiowa		35	49	39	54	44	67	
Pawnee		41	57	35	48	40	60	
Pratt		46	46	45	52	43	65	
Reno		55	55	57	58	47	72	
Sedgwick		53	53	50	51	42	64	
Stafford	43	43	44	48	40	60		
Sumner	52	52	58	58	48	73		

Region	County	2021 NASS	2022 KSU	2022 NASS	2023 KSU	25th Percentile	75th Percentile
Northwest	Cheyenne	47	64	50	65	41	93
	Decatur	54	76	57	78	49	111
	Graham	40	40	42	58	36	82
	Norton	47	70	49	68	42	97
	Rawlins	57	76	60	77	48	109
	Sheridan	50	66	55	77	48	109
	Sherman	58	65	58	65	41	93
	Thomas	58	72	60	75	47	106
West Central	Gove	50	63	52	68	43	92
	Greeley	35	50	0	63	41	86
	Lane	36	53	39	55	35	74
	Logan	44	60	50	65	41	88
	Ness	36	48	46	57	37	78
	Scott	48	71	61	81	52	111
	Trego	0	48	40	55	35	74
	Wallace	0	74	0	70	45	95
Wichita	45	68	57	74	47	100	
Southwest	Clark	31	46	33	44	32	54
	Finney	41	62	45	61	44	75
	Ford	38	56	42	59	42	72
	Grant	31	47	28	35	25	43
	Gray	47	71	47	66	47	80
	Hamilton	32	35	34	40	29	49
	Haskell	36	53	43	60	43	72
	Hodgeman	32	48	37	51	36	62
	Kearny	31	46	31	43	31	53
	Meade	39	59	39	53	38	65
	Morton	38	38	31	31	22	38
	Seward	29	43	30	42	30	51
	Stanton	32	47	38	43	31	52
	Stevens	23	34	29	29	21	35

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Northeast	Atchison	107	116	118	135	104	173	
	Brown	166	166	181	181	140	232	
	Doniphan	178	215	189	220	170	282	
	Jackson	82	82	87	94	73	120	
	Jefferson	74	87	72	95	74	122	
	Leavenworth	68	70	68	78	61	101	
	Marshall	115	115	127	127	98	163	
	Nemaha	142	142	139	139	107	178	
	Pottawatomie	71	75	76	88	68	113	
	Riley	76	76	82	85	66	109	
	Wyandotte	0	103	0	121	94	156	
East Central	Anderson	59	86	59	79	63	95	
	Chase	63	66	55	68	54	81	
	Goffey	60	63	62	68	54	81	
	Douglas	74	83	77	89	71	106	
	Franklin	74	94	74	91	73	109	
	Geary	70	80	76	89	71	106	
	Johnson	58	77	56	76	61	91	
	Linn	76	80	70	81	64	96	
	Lyon	63	63	68	68	54	80	
	Miami	91	103	91	105	84	126	
	Morris	51	56	57	65	51	77	
	Osage	54	76	65	79	62	94	
	Shawnee	54	70	66	78	62	93	
	Wabaunsee	54	60	62	72	57	85	
	Southeast	Allen	49	74	56	70	51	93
		Bourbon	45	61	52	65	47	86
		Butler	45	68	45	63	46	84
Chautauqua		43	43	37	37	27	48	
Cherokee		71	80	64	78	57	103	
Cowley		55	55	63	63	46	84	
Crawford		61	68	66	69	50	92	
Elk		47	47	53	53	39	70	
Greenwood		52	52	52	52	38	68	
Labette		50	50	48	48	35	63	
Montgomery		49	49	57	57	41	75	
Neosho		51	57	47	54	40	72	
Wilson		70	70	78	79	57	104	
Woodson		56	74	54	74	54	98	



Region	County	2022 NASS	2023 KSU	2023 NASS	2024 KSU	25th Percentile	75th Percentile
Northwest	Cheyenne	50	65	52	73	46	103
	Decatur	57	78	58	81	50	114
	Graham	42	58	41	57	36	82
	Norton	49	68	54	76	47	107
	Rawlins	60	77	62	86	54	122
	Sheridan	55	77	59	82	51	116
	Sherman	58	65	55	76	48	108
	Thomas	60	75	59	82	51	116
West Central	Gove	52	68	45	62	40	85
	Greeley	0	63	43	60	39	82
	Lane	39	55	39	55	35	74
	Logan	50	65	51	71	45	96
	Ness	46	57	39	54	35	73
	Scott	61	81	64	90	57	122
	Trego	40	55	35	48	31	66
	Wallace	0	70	0	113	73	154
Wichita	57	74	58	81	52	109	
Southwest	Clark	33	44	30	41	30	50
	Finney	45	61	41	57	41	70
	Ford	42	59	38	53	38	65
	Grant	28	35	32	44	32	54
	Gray	47	66	47	65	47	79
	Hamilton	34	40	29	41	29	49
	Haskell	43	60	43	60	43	72
	Hodgeman	37	51	32	45	32	55
	Kearny	31	43	0	121	86	147
	Meade	39	53	41	57	41	70
	Morton	31	31	32	32	23	38
	Seward	30	42	32	45	32	55
Stanton	38	43	29	41	29	49	
Stevens	29	29	31	43	31	53	

