Staff Paper P07-15 **October 2007**

Staff Paper Series

Estimates of Minnesota Farm-level Crop Commodity Payments under Alternative Proposed Federal Policies

by
Kent D. Olson and Matthew R. DalSanto

Department of
APPLIED
ECONOMICS

College of Food, Agricultural and Natural Resource Sciences
UNIVERSITY OF MINNESOTA

Staff Paper P07-15 **October 2007**

Estimates of Minnesota Farm-level Crop Commodity Payments under Alternative Proposed Federal Policies

by
Kent D. Olson and Matthew R. DalSanto

Major funding for this study came from the Rapid Agricultural Research Fund (RARF) of the College of Food, Agricultural, and Natural Resource Sciences and the University of Minnesota Agricultural Experiment Station.

Copies of this publication are available at http://agecon.lib.umn.edu/. Information on other titles in this series may be obtained from: Waite Library, University of Minnesota, Department of Applied Economics, 232 Classroom Office Building, 1994 Buford Avenue, St. Paul, MN 55108, U.S.A. A list of titles is also on the web at: http://www.apec.umn.edu

Estimates of Minnesota Farm-level Crop Commodity Payments under Alternative Proposed Federal Policies

Kent D. Olson and Matthew R. DalSanto[1]
October 2007

ABSTRACT

With the current federal farm bill expired as of the end of September this year, many proposals have been made to redesign the next bill. The objective of this study is to compare the current policy with major proposed alternatives by estimating the potential payments for 17 example farms in Minnesota under each of the alternatives. The alternative proposals analyzed are the two alternatives in the recently passed House proposal (HR 2419), Durbin-Brown revenue-based support proposal (S 1872), USDA's proposed policy, NCGA's proposal of commodity based revenue-based support, ASA's proposal to adjust loan rates and target prices, multi-commodity revenue insurance, and NFU's cost-based safety net. These policies are compared in two ways. First, an historical comparison of crop revenue and estimated government payments for individual farms are made under each proposal from 2002-2005. Second, projections of crop revenue and government payments are made using historical yields for each farm, county, and nation; historical price data; and statistical distributions of the yields and prices.

Using FAPRI-2 projections (which are closer to the prices expected in the next few years when a new farm bill will be in force), expected TGPs are similar for the most likely alternatives. TGPs for the two House proposals (HB-CCP and HB-RCCP) are consistently a little higher than the current policy. TGPs with the D-B proposal are slightly higher for some farms and slightly lower for others—ranging from 94% to 105% of the current policy. Non-DP payments are projected to be much higher for HB-CCP and HB-RCCP compared to current policy. The non-DP payments are slightly lower on average for the D-B proposal, but there was a wide dispersion across farms. Each of the proposals reduces risk by similar levels as measured by the variability of a farm's market revenue plus government payments compared to the expected total of market revenue.

Since expected payments and risk reductions are similar between the most likely options, the choice between these alternatives depends more on the method used to determine payments and less on what the final amount is. Current policy and HB-CCP use a price based system to calculate payments with target prices set in policy and HB-RCCP sets the target revenue in policy while D-B used a market-oriented system to set the target revenue in each year. So, if the goal is to provide a safety net that moves with market conditions in a volatile world, the D-B proposal would be the best choice based on its market orientation.

---

[1] Olson is a Professor and DalSanto is a graduate student in the Applied Economics Department, University of Minnesota, St. Paul, MN. Olson's email is kdolson@umn.edu; DalSanto's is dalsanto@umn.edu. Major funding for this study came from the Rapid Agricultural Research Fund (RARF) of the College of Food, Agricultural, and Natural Resource Sciences.

Acronyms used in this report	
AGR	Adjusted Gross Revenue
ASA	American Soybean Association
BRP	Base Revenue Protection
CAIS	Canadian Agricultural Income Stabilization
CCGA	Chicago Council on Global Affairs
CCP	Countercyclical Payment
CV	Coefficient of Variation
D-B	Durbin-Brown proposal (S 1872)
DP	Direct Payment
ERS	Economic Research Service
FAPRI	Food and Agricultural Policy Research Institute
LDP	Loan Deficiency Payment
NASS	National Agricultural Statistics Service
NCGA	National Corn Growers Association
NFU	National Farmers Union
Non-DP	TGP minus DP, government payment without the direct payment
OLS	Ordinary Least Squares, a basic statistical regression technique
PCP	Posted County Prices
RCCP	Revenue Counter-cyclical Payment
RCCP-C	RCCP in the NCGA proposal
RCCP-H	RCCP in the House plan (HR 2419)
RCCP-U	RCCP in the USDA proposal
TGP	Total Government Payment
USDA	United States Department of Agriculture

Estimates of Minnesota Farm-level Crop Commodity Payments under Alternative Proposed Federal Policies

Kent D. Olson and Matthew R. DalSanto
October 2007

Congress is in the midst of their debate over writing a new farm bill. Current policy ended at the end of September, 2007. The House of Representatives passed their version in late July. Even though current policy expired at the end of September, the Senate is expected to present and discuss their version in November or even later. Since the Senate is not expected to pass a bill identical to the House bill, the two versions will create an interesting discussion within the conference committee. The final version would return to the House and Senate for final approval and then on to the President for his signature sometime this fall.

If all goes according to plan.

If a new policy is not passed and signed, current policy may be extended for 1-2 years.

The final form, rules, guidelines, and funding of major portions of the proposals are still subject to major change from current policy. The debate is not just about the details of cents per bushel or minor adjustments in fund allocations. The House passed some changes including some relative minor adjustments in the commodity provisions and the addition of a new revenue-based safety net; increases in funding for conservation and nutrition programs; and a new title on horticulture and organic agriculture. Some in the Senate talk about increasing the funding even more for conservation and nutrition programs, increased tightening of eligibility rules for receiving commodity payments, and, perhaps, switching completely to a revenue-based safety net (versus the current price-based safety net). Congress is also constrained due to the budget baseline for the next Farm Bill being based on future payments which are forecast to be low under current policy and high forecasted prices. With high budget concerns due to other uses of federal dollars, the ability to expand the farm bill pie is not great. This budget concern is heightened by Congress' adoption of the "pay-go" rule that all budget increases have to be balanced by decreases elsewhere.

Many farmers and others involved in agriculture want to see a new policy that is very similar to current policy. However, factors, such as federal budget deficits, international trade issues, energy concerns, and environmental concerns, are increasing the pressure to make

fundamental changes in federal farm policy. The fairness of the current distribution of payments is also questioned with calls to change how payments are calculated and allocated. The rationale for and size of government payments for commodities, conservation, rural development, and food assistance may still change considerably from current policy even though the House has already passed their version.

With the potential for change and to help answer some of these questions, the specific objectives of this study are to compare the current policy with major proposed alternatives and estimate the potential payments to farmers under each of these alternatives. The first section describes current policy for determining payments for farmers. In the following sections the alternatives to current policy are described. The analysis methods, procedures, and data sources used in estimating commodity payments are described in the following section. The results of our analysis are then presented and interpreted in the following sections. Some concluding comments are at the end.

Current Federal Farm Policy for Crop Commodities

Under the Farm Security and Rural Investment Act of 2002, commodity programs provide income support for wheat, feed grains, upland cotton, rice, and oilseeds through three programs: direct payments, counter-cyclical payments (CCP), and the marketing assistance loan program that includes Loan Deficiency Payments (LDPs).

Direct payments are paid to farmers of covered crop commodities on the basis of the direct payment specified in the 2002 Act, 85% of their base acres for the crop, and their payment yield for the crop. The payment is made regardless of current production levels and market conditions. The Act fixes direct payments for the duration of the Act as $0.28 per bushel for corn, $0.44 for soybeans, and $0.52 for wheat (Table 1).

Table 1. Direct payments, target prices, and loan rates for corn, soybean, and wheat under current policy.

	Direct payment ($/bushel)	Target price ($/bushel)	Loan rate ($/bushel)
Corn	0.28	2.63	1.95
Soybean	0.44	5.80	5.00
Wheat	0.52	3.92	2.75

A counter-cyclical payment (CCP) is made if the national seasonal average market price is less than the target price minus the direct payment rate (e.g., $2.63 minus $0.35, or $2.35 for corn). The CCP is calculated as the target price minus the direct payment minus the higher of the national season average market price or the loan rate. For the 2007 crop, the target prices are set in the Act at $2.63 per bushel for corn, $5.80 for soybeans, and $3.92 for wheat. For the 2007 crop, Act set the loan rates at $1.95 per bushel for corn, $5.00 for soybeans, and $2.75 for wheat. For example, a corn farmer will receive a CCP if the national seasonal market price falls below $2.35 which is the target price of $2.63 minus the direct payment of $0.28. The maximum CCP per bushel is $0.40 per bushel which is the difference between $2.35 and the loan rate of $1.95. The total CCP for a farmer is the product of that year's CCP per bushel, the farm's payment yield, and 85% of the acreage base.

Under the Marketing Assistance Loan Program, farmers can take a loan at harvest at the loan rate set in the Act. This program is designed to provide farmers the cash needed to pay bills without having to sell their product at typically low harvest prices. These are nonrecourse loans so farmers have the option to either pay back the loan plus interest costs or forfeit the crop pledged as collateral to the CCC. Farmers have the option to choose and usually do choose to receive a loan deficiency payment (LDP) in place of taking the loan. If the local market price is below the national loan rate, the local LDP is the difference between the local market price and the national loan rate. If the market price is above the loan rate, no loans or LDPs are available. Under the 2002 Act, the receipt of the LDP was not conditioned on the sale of the commodity; thus, the commodity could be held and sold at prices higher than the price used to determine the LDP received.

House Passed Version of New Policy for Crop Commodities

On July 27, 2007, the U.S. House of Representatives passed their version of a new farm bill: H.R. 2419, "Farm, Nutrition, and Bioenergy Act of 2007''. The commodity programs remain basically the same except for the addition of the option for a one-time switch to a revenue-based counter-cyclical payment (versus the current price-based counter-cyclical payments). Other than that addition, the structure of direct payments, counter-cyclical payments (CCP), and the marketing assistance loan program (including LDPs) remains the same—with adjustments in the level of direct payments, target prices, and loan rates for some program crops.

For corn, soybean, and wheat, the main program crops in Minnesota, direct payments do not change from current policy, but the target price per bushel would increase from $5.80 to $6.10 for soybean and from $3.92 to $4.15 for wheat (Table 2). The loan rate for wheat would increase from $2.75 to $2.94.

Table 2. Direct payments, target prices, and loan rates for corn, soybean, and wheat under the House passed HR 2419.

	Direct payment ($/bushel)	Target price ($/bushel)	Loan rate ($/bushel)
Corn	0.28	2.63	1.95
Soybean	0.44	6.10	5.00
Wheat	0.52	4.15	2.94

The House version of a revenue-based counter-cyclical program is similar to that proposed by the USDA (and explained in the next section) except that HR 2419 sets a different national target revenue per acre for the program crops and national payment yield. The national target revenue per acre is equal to the 2002-2006 Olympic average yield times the difference between the new House target price and the direct payment rate. The national payment yields are the same as in the 2002 Act. These are listed in Table 3 for corn, soybean, and wheat.

Table 3. National target revenue and national payment yields for corn, soybean, and wheat for the Revenue-Based Counter-Cyclical Payments in the House passed HR 2419.

	National target revenue ($/acre)	National payment yield (bu/acre)
Corn	344.12	114.4
Soybean	231.87	34.1
Wheat	149.92	36.1

A revenue-based counter-cyclical payment under the House plan (RCCP-H) would be made when the national actual revenue per acre for the covered commodity is less than the national target revenue per acre. The national actual revenue per acre for a commodity would equal the national average yield for the commodity times the higher of the season-average market price or the loan rate for the commodity. If a payment is triggered, the national payment rate for a covered commodity would be the difference between the national target revenue per acre and the national actual revenue per acre divided by the national payment yield. The amount of the counter-cyclical payment to be paid to producers for a covered commodity would be the

product of the national payment rate times the payment acres of the commodity on a specific farm, and the payment yield for counter-cyclical payments for the covered commodity.

Durbin-Brown Revenue-Based Proposal

In their Farm Safety Net Improvement Act Of 2007 (S 1872), Senators Richard Durbin of Illinois and Sherrod Brown of Ohio propose to replace the current loan deficiency and price counter-cyclical programs with a state level revenue counter-cyclical program. In the Durbin-Brown proposal, a farmer receives a countercyclical revenue-based payment if the state's actual revenue is less than the state's revenue target for that crop year. The Durbin-Brown proposal retains the direct payment program from the 2002 Act.

A revenue counter-cyclical payment is made to producers in a State if the actual State revenue from the crop year for the covered commodity is less than the revenue counter-cyclical program guarantee for the crop year for the covered commodity in the State. The actual State revenue is calculated by multiplying the actual State yield for each planted, not harvested, acre by the revenue counter-cyclical program harvest price. The revenue counter-cyclical program harvest price is the harvest price used under revenue coverage plans under the Federal Crop Insurance Act.

