Examining Share Lease Arrangements for Grain Operations in the Texas Panhandle Under Changing Market Conditions

By Nicole Gueck, Steven Klose, DeDe Jones, and Jay Yates

Abstract

This paper examines the preferred share arrangement for both landlords and tenants producing grain in the Texas High Plains (based on risk preference), and determines the sensitivity to changing input costs and market prices. Results of the analyses show that tenants and landlords prefer different arrangements in all scenarios. Results also indicate that a tenant would prefer a different lease arrangement in 2008 than in 2005, while the landlord's preference would remain unchanged.

Rental arrangements are an important component of agricultural land tenure in Texas as they are in much of the United States. The Texas High Plains region (NASS District 1) produces the vast majority of Texas grain. Crop share and other lease arrangements are a typical practice in this area. The most recent Census of Agriculture (2007) indicates that approximately 41 percent of the 130 million acres of Texas farmland is operated by full owners (who own all of the land they farm), 46 percent are operated by part owners (who own part of the land they farm), and 13 percent are operated by tenants (who rent all of the land they farm). Leasing of agricultural land is especially common in states with a high number of commercial operators, where crop receipts make up a significant portion of farm income, and/or where land is highly valued (Moss and Erven; Dillon, Oirade, and Parsch).

Historically, the most common type of lease arrangement between landlords and tenants in the Texas High Plains has been a crop share agreement. A crop share lease is characterized by the landowner and operator both sharing in the cost of growing the crop. In return, crop receipts (including government payments) are shared by the landlord and tenant based on pre-determined percentages. The basic premise of this agreement is for each party to receive income from the crop in the same proportion that expenses are shared. In contrast to a cash lease, a crop share lease places the owner at higher risk for price and production volatility. Both the owner and operator share the risk of yields and/or prices being lower than expected. On the other hand by sharing crop receipts and expenses, the farm operator is giving up a higher profit potential during good years (Pflueger).

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Most crop share leases are based upon what is customary for the area. They can vary greatly throughout the country and even within a single region. In most cases, landowners and tenants try to negotiate an arrangement that is fair and equitable to both parties. According to Langemeier, a good share lease should follow five basic principles: (1) yield increasing inputs should be shared; (2) share arrangements should be adjusted as technology changes; (3) total returns should be divided in the same proportion as resources contributed; (4) long-term investments should be compensated when the lease is terminated; and (5) there must be good communication between landowner and tenant. Examples of yield increasing inputs are fertilizer, chemicals, irrigation and possibly hybrid seed.

Crop share agreements for grain in the Texas High Plains typically involve a 33 percent crop share. However, individual costs shared by the landlord and tenant differ between the Northern and Southern High Plains. In the Northern High Plains, the landlord typically pays 33 percent of fertilizer, chemicals, and irrigation costs. In the Southern High Plains, the landlord typically pays 33 percent of fertilizer, insecticide and harvest costs. According to regional Texas AgriLife Extension Economists, sharing irrigation expenses in the Northern High Plains has only become standard within the last five years. There is also a question of whether landlords should be sharing in seed cost, due to the prevalence of seed-enhancing technologies that result in increased yields. In some areas of the Texas High Plains, producers have switched to a straight share lease, where the landlord shares no costs and receives 20 percent of crop income. While this option does not follow the logic of sharing both costs and revenues, it is an option that does not require investment, other than land, by the landlord.

This paper determines the preferred share arrangement individually for both landlords and tenants producing grain in the Texas High Plains (based on risk preference). It also examines how this preferred lease is affected by input costs and market prices. The analysis calculates Net Returns above Variable Costs for both the tenant and landlord in five alternative share arrangements currently being used or considered in the region. Results are determined at the whole farm level, assuming a crop mix of irrigated (pivot) corn, irrigated (pivot) wheat, dryland wheat, and dryland sorghum under two scenarios. The first scenario assumes 75 percent of the acres are irrigated and 25 percent are dryland, while the second scenario assumes that 75 percent of the acres are dryland and 25 percent are irrigated. The analysis provides a side-by-side comparison of each scenario in two significantly different market environments: 2005 (lower cost and low price) and 2008 (record high costs and prices).

Literature

Numerous studies have focused on the advantages and disadvantages of alternative farmland leases and the balance of benefits to the landlord and tenant (Langemeier, Albright, and DeLano; Davis; Issawi; Adam and Rask; Chueng). However, as noted by Rainey, et al., except for Bierlen, et al., the literature primarily focuses on the selection of contract type without considering alternative terms within contract types. For example, Muzinga, Lins, and Boehlje analyzed the returns to landowners and tenants for cash, share, and flexible leases. Held; Patterson, Hanson, and Robison; and Burton, et al. concluded that in general, most landlords will choose a cash lease, while tenants will typically choose a share lease arrangement.

A significant amount of research has also been completed on the importance of considering the risk tolerance of the decision maker with regard to contract preference (Sutinen; Hiebert; Robison and Barry; Rainey, et al.). In a 2004 South Carolina grain study, Davis ranked preferred leasing alternatives by risk preference for both the landlord and tenant using certainty equivalents. However, to our knowledge, no previous literature has ranked alternative *share* lease arrangements (based on contract terms) using the stochastic efficiency with respect to a function (SERF) method of stochastic dominance analysis. This method, fully described in Hardaker and Lien partitions a set of risky alternatives in terms of certainty equivalents for a specified range of attitudes to risk. We are also not aware of previous literature that has examined preferences for share lease contract terms under varying market conditions.

Data and Methods

The base analysis in this study is performed using Texas AgriLife Extension Services' *Financial And Risk Management Assistance (FARM Assistance)*. As described by Klose and Outlaw, the FARM Assistance program is technically a 10-year pro forma stochastic financial analysis model.

Best described as a computerized decision support model, Financial and Risk Management (FARM) Assistance is a highly specialized Extension effort aimed at helping farmers and ranchers with strategic planning and risk management. The program uses both farm-level information supplied by participating producers as well as market price forecasts from the Food and Agricultural Policy Research

Institute (FAPRI) at the University of Missouri. The FARM Assistance program conducts financial analyses for over 150 individuals each year, and the individual client work creates a rich database of information describing real Texas farms and ranches.

