

Base Revenue Protection and Revenue Countercyclical Programs for Corn in North Dakota

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Abstract

The National Corn Growers Association Public Policy Team's Base Revenue Projection Program (BRP) and the Revenue Countercyclical Program (RCCP) were analyzed. The analysis was done for corn using the BRP-RCCP calculator, as developed by the National Corn Growers Association. Three representative counties (Richland, Barnes and Foster) were chosen in North Dakota. Historic and projected data were used to analyze 2002 to 2010 crop years. A comparison of the BRP-RCCP programs to the current farm program was done.

For 2002 to 2005, Barnes County would have received more total payments under the BRP-RCCP program than with the current farm program. The gain would have been \$24.12 per acre during the four years. Richland and Foster counties would have received more payments with the current farm program than with the BRP-RCCP program. The Richland County farm would have received considerably more under the existing program - \$78.03 per acre for the four-year period, or about \$19.50 per acre per year. For Foster County, the advantage to the current program was only \$10.05 for the four-year period.

Keywords: farm bill, corn, countercyclical payments, revenue

Introduction

At the request of the North Dakota Corn Growers Association, government program revenue for North Dakota corn was analyzed. The model and methodology used were developed by the National Corn Growers Association Public Policy Team. The alternative set of programs would replace the current set of farm programs in the 2007 farm bill with four changes: 1) maintenance of the present calculation for direct payments, 2) change the nonrecourse loan program to a recourse program, 3) create a new Base Revenue Protection (BRP) program and 4) modify the current countercyclical payment program into a Revenue Countercyclical Program (RCCP). The BRP-RCCP calculator, as developed by the National Corn Growers Association, was used to generate the results using North Dakota data. Historical 2002 to 2005 comparison was done comparing BRP-RCCP to past programs for representative counties for each crop. Projected 2006 to 2010 comparison also was done comparing the BRP-RCCP program relative to the current programs.

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Corn was analyzed for 2002 to 2005 historically and 2006 to 2010 projected. Three counties in North Dakota, one with major corn production, one with majority corn production and one with marginal corn production, were studied. Richland County was chosen as the major county, ranking first, with the largest corn production in the state. In 2005, Richland County had 220,000 acres of corn planted, with corn grain production of 28,475,000 bushels and corn silage production of 26,400 tons. A typical crop rotation for Richland County is corn/soybeans. Barnes County was chosen as the median county. It typically has a corn/soybean/wheat rotation. It ranks seventh in the state in corn production, second in soybean production and eighth in spring wheat production. Foster County was chosen as the marginal county. It is geographically further north with less yield potential. A typical rotation for Foster County would be wheat/soybeans, with other acreages planted to corn, sunflowers and barley. It ranks 16th in corn and 13th in soybean production.

Calculating the Base Revenue Protection Payment (BRP)

Tables 1A, 1B and 1C include historical data for farms in Richland, Barnes and Foster counties, respectively, 1997 through 2005. Data included in these tables are farm yields, National Agricultural Statistics Service (NASS) prices, Economic Research Service (ERS) variable costs and BRP net revenue. Farm yields are the county average yield per planted acre. NASS prices are the annual average national corn price. ERS variable costs are the variable costs reported by the ERS for the Northern Plains region. The BRP values are calculated for each farm by multiplying the actual yield by the NASS price and subtracting the ERS variable costs.

NOTE: Under the BRP program, the farm yield would be the yield for each individual farm, not the county average as used here. Furthermore, it would be the yield averaged over the entire farm operation, not optional units, as is available with multiperil crop insurance.

Table 1A. Corn Data For Richland County Farm, 1997-2005

| Year | Farm Yield (bu/ac) | NASS Price (\$/bu) | ERS Var Costs (\$/acre) | BRP Net Revenue (\$/acre) |
|------|-----------------------|-----------------------|----------------------------|------------------------------|
| 1997 | 110.0 | 2.43 | 136.58 | 130.72 |
| 1998 | 117.8 | 1.94 | 132.19 | 96.34 |
| 1999 | 132.6 | 1.82 | 132.61 | 108.72 |
| 2000 | 120.6 | 1.85 | 133.38 | 89.73 |
| 2001 | 115.6 | 1.97 | 136.53 | 91.20 |
| 2002 | 134.1 | 2.32 | 116.06 | 195.05 |
| 2003 | 126.3 | 2.42 | 134.19 | 171.46 |
| 2004 | 121.4 | 2.06 | 142.48 | 107.60 |
| 2005 | 129.2 | 1.99 | 160.12 | 96.99 |

