

**EVALUATING APPROPRIATE RENTAL RATES  
FOR RICE ACREAGE**

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# EVALUATING APPROPRIATE RENTAL RATES FOR RICE ACREAGE

## Introduction

The Federal Agriculture Improvement and Reform Act of 1996 (FAIR Act of 1996) (Knutson et al.) effectively decoupled planting requirements from receipt of government farm program payments. This structural change combined with the magnitude and risk-free nature of government market transition payments associated with rice base acreage (i.e., \$100+/ac) has precipitated considerable interest over the last two years among many Texas rice landowners regarding their tenure arrangements with tenant-operators. The principal objective of landowners was to receive a larger rental payment and/or a greater share (or all) of the payments themselves. The planting requirements and uncertainty with respect to the magnitude of deficiency payments associated with previous farm legislation did not realistically allow much latitude in changing prevailing tenure arrangements.

Considerable dialogue occurred throughout the Texas Rice Belt during 1996 and 1997 in this regard, with several reported incidences of landowners becoming owner/operators (i.e., self-operators, with most no longer growing rice on the affected acreage) or negotiating more favorable tenure contracts (from the landowners' perspective). Concerns have been expressed that these decisions are being evaluated on a short-term basis with insufficient consideration given to maintenance of the Texas rice industry infrastructure. Loss of this infrastructure could impact land use after the final year of the government market transition payments currently scheduled to end in 2002.

Land rental markets have several characteristics, not the least of which is tradition. Rental arrangements tend to be fairly rigid over time within confined geographic areas.

Attempts, either by tenants or landowners, to vary arrangements from the prevailing local standard are usually thwarted by other tenants or landowners willing to maintain the *status quo* with existing arrangements. Consequently, seldom is one party able to realize an undue advantage over the other, outside the bounds dictated by local market forces. This is especially true for the Texas Rice Belt due to very limited agricultural alternatives other than rice.

Historically, the planting requirement favored tenant producers in that many landowners actively sought a producer to farm their acreage. In many instances, the landowners were willing to share a substantial proportion of the government payments with their tenants in what some would perceive today as low cash or low share-rental arrangements. Coincidentally, agricultural government program payments accrued to individuals with vested, at-risks, interests in an eligible planted commodity. An opportunity for exceptions to or a shift in historical rental rate rigidity arose with the decoupling provisions of the FAIR Act of 1996.

The FAIR Act of 1996 allows for greater flexibility in choice of agricultural enterprises and associated cultural practices on program acreage, with receipt of the government market transition payments corresponding to the holder of the affected acreage's property rights. Simply put, some landowners no longer perceive that a tenant operator is necessary for the management of their agricultural property. Consequently, many tenant operators are confronted with either needing to pay higher rents or lose control of acreage which they may have farmed for considerable lengths of time. Tenants' contributions towards developing the rice-growing infrastructure on landowners' rice acreage are frequently suggested as representing just cause for them to continue to share government market transition payments at historical magnitudes through 2002. While merit may exist for the arguments, they are

unenforceable in the absence of a benevolent landowner and/or a written, multiple-year tenure arrangement. The FAIR Act of 1996's deferral to State property rights provides for no other mechanisms for tenant operators to realize otherwise.

This paper examines the rice land rental issue, identifying the predominant economic factors affecting a landowner's "rent to a tenant or self-operate" decision. Emphasis in this paper is on land tenure arrangements involving only a payment for land. That is, (a) cash land tenure arrangements and (b) share-rental arrangements involving the landowner sharing in only a few specified, post-harvest handling expenses are addressed. More complex share-rental arrangements involving landowners' participation in the costs for chemicals, water, and/or other inputs are not considered.

### **Economic Considerations**

Landowners tend to be primarily interested in maximizing the economic returns to their investment, given the amount of risk they are willing to bear. Ultimately, the decision regarding the landowners' appropriate use of their rice acreage is dictated by whether they can achieve higher returns when their land is rented to tenant operators as opposed to the net returns that can be obtained when the landowners operate the land themselves, be it farmed to rice or any other qualified,<sup>1</sup> chosen use.