The revenue counter-cyclical program guarantee is 90 percent of the expected State yield for each planted acre and the revenue counter-cyclical program pre-planting price. The expected State yield for each planted acre is based on a linear trend of the yield per planted acre from 1980 through 2006 using National Agricultural Statistics Service data. The revenue counter-cyclical program pre-planting price is the three-year average price used to determine crop insurance guarantees under the Federal Crop Insurance Act during the crop year and the preceding 2 crop years. The revenue counter-cyclical program pre-planting price is not allowed to decrease or increase more than 15 percent from the pre-planting price for the preceding year.

If required, the revenue counter-cyclical payment to be paid to the producers on a farm is the product obtained by multiplying (1) the difference between the revenue counter-cyclical program guarantee for the crop year for the covered commodity in the State and the actual State revenue from the crop year for the covered commodity in the State; (2) the acreage planted or considered planted to the covered commodity for harvest on the farm in the crop year; (3) the

quotient obtained by dividing the actual production history (APH) yield on the farm by the expected State yield for the crop year; and (4) 90 percent.

USDA's Proposed Policy

On January 31, 2007, the USDA unveiled the administration's proposed policy for 2007. The administration said they designed their changes for commodity programs to make them less vulnerable to challenges of violating international trading rules and regulations. Thus, their proposal still strives to support farm income and also to distance payment calculations from a farmer's current production decisions and, thus, not influence market prices (that is the crux of the legal arguments against current payment systems).

The administration proposed three rather dramatic changes in the marketing assistance loan program. First, rather than setting the loan rates in the policy for the duration of the policy (as done in the current policy), the proposal prescribes the calculation rule and allows the loan rate to change between years. Under this proposal, the loan rate would be set at 85% of the most recent 5-year Olympic average of market prices with maximum loan rates set at the rates set in the House-passed version of the 2002 farm bill (Table 4). The loan rates would be recalculated each year and thus more responsive to market conditions. The second major change would be a shift from daily posted county prices (PCP) to a monthly PCP. The monthly PCPs would be an average of five daily PCPs on pre-set days during the previous month. The third change would be to revise requirements for establishing loan deficiency payments (LDP) and loan repayment rates based on the month that beneficial interest is lost (i.e., sold in most instances) versus current law that allows LDP rates to be set at times not related to when the crop is sold. This connecting of the LDP and the month when beneficial interest is lost will remove the often-used possibility of choosing the LDP when it is at a high level and then selling the crop later when market prices have improved. For those farmers who do not lose beneficial interest (silage producers, farmer-feeders, for example), USDA would establish a payment rate for these producers based on the average of the monthly PCPs during the first three months of the marketing year.

Table 4. USDA's proposed direct payments and loan rates for corn, soybean, and wheat.				
	Proposed Direct Payment, 2008-2009 & 2013-2017 ($/bushel)	Proposed Direct Payment 2010-2012 ($/bushel)	Estimated Average Proposed Loan Rate over 2008-2012	Proposed Maximum Loan Rate
Corn ($/bu)	0.28	0.30	1.89	1.89
Soybeans ($/bu)	0.47	0.50	4.92	4.92
Wheat ($/bu)	0.52	0.56	2.58	2.58

The USDA proposes to increase the direct payment rate for program crops slightly but not immediately for all crops. For Minnesota crops, the increase would come for soybeans in 2008 but not for corn and wheat until 2010. The USDA also proposes to continue to pay based on 85% of base acres without updating base acres and yields from the 2002 Farm Bill. Thus, neither current production nor a farmer's most recent production history affects these direct payments.

The USDA also proposes to replace the current price-based counter-cyclical program (CCP) with a revenue-based counter-cyclical program (RCCP-U) for that commodity. This is not a whole-farm revenue program but a commodity-based program. The USDA proposes the revenue-based payment be triggered when the national actual revenue per acre for the commodity is less than the national target revenue per acre. The national target revenue per acre for a commodity would equal the 2002 farm bill's target price minus the 2002 farm bill's direct payment rate multiplied by the national average yield for the commodity during the 2002-2006 crop years, excluding the high yield years. The national actual revenue per acre for a commodity would equal the national average yield for the commodity times the higher of the season-average market price or the loan rate for the commodity. If a payment is triggered, the national revenue-based payment per acre would be converted to a payment rate for producers by dividing the national revenue payment rate per acre by the U.S. average payment yield per base acre under the 2002 farm bill countercyclical payment program. An individual producer's revenue-based counter-cyclical payment would be determined by multiplying the national average payment rate for the commodity times 85% of the producer's base acres times the producer's program payment yield under the 2002 farm bill countercyclical payment program. Base acres and program payment yields would remain fixed over the life of the 2007 farm bill. The national

yield for determining target revenue would remain fixed over the life of the 2007 farm bill and would equal the average yield for the 2002-2006 crops, excluding the high and the low year.

Alternative Proposed Policies

In this section, we summarize four alternatives to current policy besides the House-passed HR 2419 and USDA's proposal: an alternative form of revenue-based support payments using local information; increases in current target prices and loan rates; multi-commodity revenue insurance; and a cost-based safety net. Other groups have presented proposals, but we chose to analyze only these four since they represent a broad spectrum of proposed alternatives to current policy.

Local revenue-based support payments

The National Corn Growers Association (NCGA) has developed a new proposal for the commodity title of federal farm policy, titled "Forging a New Direction for Farm Policy" (NCGA 2006). For the commodity program, specifically corn, they propose (1) maintaining the current calculation methods for direct payments, (2) changing the nonrecourse loan program to a recourse loan program, (3) creating a support program called Base Revenue Protection (BRP), and (4) modifying the current countercyclical program (CCP) into a Revenue Countercyclical Program (RCCP-C). The NCGA proposed these for corn specifically; for this study, we applied their ideas to all program crops.

Under the current policy, farmers can use their corn, for example, as collateral for a nonrecourse loan at the loan rate established in current policy. Since this is a nonrecourse loan, farmers are allowed to surrender their grain as full payment of the loan whether the market price (and thus value) is below the loan rate. This assurance of a minimum guaranteed price reduces the market orientation of farmers via the farm bill and, thus, creates criticism of the program. A recourse loan would require farmers to repay the loan with a full monetary payment with no chance to pay with grain. The recourse loan program would allow farmers the chance to borrow at harvest time to pay bills, but they would be subject to the full risk of the marketplace.

In addition to maintaining the direct payments, the NCGA has proposed two new programs: Base Revenue Protection (BRP) and Revenue Countercyclical Program (RCCP-C). Together, these two programs form a basis for decreasing the down-side risk of farm income

based on revenue, not prices. In that sense, the NCGA proposal is similar to the USDA proposal but differs greatly in the proposed implementation procedures. While the USDA proposal estimates the change in revenue at the national level and then applies the payment rate to an individual farm's program yield and acreage, the NCGA proposal has a greater focus on revenue changes at the individual farm and county levels.

Under the BRP program, government payments would occur whenever an individual farm's estimated net farm corn revenue falls more than 30 percent below the previous five year Olympic average of per acre net corn revenue on that farm. Per-acre net revenue in any year would be calculated by multiplying farm-level actual corn yield per planted acre by a national market price, then subtracting per-acre average variable costs of production for the region in which the farm is located. The national market price would be determined by USDA's National Agricultural Statistics Service (NASS). The cost of production would be based on a regional estimate published by USDA's Economic Research Service (ERS).

Another feature of the NCGA's proposal is the modification of the current Countercyclical Program (CCP) which is based on changes in the commodity price to create the RCCP-C based on changes in revenue at the county level. RCCP-C payments to farmers would be triggered whenever actual per-acre county revenue falls below the RCCP-C trigger revenue for that county. Actual county revenue would be calculated in this proposal as the product of a season average price and the NASS county average yield. The county trigger revenue would equal 100 percent of the product of the effective target price (target price less direct payment rate) and expected county yield. The expected county yield for each year of the RCCP-C program would be estimated for every county based on trend yields for each county using NASS data back to at least 1980. In counties that do not have adequate NASS data available, NCGA recommends using trend yields for RCCP-C based on crop reporting district yields. RCCP-C payments to farmers in a county where a loss occurs would equal the per-acre payment times each farmer's number of planted acres. All farmers in the county would receive the same per-acre RCCP-C payment. NCGA's proposal also states that because RCCP-C and BRP are a package of programs, the maximum per-acre RCCP-C payment would equal the county trigger revenue times 30 percent, reflecting the 70 percent coverage under BRP.

Continuing current policy with higher target prices and loan rates

The American Soybean Association proposes to continue the current system of support payments with adjustments to the loan rates and target prices (ASA, 2007). These adjustments are increases for most commodities to alleviate the inequities that ASA sees in the current set of rates and prices. In the 2002 farm bill, the current target price for soybeans was 110% of the 2000-04 Olympic average price; corn, 124%; wheat, 123%; barley, 91%; cotton, 155%; and rice, 181%. Under their proposal for the next farm bill, target prices would be raised to a minimum of 130% of 2000-04 Olympic average market prices and marketing loan rates would be set at a minimum of 95% of the Olympic average market prices (Table 5). Under ASA's proposal, the target price would be $2.75 per bushel for corn, $6.85 for soybeans, and $4.15 for wheat. ASA proposes to hold direct payments at current levels. Other features of the commodity program would remain the same as in the 2002 bill.

Table 5. American Soybean Association's proposed loan rates and target prices for corn, soybean, and wheat.

	Loan rate	Target price
Corn ($/bu)	2.01	2.75
Soybeans ($/bu)	5.01	6.85
Wheat ($/bu)	3.03	4.15

Multi-commodity revenue insurance

Multi-commodity revenue insurance would provide coverage for losses in total whole-farm revenue from multiple commodities produced on a farm. Since multi-commodity revenue insurance provides coverage on whole farm revenue, it would not protect against losses suffered by just one crop unless that loss had a large enough impact on total farm revenue. An indemnity payment would be paid only if the total revenue dropped below the approved revenue insurance level due to low production, low prices, or both. The payment amount would be the difference between total revenue and the approved revenue insurance level times a predetermined payment rate which we assumed to be 90% in this study.

In each year total farm revenue was calculated as the sum of all revenue received for all planted commodity crops. We assumed that the approved revenue insurance level was equal to the minimum of the 5-year Olympic Average of total farm revenue and the revenue adjusted level. We defined the revenue adjusted level to be the sum over all commodity crops of the normal acreage of each crop for that given year times the 5 year Olympic average price and the 5

year Olympic average yield. This was done to avoid issuing too large of a payment to a farmer who has simply scaled back farm production as opposed to incurring a loss due to market conditions.

Due to the current high commodity prices and the consequently low expected payments under Revenue Insurance, we added one-half of what the direct payment amount would be under current policy to the Revenue Insurance's Total Government Payments. We believe a measure such as this must be taken if multi-commodity revenue insurance is to be implemented to smooth the loss of government income.

Cost-based counter cyclical payments

The National Farmers Union's (NFU) proposal replaces the current DP, CCP, and marketing loan program (including the LDP) with a counter cyclical payment based on costs of production, not revenue (Buis, 2007). In NFU's proposal, a payment would be made to farmers if the national average revenue for a crop is less than 95% of that crop's full cost of production. The NFU computes national average revenue as the product of the national average price and the national average yield. The full cost of production is taken from USDA's ERS cost estimates. The payment rate per acre is the difference between 95% of the full cost of production and the national average revenue multiplied by the ratio of the previous year's total use to total supply of that crop. Thus, a crop whose total use exceeded its total supply in the previous year will have its payments increased, and a crop whose total supply exceeded its total use will have its payments decreased.

Analysis Data and Methods

For this study, we used the historical yield data from seventeen farms in Minnesota (Table 6). This individual farm data was coupled with historical national prices and yields and rules under current policy and each proposal. In each year we used a farm's actual acreage for the cropping mix; for the projected impacts, we used the actual 2005 cropping mix. However, for Pennington and Polk farms we had only data on total planted acreage (and not individual crop acreage), so we divided the total acreage into half soybean and half wheat (farms in these two counties did not grow corn). The farms had other crop and livestock enterprises, but we focused only on the corn, wheat, and soybean crops for this analysis.

Table 6. Location, acreage, and yields of example farms					
County and farm number	Location within Minnesota	Average crop acreage, 2002-2005 (acres)	Average corn yield, 2002-2005 (bu/ac)	Average soybean yield, 2002-2005 (bu/ac)	Average wheat yield, 2002-2005 (bu/ac)
Cottonwood 1	Southwest	1052	171	40	--
Cottonwood 2	Southwest	886	168	44	--
Cottonwood 3	Southwest	1041	170	46	--
Faribault 1	South Central	1043	182	51	--
Faribault 2	South Central	340	186	55	--
Goodhue 1	Southeast	149	158	39	--
Goodhue 2	Southeast	754	168	41	--
Goodhue 3	Southeast	1300	180	43	--
Pennington 1	Northwest	1976	--	25	45
Pennington 2	Northwest	1653	--	26	52
Pennington 3	Northwest	1758	--	21	41
Pipestone 1	Southwest	472	147	44	--
Pipestone 2	Southwest	170	164	49	--
Pipestone 3	Southwest	764	168	47	--
Polk 1	Northwest	1663	--	34	61
Polk 2	Northwest	1612	--	26	48
Polk 3	Northwest	469	--	26	49

We compared the policies in two ways. First, we made an historical comparison of the crop revenue and estimated government payments for each farm under each proposal in each of the four years from 2002-2005. However, to compare the policy alternatives using historical data may not provide an accurate comparison since current policy was in effect and farmers made their planting decisions on the basis of that policy. If one of the other policies had been in place, their production decisions might have been different and those possible differences are not reflected in the historical data. Therefore, the second way we compared the policies was by projecting what crop revenue and government payments might be in the future.