Table 1B. Corn Data For Barnes County Farm, 1997-2005

| Year | Farm Yield (bu/ac) | NASS Price (\$/bu) | ERS Var Costs (\$/acre) | BRP Net Revenue (\$/acre) |
|------|-----------------------|-----------------------|----------------------------|------------------------------|
| 1997 | 88.8 | 2.43 | 136.58 | 79.20 |
| 1998 | 100.4 | 1.94 | 132.19 | 62.59 |
| 1999 | 96.8 | 1.82 | 132.61 | 43.57 |
| 2000 | 113.1 | 1.85 | 133.38 | 75.86 |
| 2001 | 129.5 | 1.97 | 136.53 | 118.59 |
| 2002 | 117.7 | 2.32 | 116.06 | 157.00 |
| 2003 | 122.3 | 2.42 | 134.19 | 161.78 |
| 2004 | 75.3 | 2.06 | 142.48 | 12.64 |
| 2005 | 132.0 | 1.99 | 160.12 | 102.56 |

Table 1C. Corn Data For Foster County Farm, 1997-2005

| Year | Farm Yield (bu/ac) | NASS Price (\$/bu) | ERS Var Costs (\$/acre) | BRP Net Revenue (\$/acre) |
|------|-----------------------|-----------------------|----------------------------|------------------------------|
| 1997 | 65.5 | 2.43 | 136.58 | 22.59 |
| 1998 | 68.0 | 1.94 | 132.19 | -0.27 |
| 1999 | 92.1 | 1.82 | 132.61 | 35.01 |
| 2000 | 92.1 | 1.85 | 133.38 | 37.01 |
| 2001 | 106.9 | 1.97 | 136.53 | 74.06 |
| 2002 | 61.8 | 2.32 | 116.06 | 27.32 |
| 2003 | 70.1 | 2.42 | 134.19 | 35.45 |
| 2004 | 34.1 | 2.06 | 142.48 | -72.23 |
| 2005 | 100.1 | 1.99 | 160.12 | 39.08 |

This analysis utilized county average yields, rather than individual farm yields, to better reflect the impact to corn producers as a whole. Much of the variability of yields by unit has to do with optional units within whole-farm units. As this program is proposed, a unit would be no smaller than a whole farm.

The historical data from tables 1A, 1B and 1C are used to calculate the BRP guarantee and the BRP payment found in tables 2A, 2B and 2C. The Olympic average figures are derived from the BRP net revenues from the previous five years. For example, in table 2A, the Olympic average for 2002 (\$98.76) is calculated from the BRP net revenue figures from 1997 through 2001 from table 1A. The high value from 1997 (\$130.72) and the low value from 2000 (\$89.73) are dropped and the remaining three values are averaged. The BRP guarantee is calculated by multiplying the Olympic average by 70 percent, yielding \$69.13 for 2002.

Table 2A. Richland County
Loss Calculations for BRP through 2005 and Guarantees through 2006

| Year | Olympic Average | BRP Guarantee | BRP Net Revenue | Per Acre Payment |
|------|--------------------|------------------|--------------------|---------------------|
| | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 98.76 | 69.13 | 195.05 | 0.00 |
| 2003 | 98.76 | 69.13 | 171.46 | 0.00 |
| 2004 | 123.79 | 86.66 | 107.60 | 0.00 |
| 2005 | 123.42 | 86.39 | 96.99 | 0.00 |
| 2006 | 125.35 | 87.74 | | |

Table 2B. Barnes County
Loss Calculations for BRP through 2005 and Guarantees through 2006

| Year | Olympic Average | BRP Guarantee | BRP Net Revenue | Per Acre Payment |
|------|--------------------|------------------|--------------------|---------------------|
| | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 72.55 | 50.78 | 157.00 | 0.00 |
| 2003 | 85.68 | 59.97 | 161.78 | 0.00 |
| 2004 | 117.15 | 82.00 | 12.64 | 69.37 |
| 2005 | 117.15 | 82.00 | 102.56 | 0.00 |
| 2006 | 126.05 | 88.23 | | |

Table 2C. Foster County
Loss Calculations for BRP through 2005 and Guarantees through 2006

| Year | Olympic Average | BRP Guarantee | BRP Net Revenue | Per Acre Payment |
|------|--------------------|------------------|--------------------|---------------------|
| | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 31.53 | 22.07 | 27.32 | 0.00 |
| 2003 | 33.11 | 23.18 | 35.45 | 0.00 |
| 2004 | 35.82 | 25.08 | -72.23 | 97.31 |
| 2005 | 33.26 | 23.28 | 39.08 | 0.00 |
| 2006 | 33.95 | 23.76 | | |

To determine if a BRP payment would have been paid in 2002 on this farm, the BRP net revenue is subtracted from the BRP guarantee. If this calculation is zero or a negative value, no payment is made. For the years 2002 through 2005, no BRP payment would have been made to the Richland County farm. The farms in Barnes and Foster counties both would have received a BRP payment in 2004. The Barnes County farm had net revenue of \$12.64 per acre and a BRP guarantee of \$82.00, resulting in a payment of \$69.37 per acre. The Foster County farm had a guarantee of \$25.08 and actual revenue of negative \$72.23 per acre. As a result, the BRP payment would have been \$97.31 per acre.