The FARM Assistance database was queried to extract yields, prices received, and input costs for all crop producing units of irrigated (pivot) corn, irrigated wheat, dryland wheat, and dryland sorghum reported by participants in Texas AgriLife Extension Districts 1 and 2 for 2005 and 2008 (as reported in Table 1). Extension District 1 includes the 22 most northern counties in the Texas Panhandle, and District 2 includes the 20 counties south of District 1 (see Figure 1). The data from District 1 and District 2 were aggregated, and weighted averages by planted acres were used for yields, prices, and input costs. No overhead costs were included in this study.

Five alternative lease arrangement scenarios were developed based on typical crop share arrangements for grain production in the region as well as new variations being considered. Alternative 1 represents a typical District 1 arrangement: 33 percent crop share with landlord sharing fertilizer, herbicide, insecticide, and irrigation costs. Alternative 2 represents a typical arrangement in District 2: 33 percent crop share with landlord sharing fertilizer, insecticide, and harvest costs. Alternative 3 represents a slight variation on the expense sharing that may be considered: 33 percent crop share with landlord sharing ***seed***, fertilizer, herbicide, and insecticide costs, but ***not irrigation***. Seed-enhancing technologies that result in increased yields have become standard in this area, and the historical concept of expense sharing was that the landlord shared in the yield-increasing expenses. Alternative 4 assumes that landlord agrees to share in the cost of all items considered "yield improving," including ***seed***, fertilizer, herbicide, insecticide, and ***irrigation***. Alternative 5 demonstrates what some are calling a straight share arrangement that is becoming more popular in the Texas High Plains region. In this arrangement, the landlord shares none of the crop production costs and receives 20 percent of crop income. None of these alternatives are being proposed here as optimal, but rather they are the variations currently being used or considered in the region. An overview of the five alternative scenarios is provided in Table 2.

Two scenarios were analyzed assuming one section (640 acres) of farmland. The first, or irrigated scenario assumed the section was primarily (75%) irrigated. The second, or dryland scenario, assumed the section was primarily (75%) dryland. The crops and acres used to run the whole farm scenario analyses are provided in Table 3. Both irrigated and dryland scenarios were run in two different market environments, 2005 and 2008. According to FARM Assistance data, input costs for grain in the Texas Panhandle were expected to be 40 to50 percent higher in 2008 than they were in 2005. Market prices during the peak of the season were up 100 percent or more, depending on the crop, in 2008 versus 2005. For purposes of this study, arbitrary prices representing the lower to mid-range of the futures market between January and August 2008 were used. Corn price was assumed to be $5.00, wheat price was assumed to be $9.00, and sorghum was assumed to be $4.45.

The results of each simulation were then ranked using stochastic efficiency with respect to a function (SERF) and defined in terms of Pratt Risk Aversion Coefficients (RACs). The Pratt risk aversion coefficient is a measure of a hypothetical person's aversion to risk. A method of stochastic dominance with respect to a function (SDRF), SERF orders a set of risky alternatives in terms of certainty equivalents (CEs) for a specified range of attitudes to risk. Unlike conventional SDRF, SERF involves comparing each alternative with all the other alternatives simultaneously, not pairwise, and hence can produce a smaller efficient set than that found by simple pairwise SDRF over the same range of risk attitudes. (Hardaker and Lien) Absolute risk aversion coefficients ARAC were based on Anderson and Dillon's (1992) classification of degree of risk aversion, which is based on the magnitude of the relative risk aversion coefficient. Measured in very small increments, the lower absolute risk aversion coefficient (ARAC) was set at 0 representing a risk neutral tenant or landlord and the upper ARAC was set at 0.0001 representing an extremely risk averse tenant or landlord. As discussed by Anderson, Dillon, and Hardaker, risk-averse behavior is common and aversion to risk is expected to decrease as wealth increase. The midpoint of these two ARACs is considered to be "somewhat risk averse". The scenario with the highest CE within a range of ARACs is the preferred scenario. CE is based on the negative exponential utility function with constant risk aversion. The decision maker is indifferent between scenarios at the point where CE lines cross; this is also known as the "breakeven risk aversion coefficient" or BRAC (McCarl).

Results

As shown in Table 4 and Figure 2, in the 2005 irrigated scenario, tenants preferred the crop share arrangement represented by Alternative 4 above all others regardless of risk aversion. The second most preferred option was Alternative 1, followed by Alternative 5,

Alternative 3 and Alternative 2; this ranking remained constant across all RACs. The risk premium (RP) between Alternative 4 and Alternative 1 is $3,988.81 at all RACs. This is the amount of money that a tenant would require in order to be indifferent between Alternatives 1 and 4.

The landlord's preferred share arrangement under the 2005 irrigated scenario is Alternative 2 at all RACS; the second most preferred option is Alternative 3 with the risk premium between Alternative 2 and 3 increasing with risk aversion from $4,328 to $4,380 (refer to Table 4 and Figure 3). As may be expected, the preferred alternatives of the landlord and tenant are not the same, and in most cases, completely opposite, which should necessitate some kind of compromise in order to ensure that the lease arrangement is fair and equitable to both parties.

Interestingly, the 2005 dryland scenario results in the tenant choosing Alternative 5 over all others, if he/she is risk neutral, but reverting back to Alternative 4 with higher levels of risk aversion. Alternative 4 is the second most preferred option for a risk neutral tenant, while Alternative 5 is the second most preferred for a slightly risk averse and Alternative 1 is second for an extremely risk averse tenant (Table 5 and Figure 4).

As shown in Table 5 and Figure 5, the landlord in the 2005 dryland scenario prefers Alternative 3 if he/she is risk neutral or slightly risk averse, but Alternative 2 if extremely risk averse. In both the risk neutral and somewhat risk averse scenarios, the second most preferred option is Alternative 3, but the risk premium decreases substantially between Alternative 3 and Alternative 2 as risk aversion increases.

In the 2008 irrigated scenario, tenants preferred the straight share lease represented by Alternative 5 if risk neutral and continue to choose Alternative 4 if more risk averse. The second most preferred option was Alternative 4 for the risk neutral tenant, Alternative 5 for the somewhat risk averse tenant and Alternative 1 for the extremely risk averse tenant. The ranking order for risk neutral and somewhat risk averse tenants is different in 2008 than it was in 2005 reflecting the value of changing from 33 to 20 percent payment to the landlord at higher commodity prices. The order preference for an extremely risk averse tenant is unchanged in the new market environment. However, the risk premium between Alternative 1 and Alternative 4 in 2008 is 50 percent higher than it was in 2005, indicating that the tenant would require significantly more money to be indifferent between Alternative 4 and Alternative 1 at a higher market price environment (Table 6 and Figure 6).

