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

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Historically, the most common type of lease arrangement between landlords and tenants in the Texas High Plains has been a crop share agreement.

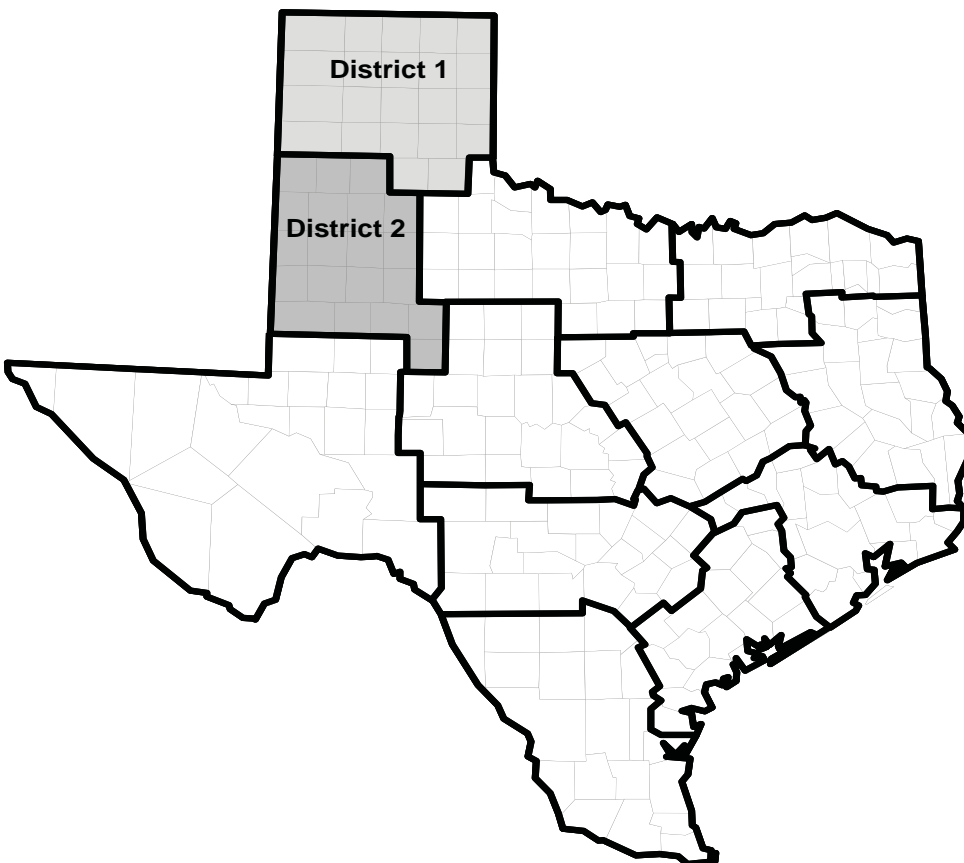
Background

Rental arrangements are an important component of farming in the Texas Panhandle as they are in much of the United States. 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 a proportion similar to the sharing of expenses. Unlike

a cash lease, a crop share lease places the **owner** at higher risk for price and production volatility because the owner and operator share the risk of yields and/or prices being lower than expected. By the same token, the farm **operator** is giving up a higher profit potential during good years. In most cases, landowners and tenants try to negotiate an arrangement that is fair and equitable to both parties. According to Langemeier (1997), 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) the share of total returns should be reflective of the proportion of resources contributed; (4) a tenant's long-

term investments should be compensated in the terms of the lease; and (5) there must be good communication between landowner and tenant. Examples of yield increasing inputs are fertilizer, chemicals, irrigation and possibly seed technology.

Crop share agreements for grain in the Texas High Plains typically include a 33% crop share. However, individual costs shared by the landlord and tenant differ between regions (specifically Texas AgriLife Extension Districts 1 and 2). In District 1, the landlord typically pays 33% of fertilizer, chemicals, and irrigation costs. In District 2, the landlord typically pays 33% of fertilizer, insecticide and harvest costs. In some portions of the Panhandle, producers have switched to a straight share lease, where the landlord shares no costs and receives 20% of crop income.



This paper compares the risk and profit potential of various share arrangements for both landlords and tenants producing grain in the Texas High Plains. It also examines the extent to which lease preferences are 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. Estimated preferences are determined at the whole farm level, assuming a crop mix of irrigated (pivot) corn, irrigated

(pivot) wheat, dryland wheat and dryland sorghum under a mostly irrigated scenario as well as a mostly dryland scenario. The analysis also provides a side-by-side comparison of each scenario in two significantly different market environments: 2005 (lower cost and low price) and 2008 (high costs and high market prices).