The BRP payment per acre may exceed the BRP guarantee, as would have been the case for the Foster County farm in 2004. This is possible because the BRP payment takes into account negative net revenue values and adds this value to the guarantee.

The Olympic average needed to calculate the BRP guarantee is similar to actual production history (APH) with multiperil crop insurance in that this value increases and decreases based on actual farm yields. A significant difference is that APH is an average of only yields, while BRP is an average of net revenue. BRP takes into account yields, national average market price and

regional variable costs. Consecutive years of high or low net revenues can cause an increase or decrease in the BRP guarantee or safety net. For the Richland and Barnes County farms, the BRP guarantee increased significantly from 2003 to 2004 and remained at this increased level through 2006. The BRP guarantee for the Foster County farm remained stable through this five-year period.

Tables 3A, 3B and 3C include the data needed to calculate the BRP net revenue for years 2004 through 2008 and the BRP guarantee for 2009. The National Corn Growers Association proposes including existing farm program payments from marketing loan benefits and the countercyclical payment program in the transition to the BRP-RCCP program. To illustrate this, the BRP net revenue for 2004 and 2005 includes both payments. The average loan deficiency payment rate (LDP) was obtained from the Farm Service Agency (FSA) and applied to total production on each farm for 2004 and 2005. Countercyclical payments were made for corn in both 2004 and 2005. The countercyclical payment rate, as well as the average countercyclical payment yield for each county, was obtained from the FSA.

Table 3A. Richland County

Calculation of BRP Net Revenue from 2004 - 2008 and 2009 BRP Guarantee

| Year | Farm Yield (bu/acre) | NASS Price (\$/acre) | ERS Var Costs (\$/acre) | LDP (\$/acre) | CCP (\$/acre) | BRP Net Revenue (\$/acre) |
|--------------------|-------------------------|-------------------------|----------------------------|------------------|------------------|------------------------------|
| 2004 | 121.4 | 2.06 | 142.48 | 30.35 | 29.29 | 167.24 |
| 2005 | 129.2 | 1.99 | 160.12 | 59.43 | 35.35 | 191.77 |
| 2006 | 129.3 | 2.89 | 174.22 | | | 199.46 |
| 2007 | 132.0 | 3.00 | 174.69 | | | 221.31 |
| 2008 | 134.8 | 3.02 | 171.59 | | | 235.51 |
| 2009 BRP Guarantee | | | 142.92 | | | |

Table 3B. Barnes County

Calculation of BRP Net Revenue from 2004 - 2008 and 2009 BRP Guarantee

| Year | Farm Yield (bu/acre) | NASS Price (\$/acre) | ERS Var Costs (\$/acre) | LDP (\$/acre) | CCP (\$/acre) | BRP Net Revenue (\$/acre) |
|--------------------|-------------------------|-------------------------|----------------------------|------------------|------------------|------------------------------|
| 2004 | 75.3 | 2.06 | 142.48 | 18.07 | 22.04 | 52.75 |
| 2005 | 132.0 | 1.99 | 160.12 | 60.72 | 26.60 | 189.88 |
| 2006 | 119.4 | 2.89 | 174.22 | | | 170.85 |
| 2007 | 122.8 | 3.00 | 174.69 | | | 193.71 |
| 2008 | 126.1 | 3.02 | 171.59 | | | 209.23 |
| 2009 BRP Guarantee | | | 129.37 | | | |

Table 3C. Foster County
Calculation of BRP Net Revenue from 2004 - 2008 and 2009 BRP Guarantee

| Year | Farm Yield (bu/acre) | NASS Price (\$/acre) | ERS Var Costs (\$/acre) | LDP (\$/acre) | CCP (\$/acre) | BRP Net Revenue (\$/acre) |
|--------------------|-------------------------|-------------------------|----------------------------|------------------|------------------|------------------------------|
| 2004 | 34.1 | 2.06 | 142.48 | 8.87 | 18.27 | -45.09 |
| 2005 | 100.1 | 1.99 | 160.12 | 47.05 | 22.05 | 108.18 |
| 2006 | 66.6 | 2.89 | 174.22 | | | 18.25 |
| 2007 | 69.3 | 3.00 | 174.69 | | | 33.21 |
| 2008 | 72.1 | 3.02 | 171.59 | | | 46.15 |
| 2009 BRP Guarantee | | | 22.78 | | | |

The data for years 2006 through 2008 were estimated using the BRP-RCCP calculator. The farm yields equal the county trend yields. The prices used for 2006 through 2008 are from the Food and Agricultural Policy Institute (FAPRI) projections released in November. Due to higher projected prices for 2006 through 2008 combined with trend yields, the projected net revenue increases substantially through this period. The BRP guarantee for 2009 was calculated from the actual net revenue for 2004 and 2005 and the net revenue projections for 2006 through 2008.

