



Weekly Farm Economics: Cash Rent with Bonus Leasing Arrangement: Description and Example

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A "cash rent with bonus" leasing arrangement is a variable cash rent lease that has a base rent and the potential for a bonus if crop revenue exceeds target revenue. Variable lease rental arrangements have become more popular in recent years as crop prices have become more variable, thereby making it more difficult to determine satisfactory cash rents. This document describes details of cash rent with bonus arrangements.

Basics

The landlord and farmer agree on a base rent that will be paid no matter the yield or price level. A bonus results if crop revenue exceeds a crop revenue target. Crop revenue is determined based on the yield from the farm and a price. The price typically is an average of prices from a delivery point near the farm. This lease differs from others which may be based on crop insurance parameters (available [here](#)) in that the rent is based on yields from the farm.

For a cash rent with bonus rental arrangement to work properly, the landlord and farmer must agree on certain parameters. These parameters are described in the following section. After harvest is complete, the bonus can be calculated and the final cash rent will be determined. This process is described in the "Calculation of the Bonus" and "Calculation of Rent" sections.

Parameters of a Cash Rent with Bonus



Table 1. Worksheet for Calculating Cash Rent with Bonus.

Panel A. Parameters of Cash Lease (agree on parameters before crop year begins)

A. Base cash rent ¹	<u>\$200</u>			
B. Maximum cash rent ²	<u>\$550</u>			
C. Crop	<u>Corn</u>	<u>Soybeans</u>	<u> </u>	<u> </u>
D. Crop revenue trigger ³	<u>\$720</u>	<u>\$500</u>	<u> </u>	<u> </u>
E. Landlord share above revenue trigger ⁴	<u>40%</u>	<u>45%</u>	<u> </u>	<u> </u>
F. Share of acres ⁵	<u>66%</u>	<u>34%</u>	<u> </u>	<u> </u>

Panel B. Calculation of Bonus (after yield and price are known)

G. Actual yield ⁶	<u>190</u>	<u>55</u>	<u> </u>	<u> </u>
H. Price ⁷	<u>\$6.00</u>	<u>\$13.00</u>	<u> </u>	<u> </u>
I. Crop revenue (G x H)	<u>\$1,140</u>	<u>\$715</u>	<u> </u>	<u> </u>
J. Revenue above crop revenue trigger (I - D) (put \$0 if less than \$0)	<u>\$420</u>	<u>\$215</u>	<u> </u>	<u> </u>
K. Bonus per crop (E x J)	<u>\$168</u>	<u>\$97</u>	<u> </u>	<u> </u>
L. Acre weighted bonus (F x K)	<u>\$111</u>	<u>\$33</u>	<u> </u>	<u> </u>
M. Average bonus (sum of L)	<u>\$144</u>		<u> </u>	<u> </u>

Panel C. Calculation of Cash Rent

N. Minimum plus bonus (A + M)	<u>\$344</u>			
O. Cash rent (Lower of B or N)	<u>\$344</u>			

¹ The base cash rent is the minimum rent. The bonus will be added to the base rent.

² The base rent plus bonus can not exceed the maximum.

³ The landlord receives a share of revenue above this amount.

⁴ This is the share of revenue above the crop revenue trigger that will be received by the landlord.

⁵ Indicate the share for each acres that each crop is of total acres. The sum should equal 100 percent.

⁶ Yield from the farm.

⁷ Price used for calculating revenue.

Table 1 shows a worksheet for setting parameters of a cash rent with bonus arrangement and then determine the bonus and cash rent at harvest. Panel A gives parameters of the cash rent with bonus lease that should be determined at the time of signing up for the agreement. These parameters are:

- Base cash rent is the minimum cash rent that the landlord will receive regardless of crop revenue. In Table 1, the base cash rent is \$200 per acre.
- Maximum cash rent is the maximum cash rent the landlord will receive. In Table 1, the maximum cash rent is \$550 per acre.
- Crops can have an influence on the crop revenue trigger and landlord share of revenue above the trigger. Hence, each crop is listed and then parameters are listed by crop in lines D and E.