A significant factor being considered today is that when a landowner self-operates the property, he/she receives 100% of the government market transition payments. Under a cash renting arrangement, the tenant receives all of the payments, since the landowner is not at risk. Under a share tenure contract, however, tenants and landowners share the government market

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<sup>1</sup> Landowners' receipt of market transition payments is conditional on their land use alternative meeting the standards established in federal farm legislation and enforced by local Farm Service Agency (FSA) offices, previously known as county Agricultural Stabilization and Conservation Service (ASCS) offices.

transition payments according to a negotiated share arrangement. These shares may or may not coincide with the manner in which crop receipts and expenses are shared, depending on the amount of production risk borne by each party and other factors. The government market transition payments are the multiple of the annual payment rates specified in the FAIR Act of 1996 for 1998-2002, a farm's Farm Payment Yield, and 85% amount of eligible base acreage.

Critical in measuring and comparing economic returns associated with different land use options are (a) the length of time considered (i.e., the planning horizon), and (b) the way in which future earnings are discounted (i.e., the discount rate). Landowners should not focus on the net returns that can be achieved in one single year, but rather look across time and calculate and compare the Net Present Value (and/or amortized annuity) of net receipts for the various feasible options available to them.

### **Risks of Returns and Other General Circumstances**

For the purposes of this paper, the differences in the risk of the various sources of receipts are acknowledged, but ignored in the calculated case examples. Cash rental rates are assumed known with certainty, and to be effective annually throughout the designated planning horizon, i.e., either a multiple-year lease with a fixed rental rate or a series of different leases, all for the same rental rate, is assumed to be in effect. A range of cash rental rates are evaluated, representing the possible range of what different landowners might be able to realize. The market transition payments also are assumed to be known with certainty through 2002, ignoring the possibility of changes in the annual payment rate.

So far as landowners are concerned, the greatest sources of risk with respect to this decision are the revenues an owner-operator can receive from the production of their land, which is determined by their yields and prices. Similarly, when landowners are engaged in a

share-rental arrangement, risks in yields and prices are of consequence. These risks are ignored in this study except for the calculation of returns for several net receipt levels corresponding to alternative yield and price combinations. In the hypothetical case examples calculated for this paper, one fixed production return rate is assumed for the owner-operator during the 1998-2002 period, while a range of net receipts are calculated for 2003 and thereafter (i.e., the post-market transition period). Such post-2002 receipts can be assumed to result from owner-operation and/or leasing-to-a-tenant scenarios.

Similarly, property taxes and any other expenses that landowners will incur under either land use option (i.e., rent to a tenant or self-operate ) are ignored in this paper. While they affect the absolute level of net returns, they do not affect the relative ranking of the two options inasmuch as they are assumed identical in both cases.<sup>2</sup> Income tax and FICA tax consequences are also ignored, although the issues identified by Novak et al. xyz are acknowledged.

Another item ignored in this paper is the timing of receipt of rental payments by a landowner. It is customary for cash rents to be paid in advance while share-rent payments are routinely paid soon following harvest and sale of the crop. Twelve months (or more) could separate the timing of these two events. Accordingly, the cash rents used in this paper's analyses should be interpreted as including a premium for early payment in comparison to share-rent payments. All payments are assumed to be received at the end of the year.

Situation-specific circumstances are also critical in determining landowners' optimal land use. Of particular consequence is the frequency of rice plantings occurring; that is, is

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<sup>2</sup> It is also assumed that the agricultural exemption normally extended to agricultural properties in the calculation of property taxes remains in effect under whatever alternative use a landowner selects instead of rice production.

rice being planted annually somewhere on the landowners' acreage or is it only being planted every two or three years (as a rotational crop)? The assumption in the analyses presented in this paper is that the land of concern has an annual rice base which can be planted each year and which is eligible, as specified in legislative provisions, for government market transition payments during 1998-2002. Returns on other, non-rice base acres are disregarded.

Another circumstantial consideration is that of the potential effects of government agricultural program payment limitations. One individual entity is eligible to receive \$40,000 in agricultural government payments each year. It is assumed in the analyses presented in this paper that such limitations are non-binding for both tenants and landowners. That is, they are assumed to have their businesses so organized that no payments are left on the table under current contractual arrangements. Similarly, should there be a need to renegotiate crop shares, such alterations to existing contracts are assumed to not result in a payment limit problem for either the landowner or tenant.

### **Calculations**

The landowner's basic choice of land uses are: (a) cash rent to a tenant; (b) share rent to a tenant; and (c) self-operate. Appropriate calculations for determining a landowner's net economic returns for each option are indicated below, assuming the common basis of comparison is one acre of rice base as defined by the FSA.