Revenue Countercyclical Program (RCCP)

Revenue Countercyclical Program (RCCP) payments are intended to replace countercyclical payments received with the 2002 farm program. These countercyclical payments are triggered by a low national average price only. No recognition of yield is used in calculating these payments. The RCCP payments are based on a shortfall of total revenue calculated by multiplying yield times price. RCCP payments are not impacted by the yield or price an individual farmer receives. Rather, these payments are triggered when the county revenue per acre for corn is below the RCCP trigger revenue. The payment is determined by subtracting the product of the county average yield and the NASS price from the product of the county trend yield and the effective target price. The effective target price is the current target price minus the direct-payment rate. The RCCP payment is capped at 30 percent of the trigger revenue, reflecting the 70 percent coverage level provided by the BRP program.

If an RCCP payment is triggered in a county, all corn producers in that county will receive the same payment per acre multiplied by the planted acres on each farm. This is similar to the multiperil group risk insurance programs.

Tables 4A, 4B and 4C detail the per-acre RCCP trigger revenues and payments for farms in Richland, Barnes and Foster counties for 2002 through 2010, respectively. The county trend yields were obtained from the BRP calculator. The actual yields used for 2002 through 2005 are the yield per planted acre reported by NASS. For 2006 through 2010, the yields used for actual yields are the county trend yields. Actual marketing year average prices are used for 2002 through 2005. Prices for 2006 through 2010 were obtained from the November projections from FAPRI. An RCCP payment would have been triggered in 2004 and 2005 Richland and Barnes counties and in 2004 only for Foster County. The payment for 2004 for both Barnes and Foster counties would have been capped at the maximum level, which is 30 percent of the trigger level.

Table 4A. RCCP Trigger Revenues and Payments from 2002 to 2010, Richland County

| Year | Trend Yield | Trigger Revenue | Actual Yield* | NASS Price | Actual Revenue | RCCP Payment | Maximum Payment |
|------|-------------|-----------------|---------------|------------|----------------|--------------|-----------------|
| | (bu/acre) | (\$/acre) | (bu/acre) | (\$/bu) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 118.1 | 277.54 | 134.1 | 2.32 | 311.11 | 0.00 | 83.26 |
| 2003 | 120.9 | 284.12 | 126.3 | 2.42 | 305.65 | 0.00 | 85.23 |
| 2004 | 123.7 | 290.70 | 121.4 | 2.06 | 250.08 | 40.61 | 87.21 |
| 2005 | 126.5 | 297.28 | 129.5 | 1.99 | 257.71 | 39.57 | 89.18 |
| 2006 | 129.3 | 303.86 | 129.3 | 2.89 | 373.68 | 0.00 | 91.16 |
| 2007 | 132.0 | 310.20 | 132.0 | 3.00 | 396.00 | 0.00 | 93.06 |
| 2008 | 134.8 | 316.78 | 134.8 | 3.02 | 407.10 | 0.00 | 95.03 |
| 2009 | 137.6 | 323.36 | 137.6 | 3.07 | 422.43 | 0.00 | 97.01 |
| 2010 | 140.4 | 329.94 | 140.4 | 3.08 | 432.43 | 0.00 | 98.98 |

* Actual yields are used for 2002 - 2005 and trend yields for 2006 through 2010.

Table 4B. RCCP Trigger Revenues and Payments from 2002 to 2010, Barnes County

| Year | Trend Yield | Trigger Revenue | Actual Yield* | NASS Price | Actual Revenue | RCCP Payment | Maximum Payment |
|------|-------------|-----------------|---------------|------------|----------------|--------------|-----------------|
| | (bu/acre) | (\$/acre) | (bu/acre) | (\$/bu) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 106.1 | 249.34 | 117.7 | 2.32 | 273.06 | 0.00 | 74.80 |
| 2003 | 109.4 | 257.09 | 122.3 | 2.42 | 295.97 | 0.00 | 77.13 |
| 2004 | 112.8 | 265.08 | 75.3 | 2.06 | 155.12 | 79.52 | 79.52 |
| 2005 | 116.1 | 272.84 | 132.0 | 1.99 | 262.68 | 10.16 | 81.85 |
| 2006 | 119.4 | 280.59 | 119.4 | 2.89 | 345.07 | 0.00 | 84.18 |
| 2007 | 122.8 | 288.58 | 122.8 | 3.00 | 368.40 | 0.00 | 86.57 |
| 2008 | 126.1 | 296.34 | 126.1 | 3.02 | 380.82 | 0.00 | 88.90 |
| 2009 | 129.4 | 304.09 | 129.4 | 3.07 | 397.26 | 0.00 | 91.23 |
| 2010 | 132.8 | 312.08 | 132.8 | 3.08 | 409.02 | 0.00 | 93.62 |

* Actual yields are used for 2002 - 2005 and trend yields for 2006 through 2010.