The landlord's preferred share arrangement under the 2008 irrigated scenario is Alternative 2 across all RACs, which is unchanged from 2005. The risk premium between Alternative 2 and Alternative 3 however is 84% higher in 2008 than it was in 2005 reflecting the escalated costs of seed and herbicide costs not shared in alternative 2 (see Table 6 and Figure 7).

As reported in Table 7 and Figure 8, the 2008 dryland scenario for tenants results in the same ranking as 2005 for the risk neutral or somewhat risk averse. Alternative 5 is preferred to Alternative 4 for the risk neutral tenant and Alternative 4 is preferred to Alternative 5 for the somewhat risk averse tenant. The extremely risk averse tenant also chooses Alternative 4, with Alternative 1 being preferred second. For this same scenario in 2005, Alternative 1 was preferred second. The landlord in the dryland scenario chooses Alternative 2 over Alternative 3 at all RACs. This ranking is different than in 2005 when the landlord preferred Alternative 3 unless he/she was extremely risk averse (see Table 7 and Figure 9).

The certainty equivalent per acre for a 'somewhat risk averse' landlord was also calculated for each alternative and is provided in Table 8. According to Texas AgriLife Extension planning budgets for the region, a typical cash lease rate for an irrigated farm with the crop mix used this analysis was estimated to be $65 in 2008; the cash lease rate for a similar dryland farm was $35. The comparable CE per acre calculated in this analysis for 2008 are significantly higher than those estimated by Extension budgets because of the high arbitrary prices used to calculate Net Returns above Variable Costs. Due to the short time frame during which prices remained at those levels, it is not believed that landlords and tenants had time to react to and/or re-negotiate cash lease contracts. Based on the analysis however, if prices bounce back to such levels in the future and remain there for any length of time, such conditions would put upward pressure on cash lease rates.

Conclusions

This paper examines the preferred share arrangement for both landlords and tenants producing grain in the Texas High Plains (based on risk preference), and determines whether the results are affected by input costs and market prices. Based on the results of the analysis, the following conclusions can be made:

- Under no circumstances is the most preferred alternative by the tenant also the most preferred by the landlord or vice versa, suggesting that compromise arrangements are more likely to be found in the middle ranked preferences of both tenants and landlords;
- Crop share lease arrangements should be determined with consideration to the risk aversion characteristics of both the tenant and the landlord;
- New market conditions (e.g., increased costs and prices) call for a review of existing lease agreements as indicated by the difference in preferred alternatives in 2005 versus 2008, especially for tenants;
- The typical share arrangement practiced in District 2 is the most preferred alternative for landlords in most of the scenarios studied, and the least preferred for tenants. Not surprisingly, it is in this region where the most discussion of changing lease terms has occurred recently; and
- Tenant preference for the new 'straight share lease' scenario being utilized in District 2 depends heavily on market conditions and risk aversion. It is important to remember that what seems like a favorable lease arrangement could change as markets change.

Finally, while negotiating share lease arrangements, it should be noted that the agreement to lease land is market driven. While some may have a concept of what is fair and equitable, the terms of share lease agreements are developed through a market bidding process. However, in order to be an informed participant in the market for land leases, one must consider the impact and value of varying lease terms.

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Figure 1. Map of District 1 and District 2

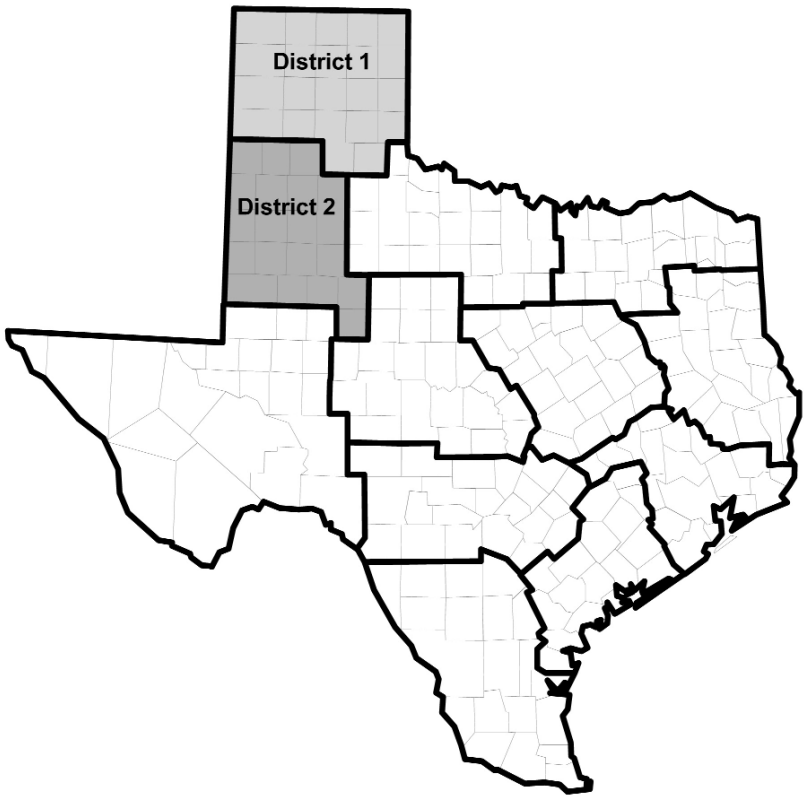

Figure 2. SERF under a negative exponential utility function, tenant, irrigated (2005)