We used historical yields for each farm, the county, and the nation; historical data on prices to estimate statistical distributions of the yields and prices including averages, standard deviations, and correlations; and each proposal's rules for calculating payments. Historical state and national prices and yields were obtained from National Agricultural Statistics Service data. We projected yields based on deviations from the yield trend—as the NCGA proposal describes.

The expected value of the simulated yield is the OLS projected estimate for the year 2007. By incorporating the correlations between yields and prices, we also allowed the joint movements of price and yield.

Actual prices and yields were used for 2002-2005 (Table 7). Two price projections from Food and Agricultural Policy Research Institute (FAPRI) were used: first, an early estimate for 2007 (FAPRI-1) which FAPRI published in 2005 and a second, more recent forecast made in late 2006 after recent increases in crop prices (FAPRI-2). For each of the projections, the simulated crop price was assumed to have a mean equal to the FAPRI projection and a variance based on historical data.

Table 7. National average marketing year prices and projected prices and U.S. and Minnesota average yields used in the analysis.

	2002	2003	2004	2005	FAPRI-1	FAPRI-2
National average marketing year prices ($/bu)						
Corn	2.32	2.42	2.06	2.00	2.08	3.16
Soybean	5.53	7.34	5.74	5.66	4.96	6.1
Wheat	3.56	3.40	3.40	3.42	3.08	4.28
National Average Yields (bu/acre)						
Corn	129.3	142.2	160.4	148.0	---	---
Soybean	38.0	33.9	42.2	43.0	---	---
Wheat	35.0	44.2	43.2	42.0	---	---
Minnesota Average Yields (bu/acre)						
Corn	146.1	134.9	149.5	163.3	---	---
Soybean	42.9	31.8	31.9	44.4	---	---
Wheat	30.6	56.2	51.9	39.3	---	---

In each of the simulated projections, the @Risk program© (Palisade, 2006) was used to conduct a Monte Carlo simulation within Microsoft Excel© with draws for price and yield coming from the distributions described above. Each farm's average crop revenue, resulting government payment, and the variation in those revenues were estimated. To establish an accurate distribution of potential results, 10,000 "draws" were taken from the statistical relationships and used to calculate crop revenue and the potential government payments under each proposal's rules. The technical structure of the formulae and rules are described in the appendix.

Impact of Alternative Crop Commodity Policies on Farm Revenue

To improve our understanding of the potential impact of alternative commodity programs on crop revenue, we estimated government payments under the current policy, House HR 2419 (both the price-based system and the revenue-based system), Durbin-Brown revenue-based support, USDA's proposed policy, NCGA's proposal of commodity based revenue-based support, ASA's proposal to adjust loan rates and target prices, multi-commodity revenue insurance, and NFU's cost-based safety net. At this point in the debate within Congress, the income safety net for commodities in a future farm bill will most likely look like the price-based system in current policy or a revenue-based system similar to the House bill or the Durbin-Brown system. Budget constraints and the resulting trade-offs may result in reductions in direct payment levels.

TGP under the alternative policies follow a very similar pattern on the 11 example corn and soybean farms and a slightly different but fairly consistent pattern for the six example wheat and soybean farms. To see this pattern more clearly, we calculated the relative size of TGP for each farm by setting the TGP for current policy as a benchmark with an index value of 100. This allows us to more easily compare the magnitudes of changes in the expected total government payments under the different policy alternatives. The numerical results for each of the 17 farms are presented in appendix and summarized using these indices in this section.

For the corn and soybean example farms in southern Minnesota, the HB-CCP, HB-RCCP, USDA, and NCGA proposals generate very similar levels of total government payments (TGPs) compared to current policy with a few exceptions (Figures 1-4). If they had been the prevailing policy in 2002 (and other conditions were the same), the revenue-based support systems in the HB-RCCP and USDA proposals would have generated a much larger TGP in 2002 due to lower national corn and wheat yields causing lower actual revenue and thus a government revenue counter-cyclical payment for 2002. Current policy was based on the price level which created a small payment fore corn but none for soybean or wheat. In 2004, the national corn price was low enough to trigger a payment under current policy, but the national corn yield was high so revenue remained high, thus the HB-RCCP and USDA proposals would have generated a lower TGP. In 2003 and 2005, TGP would have been almost the same as under current policy.

Figure 1. Index of TGP by proposal for Cottonwood 3

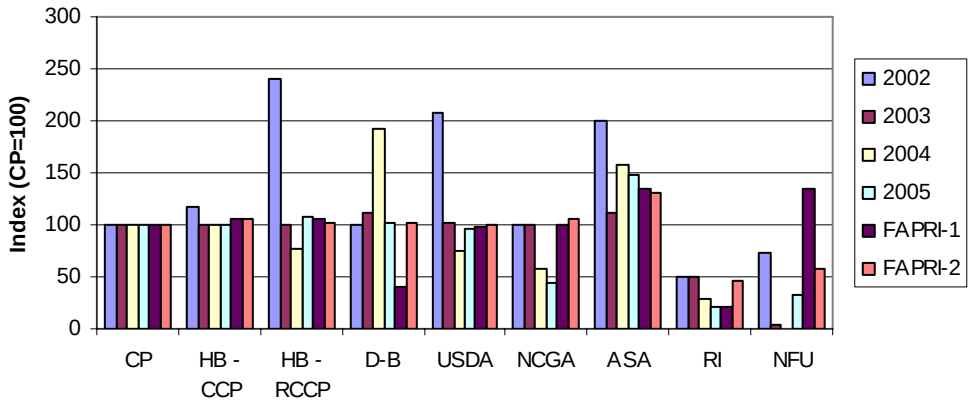


Figure 2. Index of TGP by proposal for Fairbault 2

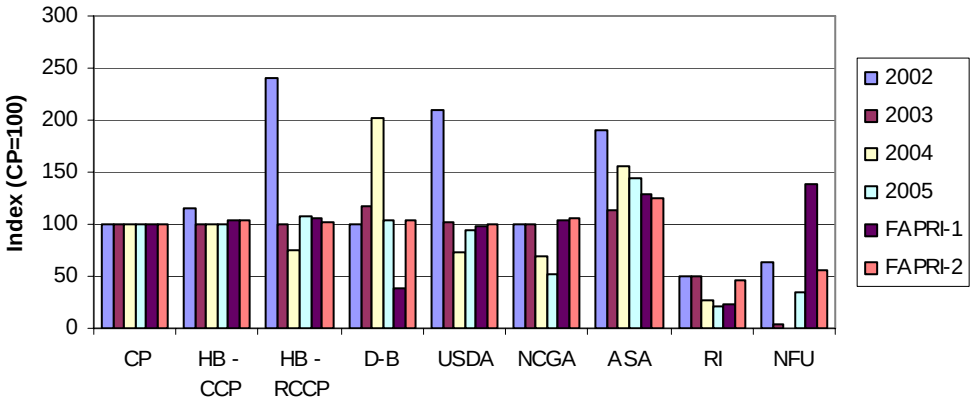
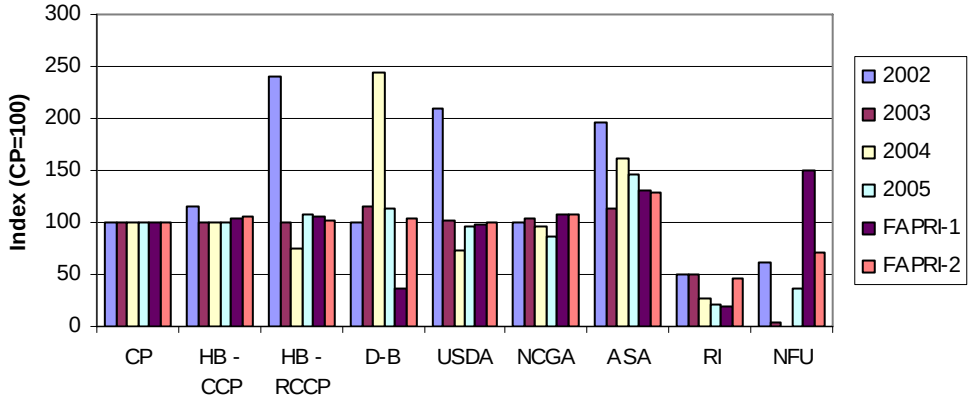
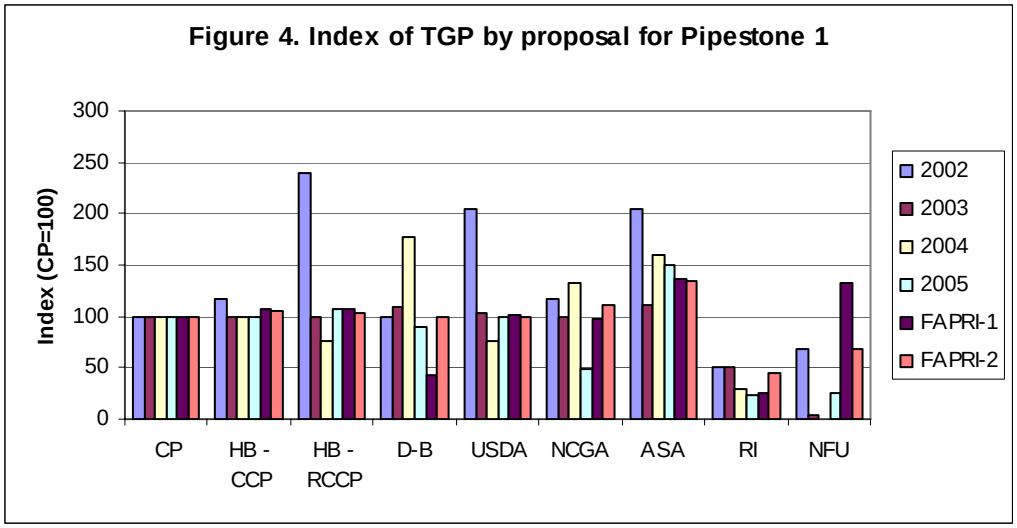


Figure 3. Index of TGP by proposal for Goodhue 3





Under the Durbin-Brown proposal, TGP would have been similar to current policy in 2002 due to the use of the expected crop revenue at the state level versus national level. These same rules would have triggered a higher payment in 2004 due to a drop in actual versus expected revenue at the state level; this drop was caused by lower corn and soybean yields in Minnesota as well as lower prices. The lower TGP under D-B with the first price projection (FAPRI-1) is a result of the D-B rules using an expected market price in the calculation of TGP instead of a set price and yield system found in current and House versions. With the higher projected prices in FARPI-2, the TGP indices are similar—not due to an increase in the payment under D-B but due to a decrease in the payments under current and House RCCP rules. Under FARPI-2 the counter-cyclical payments disappear due to the higher prices so TGP is essentially only DP.

The revenue-based system in the NCGA proposal would have produced similar TGP in 2002 and 2003 but much lower TGP in 2004 and 2005. In the two forecasts (FAPRI-1 and FAPRI-2), all of the first four alternatives provide almost identical TGP compared to current policy. The ASA proposal produces higher TGP in every historical year and forecast except for the much higher TGP in 2002 in HB-RCCP and USDA. Multi-commodity revenue insurance (RI) would produce the lowest TGP due to it being a whole-farm insurance program rather than being on an individual commodity basis. The cost-based NFU proposal also produces lower TGP except for FAPRI-1, the lower price forecast.

The example wheat and soybean farms in northwest Minnesota have higher TGPs with the HB-CCP, HB-RCCP, USDA, NCGA, and, especially, ASA proposals compared to current

policy (Figures 5 and 6, for example). As with the corn and soybean farms, the revenue based proposals (HB-RCCP and USDA) would have produced a much higher payment in 2002 due to a lower yield, but there are no lower payments estimated for the wheat and soybean farms compared to that found for corn and soybean farms. In contrast, the NCGA proposal would have a produced much higher TGP in 2004. The D-B proposal would have resulted in higher payments in 2002 and 2004 due to a lower than expected wheat yield in 2002 and a lower than expected soybean yield and price in 2004. The lower TGP for D-B with the FAPRI-1 price projection and similar TGP with FARPI-2 is due to the lower FAPRI-1 prices triggering payments under other proposals but yields holding revenue up under D-B rules—the same reason as for corn and soybean farms.