Table 4C. RCCP Trigger Revenues and Payments from 2002 to 2010, Foster County

| Year | Trend Yield | Trigger Revenue | Actual Yield* | NASS Price | Actual Revenue | RCCP Payment | Maximum Payment |
|------|-------------|-----------------|---------------|------------|----------------|--------------|-----------------|
| | (bu/acre) | (\$/acre) | (bu/acre) | (\$/bu) | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 55.7 | 130.90 | 61.8 | 2.32 | 143.38 | 0.00 | 39.27 |
| 2003 | 58.4 | 137.24 | 70.1 | 2.42 | 169.64 | 0.00 | 41.17 |
| 2004 | 61.1 | 143.59 | 34.1 | 2.06 | 70.25 | 43.08 | 43.08 |
| 2005 | 63.9 | 150.17 | 100.1 | 1.99 | 199.20 | 0.00 | 45.05 |
| 2006 | 66.6 | 156.51 | 66.6 | 2.89 | 192.47 | 0.00 | 46.95 |
| 2007 | 69.3 | 162.86 | 69.3 | 3.00 | 207.90 | 0.00 | 48.86 |
| 2008 | 72.1 | 169.44 | 72.1 | 3.02 | 217.74 | 0.00 | 50.83 |
| 2009 | 74.8 | 175.78 | 74.8 | 3.07 | 229.64 | 0.00 | 52.73 |
| 2010 | 77.6 | 182.36 | 77.6 | 3.08 | 239.01 | 0.00 | 54.71 |

* Actual yields are used for 2002 - 2005 and trend yields for 2006 through 2010.

Representative Farms

Table 5 summarizes the countercyclical program payment yields for each county, as well as the LDP rates, actual yields and net crop insurance payments for the years 2002 through 2005. Crop insurance payments were based on APH policies at the 70 percent coverage level. The county average yield in 2004 for Foster and Barnes counties would have triggered an insurance indemnity payment.

| | Year | Richland County | Barnes County | Foster County |
|-----------------------------|------|--------------------|------------------|------------------|
| CCP base | | (bushels per acre) | | |
| | | 101 | 76 | 63 |
| LDP rate | | (\$ per bushel) | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.03 | 0.03 | 0.02 |
| | 2004 | 0.25 | 0.24 | 0.26 |
| | 2005 | 0.46 | 0.46 | 0.47 |
| Farm Yield | | (bushels per acre) | | |
| | 2002 | 134.1 | 117.7 | 61.8 |
| | 2003 | 126.3 | 122.3 | 70.1 |
| | 2004 | 121.4 | 75.3 | 34.1 |
| | 2005 | 129.2 | 132.0 | 100.1 |
| Net Crop Insurance Payments | | (\$ per acre) | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.00 | 0.00 | 0.00 |
| | 2004 | 0.00 | 3.82 | 52.80 |
| | 2005 | 0.00 | 0.00 | 0.00 |

Additional data for representative farms are included in Table 6. Farm yields for 1997 to 2001 are shown here. Variable costs from ERS and market prices from NASS are included for 1997 to 2005. Trend yields for 2001 to 2005 are included in this table.

Table 6. Additional Data for Representative Farms

| | Year | Richland County | Barnes County | Foster County |
|----------------|------|--------------------|------------------|------------------|
| Farm Yield | | (bushels per acre) | | |
| | 1997 | 110.0 | 88.8 | 65.5 |
| | 1998 | 117.8 | 100.4 | 68.0 |
| | 1999 | 132.6 | 96.8 | 92.1 |
| | 2000 | 120.6 | 113.1 | 92.1 |
| | 2001 | 115.6 | 129.5 | 106.9 |
| Variable Costs | | (\$ per acre) | | |
| | 1997 | 136.58 | 136.58 | 136.58 |
| | 1998 | 132.19 | 132.19 | 132.19 |
| | 1999 | 132.61 | 132.61 | 132.61 |
| | 2000 | 133.38 | 133.38 | 133.38 |
| | 2001 | 136.53 | 136.53 | 136.53 |
| | 2002 | 116.06 | 116.06 | 116.06 |
| | 2003 | 134.19 | 134.19 | 134.19 |
| | 2004 | 142.48 | 142.48 | 142.48 |
| | 2005 | 160.12 | 160.12 | 160.12 |
| Market Price | | (\$ per bushel) | | |
| | 1997 | 2.43 | 2.43 | 2.43 |
| | 1998 | 1.94 | 1.94 | 1.94 |
| | 1999 | 1.82 | 1.82 | 1.82 |
| | 2000 | 1.85 | 1.85 | 1.85 |
| | 2001 | 1.97 | 1.97 | 1.97 |
| | 2002 | 2.32 | 2.32 | 2.32 |
| | 2003 | 2.42 | 2.42 | 2.42 |
| | 2004 | 2.06 | 2.06 | 2.06 |
| | 2005 | 1.99 | 1.99 | 1.99 |
| Trend Yield | | (bushels per acre) | | |
| | 2002 | 118.1 | 106.1 | 55.7 |
| | 2003 | 120.9 | 109.4 | 58.4 |
| | 2004 | 123.7 | 112.8 | 61.1 |
| | 2005 | 126.5 | 116.1 | 63.9 |

Table 7 summarizes the BRP revenues, BRP guarantees and BRP payments for each farm. BRP revenue is shown from 1997 to 2005. BRP guarantees are shown for 2002 to 2006. BRP payments for 2002 to 2005 are shown. The only BRP payments that would have been made are for Barnes and Foster counties during 2004. The growing season during 2004 was characterized by cool temperatures and a lack of growing degree days. In addition, many areas of North Dakota experienced a killing frost in late August. The parts of the state including Barnes and Foster counties were in the area that experienced an early end to the growing season.