Crop Reporting Districts

Last Year

This Year

		KSU	NASS
EAST	Northeast	124	114
	East Central	79	67
	Southeast	61	55
CENTRAL	North Central	95	73
	Central	62	53
	South Central	48	45
WEST	Northwest	70	54
	West Central	65	38
	Southwest	47	36

		KSU	NASS
EAST	Northeast	155	117
	East Central	92	67
	Southeast	68	55
CENTRAL	North Central	102	73
	Central	71	54
	South Central	52	46
WEST	Northwest	77	55
	West Central	70	41
	Southwest	53	32



Irrigation details

Based on growing corn only

Center pivot irrigation

Landlord owns all irrigation equipment

- Adjustment if tenant owns part

	Western KS	Central KS
Center Pivot	\$ 70.38	\$ 70.38
Power unit	\$ 26.29	\$ 14.84
Well, pump, and gearhead	\$ 90.40	\$ 60.46



Region	County	2022 NASS	2023 KSU	2023 NASS	2024 KSU	25th Percentile	75th Percentile	
North Central	Clay	189	199	199	279	234	323	
	Cloud	149	188	178	249	209	289	
	Jewell		208		252	212	292	
	Mitchell	122	132		248	208	287	
	Osborne				238	199	275	
	Ottawa		176	136	190	160	221	
	Phillips		226		252	212	292	
	Republic	236	254	232	325	272	376	
	Rooks							
	Smith		177		252	212	292	
	Washington		176		252	212	292	
	Central	Barton	114	138		196	157	240
		Dickinson		126		196	157	240
		Ellis						
Ellsworth								
Lincoln								
Marion			135		196	157	240	
McPherson		149	191	141	197	158	242	
Rice		155	166		196	157	240	
Rush			132		196	157	240	
Russell								
Saline					140	112	171	
South Central		Barber		161		194	160	243
		Comanche						
		Edwards		186	134	188	154	235
	Harper							
	Harvey	121	157	158	221	182	277	
	Kingman	104		124	174	143	217	
	Kiowa	146	204	130	182	150	228	
	Pawnee		174	143	200	165	250	
	Pratt	161	202	158	221	182	277	
	Reno	141	165	132	185	152	231	
	Sedgwick	153	167	170	238	196	298	
	Stafford	141	163	119	167	137	208	
	Sumner	124	146		194	160	243	

Region	County	2022 NASS	2023 KSU	2023 NASS	2024 KSU	25th Percentile	75th Percentile	
Northwest	Cheyenne	185	251	201	281	176	400	
	Decatur		217		225	140	319	
	Graham		171	100	140	88	199	
	Norton	154	216	178	249	156	354	
	Rawlins	176	235	144	202	126	287	
	Sheridan	153	214	177	248	155	352	
	Sherman	146	204	153	214	134	304	
	Thomas	165	231	153	214	134	304	
	West Central	Gove		137		162	104	220
		Greeley		137		162	104	220
Lane			137		162	104	220	
Logan			137		162	104	220	
Ness			106		162	104	220	
Scott			137	91	127	82	173	
Trego			125		162	104	220	
Wallace			137		162	104	220	
Wichita			137	141	197	126	268	
Southwest		Clark						
	Finney		162	180	252	180	307	
	Ford	120	168	107	150	107	183	
	Grant		162		169	121	206	
	Gray	132	185	116	162	116	198	
	Hamilton		162	164	230	164	280	
	Haskell	129	181	160	224	160	273	
	Hodgeman	109	139	88	123	88	149	
	Kearny	125	175	181	253	181	309	
	Meade		162		169	121	206	
	Morton	108	119	91	127	91	154	
	Seward	114	160	95	133	95	162	
	Stanton	113	158	96	134	96	163	
	Stevens	88	123	98	137	98	167	

Thank you!

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