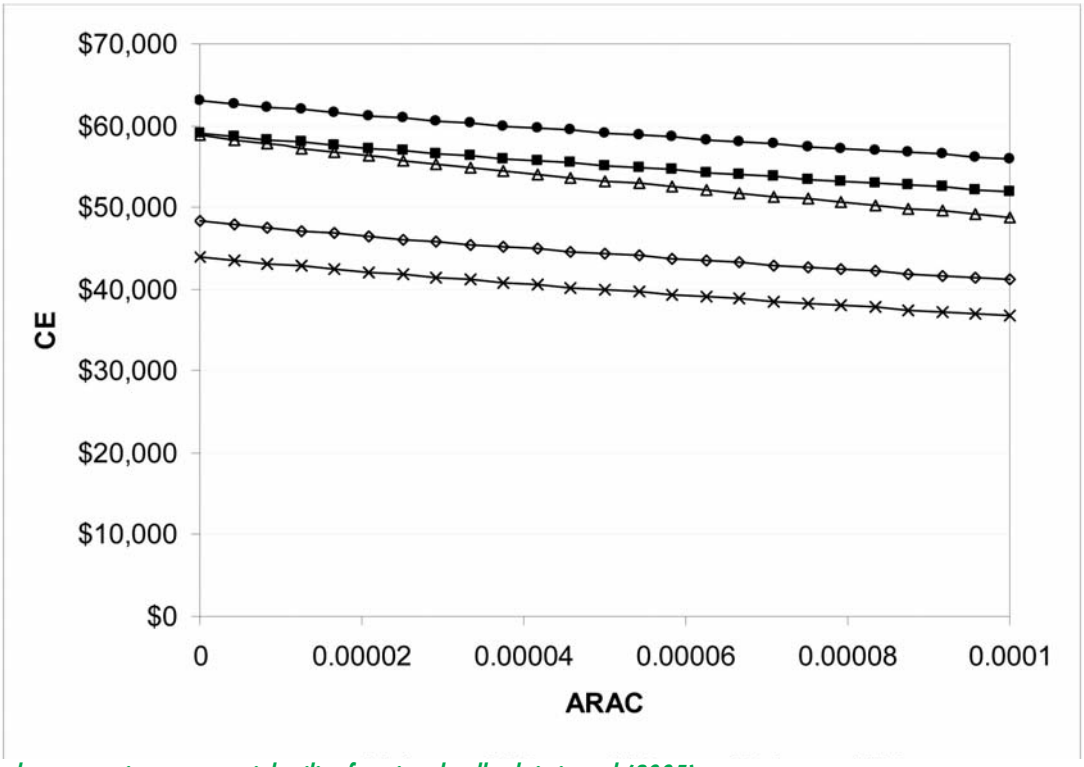

Figure 3. SERF under a negative exponential utility function, landlord, irrigated (2005)

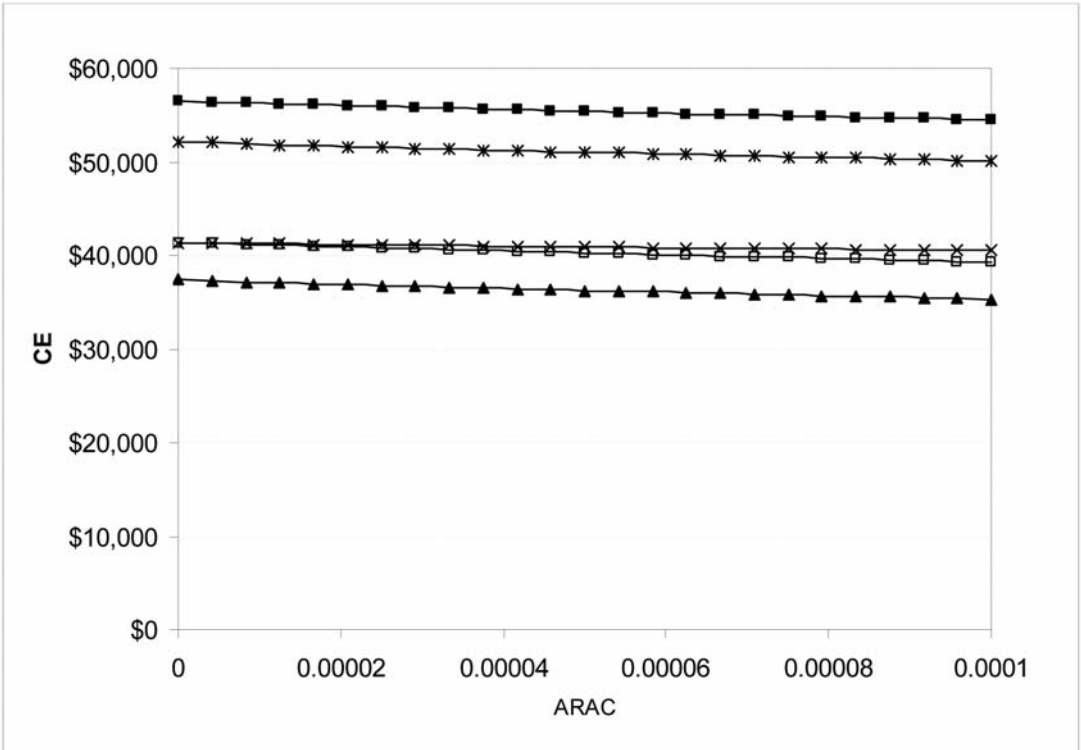

Figure 4. SERF under a negative exponential utility function, tenant, dryland (2005)