Table 7.

Calculated BRP Revenues, Guarantees and Payments for Example Farms

| | Year | Richland County | Barnes County | Foster County |
|--|------|--------------------|------------------|------------------|
| BRP Revenue | | (\$ per acre) | | |
| | 1997 | 130.72 | 79.20 | 22.59 |
| | 1998 | 96.34 | 62.59 | -0.27 |
| | 1999 | 108.72 | 43.57 | 35.01 |
| | 2000 | 89.73 | 75.86 | 37.01 |
| | 2001 | 91.20 | 118.59 | 74.06 |
| | 2002 | 195.05 | 157.00 | 27.32 |
| | 2003 | 171.46 | 161.78 | 35.45 |
| | 2004 | 107.60 | 12.64 | -72.23 |
| | 2005 | 96.99 | 102.56 | 39.08 |
| BRP Guarantee (70% of 5-Year Olympic Average of past BRP Revenues) | | | | |
| | 2002 | 69.13 | 50.78 | 22.07 |
| | 2003 | 69.13 | 59.97 | 23.18 |
| | 2004 | 86.66 | 82.00 | 25.08 |
| | 2005 | 86.39 | 82.00 | 23.28 |
| | 2006 | 87.74 | 88.23 | 23.76 |
| BRP Payment (BRP Guarantee minus BRP Revenue) | | | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.00 | 0.00 | 0.00 |
| | 2004 | 0.00 | 69.37 | 97.31 |
| | 2005 | 0.00 | 0.00 | 0.00 |

A summary of RCCP trigger revenues, actual RCCP revenues and RCCP payments are included in Table 8. All values are included for 2002 to 2005. RCCP payments would have been made in all three counties in 2004 and in Richland and Barnes counties in 2005. The calculated payments for Barnes and Foster counties for 2004 were above the maximum payment and therefore reduced to the maximum amount.

Table 8.
RCCP Trigger Revenue, Actual County Revenue, and RCCP Payments

| | Year | Richland County | Barnes County | Foster County |
|---|------|--------------------|------------------|------------------|
| RCCP Trigger Revenue | | (\$ per acre) | | |
| | 2002 | 277.54 | 249.34 | 130.90 |
| | 2003 | 284.12 | 257.09 | 137.24 |
| | 2004 | 290.70 | 265.08 | 143.59 |
| | 2005 | 297.28 | 272.84 | 150.17 |
| RCCP Actual Revenue | | | | |
| | 2002 | 311.11 | 273.06 | 143.38 |
| | 2003 | 305.65 | 295.97 | 169.64 |
| | 2004 | 250.08 | 155.12 | 70.25 |
| | 2005 | 257.71 | 262.68 | 199.20 |
| RCCP Payment (RCCP trigger revenue minus RCCP actual revenue) | | | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.00 | 0.00 | 0.00 |
| | 2004 | 40.61 | 79.52 | 43.08 |
| | 2005 | 39.57 | 10.16 | 0.00 |

Numbers in bold indicate maximum RCCP payment

Program Comparisons

Table 9 summarizes the LDP and CCP payments that would be earned under the current farm program for 2002 to 2005. LDP payments were available in 2003, 2004 and 2005 in all counties. CCP payments were made in 2004 and 2005 for all counties.

Table 9.
LDP and CCP Payments for Example Farms

| | Year | Richland County | Barnes County | Foster County |
|-------------|------|--------------------|------------------|------------------|
| LDP Payment | | (\$ per acre) | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 3.79 | 3.67 | 1.40 |
| | 2004 | 30.35 | 18.07 | 8.87 |
| | 2005 | 59.43 | 60.72 | 47.05 |
| CCP Payment | | | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.00 | 0.00 | 0.00 |
| | 2004 | 29.29 | 22.04 | 18.27 |
| | 2005 | 35.35 | 26.60 | 22.05 |

Table 10 summarizes the payments that would have been earned from 2002 to 2005 under the current farm program and under the BRP-RCCP program. The current program includes income from LDP and CCP payments, as well as crop insurance indemnity payments. The proposed

program includes BRP payments based on individual farm yields and RCCP payments based on county yields.