Data and Analysis

The analysis was performed using Texas AgriLife Extension Services' Financial And Risk Management Assistance (FARM Assistance), a computerized decision support model and highly specialized Extension effort aimed at helping farmers and ranchers with strategic planning and risk management. Five alternative lease arrangement scenarios were developed based on typical District 1 and District 2 arrangements. Several scenarios were also developed that represent potentially feasible arrangements not commonly

utilized. Alternative 1 represents a typical District 1 arrangement: 1/3-2/3 crop share with landlord sharing fertilizer, herbicide, insecticide, and irrigation costs. Alternative 2 represents a typical arrangement in District 2: 1/3-2/3 crop share with landlord sharing fertilizer, insecticide, and harvest costs. Alternative 3 represents an arrangement that some have suggested as more practical given the nature of crop share agreements: 1/3-2/3 with landlord sharing seed, fertilizer, herbicide and insecticide costs, but not irrigation. As previously discussed, it may be appropriate to share standard seed-enhancing technologies that result in increased yields. Alternative 4 assumes that the landlord shares in the cost of all items considered 'yield improving', including seed, fertilizer, herbicide, insecticide, and irrigation. Alternative 5 demonstrates 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% of crop income.

According to FARM Assistance data, input costs for grain in the Texas Panhandle were estimated to be 40-50% higher in 2008 than they were in 2005. Prices received in 2005 were \$2.63 for corn, \$3.16 for wheat, and \$2.08 for sorghum. Arbitrary prices representing the lower to mid-range of the futures market between January and August 2008 were used to estimate the higher commodity price scenarios. 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 were then ranked in terms of risk preference. For example, a landlord with a higher tolerance for risk might prefer a different scenario than a landlord who is extremely risk averse.

Results

As expected, the preferred alternatives of the landlord and tenant are not the same, which should necessitate some kind of compromise in order to ensure that the lease arrangement is fair and equitable to both parties.

Preferences under low cost / low price conditions

In a **2005 IRRIGATED** market environment, **tenants** would prefer Alternative 4 (landlord shares the cost of all items

Table 1. Alternatives Compared in Analysis				
Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Landlord Share %				
0.333	0.333	0.333	0.333	0.20
Input Costs Shared				
Fert	Fert	Seed	Seed	None
Herb	Insect	Fert	Fert	
Insect	Harv per Acre	Herb	Herb	
Irrigation	Harv per Bu	Insect	insect	
			Irrigation	

Regardless of how it is structured, the overriding concern is that the lease be fair and equitable to both parties.

	Landlord		Tenant	
	Risk Neutral	Risk Averse	Risk Neutral	Risk Averse
2005 Irrigated	Alt 2, Alt 3, Alt 1	Alt 2, Alt 3, Alt 5	Alt 4, Alt 1, Alt 5	Alt 4, Alt 1, Alt 5
2005 Dryland	Alt 3, Alt 2, Alt 1	Alt 2, Alt 3, Alt 1	Alt 5, Alt 4, Alt 1	Alt 4, Alt 1, Alt 5
2008 Irrigated	Alt 2, Alt 3, Alt 1	Alt 2, Alt 3, Alt 1	Alt 5, Alt 4, Alt 1	Alt 4, Alt 1, Alt 5
2008 Dryland	Alt 2, Alt 3, Alt 1	Alt 2, Alt 3, Alt 1	Alt 5, Alt 4, Alt 1	Alt 4, Alt 5, Alt 1

considered ‘yield improving’, including seed, fertilizer, herbicide, insecticide, and irrigation) regardless of risk preference. In a **2005 DRYLAND** scenario, tenants with a higher level of risk tolerance would prefer Alternative 5 where the landlord shares in no costs, but receives 20% of all receipts.

The **landlord’s** preferred share arrangement under the **2005 IRRIGATED** scenario is Alternative 2 (landlord shares fertilizer, insecticide and harvest cost only), regardless of risk preference. The **landlord** in the **2005 DRYLAND** scenario only prefers Alternative 2 if he/she is extremely risk averse; but otherwise would prefer Alternative 3 in which the landlord shares the cost of seed, fertilizer, herbicide and insecticide costs, but not irrigation.

Preferences under higher cost/higher price conditions

In the **2008 IRRIGATED** scenario, **tenants** preferred the straight share lease represented by Alternative 5 if risk neutral

and would choose Alternative 4 if more risk averse. In a **2008 DRYLAND** scenario, tenants with a higher level of risk tolerance would prefer Alternative 5 over Alternative 4, the same as in 2005. The **landlord’s** preferred share arrangement under both the **2008 IRRIGATED** and **DRYLAND** scenarios is Alternative 2.

Conclusions

This paper examines the risk and profit potential of share arrangements for both landlords and tenants producing grain in the Texas High Plains, and compares the impact of input costs and market prices on contract preferences. Regardless of how it is structured, the overriding concern is that the lease be fair and equitable to both parties. The agreement must also be adaptable and provide for change, meeting the requirements of modern technology and the rapidly changing environment faced by today’s farmers. 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;
- 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;
- The share arrangement typically being practiced in District 1 is not the most preferred alternative for tenants or landlords in any of the scenarios studied;
- The typical share arrangement practiced in District 2 is the most preferred alternative for landlords in most of the scenarios studied. With regard to tenant preferences, this Alternative ranks last in all scenarios studied; and
- The new ‘straight share lease’ scenario (Alternative 5) might be a good fit in a high input cost/high price market environment for tenants who are risk neutral and landlords who are more risk averse.