#### **Cash Rent to a Tenant**

Landowners' returns when the land is cash rented to a tenant essentially consists of the cash rent rate being received. There is a potential for different cash rental rates to be received on subcomponents of the rented base rice acreage. For example, whether or not the lease arrangement involves one rental rate on planted acreage and another rental rate on acreage not



planted to rice during a particular growing season, the tenant and/or landowner may elect to plant less than 100% of the rice base acreage, with an accompanying difference in the cash rental rate on the respective acreage. Terms of a cash lease may vary in that regard. The Net Present Value of a landowner's cash rent (CR) earnings over a planning horizon (PH) is calculated as:

$$NPV_{PH}^{CR} = \sum_{i=1}^{PH} \frac{((\text{rice cash rent} * \% \text{ planted}) + (\text{non-rice cash rent} * [1 - \% \text{ planted}]))}{(1 + \text{discount rate})^i}$$

### Share Rent

Unlike a cash rental arrangement, returns from a share-rental land tenure arrangement are affected by the yield and market price realized each production year. In the simplest of rice share-rent arrangements, tenants pay landowners a share of the market receipts (yield times net market price) plus the landowners also receive a negotiated share of the government market transition payments. Net market price (NMP) represents Texas rice landowners engaged in a share-rent contract customarily being responsible for selected post-harvest handling expenses (e.g., drying; research, market promotion, legislative support, and marketing checkoffs; and storage), with the per unit total costs of such items totaling approximately \$1.50 per hundredweight (cwt.). Similar to a cash-rental arrangement, rental rates for non-rice planted acreage may be separately specified. In many situations, either the landowner and/or another individual besides the tenant-operator may be in control of such acreage. Accounting for the noted differences from cash rental arrangements, the NPV of landowners share-rent (SR) earnings over a PH planning horizon can be calculated as:

$$NPV_{PH}^{SR} = \sum_{i=1}^{PH} \frac{((\text{share \%} * [(Y * NMP * \% \text{ planted}) + (GMTP_i * FPY * \% \text{ paid})]) + (\text{non-rice cash rent} * [1 - \% \text{ planted}]))}{(1 + \text{discount rate})^i}$$

where  $GMTP_i$  refers to the government market transition payments and  $FPY$  represents the Farm Payment Yield established for an individual farm unit as determined by the local county Farm Services Agency (FSA) office.

### **Self-Operate**

Should a landowner elect to be an owner-operator of his/her property (i.e., self-operate), he/she effectively receives the full amount of the government market transition payments during the next five years as well as any net returns that can be realized through operation of the properties. After 2002, only the net production returns will be realized. It is conceivable that under this option, a landowner may elect to self-operate during 1998-2002, and then cash rent the property thereafter.

There is considerable uncertainty as to the level of rent or other forms of returns that may be obtained after 2002. This uncertainty arises with respect to how the rice-growing environment may or may not deteriorate on the property (e.g., erosion of irrigation water delivery laterals), whether or not the off-farm rice infrastructure support is maintained at a critical level (e.g., are fertilizer, chemical, aerial application, and drying agribusinesses still accessible?), and whether or not there are producers seeking additional rental acreage at that time. Such uncertainty is most easily accounted for in economic calculations by the use of sensitivity analyses to consider a range of several possible net return levels during the post-

2002 period. The Net Present Value of self-operating (SO) one's property over a PH is calculated as:

$$NPV_{PH}^{SO} = \sum_{i=1}^{PH} \frac{((GMTP_i * FPY * \% \text{ paid}) + \text{net production receipts}_i)}{(1 + \text{discount rate})^i}$$

### Hypothetical Case Examples

The central focus of this paper is on circumstances affecting landowners' best economic choice between rent to a tenant versus self-operate their property. Comparisons between  $NPV_{PH}^{CR}$  and  $NPV_{PH}^{SO}$  and between  $NPV_{PH}^{SR}$  and  $NPV_{PH}^{SO}$  (i.e., net differences) are indicative of the land use option having the greater expected net returns over the PH planning horizon.

Several hypothetical case examples were analyzed to investigate the potential impact of these various factors. Spreadsheet analyses were used to derive the calculated results. Specified assumptions were made for the PH and discount rate, with NPV and AA results calculated for a range of potential rice rental rates and expected owner-operator returns during 1998-2002 and 2003 and thereafter. Because of space limitations, a general interpretation of the results is presented, but the individual scenario analyses are not presented.