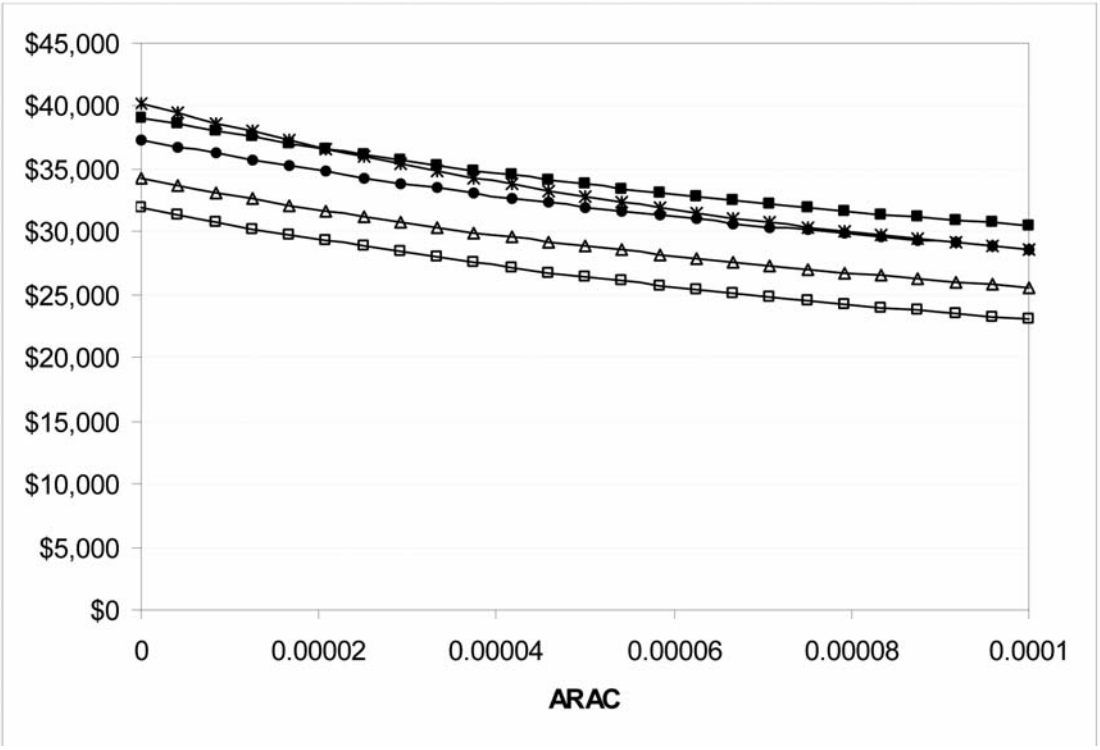

Figure 5. SERF under a negative exponential utility function, landlord, dryland (2005)

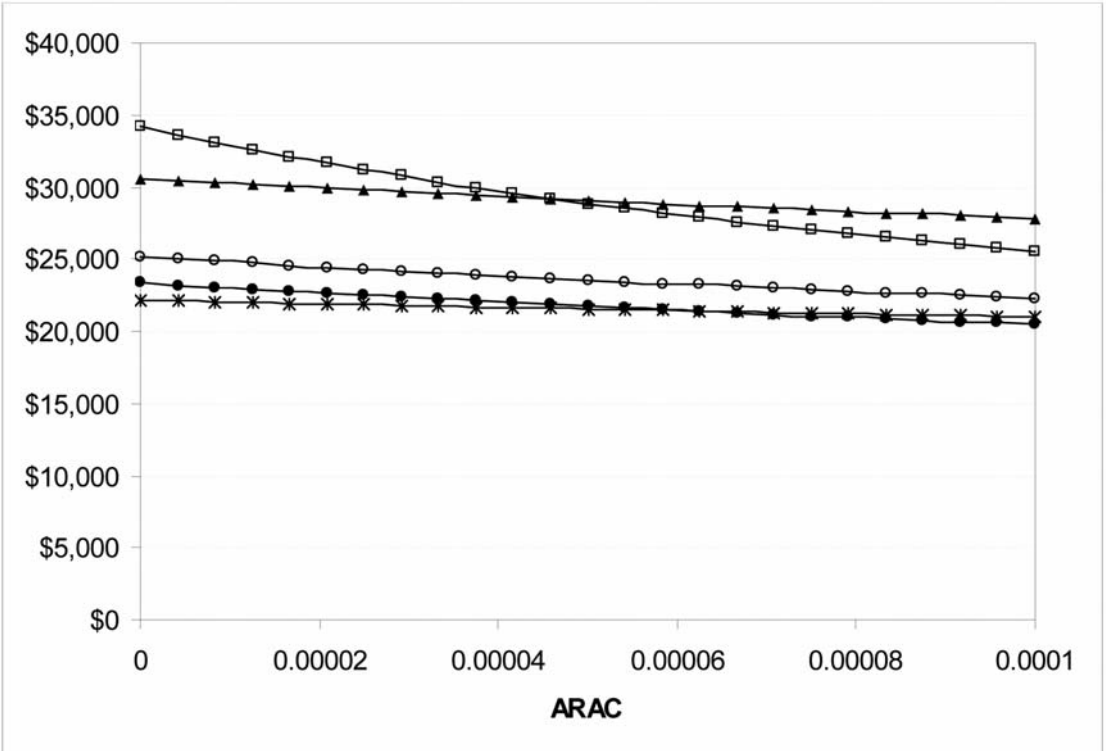

Figure 6. SERF under a negative exponential utility function, tenant, irrigated (2008)

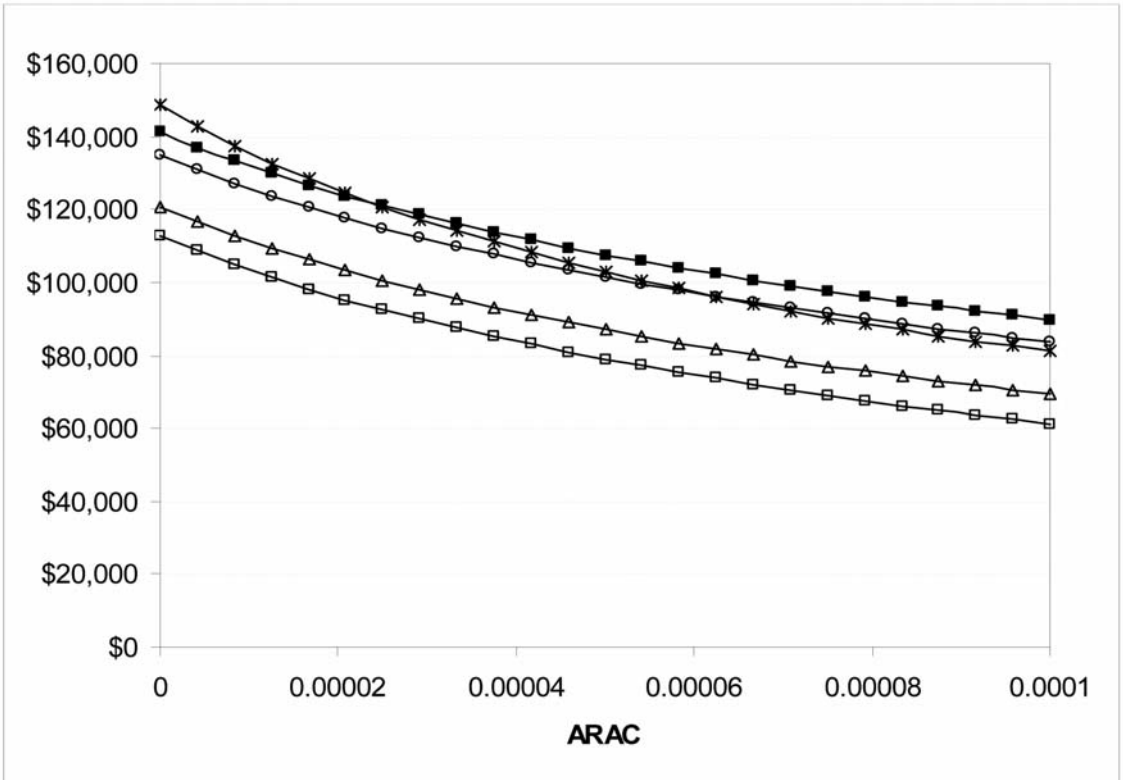

Figure 7. SERF under a negative exponential utility function, landlord, irrigated (2008)