Figure 5. Index of TGP by proposal for Pennington 1

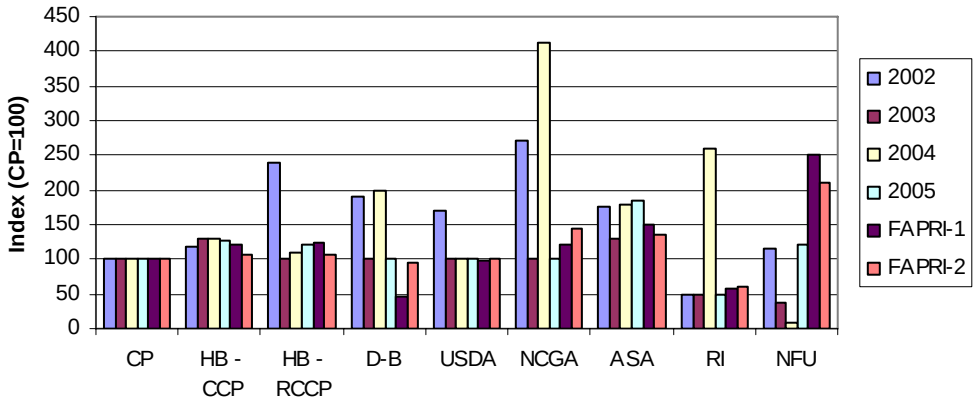
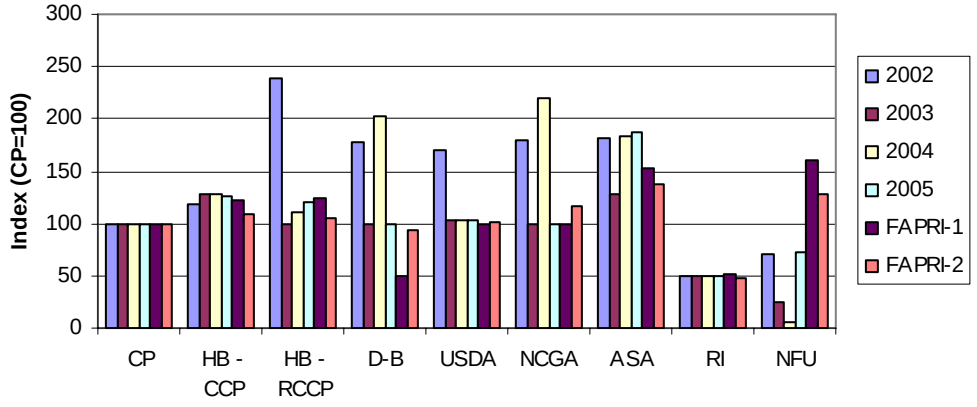


Figure 6. Index of TGP by proposal for Polk 1



The RI proposal would have produced a much higher payment in 2004 for only one example wheat and soybean farm in Pennington County (i.e., Figure 5) pointing out the impact of individual farms history of yield variability will affect the impact of alternative policies. For this example farm in Pennington County, the higher NCGA's payments are attributable to NCGA's RCCP component which is based on revenue using county yield data. Since the wheat yields in Pennington County are significantly lower than the state and national yields, the trigger value for RCCP is lower which leads to the higher RCCP payments.

An increase in crop prices lowers payments in the NFU proposal as seen by the decrease in index values between FAPRI-1 and FAPRI-2 forecasts. The gap between projected costs and projected prices is smaller under the higher prices in FAPRI-2 than in FAPRI-1. This lowers the TGP.

This comparison of TGP camouflages the true safety net capacity of each proposal, that is, the ability to make larger payments in adverse years. Since a direct payment (DP) is included in all proposals (except NFU's), TGP never decreases to zero even in very favorable income years. Thus, to look at the ability to generate payments to support farmers in adverse years, a comparison of the government payment without DP (i.e., non-DP) is needed. Since current policy was not estimated to produce a payment other than DP in some years, the absolute dollar amount of non-DP payments is used to compare alternatives since the index procedure used for comparing the proposals in terms of TGP cannot be used in those years.

The absolute dollar amount of non-DP payments for the same four corn and soybean farms shows a familiar pattern (Figures 7-10). : The price-based support systems in current policy and the House bill do not trigger non-DP payments in high price years but do in low price years. The revenue-based programs in the HB-RCCP and USDA proposals create a non-DP payment in 2002 as do the higher protection levels in the ASA proposal. The higher, more recent price forecasts in FAPRI-2 produce much lower non-DP payments compared to the payments with the lower prices in FAPRI-1.

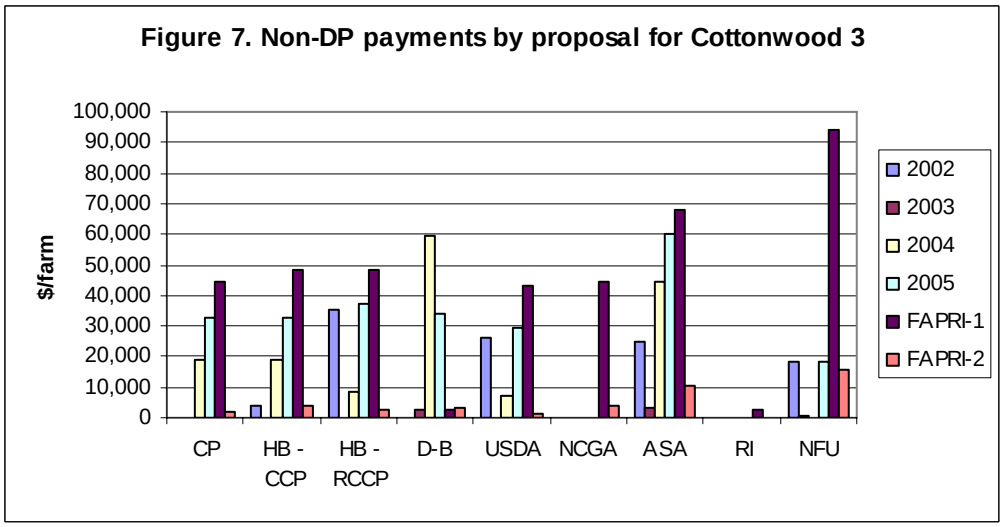


Figure 7. Non-DP payments by proposal for Cottonwood 3
$/farm
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
CP
HB - CCP
HB - RCCP
D-B
USDA
NCGA
ASA
RI
NFU
2002
2003
2004
2005
FAPRI-1
FAPRI-2

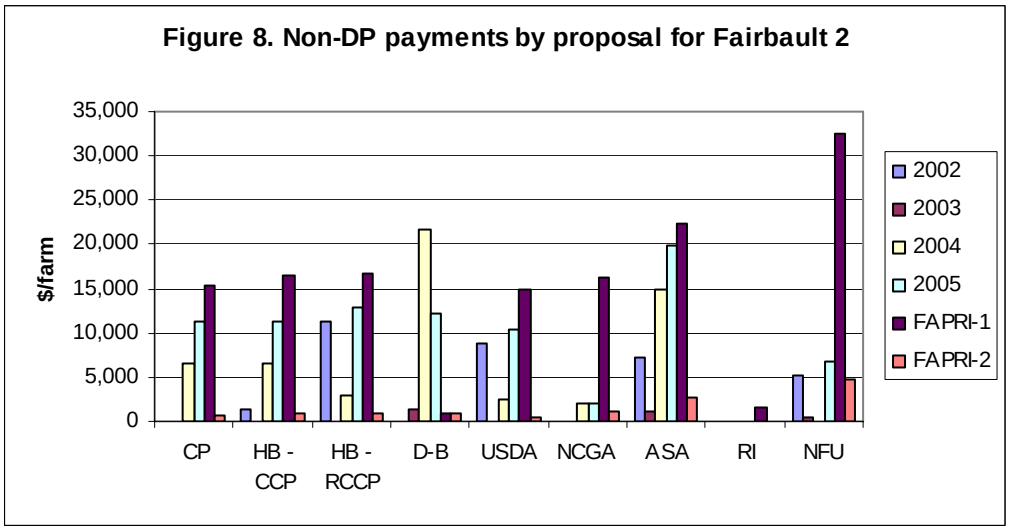


Figure 8. Non-DP payments by proposal for Fairbault 2
$/farm
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
CP
HB - CCP
HB - RCCP
D-B
USDA
NCGA
ASA
RI
NFU
2002
2003
2004
2005
FAPRI-1
FAPRI-2

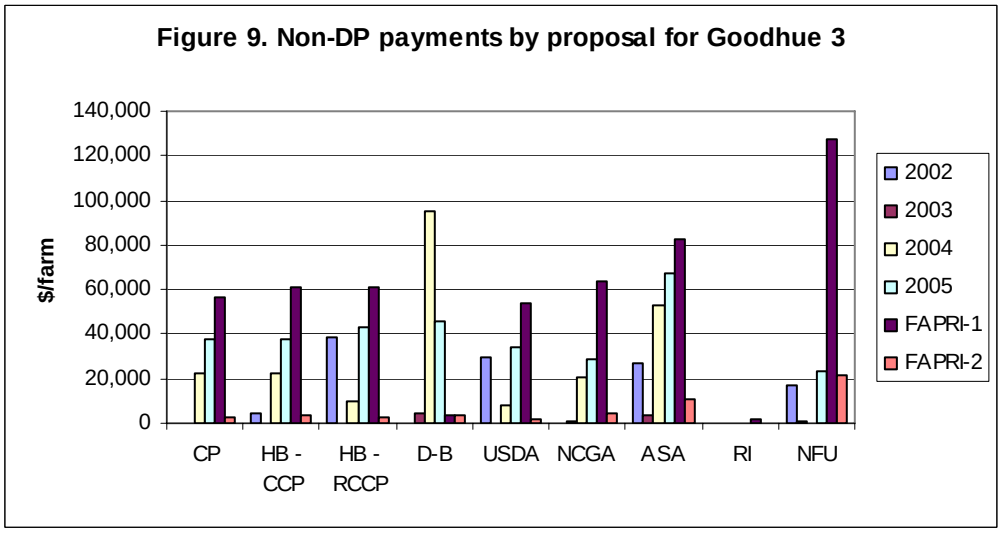
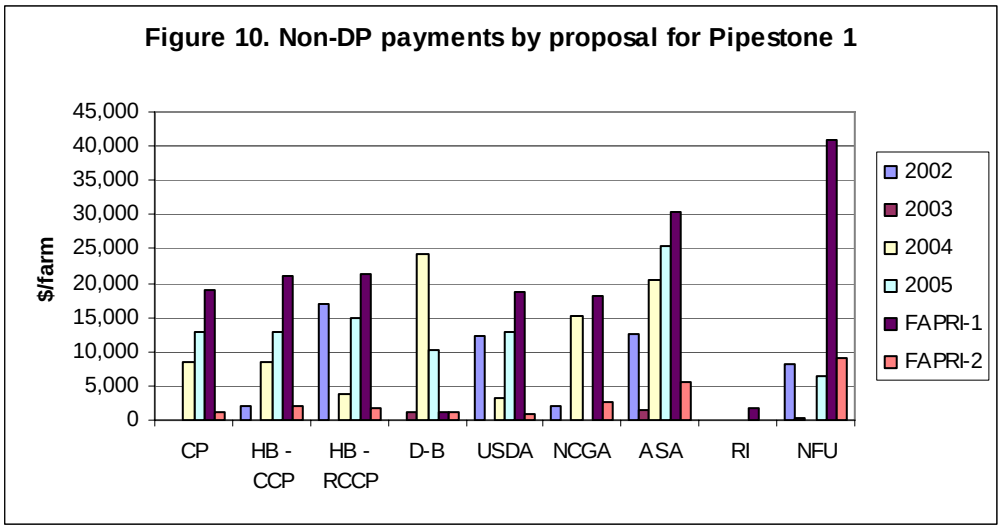
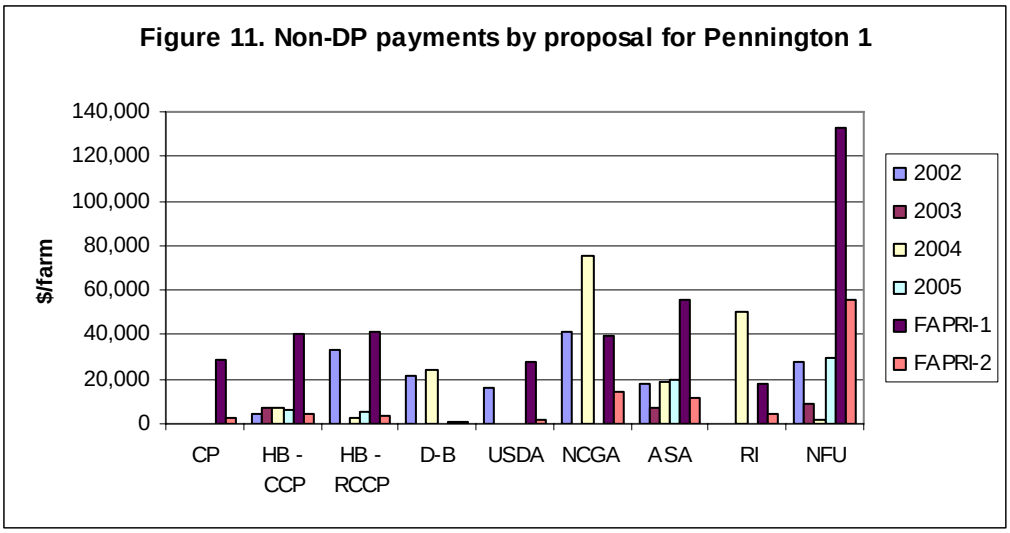
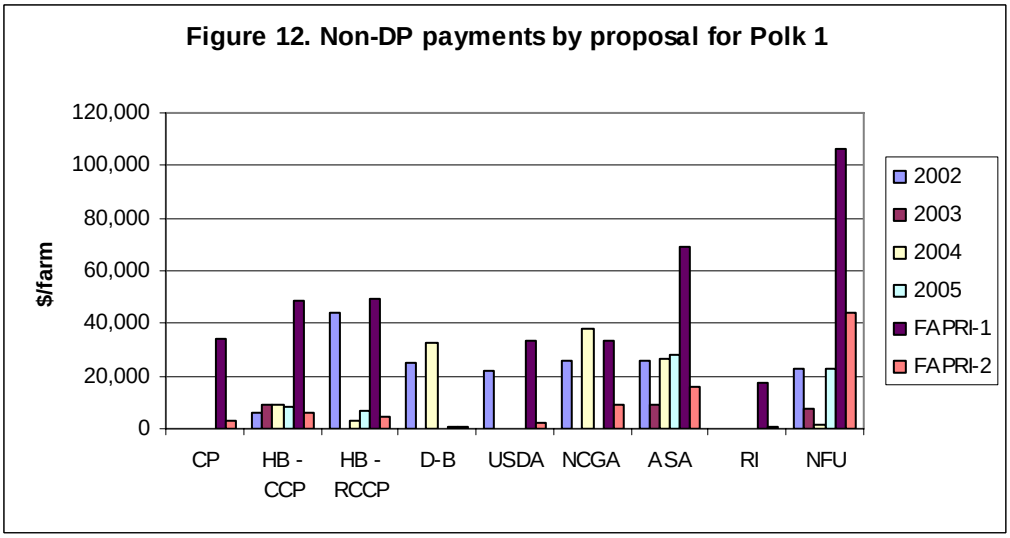