- d. Crop revenue trigger. The landlord will receive a bonus based on revenue above the crop revenue trigger. In Table 1, the crop revenue trigger is \$720 for corn and \$500 for soybeans.
- e. Landlord share above revenue trigger is the landlord's share of crop revenue above the trigger. In the example, the landlord share is 40% for corn and 45% for soybeans.
- f. Share of acres indicates the share of acres in each crop. In Table 1, 66% of the acres are in corn and 34% are in soybeans.

Calculation of the Bonus

The bonus is calculated after harvest is complete so that yield is known. Panel B of Table 1 shows how the bonus is calculated:

- g. Actual yield is the yield from the farm. The farmer will provide the landlord with harvested bushels, typically specified at a standard moisture level. In the example, the yield is 190 bushels for corn and 55 bushels for soybeans.
- h. Price is used to calculate revenue. One method for calculating price is to select a local delivery point and then collect prices from those delivery points. For example, prices could be collected each Wednesday beginning March 1 through October 31st. Others use futures prices or crop insurance prices. In Table 1, the price is \$6.00 for corn and \$13.00 for soybeans.
- i. Crop revenue equals actual yield times price. In Table 1, Crop revenue for corn is \$1,140 (190 bushel yield x \$6.00 corn price) and for soybeans is \$715 (55 bushel corn yield x \$13.000 per bushel price).
- j. Revenue above crop revenue trigger gives the amount of revenue on which a bonus is calculated. In Table 1, revenue above the trigger is \$420 per acre for corn (\$1,140 crop revenue – \$720 crop revenue trigger) and \$215 per acre for soybeans (\$715 soybean crop revenue – \$500 crop revenue trigger).
- k. Bonus per crop equals revenue above crop revenue trigger times the landlord's share above revenue trigger. In Table 1, corn has a bonus of \$168 per acre (\$420 revenue above trigger x 40% landlord share) and soybeans have a bonus of \$97 per acre (\$215 revenue above trigger x 45% landlord share).
- l. Acre weighted bonus takes the bonus per crop and multiplies that crop's share of acres. This is done so that per acre bonuses can be added together to arrive at the average bonus. In Table 1, the acre weighted bonus for corn is \$111 per acre (66% of acres in corn x \$168 bonus for corn) and for soybeans is \$33 per acre (34% of acres in soybeans x \$97 bonus for soybeans).
- m. Average bonus is the sum of the acre weighted bonuses. In Table 1, the average bonus is \$144 per acre (sum of \$111 for corn + \$33 for soybeans).

Calculation of Cash Rent

Once the bonus is calculated, the cash rent can be determined. Panel C of Table 1 shows this calculation.

- n. The minimum plus the bonus equals the base cash rent plus the average bonus. In Table 1, the minimum plus the bonus is \$344 per acre (\$200 base cash rent + \$144 bonus).
- o. The cash rent will be the smaller of the maximum cash rent (Line b) or the base rent plus bonus (line N). In Table 1, the base rent plus the bonus is the smaller of the two, resulting in a \$344 per acre rent.

Setting Parameters for a Cash Rent with Bonus

Critical parameter to understand is the non-land costs of producing crops. Budgets are available in the management section of farmdoc (available [here](#)). For 2012, non-land costs are estimated at about \$520 per acre for corn and \$300 per acre for soybeans. The crop revenue trigger can be set at non-land costs plus the base cash rent. In Table 2, the \$720 trigger for corn equals \$520 non-land costs plus \$200 base cash rent and the \$500 trigger for soybeans equals \$300 non-land cost and \$200 base cash rent.

The landlord share above revenue trigger should relate to the base cash rent. Higher landlord share above the trigger should be associated with lower base cash rents. A lower base cash rent indicates that the landlord is willing to bear more risks and hence should be compensated with a higher share of revenue above the trigger

FAST Spreadsheet: Cash Rent with Bonus Worksheets

Figure 1. Corn Sensitivity Screen from Cash Rent with Bonus FAST Spreadsheet.