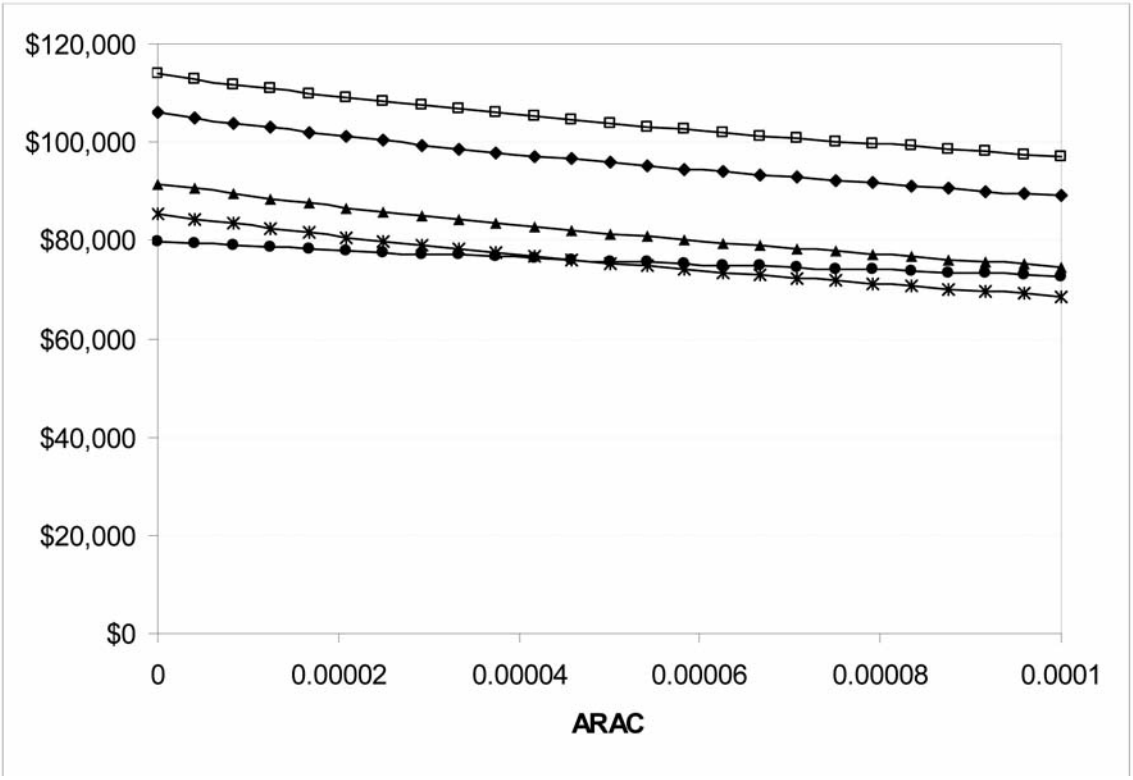

Figure 8. SERF under a negative exponential utility function, tenant, dryland (2008)

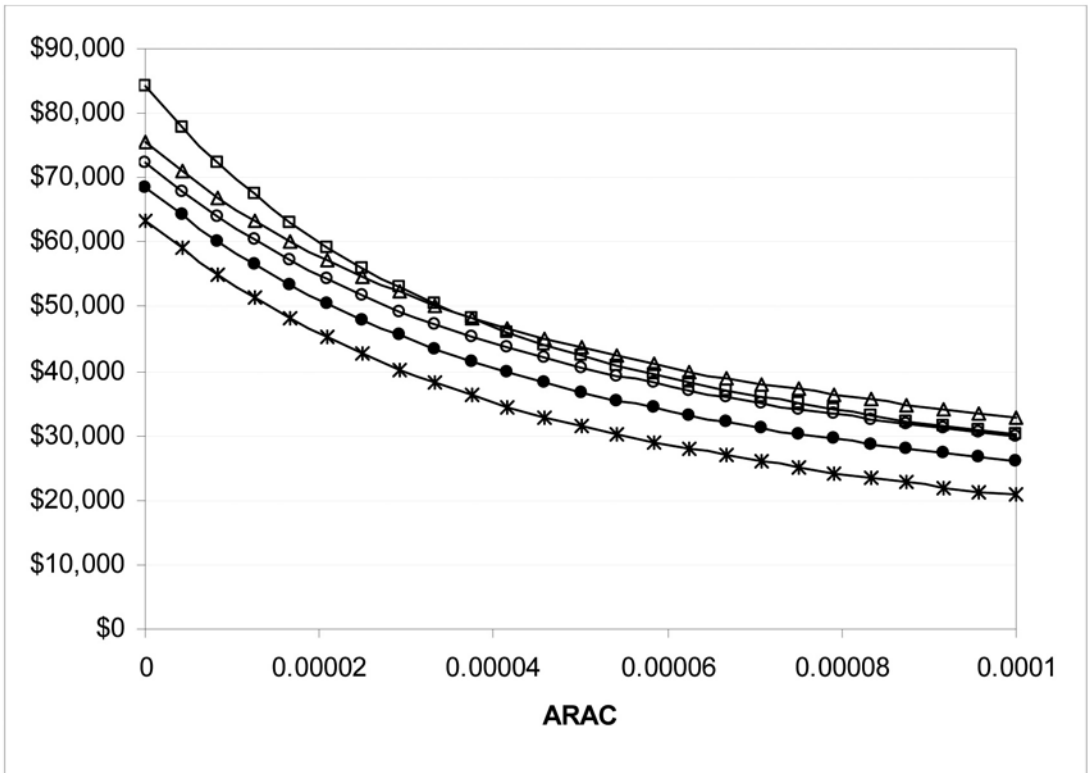

Figure 9. SERF under a negative exponential utility function, landlord, dryland (2008)