Figure 9. Non-DP payments by proposal for Goodhue 3
$/farm
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
CP
HB - CCP
HB - RCCP
D-B
USDA
NCGA
ASA
RI
NFU
2002
2003
2004
2005
FAPRI-1
FAPRI-2



For wheat and soybean farms, the non-DP payment follows a different, but not vastly different pattern (Figures 11-12). Again, the revenue-based programs and ASA produce higher non-DP payments than current policy.





A more accurate comparison of alternative policies is what might happen in the future versus what happened in a select few years. Thus, projected prices and yields and the variation in those yields and prices are used to estimate expected potential payments under the rules contained in each of the proposed policies. The most recent and thus higher price forecasts (FAPRI-2) are used since they more accurately predict the higher price conditions likely to occur in the next few years when a new farm bill is in force.

Compared to current policy, expected TGPs are similar for most of the alternatives except for the NCGA, ASA, and RI proposals. Averaged over all 17 example farms, the index of TGP is the same for the D-B and USDA proposals and increases by 4-6% for the HB-CCP, HB-RCCP, and NFU proposals (Table 8). The average expected TGP is 17% higher under the NCGA proposal and 32% higher under the ASA proposal. But the expected TGP is only 50% of current

policy under RI. Since the prices under FAPRI-2 are higher than historical levels, most of expected TGP is DP. This can easily be seen in the RI proposal where half of the historical DP is paid within the RI proposal (as we have described it for this study) and the NFU proposal which does not include any DP.

Table 8. Indices of Expected Total Government Payments (TGP) under current and alternative policies using the price projection (FAPRI-2) for seventeen example Minnesota farms (CP=100)*.

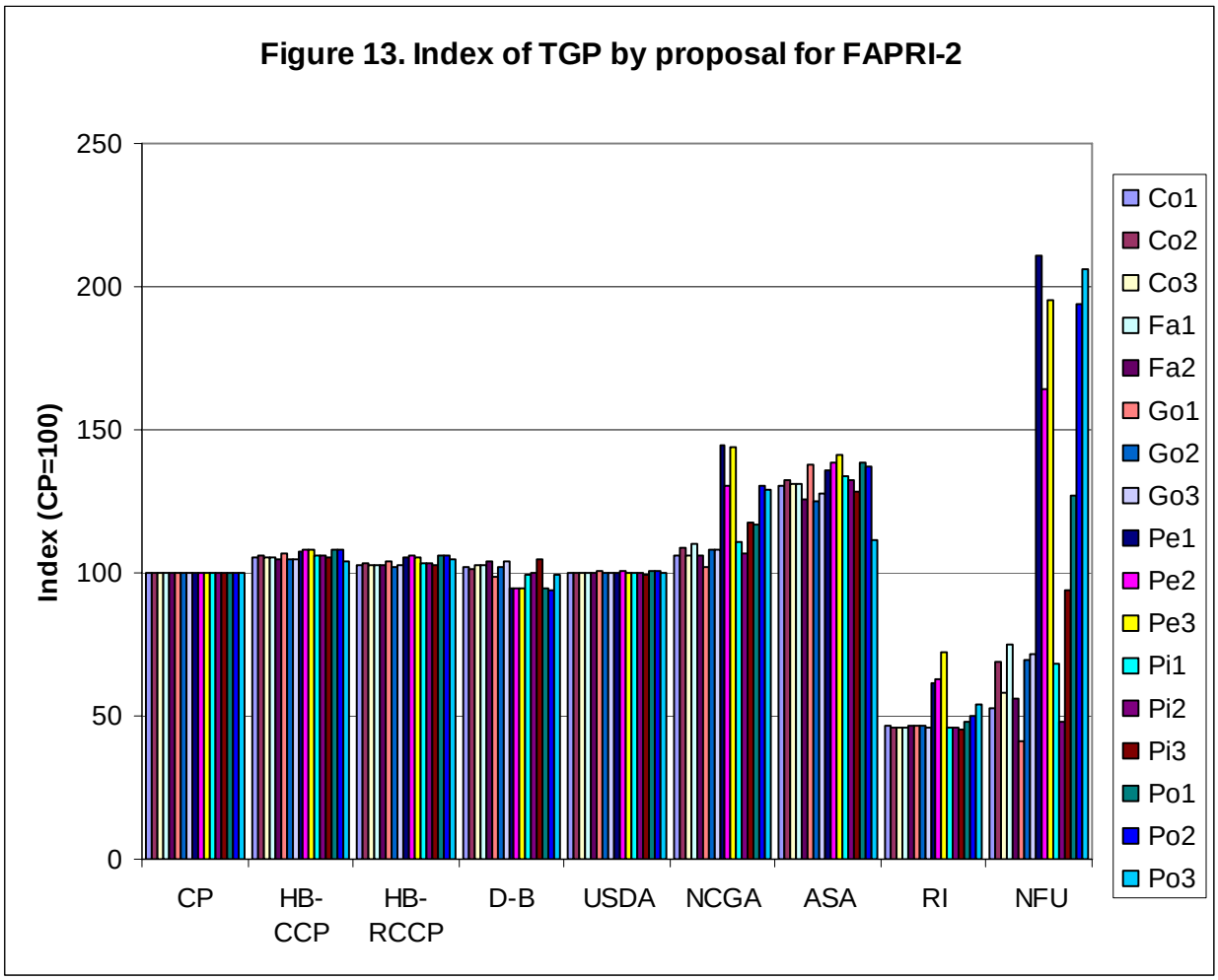
County & farm	CP	HB-CCP	HB-RCCP	D-B	USDA	NCGA	ASA	RI	NFU
Co1	100	105	103	102	100	106	130	47	53
Co2	100	106	103	101	100	109	133	46	69
Co3	100	106	103	103	100	106	131	46	58
Fa1	100	106	103	103	100	110	131	46	75
Fa2	100	105	103	104	100	106	126	46	56
Go1	100	107	104	98	101	102	138	46	41
Go2	100	105	102	102	100	108	125	47	69
Go3	100	105	103	104	100	108	128	46	72
Pe1	100	108	105	95	100	145	136	62	211
Pe2	100	108	106	95	101	131	139	63	164
Pe3	100	108	105	95	100	144	141	72	196
Pi1	100	106	104	99	100	111	134	46	68
Pi2	100	106	103	100	100	107	132	46	48
Pi3	100	105	103	105	100	118	128	46	94
Po1	100	108	106	95	100	117	138	48	127
Po2	100	108	106	94	100	131	137	50	194
Po3	100	104	105	99	100	129	111	54	206
Average	100	106	104	100	100	117	132	50	106
Maximum	100	108	106	105	101	145	141	72	211
Minimum	100	104	102	94	100	102	111	46	41

*Indices are set with the current policy at 100 and all other payments relative to that index. For example, for the second farm in Faribault county (Fa2), TGP under HB-CCP is projected to be 105% of the TGP under current policy; under the NFU proposal, TGP is projected to be 56% of the TGP under current policy.

Expected TGP for individual farms varies although a similar pattern can be seen (Figure 13). The two House proposals (HB-CCP and HB-RCCP) are consistently a little higher than the current policy. The D-B proposal is slightly higher for some farms and slightly lower for others—notably the farms with wheat in Pennington and Polk counties. TGP under the USDA proposal is extremely close to the TGP under current policy for all farms. The ASA proposal increases expected TGP for all farms. Expected TGP for wheat and soybean farms is projected to be relatively higher under the NCGA, ASA and NFU proposals. The cost-based structure of the

NFU proposal and the yield variability in these counties trigger much more favorable TGP for wheat than for corn and soybean.

Again, except for the farms with wheat, RI results with lower TGP and basically reflects the lower DP set within the rules used for RI within this study. Higher expected crop prices (FAPRI-2) create higher revenue levels which results in government payments being hardly ever made in RI. Payments (beyond DP) only were made when the yield was significantly below its expected value, which did not occur with any notable frequency in this study.



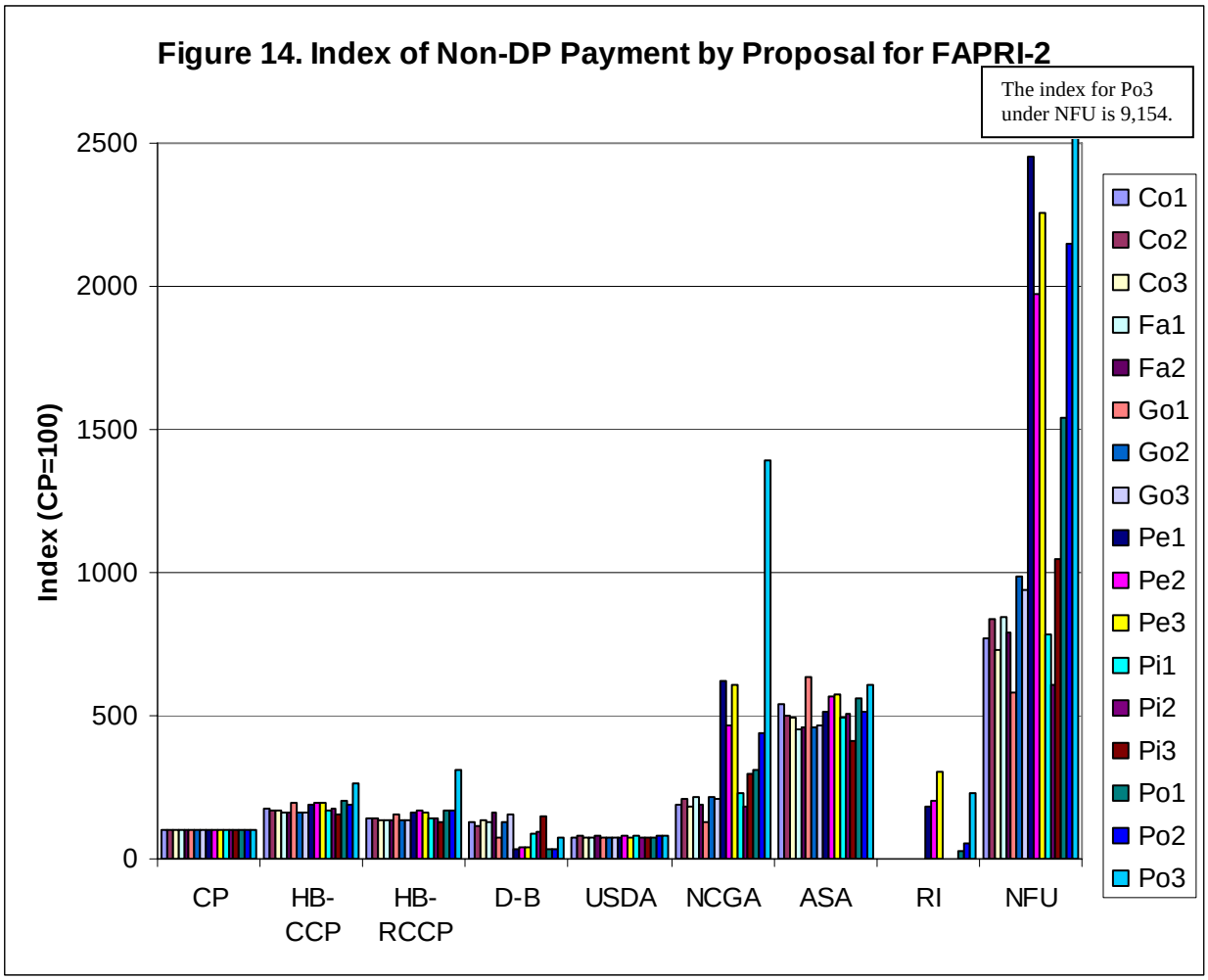
When non-DP payments are compared using the FAPRI-2 forecast, important differences can be seen between the safety-net capacity of the different proposals. Compared to current policy, expected non-DP payments are projected to be much higher for two House proposals (HB-CCP and HB-RCCP) and especially higher for the NCGA and ASA proposals (Table 9 and

Figure 14). The non-DP payments are slightly lower on average for the D-B proposal, but there was a wide dispersion across farms with some receiving less than 40% of the expected non-DP payment under current policy and others receiving over 40% more. The example wheat farms were consistently estimated to receive lower non-DP payments under D-B. The USDA proposal triggered consistently lower non-DP payments for each example farm but not as low for the wheat farms as the D-B proposal. The NCGA proposal produces higher non-DP payments especially for wheat farms. The ASA proposal has much higher non-DP payments for all farms. The RI proposal does not produce significant expected non-DP payments with the higher price levels in the FAPRI-2 forecast. Again, the cost-based NFU proposal produces much higher expected non-DP payments, especially for farms with wheat.