Corn Cash Rent Estimator

Base cash rent	\$200
Maximum cash rent	\$550
Crop revenue trigger	\$720
Landlord share above rev trigger	40%



CASH RENT FOR DIFFERENT YIELDS AND PRICES, CORN

Yield	Price									
	\$3.50	\$4.00	\$4.50	\$5.00	\$5.50	\$6.00	\$6.50	\$7.00	\$7.50	\$8.00
	\$ per Acre									
120	200	200	200	200	200	200	224	248	272	296
130	200	200	200	200	200	224	250	276	302	328
140	200	200	200	200	220	248	276	304	332	360
150	200	200	200	212	242	272	302	332	362	392
160	200	200	200	232	264	296	328	360	392	424
170	200	200	218	252	286	320	354	388	422	456
180	200	200	236	272	308	344	380	416	452	488
190	200	216	254	292	330	368	406	444	482	520
200	200	232	272	312	352	392	432	472	512	550
210	206	248	290	332	374	416	458	500	542	550
Low yield	120	yield increment	10	Low price	\$3.50	Price increment	\$0.50			

CASH RENT AS A PERCENT OF CROP REVENUE, CORN

Yield	Price									
	\$3.50	\$4.00	\$4.50	\$5.00	\$5.50	\$6.00	\$6.50	\$7.00	\$7.50	\$8.00
	Percent									
120	48%	42%	37%	33%	30%	28%	29%	30%	30%	31%
130	44%	38%	34%	31%	28%	29%	30%	30%	31%	32%
140	41%	36%	32%	29%	29%	30%	30%	31%	32%	32%
150	38%	33%	30%	28%	29%	30%	31%	32%	32%	33%
160	36%	31%	28%	29%	30%	31%	32%	32%	33%	33%
170	34%	29%	28%	30%	31%	31%	32%	33%	33%	34%
180	32%	28%	29%	30%	31%	32%	32%	33%	33%	34%
190	30%	28%	30%	31%	32%	32%	33%	33%	34%	34%
200	29%	29%	30%	31%	32%	33%	33%	34%	34%	34%
210	28%	30%	31%	32%	32%	33%	34%	34%	34%	33%
Target cash rent as a percent of crop revenue	30%									

Developed by: Jeff Reed and Bob Rhea, Western Farm Business Farm Management and Gary Schmitkey, University of Illinois.

A FAST spreadsheet entitled "Cash Rent with Bonus Worksheet" (available [here](#)) can be used to evaluate alternative cash rent with bonus arrangements. This spreadsheet includes the worksheet in Table 1. Also included are sheets that show how cash rent with bonus performs under different prices and yields. An example of the corn sensitivity analysis is shown in Figure 1. This spreadsheet was developed with Jeff Reed and Bob Rhea, field staff in Illinois Farm Business Farm Management.

Summary

Often, it is difficult to agree on a fixed cash rent because of uncertainty about the economic outlook for the coming leasing period. A cash rent with bonus leasing arrangement allows rent to vary with different

prices and yields, thereby allowing the rent to adjust to realized prices and yields. A blank form of the worksheet is included in the appendix.

Appendices



Worksheet for Calculating Cash Rent with Bonus.

Panel A. Parameters of Cash Lease (agree on parameters before crop year begins)

A. Base cash rent ¹	_____			
B. Maximum cash rent ²	_____			
C. Crop	_____	_____	_____	_____
D. Crop revenue trigger ³	_____	_____	_____	_____
E. Landlord share above revenue trigger ⁴	_____	_____	_____	_____
F. Share of acres ⁵	_____	_____	_____	_____

Panel B. Calculation of Bonus (after yield and price are known)

G. Actual yield ⁶	_____	_____	_____	_____
H. Price ⁷	_____	_____	_____	_____
I. Crop revenue (G x H)	_____	_____	_____	_____
J. Revenue above crop revenue trigger (I - D) (put \$0 if less than \$0)	_____	_____	_____	_____
K. Bonus per crop (E x J)	_____	_____	_____	_____
L. Acre weighted bonus (F x K)	_____	_____	_____	_____
M. Average bonus (sum of L)	_____			

Panel C. Calculation of Cash Rent

N. Minimum plus bonus (A + M)	_____
O. Cash rent (Lower of B or N)	_____

¹ The base cash rent is the minimum rent. The bonus will be added to the base rent.

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