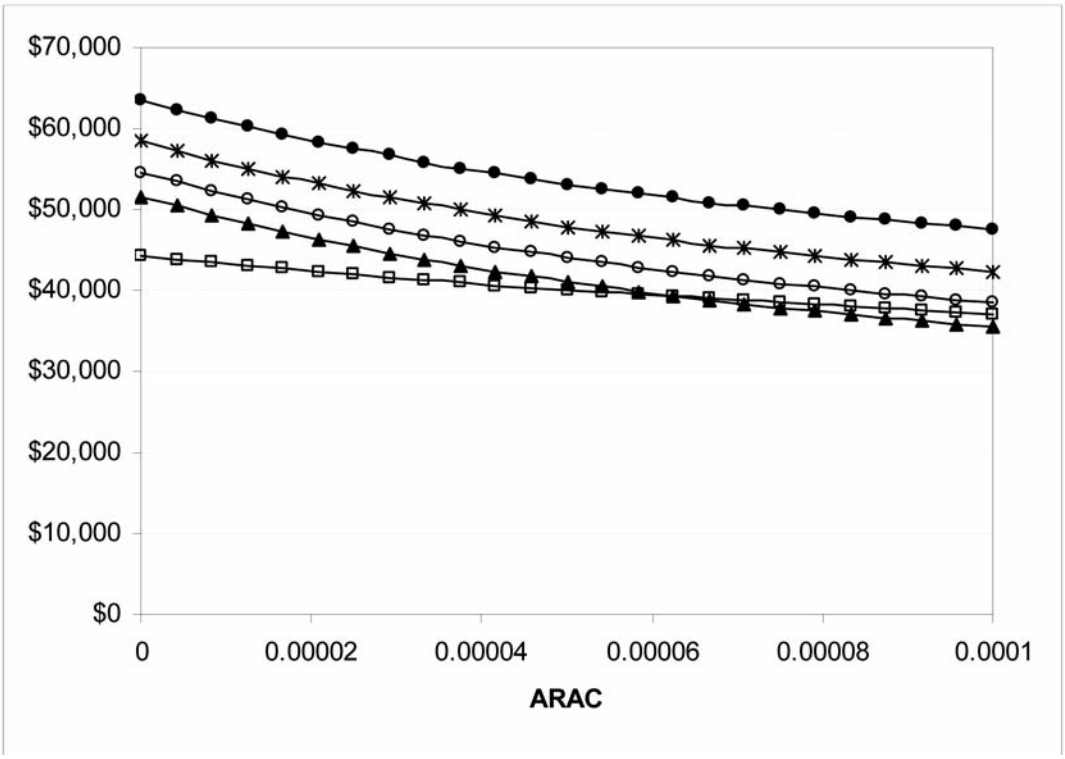

Table 1. Weighted average cost of production and revenue factors for Texas North Plains, 2005 vs. 2008

	Corn (Irr)		Wheat (Irr)		Wheat (Dry)		Sorghum (Dry)	
	2005	2008	2005	2008	2005	2008	2005	2008
Variable								
# Observations	72	39	80	39	170	45	52	12
Expected Yield	204.5 bu	204.5 bu	58.4 bu	58.4 bu	23.1 bu	23.1 bu	44.9 bu	44.9 bu
Price Received	$2.63	$5.00	$3.16	$9.00	$3.16	$9.00	$2.08	$4.45
Variable Input Costs								
Seed	$41.01	$57.09	$6.58	$14.12	$2.68	$6.65	$4.28	$7.15
Fertilizer	$71.36	$118.08	$24.77	$59.36	$5.47	$17.85	$9.52	$18.79
Herbicide	$27.62	$29.89	$5.80	$7.73	$6.43	$10.66	$13.21	$21.65
Insecticide	$16.64	$10.90	$1.19	$3.63	$0.19	$0.25	$1.29	$1.70
Custom Application	$0.74	-	$0.26	-	$0.50	-	$0.14	-
Scouting	$3.81	$1.94	$0.93	$4.35	-	-	$0.54	$1.70
Irrigation Fuel	$141.83	$181.93	$43.16	$74.30	-	-	-	-
Other Fuel	$2.90	-	$2.42	-	$0.79	-	-	-
Harvest Cost per Acre	$9.41	$11.57	$6.93	$5.33	$6.34	$4.42	$3.26	$4.24
Harvest Cost per Bushel	$0.05	$0.01	$0.08	$0.03	$0.07	$0.04	$0.07	$0.04
Custom Labor	$0.63	-	$0.40	-	$0.12	-	$1.02	-

**Note: The data contained within the FARM Assistance database is reported by participants and are typically budget projections. The number of observations represents farm units reported by all producers, not individual producers or farms. The number of observations is lower for 2008 since this analysis was performed before all data was collected for the year.*

Table 2. Alternative share arrangement scenarios

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Landlord Share %				
0.333	**0.333**	**0.333**	**0.333**	**0.2**
Input Costs Shared				
		Seed	Seed	
Fertilizer	Fertilizer	Fertilizer	Fertilizer	
Herbicide		Herbicide	Herbicide	
Insecticide	Insecticide	Insecticide	Insecticide	
Irrigation			Irrigation	
	Harvest			

Table 3. Crops and acres used for whole farm analysis

	Irrigated Scenario	Dryland Scenario
	Acres	
Irr Corn	240	80
Irr Wheat	240	80
Dry Wheat	80	240
Dry Sorghum	80	240
Total	**640**	**640**

Table 4. Tenant versus landlord results ranked using SERF, irrigated (2005)