Table 9. Indices of Expected Total Government Payments (TGP) minus Direct Payments (DP) under current and alternative policies using the price projection (FAPRI-2) for seventeen example Minnesota farms (CP=100)*.

County & farm	CP	HB-CCP	HB-RCCP	D-B	USDA	NCGA	ASA	RI	NFU
Co1	100	178	142	128	75	191	544	0	773
Co2	100	171	141	114	78	207	497	0	835
Co3	100	170	132	136	72	180	491	0	729
Fa1	100	164	132	129	74	213	452	1	846
Fa2	100	165	137	160	78	189	461	1	791
Go1	100	196	155	77	76	129	634	0	583
Go2	100	165	132	129	74	217	458	0	989
Go3	100	165	134	156	75	208	465	0	937
Pe1	100	190	164	37	76	622	515	185	2,456
Pe2	100	198	172	37	79	469	568	203	1,975
Pe3	100	197	163	39	75	607	574	306	2,257
Pi1	100	171	142	90	78	228	493	0	785
Pi2	100	173	139	96	76	186	510	0	606
Pi3	100	157	129	151	74	297	415	0	1,044
Po1	100	202	171	33	78	309	563	29	1,542
Po2	100	187	170	36	81	437	511	52	2,147
Po3	100	266	312	74	83	1,391	607	229	9,154
Average	100	183	157	95	77	358	515	59	1,674
Maximum	100	266	312	160	83	1,391	634	306	9,154
Minimum	100	157	129	33	72	129	415	0	583

*Indices are set with the current policy at 100 and all other payments relative to that index. For example, for the second farm in Faribault county (Fa2), TGP minus DP under HB-CCP is projected to be 165% of the TGP minus DP under current policy; under the NFU proposal, TGP minus DP is projected to be 791% of the TGP minus DP under current policy.

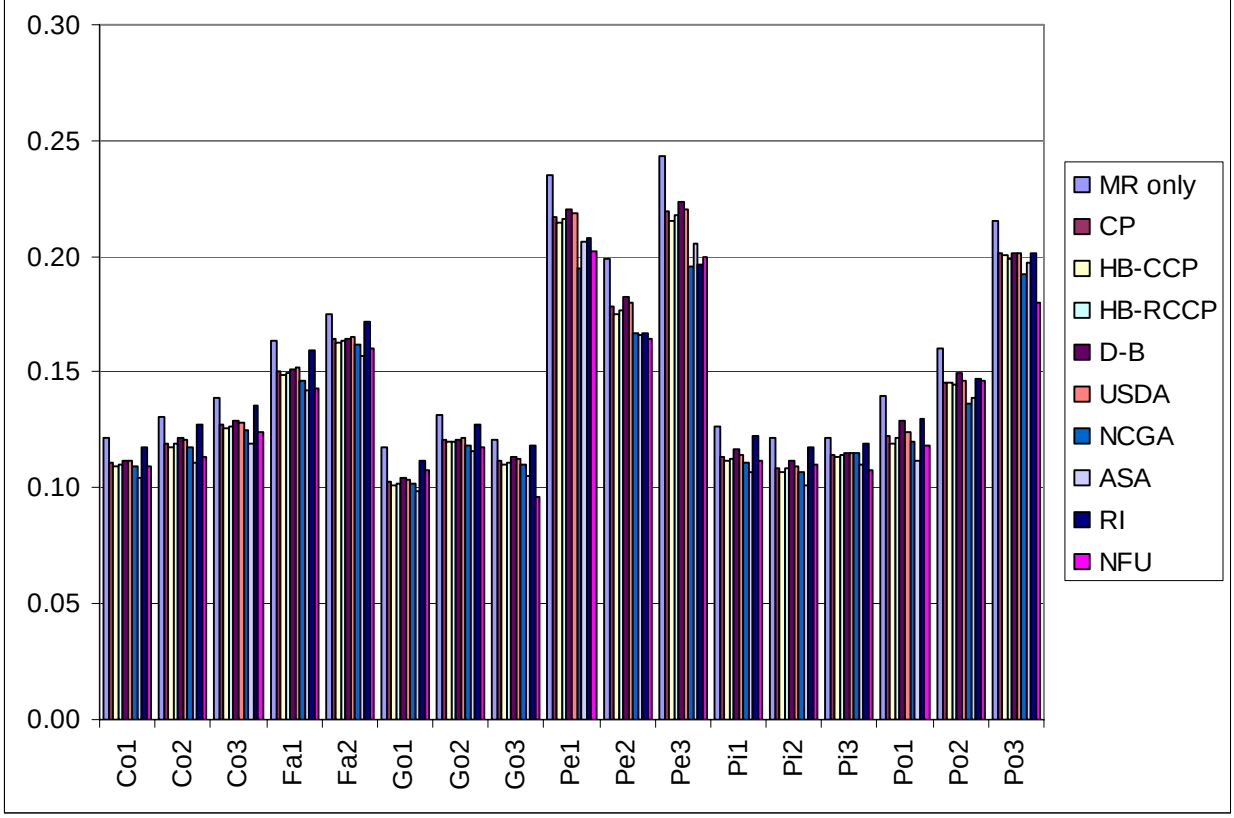


These averages and expected levels camouflage the variability of the actual prices and yields that may occur in any specific year. To understand better the impact of this variability and the ability of each proposal to reduce the resulting variability in a farm's total revenue, we also calculated the coefficient of variation (CV) which measures the variability or potential dispersion of total revenue compared to the average or expected total revenue. When TGP is added to a farm's total receipts from the marketplace, each proposal's ability to reduce risk is shown by the reduction in the CV compared to the CV from receiving only market receipts. A lower CV means lower risk for the farmer. And, assuming that risk reduction is one goal of farm policy, a lower CV means a better achievement by that proposal.

Using the higher price projections of FAPRI-2, each of the proposals does reduce risk as measured by CV (Figure 15). This can be seen in the taller bars for the market revenue (MR)

only compared to the lower bars for MR plus TGP for every proposal on every farm. The ASA, NFU, and NCGA proposals decrease CV and thus risk the most—more than 10%. The other proposals also reduce risk, but not as much.

Figure 15. Coefficient of Variation for Market Revenue plus TGP



CLOSING COMMENTS

In this paper, we have estimated and compared the government payments for seventeen Minnesota farms under current federal farm policy and eight alternative proposals. These eight proposals are the House-passed CCP and RCCP-H programs; Durbin-Brown revenue-based proposal; USDA's proposal of national revenue-based support payments; NCGA's proposal for local revenue-based support payments; ASA's proposal to keep the current payment system with adjustments in target prices and loan rates; multi-commodity revenue insurance; and NFU's proposal for a cost-based support system. At this point in the debate within Congress, the

income safety net for commodities in a future farm bill will most likely look like the price-based system in current policy or a revenue-based system similar to the House bill or the Durbin-Brown system. Budget constraints and the resulting trade-offs may result in reductions in direct payment levels.

The strongest overall result we note is the similarity of the expected payments in the future under each of most likely alternatives (that is, current policy, HB-RCCP, or D-B). While the absolute dollar amount varies between farms, the expected payment for an individual farm under each of the most likely alternatives does not vary greatly from the expected payment under current policy. The amounts do vary slightly, but the end result is total payments that do not vary as much as the discussion would seem to predict.

For the corn and soybean example farms in southern Minnesota, the HB-CCP, HB-RCCP, USDA, and NCGA proposals generate very similar levels of TGP compared to current policy with a few exceptions. The lower TGP under D-B with the lower projected prices of FAPRI-1 is a result of the D-B rules using an expected market price in the calculation of TGP instead of a set price and yield system found in current and House versions. With the higher projected prices in FAPRI-2, the TGP indices are similar—not due to an increase in the payment under D-B but due to a decrease in the payments under current and House RCCP rules. Under FAPRI-2 the counter-cyclical payments disappear due to the higher prices, so TGP is essentially only DP.

The example wheat and soybean farms in northwest Minnesota have higher TGPs with the HB-CCP, HB-RCCP, USDA, NCGA, and, especially, ASA proposals compared to current policy. The lower TGP for D-B with the FAPRI-1 price projection and similar TGP with FARPI-2 is due to the lower FAPRI-1 prices triggering payments under other proposals but yields holding revenue up under D-B rules—the same reason as for corn and soybean farms.

Using FAPRI-2 projections (which are closer to the prices expected in the next few years when a new farm bill will be in force), expected TGPs are similar for the most likely alternatives. TGPs for the two House proposals (HB-CCP and HB-RCCP) are consistently a little higher than the current policy. TGPs with the D-B proposal are slightly higher for some farms and slightly lower for others—ranging from 94% to 105% of the current policy.

Non-DP payments are projected to be much higher for HB-CCP and HB-RCCP compared to current policy. The non-DP payments are slightly lower on average for the D-B

proposal, but there was a wide dispersion across farms. The example wheat farms were consistently estimated to receive much lower non-DP payments under D-B.

These averages and expected levels camouflage the variability of the actual prices and yields that may occur in any specific year. With both price projections, each of the proposals reduces risk by similar levels as measured by the variability of a farm's market revenue plus government payments compared to the expected total of market revenue plus government payments.

Since expected payments and risk reductions are similar between the most likely options, the choice between these alternatives depends more on the method used to determine payments and less on what the final amount is. Current policy and HB-CCP use a price based system to calculate payments with target prices set in policy and HB-RCCP sets the target revenue in policy while D-B used a market-oriented system to set the target revenue in each year. So, if the goal is to provide a safety net that moves with market conditions in a volatile world, the D-B proposal would be the best choice based on its market orientation.

While this study compares the potential payments or subsidies to farms under alternative proposals, it is only one part of the information needed to develop farm policy for the future. We do not attempt to answer the question of what level of subsidy or income safety net is necessary or whether any safety net is needed in the coming years. Nor do we attempt to answer the value to society of using taxpayer money to support farmers instead of using that money for other purposes. That tradeoff is appropriately made in Congress.

REFERENCES

American Farmland Trust (AFT). 2006. Agenda 2007: A New Framework and Direction for U.S. Farm Policy. Accessed at www.farmland.org on November 17, 2006.

American Soybean Association (ASA). 2007. Proposals for the 2007 Farm Bill. Accessed at www.soygrowers.com/policy/2007FarmBill/ASA2007FB.PDF on February 16, 2007.

Buis, T. 2007. Economic Challenges and Opportunities Facing American Agriculture Producers Today. Testimony before the U.S. Senate Committee on Agriculture, Nutrition and Forestry, April 25, 2007. Accessed on September 10, 2007 at http://www.nfu.org/wp-content/4-25-07-senate-economic-challenges-opportunities.pdf

Chicago Council on Global Affairs: Agriculture Task Force. 2006. Modernizing America's Food and Farm Policy: Vision for a New Direction. Accessed at www.thechicagocouncil.org on October 23, 2006.

U.S. House of Representatives. 2007. H.R. 2419. "Farm, Nutrition, and Bioenergy Act of 2007''. Accessed at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h2419eh.txt.pdf on August 24, 2007.

Internal Revenue Service (IRS). 2007. Table 2.--Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2004. Accessed at www.irs.gov/pub/irs-soi/04in54cm.xls on March 13, 2007.

National Corn Growers Association. 2006. Forging a New Direction for Farm Policy. Accessed at http://www.ncga.com/news/notd/pdfs/10_23_06NFSA.pdf on November 17, 2006.

Palisade Corporation. 2006. @RISK. Ithaca, New York.

United States Department of Agriculture (USDA). 2007. USDA Farm Bill Proposals. Accessed at http://www.usda.gov/documents/07finalfbp.pdf on January 31, 2007.

APPENDIX A. TECHNICAL DESCRIPTION OF ANALYSIS PROCEDURES

Our analysis of the policy alternatives used Minnesota historical price data from the USDA's NASS database or a projection based off of this data whenever a computation called for a local price (e.g., the price an individual farmer receives for his crop or for an estimate of the county price). When a national price was required, NASS's historical national price data series was used or a projection calculated from it. The yields used in both the projection and historical analyses came from actual individual farm data collected by the Department of Applied Economics and from the USDA's NASS county, state, and national yield databases.