### Limitations

The results are circumstantial, predicated on the specified assumptions. Such assumptions include the possibility of and strict enforceability of either a multiple-year cash lease or a series of annual leases at a specified, fixed cash rent level and the non-binding effects of agricultural government payment limitations. The several relevant economic factors and the resulting geometric number of possible combinations preclude an exhaustive presentation of results for all feasible situations. The admitted exclusion of risk from the

analyses may potentially bias the results, although it is unclear in what direction. Economic analyses are emphasized in identifying optimal, best decisions, excluding consideration of psychological and sociological aspects of landowner-tenant relationships. Similarly, implications for off-farm, agribusiness interests, while mentioned, are not quantified nor are they considered as a direct factor in determining the individual landowner's net returns.

### **Conclusions and Implications**

The results associated with the methodology specified in this paper are illuminating with respect to current negotiations regarding rice land tenure in the Texas Rice Belt. Several hypothetical case analyses results indicate: (a) there are levels of cash rent, some higher than historical Texas Rice Belt cash rents, at which a landowner is better off economically renting to a tenant as opposed to self-operating his/her property; (b) there are circumstances for which existing share-rental rates appear appropriate, but in other cases, higher than existing rates are required to meet landowners' opportunity costs; (c) high (low) rough rice field yields lower (increase) the breakeven share-rental rates; (d) high (low) rough rice net market prices lower (increase) the breakeven share-rental rates; (e) long planning horizons tend to favor rent to a tenant over self-operate; (f) high discount rates tend to favor self-operate; and (g) high non-rice enterprise returns that can be realized by a landowner tend to favor self-operate.

Circumstances or individual situations can be defined such that landowners appear economically justified to discontinue their rental agreement with a tenant and choose instead to self-operate his/her rice base acreage. Similarly, other circumstances can be described for which the rent to a tenant option appears to be the most economically rewarding for the landowner. Landowners must consider their personal situations in determining the appropriate contractual arrangements under which continued renting to a tenant is preferred and then

allow his/her current tenant's economic position and the local land rental market determine whether or not renting to others affords greater returns than can be realized through self-operation.

So far as rice tenant operators are concerned, the implied results of these analyses are several. First, the FAIR Act of 1996 affords rice landowners with an opportunity they have not previously enjoyed. Consequently, the market for cash renting rice acreage is not dictated merely by the economic posture of other rice producers but also by the willingness of landowners to self-manage their properties. That in itself points to higher rents being a necessity for cash rental of rice acreage. Accepting that implication suggests that rice tenant operators should be prepared to evaluate the economic implications of higher rents on their operation, i.e., can they afford to pay higher rents and stay in the rice farming business? For example, one scenario might involve a landowner who effectively declares the cash rental rate for his/her rice base acreage to be equivalent to the government market transition payment. In effect, such a situation represents what will occur in post-2002—the rice producer must decide if his/her rice production economics and related expected costs of production are such that he/she can realize a profit under expected market prices in the absence of government prices.

As described, current circumstances confronting tenant operators may be better than can be expected during the post-2002 period. That is, after 2002, a landowner presently willing to rent his/her land for the government market transition payment would still expect a positive cash rental payment. Thus, while rents may decline, the resulting lower rents will represent a net added cost over what is being asked for today in that tenant operators will no longer have government market transition payments available to use in paying the rent; rather, such rents will be an added debit against their profit margin. Also, tenant operators who do

not see fit to pay the higher rents currently sought by their landowners may realize detrimental effects on their costs of production for their remaining rice acreage in that fixed costs per acre will rise when total acres farmed decline.

It should also be mentioned that the primary determinant of land values is the discounted cash flows of the residual returns to land. While this paper has concentrated on evaluating the impacts of the cash flows with respect to short- and intermediate-term planning horizons, we have not examined the impact on landowners' wealth that might occur in the wake of a collapse of the infrastructure that supports rice production in the Texas Rice Belt.

The rice land tenure situation in the Texas Rice Belt occurring today is circumstantial as affected by the FAIR Act of 1996. In that respect, the situation is comparable to that possibly occurring in other U.S. rice-producing regions. In all cases, economic considerations are largely contributing to both landowners' and tenant operators' actions and should be considered in determining the best decisions. Further, it should be recognized that what is best or preferred in one situation may not (most probably is not) optimal for other situations -- answers to the decisions addressed in this paper are very much specifically-oriented to individual landowners and the tenants with whom they are negotiating.

### **References**

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Novak xyz