Table 10.

| Payment Comparison by Year and Total for Example Farms | | | | |
|--|------|--------------------|------------------|------------------|
| | Year | Richland County | Barnes County | Foster County |
| LDP + CCP + CI (\$ per acre) | | | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 3.79 | 3.67 | 1.40 |
| | 2004 | 59.64 | 43.93 | 79.94 |
| | 2005 | 94.78 | 87.32 | 69.10 |
| Total | | 158.21 | 134.92 | 150.44 |
| RCCP + BRP | | | | |
| | 2002 | 0.00 | 0.00 | 0.00 |
| | 2003 | 0.00 | 0.00 | 0.00 |
| | 2004 | 40.61 | 148.89 | 140.39 |
| | 2005 | 39.57 | 10.16 | 0.00 |
| Total | | 80.18 | 159.04 | 140.39 |

Barnes County would have received more total payments under the BRP-RCCP program than with the current farm program. The gain would have been \$24.12 during the four years. Richland and Foster counties would have received more payments with the current farm program than with the BRP-RCCP program. The Richland County farm would have received considerably more under the existing program - \$78.03, or about \$19.50 per acre per year. For Foster County, the advantage to the current program was only \$10.05 for the four-year period.

Limitations

The BRP-RCCP programs have possible limitations. First, the ERS cost of production value is a regional number and may not be reflective of North Dakota. The program calculation depends on the accuracy of these values. Table 11 shows a comparison of ERS values to North Dakota Farm Business Management Records data. North Dakota costs vary from a positive \$4.20 to a negative \$4.92 as compared to the ERS values. Secondly, the National Agricultural Statistics Service prices also are very critical to the program calculations. The national average price for corn differs considerably from the state average price in North Dakota. The North Dakota corn price during the last 10 years has averaged 10 percent less than the national average price; therefore, this program provides a reduced safety net to North Dakota producers. The third limitation, with the volatile climate and yield variability in North Dakota, two low yield years in a row would dramatically lower the BRP coverage guarantee. This is illustrated in tables 12A, 12B and 12C. The fourth limitation is the issue of whether the BRP-RCCP program will replace the crop insurance program or enhance it. If crop insurance is retained, this would be a duplication of coverage. Would producers have double coverage or be able to buy up coverage only over the BRP-RCCP protection? Finally, does the current high price of corn affect the results. There is an issue of whether volatile prices would make this program an adequate safety net.

Table 11. Cost Comparison by Year to
ND Farm Business Management Records

| Year | NDFBM Records | ERS Var Costs | Difference |
|------|------------------|------------------|------------|
| | (\$/acre) | (\$/acre) | (\$/acre) |
| 2002 | 120.26 | 116.06 | 4.20 |
| 2003 | 129.27 | 134.19 | -4.92 |
| 2004 | 146.14 | 142.48 | 3.66 |
| 2005 | 162.56 | 165.38 | -2.82 |

Table 12A. Richland County

Calculation of BRP Net Revenue, BRP Guarantee, BRP Payment, 2004 - 2010

| Year | Farm Yield | NASS Price | ERS Var Costs | LDP | CCP | BRP Net Revenue | BRP Guarantee | BRP Payment |
|------|---------------|---------------|------------------|-----------|-----------|--------------------|------------------|----------------|
| | (bu/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) |
| 1999 | 132.6 | 1.82 | 132.61 | | | 108.72 | | |
| 2000 | 120.6 | 1.85 | 133.38 | | | 89.73 | | |
| 2001 | 115.6 | 1.97 | 136.53 | | | 91.20 | | |
| 2002 | 134.1 | 2.32 | 116.06 | | | 195.05 | | |
| 2003 | 126.3 | 2.42 | 134.19 | | | 171.46 | | |
| 2004 | 121.4 | 2.06 | 142.48 | 30.35 | 29.29 | 167.24 | 86.66 | 0.00 |
| 2005 | 129.2 | 1.99 | 160.12 | 59.43 | 35.35 | 191.77 | 100.31 | 0.00 |
| 2006 | 129.3 | 2.89 | 174.22 | | | 199.46 | 123.78 | 0.00 |
| 2007 | 92.4 | 3.00 | 174.69 | | | 102.51 | 130.26 | 27.75 |
| 2008 | 94.4 | 3.02 | 171.59 | | | 113.50 | 123.78 | 10.28 |
| 2009 | 137.6 | 3.07 | 170.71 | | | 251.72 | 110.25 | 0.00 |
| 2010 | 140.4 | 3.08 | 171.69 | | | 260.74 | 117.77 | 0.00 |