In each of the projections' analysis the simulated crop price was assumed to have a mean equal to the FAPRI projection plus/minus a change based on the historical data.

The simulated yield was calculated from an OLS regression on yield versus year on the relevant yield data plus/minus a change based on historical observations of the yield data. The expected value of the simulated yield is the OLS projected estimate for the year 2007.

In each of the simulated projections the @Risk program was used to conduct a Monte Carlo simulation with draws for price and yield coming from the distributions described above. Each Monte Carlo simulation ran 50,000 iterations.

Correlations between deviations from trend yield and commodity prices were calculated based off of the relevant and available historical yield and price data. The exact same underlying simulation procedures were used in each simulation even when a new crop was introduced and another omitted (for further technical details see the appendix). This allowed us to analyze the results of the different policy alternatives for farms that planted different crops

Missing Data Points:

If the acreage planted for a particular example farm in a given year is missing and there is data on the acreage planted before and after the missing year's value, then the missing acreage value was estimated as the simple average of the preceding and subsequent year's planted acreage for the crop. If, however, there is only acreage data available in subsequent years, then we estimated the missing value by assuming it is the same as the subsequent year's value.

If a yield data point is missing its value will be estimated by the following method using data from the five subsequent years (or the number of years available)

x_t = Indiv Farm Yld_t / Cty Farm Yld_t
M=Avg(X_t)
Est of Year j Indiv Farm Yld = M * Cty Yld_j

Common Assumptions:

The Payment Yield for a commodity crop was assumed to be equal to 93.5% of the average yields for the 1998-2001 seasons.

The Base Acreage for a commodity crop was assumed equal to the average planted acreage for the crop in the 1998-2001 seasons.

CP/ASA/House Version - CCP

Direct payments for each commodity crop were calculated by taking the product of the DP Rate, the Payment Yield, and 85% of the Base Acreage.

$$DP_i = (DP\ Rate)_i \times (Payment\ Yield)_i \times [(Base\ Acres)_i \times 0.85]$$

Counter Cyclical Payments for each commodity crop were calculated by taking the product of the CCP Rate, the Payment Yield, and 85% of the Base Acreage. The CCP Rate was calculated as the Target Price less the DP Rate less the higher of the Price and the Loan Rate. If the sum of the DP Rate and the higher of the Price and Loan Rate exceeded the Target Price, then a payment was not made.

$$CCP_i = (CCP\ Rate)_i \times (Payment\ Yield)_i \times [(Base\ Acres)_i \times 0.85]$$

where $(CCP\ Rate)_i = \max\{0, R_i\}$

$$R_i = (Target\ Price)_i - (DP\ Rate)_i - \max\{(Price)_i, (Loan\ Rate)_i\}$$

Loan Deficiency Payments for each commodity crop were calculated by taking the product of the difference between the Loan Rate and the Price, the Payment Yield, and the Normal Acreage. If the Price exceeded the Loan Rate, then no LDP was issued.

$$LDP_i = \max\{0, [(Loan\ Rate)_i - (Price)_i]\} \times (Payment\ Yield)_i \times (Normal\ Acres)_i$$

The total government payment (TGP) for each farm was a simple summation of DP, CCP and LDP.

$$TGP = \sum_i (DP_i + CCP_i + LDP_i)$$

House - RCCP

Direct payments for each commodity crop were calculated by taking the product of the DP Rate, the Payment Yield, and 85% of the Base Acreage.

$$DP_i = (DP\ Rate)_i \text{ x } (Payment\ Yield)_i \text{ x } [(Base\ Acres)_i \text{ x } 0.85]$$

RCCP for each commodity crop were calculated by taking the product of the National Revenue Payment per Acre, the Program Yield, and 85% of the Base Acreage. National Revenue Payment per Acre was calculated as the ratio of the difference between National Target Revenue per Acre and National Actual Revenue per Acre and the US Average Payment Yield for CPP under the 2002 Farm Bill. If National Actual Revenue exceeded the National Target Revenue, then no payment was made. National Actual Revenue per Acre was calculated as the product of the higher of the Season Average Price the Loan Rate, and the National Average Yield.

$$(Nat'l\ Actual\ Revenue)_i^{Acre} = \max\{(Season\ Avg\ Price)_i, (Loan\ Rate)_i\} \text{ x } (Nat'l\ Avg\ Yield)_i$$

$$(Nat'l\ Revenue\ Payment)_i^{Acre} = \max\{0, [[(Nat'l\ Target\ Revenue) - (Nat'l\ Actual\ Revenue)] / (US\ Avg\ Payment\ Yield)_i^{Base\ Acre}]\}$$

$$RCCP_i = (Nat'l\ Revenue\ Payment)_i^{Acre} \text{ x } (Program\ Yield\ under\ CCP)_i \text{ x } [(Base\ Acres)_i \text{ x } 0.85]$$

The LDP for each commodity crop was calculated by taking the product of the difference in Loan Rate and Price, the Payment Yield, and the Normal Acreage. If the Price exceeded the Loan Rate, then no payment was made. The Loan Rate was calculated as the lesser of 85% of the Five Year Olympic Average Price and the Loan Rate.

$$(Loan\ Rate)_i = \min\{[0.85 \text{ x } (5\ Yr\ Olympic\ Avg\ Price)_i], (Loan\ Rate)_i\}$$

$$LDP_i = max\{0, [(Loan\ Rate)_i - (Price)_i]\} \text{ x } (Payment\ Yield)_i \text{ x } (Normal\ Acres)_i$$

The total government payment (TGP) for each farm was a simple summation of DP, RCCP and LDP.

$$TGP = \sum_i (DP_i + RCCP_i + LDP_i)$$

USDA Proposal

Direct payments for each commodity crop were calculated by taking the product of the DP Rate, the Payment Yield, and 85% of the Base Acreage.

$$DP_i = (DP\ Rate)_i \text{ x } (Payment\ Yield)_i \text{ x } [(Base\ Acres)_i \text{ x } 0.85]$$

RCCP for each commodity crop were calculated by taking the product of the National Revenue Payment per Acre, the Program Yield under the 2002 Farm Bill, and 85% of the Base Acreage. National Revenue Payment per Acre was calculated as the ratio of the difference between National Target Revenue per Acre and National Actual Revenue per Acre and the US Average Payment Yield for CPP under the 2002 Farm Bill. If National Actual Revenue exceeded the National Target Revenue, then no payment was made. National Actual Revenue per Acre was calculated as the product of the higher of the Season Average Price the Loan Rate, and the National Average Yield. National Target Revenue per Acre was calculated as the product of the difference between the Target Price and DP Rate under the 2002 Farm Bill, and the National Yield Olympic Average for 2002-2006.

$$(Nat'l\ Target\ Revenue)_i^{Acre} = [(2002\ FB\ Target\ Price)_i - (2002\ FB\ DP\ Rate)_i] \text{ x } (Nat'l\ Yield\ Olympic\ Avg\ 2002-2006)_i$$

$$(Nat'l\ Actual\ Revenue)_i^{Acre} = \max\{(Season\ Avg\ Price)_i, (Loan\ Rate)_i\} \text{ x } (Nat'l\ Avg\ Yield)_i$$

$$(Nat'l\ Revenue\ Payment)_i^{Acre} = \max\{0,[[(Nat'l\ Target\ Revenue) - (Nat'l\ Actual\ Revenue)] / (US\ Avg\ Payment\ Yield\ for\ CPP\ under\ 2002\ FB)_i^{Base\ Acre}]\}$$

$$RCCP_i = (Nat'l\ Revenue\ Payment)_i^{Acre} \text{ x } (Program\ Yield\ under\ CCP\ for\ 2002\ FB)_i \text{ x } [(Base\ Acres)_i \text{ x } 0.85]$$

The LDP for each commodity crop was calculated by taking the product of the difference in Loan Rate and Price, the Payment Yield, and the Normal Acreage. If the Price exceeded the Loan Rate, then no payment was made. The Loan Rate was calculated as the lesser of 85% of the Five Year Olympic Average Price and the Loan Rate Passed in the 2002 House Version of the Farm Bill.

$$(Loan\ Rate)_i = \min\{[0.85 \text{ x } (5\ Yr\ Olympic\ Avg\ Price)_i], (Loan\ Rate\ Passed\ in\ 2002\ House\ Ver\ of\ Farm\ Bill)_i\}$$

$$LDP_i = max\{0, [(Loan\ Rate)_i - (Price)_i]\} \text{ x } (Payment\ Yield)_i \text{ x } (Normal\ Acres)_i$$

The total government payment (TGP) for each farm was a simple summation of DP, RCCP and LDP.

$$TGP = \sum_i (DP_i + RCCP_i + LDP_i)$$

NCGA Proposal

Direct payments for each commodity crop were calculated by taking the product of the DP Rate, the Payment Yield, and 85% of the Base Acreage.

$$DP_i = (DP\ Rate)_i \text{ x } (Payment\ Yield)_i \text{ x } [(Base\ Acres)_i \text{ x } 0.85]$$

Base Revenue Protection payment for each commodity crop was calculated by taking the product of the Normal Acreage and the BRP payment rate. The BRP payment rate was calculated as the difference between 70% of the 5 year Olympic Average Net Revenue per Acre and Net Revenue per Acre. If Net Revenue per Acre exceeded 70% of the five year Olympic Average Net Revenue per Acre, then the BRP payment rate is zero. Net Revenue per Acre was calculated as

the product of the National Market Price and Yield less the Regional Estimate of Average Variable Costs published by the USDA's ERS.

$$BRP_i = (Normal\ Acres)_i \text{ x } BRP_i^{Acre}$$
$$BRP_i^{Acre} = \max\{0, [0.7 \text{ x } (5\ Yr\ Olympic\ Avg\ Net\ Revenue)_i^{Acre} - (Net\ Revenue)_i^{Acre}]\}$$
$$(Net\ Revenue)_i^{Acre} = (Nat'l\ Market\ Price)_i \text{ x } (Yield)_i - (USDA\ ERS\ Regional\ Est\ of\ Avg\ Var\ Costs)_i$$

The Revenue Counter Cyclical Payment was calculated by taking the product of the Normal Acreage and the RCCP payment rate. The RCCP payment rate is the lesser of the difference between the RCCP Trigger per Acre and the County Revenue per Acre, and 30% of the RCCP Trigger per Acre. If the RCCP Trigger per Acre is less than the County Revenue per Acre, then the RCCP payment rate is zero. County Revenue per Acre is calculated as the product of the Season Average Price and the County Yield Average. The RCCP Trigger per Acre is calculated as the product of the difference between the Target Price and the DP Rate, and the Expected County Yield.

$$RCCP_i = RCCP_i^{Acre} \text{ x } (Normal\ Acres)_i$$
$$RCCP_i^{Acre} = \min\{\max\{0, (RCCP\ Trigger)_i^{Acre} - (Cty\ Revenue)_i^{Acre}\}, 0.3 \text{ x } (RCCP\ Trigger)_i^{Acre}\}$$
$$(Cty\ Revenue)_i^{Acre} = (Season\ Avg\ Price)_i \text{ x } (Cty\ Yield\ Avg)_i$$
$$(RCCP\ Trigger)_i^{Acre} = [(Target\ Price)_i - (DP\ Rate)_i] \text{ x } (Expected\ Cty\ Yield)_i$$

The total government payment (TGP) for each farm was a simple summation of DP, RCCP and BRP.

$$TGP = \sum_i (DP_i + RCCP_i + BRP_i)$$

Revenue Insurance

The Total Government Payment for a farm is the product of the Payment Rate and the difference between the product of the Coverage Level and the Current Year's Revenue and the Approved RI Level. The Approved RI Level is the lesser of the Revenue Average of the previous years and the Revenue Average Adjusted of the previous years. The Revenue Average in the Current Year is the Average of the past five years of farm Revenue. The Revenue Average Adjusted in the current year is the sum over all commodity crops of the product of the Olympic Average of

the Previous Five Years Prices, the Olympic Average of the Yield in the Previous Five Years, and the Current Year's Normal Acreage.

$$(Revenue\ Avg\ in\ Year\ t) = \sum_{j=t-6}^{t-2} \sum_{i} (Revenue\ in\ Year\ j)_i / 5$$

$$(Revenue\ Avg\ Adjusted\ in\ Year\ t) = \sum_{i} \begin{matrix} [(Olympic\ Avg\ Price\ in\ Years\ (t-1)\ through\ (t-5))_i \\ \text{x}\ (Olympic\ Avg\ Yield\ in\ Years\ (t-1)\ through\ (t-5))_i \\ \text{x}\ (Normal\ Acres)_i\ ] / \end{matrix}$$

$$(Approved\ RI\ Level) = \min\{(Revenue\ Avg\ in\ Year\ t), (Revenue\ Avg\ Adjusted\ in\ Year\ t)\}$$

$$TGP = \max\{0, (Payment\ Rate)\ \text{x}\ [(Coverage\ Level)\ \text{x}\ (Year\ t\ Revenue) - (Approved\ RI\ Level)]\}$$