		Risk Neutral		Slightly Risk Averse		Extremely Risk Averse	
	Level of Preference	**Strategy**	**RP vs Alt 4**	**Strategy**	**RP vs Alt 4**	**Strategy**	**RP vs Alt 4**
Tenant	Most Preferred	**Alt 4**		**Alt 4**		**Alt 4**	
	2nd Most Preferred	Alt 1	$3,988.81	Alt 1	$3,988.81	Alt 1	$3,988.81
	3rd Most Preferred	Alt 5	$4,204.13	Alt 5	$5,713.37	Alt 5	$7,130.98
	4th Most Preferred	Alt 3	$14,784.40	Alt 3	$14,784.40	Alt 3	$14,784.40
	Least Preferred	Alt 2	$19,112.47	Alt 2	$19,159.30	Alt 2	$19,216.51
		Strategy	**RP vs Alt 2**	**Strategy**	**RP vs Alt 2**	**Strategy**	**RP vs Alt 2**
Landlord	Most Preferred	**Alt 2**		**Alt 2**		**Alt 2**	
	2nd Most Preferred	Alt 3	$4,328.06	Alt 3	$4,352.47	Alt 3	$4,380.36
	3rd Most Preferred	Alt 1	$15,123.66	Alt 5	$14,526.57	Alt 5	$13,934.60
	4th Most Preferred	Alt 5	$15,148.52	Alt 1	$15,148.07	Alt 1	$15,175.95
	Least Preferred	Alt 4	$19,112.46	Alt 4	$19,136.88	Alt 4	$19,164.76

Table 5. Tenant versus landlord results ranked using SERF, dryland (2005)

		Risk Neutral		Slightly Risk Averse		Extremely Risk Averse	
	Level of Preference	**Strategy**	**RP vs Alt 5**	**Strategy**	**RP vs Alt 4**	**Strategy**	**RP vs Alt 4**
Tenant	Most Preferred	**Alt 5**		**Alt 4**		**Alt 4**	
	2nd Most Preferred	Alt 4	$1,108.27	Alt 5	$877.54	Alt 1	$1,824.04
	3rd Most Preferred	Alt 1	$2,932.31	Alt 1	$1,824.04	Alt 5	$1,891.19
	4th Most Preferred	Alt 3	$6,036.41	Alt 3	$4,928.14	Alt 3	$4,928.14
	Least Preferred	Alt 2	$8,352.31	Alt 2	$7,371.77	Alt 2	$7,452.76
		Strategy	**RP vs Alt 3**	**Strategy**	**RP vs Alt 3**	**Strategy**	**RP vs Alt 2**
Landlord	Most Preferred	**Alt 3**		**Alt 3**		**Alt 2**	
	2nd Most Preferred	Alt 2	$3,609.69	Alt 2	$48.62	Alt 3	$2,302.41
	3rd Most Preferred	Alt 1	$9,029.69	Alt 1	$5,541.70	Alt 1	$5,559.11
	4th Most Preferred	Alt 4	$10,853.73	Alt 4	$7,365.74	Alt 5	$6,840.49
	Least Preferred	Alt 5	$12,043.50	Alt 5	$7,631.50	Alt 4	$7,383.16

Table 6. Tenant versus landlord results ranked using SERF, irrigated (2008)

		Risk Neutral		Slightly Risk Averse		Extremely Risk Averse	
	Level of Preference	**Strategy**	**RP vs Alt 5**	**Strategy**	**RP vs Alt 4**	**Strategy**	**RP vs Alt 4**
Tenant	Most Preferred	**Alt 5**		**Alt 4**		**Alt 4**	
	2nd Most Preferred	Alt 4	$7,422.32	Alt 5	$3,963.60	Alt 1	$6,058.74
	3rd Most Preferred	Alt 1	$13,481.07	Alt 1	$6,058.74	Alt 5	$8,663.93
	4th Most Preferred	Alt 3	$27,900.22	Alt 3	$20,477.90	Alt 3	$20,477.90
	Least Preferred	Alt 2	$35,878.35	Alt 2	$28,517.43	Alt 2	$28,547.83
		Strategy	**RP vs Alt 2**	**Strategy**	**RP vs Alt 2**	**Strategy**	**RP vs Alt 2**
Landlord	Most Preferred	**Alt 2**		**Alt 2**		**Alt 2**	
	2nd Most Preferred	Alt 3	$7,978.11	Alt 3	$8,012.86	Alt 3	$8,043.57
	3rd Most Preferred	Alt 1	$22,397.28	Alt 1	$22,432.02	Alt 1	$22,462.73
	4th Most Preferred	Alt 4	$28,456.01	Alt 5	$28,459.76	Alt 5	$24,355.59
	Least Preferred	Alt 5	$34,163.91	Alt 4	$28,490.76	Alt 4	$28,521.47

Table 7. Tenant versus landlord results ranked using SERF, dryland (2008)

		Risk Neutral		Slightly Risk Averse		Extremely Risk Averse	
	Level of Preference	**Rank**	**RP vs Alt 5**	**Rank**	**RP vs Alt 4**	**Rank**	**RP vs Alt 4**
Tenant	Most Preferred	**Alt 5**		**Alt 4**		**Alt 4**	
	2nd Most Preferred	Alt 4	$8,833.78	Alt 5	$880.39	Alt 5	$2,772.07
	3rd Most Preferred	Alt 1	$11,833.71	Alt 1	$2,999.93	Alt 1	$2,999.93
	4th Most Preferred	Alt 3	$15,659.74	Alt 3	$6,825.97	Alt 3	$6,825.97
	Least Preferred	Alt 2	$20,788.44	Alt 2	$12,089.60	Alt 2	$12,119.25
		Rank	**RP vs Alt 2**	**Rank**	**RP vs Alt 2**	**Rank**	**RP vs Alt 2**
Landlord	Most Preferred	**Alt 2**		**Alt 2**		**Alt 2**	
	2nd Most Preferred	Alt 3	$5,128.70	Alt 3	$5,222.59	Alt 3	$5,268.34
	3rd Most Preferred	Alt 1	$8,954.73	Alt 1	$9,048.63	Alt 1	$9,094.37
	4th Most Preferred	Alt 4	$11,954.66	Alt 4	$12,048.56	Alt 5	$10,473.39
	Least Preferred	Alt 5	$19,259.83	Alt 5	$13,455.45	Alt 4	$12,094.30

Table 8. Certainty equivalent per acre for each alternative, 2005 and 2008

	2005 Irr	**2005 Dry**	**2008 Irr**	**2008 Dry**
Alt 1	$62.84	$36.81	$126.69	$68.81
Alt 2	$86.51	$45.40	$161.75	$82.96
Alt 3	$79.70	$45.11	$149.22	$74.79
Alt 4	$56.60	$33.96	$117.23	$64.12
Alt 5	$63.89	$33.66	$118.17	$62.46