Bold values in 2007 and 2008 are 70% of expected farm yield

Table 12B. Barnes County

Calculation of BRP Net Revenue, BRP Guarantee, BRP Payment, 2004 - 2010

| Year | Farm Yield | NASS Price | ERS Var Costs | LDP | CCP | BRP Net Revenue | BRP Guarantee | BRP Payment |
|------|---------------|---------------|------------------|-----------|-----------|--------------------|------------------|----------------|
| | (bu/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) | (\$/acre) |
| 1999 | 96.8 | 1.82 | 132.61 | | | 43.57 | | |
| 2000 | 113.1 | 1.85 | 133.38 | | | 75.86 | | |
| 2001 | 129.5 | 1.97 | 136.53 | | | 118.59 | | |
| 2002 | 117.7 | 2.32 | 116.06 | | | 157.00 | | |
| 2003 | 122.3 | 2.42 | 134.19 | | | 161.78 | | |
| 2004 | 75.3 | 2.06 | 142.48 | 18.07 | 22.04 | 52.75 | 82.00 | 29.26 |
| 2005 | 132.0 | 1.99 | 160.12 | 60.72 | 26.60 | 189.88 | 82.00 | 0.00 |
| 2006 | 119.4 | 2.89 | 174.22 | | | 170.85 | 102.05 | 0.00 |
| 2007 | 86.0 | 3.00 | 174.69 | | | 83.31 | 114.25 | 30.94 |
| 2008 | 88.3 | 3.02 | 171.59 | | | 95.08 | 97.05 | 1.97 |
| 2009 | 129.4 | 3.07 | 170.71 | | | 226.55 | 81.49 | 0.00 |
| 2010 | 132.8 | 3.08 | 171.69 | | | 237.33 | 106.35 | 0.00 |

Bold values in 2007 and 2008 are 70% of expected farm yield

Table 12C. Foster County
 Calculation of BRP Net Revenue, BRP Guarantee and BRP Payment, 2004 - 2010

| Year | Farm Yield (bu/acre) | NASS Price (\$/acre) | ERS Var Costs (\$/acre) | LDP (\$/acre) | CCP (\$/acre) | BRP Net Revenue (\$/acre) | BRP Guarantee (\$/acre) | BRP Payment (\$/acre) |
|------|-------------------------|-------------------------|----------------------------|------------------|------------------|------------------------------|----------------------------|--------------------------|
| 1999 | 92.1 | 1.82 | 132.61 | | | 35.01 | | |
| 2000 | 92.1 | 1.85 | 133.38 | | | 37.01 | | |
| 2001 | 106.9 | 1.97 | 136.53 | | | 74.06 | | |
| 2002 | 61.8 | 2.32 | 116.06 | | | 27.32 | | |
| 2003 | 70.1 | 2.42 | 134.19 | | | 35.45 | | |
| 2004 | 34.1 | 2.06 | 142.48 | 8.87 | 18.27 | -45.09 | 25.08 | 70.17 |
| 2005 | 100.1 | 1.99 | 160.12 | 47.05 | 22.05 | 108.18 | 23.28 | 0.00 |
| 2006 | 66.6 | 2.89 | 174.22 | | | 18.25 | 31.93 | 13.67 |
| 2007 | 48.5 | 3.00 | 174.69 | | | -29.19 | 18.91 | 48.10 |
| 2008 | 50.5 | 3.02 | 171.59 | | | -19.08 | 5.72 | 24.80 |
| 2009 | 74.8 | 3.07 | 170.71 | | | 58.93 | -7.00 | 0.00 |
| 2010 | 77.8 | 3.08 | 171.69 | | | 67.93 | 13.56 | 0.00 |

Bold values in 2007 and 2008 are 70% of expected farm yield

This impact is illustrated by reducing the farm yield for both 2007 and 2008 to 70 percent of the expected or trend yield. On the Richland County farm, the BRP guarantee falls from \$130.26 in 2007 to \$123.78 in 2008 and to \$110.25 in 2009 before beginning to recover in 2010. This represents a 15 percent drop in the BRP guarantee in two years.

For the Barnes County farm, the BRP guarantee declines from \$114.25 in 2007 to \$97.05 in 2008 and to \$81.49 in 2009, and then recovers significantly in 2010. The decline from 2007 to 2009 is a 29 percent drop in the BRP guarantee for the Barnes County farm.

The impact on the Foster County farm is much greater. Due to unusually high yields in 2001 and 2005, the BRP guarantee is highest in 2006. In 2007, the BRP guarantee is at \$18.91. It declines to \$5.72 in 2008 and to a negative \$7.00 in 2009, which is a decrease of 137 percent in two years.

A negative BRP guarantee means variable costs can exceed gross market revenue and still not trigger a safety net payment to an individual farm.

Conclusions

The BRP-RCCP program is innovative in that it targets both yield and price, thus combining the yield guarantee of the crop insurance program and the price guarantee of the current government program.

The BRP-RCCP program versus the current farm program shows mixed results for the corn analysis. The differences are dependent on the yield variability of the county. The BRP-RCCP programs show promise in providing a safety net for farmers. A significant weakness shows up when low yields occur multiple years in a row, as often occurs with regionalized wet or dry periods. The BRP guarantee is based on three of the most recent five years, which means multiple low years significantly lowers the safety net for individual farms. A national study needs to be done for all program crops to evaluate the program further.

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