NFU

The Total Government Payment for a commodity crop in the NFU's proposal was calculated as the product of the Total Government Payment Rate per Acre and the Normal Acreage. The Total Government Payment Rate per Acre is the Payment Rate per Acre divided by the National Average Yield per Acre. The Payment Rate per Acre is the product of the ratio of Total Use in Previous Year to Total Supply in Previous Year and the difference between the Targeted Protection Level per Acre and the product of the National Average Price and the National Average Yield. If the Targeted Protection Level is less than the product of the National Average Price and the National Average Yield, then the Payment Rate per Acre is zero. The Targeted Protection Level per Acre is 95% of the Full Cost of Production per Acre as computed from ERS estimates.

$$(Targeted\ Protection\ Level)_i^{Acre} = 0.95\ \text{x}\ (Full\ Cost\ of\ Production)_i^{Acre}$$

$$(Payment\ Rate)_i^{Acre} = \max\{0, [(Targeted\ Protection\ Level)_i^{Acre} - (Nat'l\ Avg\ Price)_i\ \text{x}\ (Nat'l\ Avg\ Yield)_i]\ \text{x}\ R_i\}$$

$$R_i = (Total\ Use\ in\ Previous\ Year)_i / (Total\ Supply\ in\ Previous\ Year)_i$$

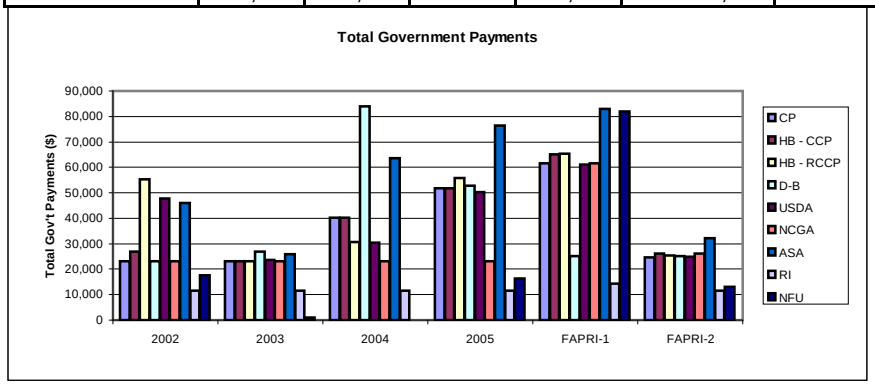
$$TGP_i^{Acre} = (Payment\ Rate)_i^{Acre} / (Nat'l\ Avg\ Yield)_i^{Acre}$$

$$TGP_i = TGP_i^{Acre}\ \text{x}\ (Normal\ Acres)_i$$

$$TGP = \sum_i TGP_i$$

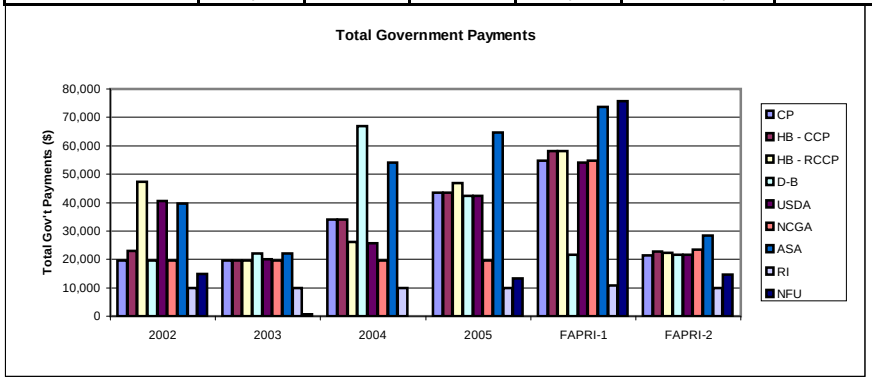
Appendix B1. Estimated government payments for Cottonwood 1 (Co1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	322,586	345,516	312,122	276,171	263,203	380,463
CP					324,711	405,189
CCP	0	0	16,383	19,773	17,207	1,054
DP	23,036	23,036	23,036	23,036	23,036	23,036
LDP	0	0	910	9,091	21,265	636
TGP	23,036	23,036	40,329	51,899	61,508	24,726
HB - CCP					328,290	406,514
CCP	3,827	0	16,383	19,773	20,785	2,379
DP	23,036	23,036	23,036	23,036	23,036	23,036
LDP	0	0	910	9,091	21,265	636
TGP	26,863	23,036	40,329	51,899	65,087	26,051
HB - RCCP					328,655	405,907
RCCP	32,252	0	6,763	23,763	21,151	1,772
DP	23,036	23,036	23,036	23,036	23,036	23,036
LDP	0	0	910	9,091	21,265	636
TGP	55,288	23,036	30,709	55,889	65,452	25,444
Durbin-Brown					288,403	405,664
S-RCCP	0	3,838	60,817	29,757	2,165	2,165
DP	23,036	23,036	23,036	23,036	23,036	23,036
TGP	23,036	26,873	83,852	52,792	25,200	25,200
USDA					324,287	405,265
RCCP	24,188	0	6,768	23,783	19,941	771
DP	23,528	23,528	23,528	23,528	23,528	23,528
LDP	0	0	0	3,030	17,615	502
TGP	47,716	23,528	30,296	50,341	61,084	24,802
NCGA					324,720	406,726
BRP	0	0	0	0	18	0
DP	23,036	23,036	23,036	23,036	23,036	23,036
RCCP	0	0	0	0	38,463	3,227
TGP	23,036	23,036	23,036	23,036	61,517	26,263
ASA					346,111	412,685
CCP	22,909	2,825	34,153	38,290	35,158	8,524
DP	23,036	23,036	23,036	23,036	23,036	23,036
LDP	0	0	6,370	15,152	24,715	662
TGP	45,945	25,860	63,558	76,477	82,908	32,222
RI					277,523	391,982
RI	0	0	0	0	2,802	0
1/2 DP	11,518	11,518	11,518	11,518	11,518	11,518
TGP	11,518	11,518	11,518	11,518	14,320	11,518
NFU					345,234	393,529
CCCP	17,514	1,097	0	16,437	82,031	13,066
TGP	17,514	1,097	0	16,437	82,031	13,066



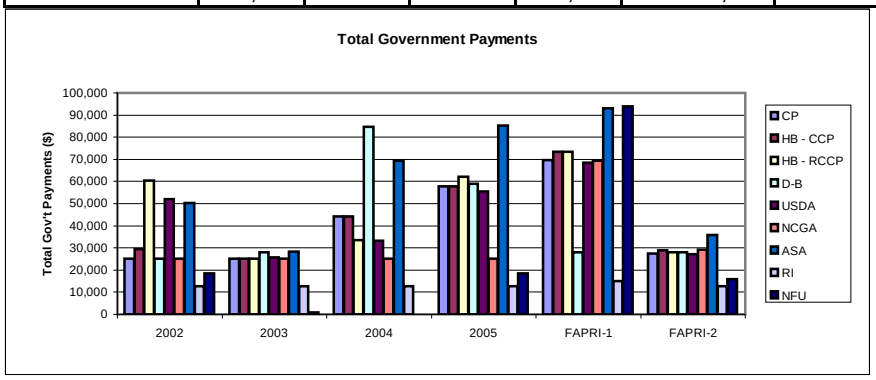
Appendix B2. Estimated government payments for Cottonwood 2 (Co2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	259,771	304,582	240,402	279,878	260,527	366,833
CP					315,396	388,303
CCP	0	0	13,686	16,518	14,587	932
DP	19,704	19,704	19,704	19,704	19,704	19,704
LDP	0	0	739	7,284	20,578	834
TGP	19,704	19,704	34,129	43,505	54,869	21,470
HB - CCP					318,678	389,555
CCP	3,333	0	13,686	16,518	17,869	2,184
DP	19,704	19,704	19,704	19,704	19,704	19,704
LDP	0	0	739	7,284	20,578	834
TGP	23,037	19,704	34,129	43,505	58,151	22,722
HB - RCCP					318,669	389,032
RCCP	27,610	0	5,650	19,851	17,860	1,661
DP	19,704	19,704	19,704	19,704	19,704	19,704
LDP	0	0	739	7,284	20,578	834
TGP	47,314	19,704	26,093	46,838	58,142	22,199
Durbin-Brown					282,258	388,555
S-RCCP	0	2,454	47,305	22,722	2,027	2,019
DP	19,704	19,704	19,704	19,704	19,704	19,704
TGP	19,704	22,158	67,009	42,426	21,731	21,723
USDA					314,627	388,363
RCCP	20,496	0	5,654	19,868	16,677	732
DP	20,147	20,147	20,147	20,147	20,147	20,147
LDP	0	0	0	2,428	17,277	652
TGP	40,642	20,147	25,801	42,442	54,101	21,530
NCGA					315,302	390,192
BRP	0	0	0	0	16	0
DP	19,704	19,704	19,704	19,704	19,704	19,704
RCCP	0	0	0	0	35,055	3,655
TGP	19,704	19,704	19,704	19,704	54,775	23,359
ASA					334,292	395,315
CCP	20,059	2,360	29,232	32,771	30,640	7,912
DP	19,704	19,704	19,704	19,704	19,704	19,704
LDP	0	0	5,172	12,139	23,420	866
TGP	39,763	22,064	54,107	64,614	73,765	28,482
RI					271,447	376,685
RI	0	0	0	0	1,068	0
1/2 DP	9,852	9,852	9,852	9,852	9,852	9,852
TGP	9,852	9,852	9,852	9,852	10,920	9,852
NFU					336,225	381,572
CCCP	14,790	746	0	13,351	75,698	14,739
TGP	14,790	746	0	13,351	75,698	14,739



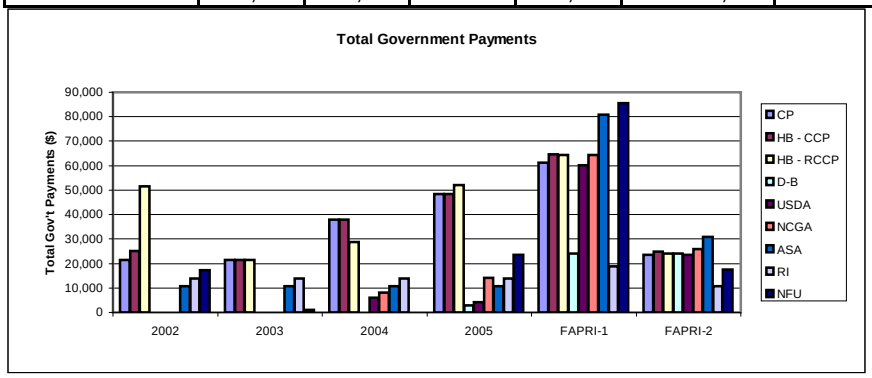
Appendix B3. Estimated government payments for Cottonwood 3 (Co3)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	305,974	335,144	303,368	364,336	320,189	457,558
CP					389,750	484,911
CCP	0	0	17,936	21,647	18,750	1,200
DP	25,177	25,177	25,177	25,177	25,177	25,177
LDP	0	0	999	11,025	25,634	976
TGP	25,177	25,177	44,112	57,849	69,561	27,353
HB - CCP					393,714	486,435
CCP	4,178	0	17,936	21,647	22,714	2,724
DP	25,177	25,177	25,177	25,177	25,177	25,177
LDP	0	0	999	11,025	25,634	976
TGP	29,355	25,177	44,112	57,849	73,525	28,877
HB - RCCP					393,710	485,606
RCCP	35,249	0	7,404	26,015	22,710	1,895
DP	25,177	25,177	25,177	25,177	25,177	25,177
LDP	0	0	999	11,025	25,634	976
TGP	60,426	25,177	33,580	62,217	73,521	28,048
Durbin-Brown					348,285	485,687
S-RCCP	0	2,792	59,404	33,680	2,919	2,951
DP	25,177	25,177	25,177	25,177	25,177	25,177
TGP	25,177	27,970	84,581	58,857	28,096	28,128
USDA					388,740	484,834
RCCP	26,454	0	7,410	26,037	21,443	790
DP	25,713	25,713	25,713	25,713	25,713	25,713
LDP	0	0	0	3,675	21,395	773
TGP	52,167	25,713	33,123	55,425	68,551	27,276
NCGA					389,653	486,646
BRP	0	0	0	0	14	0
DP	25,177	25,177	25,177	25,177	25,177	25,177
RCCP	0	0	0	0	44,272	3,911
TGP	25,177	25,177	25,177	25,177	69,464	29,088
ASA					413,218	493,417
CCP	24,997	3,092	37,326	41,847	38,411	9,667
DP	25,177	25,177	25,177	25,177	25,177	25,177
LDP	0	0	6,991	18,375	29,441	1,015
TGP	50,174	28,269	69,494	85,399	93,029	35,858
RI					335,220	470,147
RI	0	0	0	0	2,443	0
1/2 DP	12,589	12,589	12,589	12,589	12,589	12,589
TGP	12,589	12,589	12,589	12,589	15,031	12,589
NFU					413,985	473,422
CCCP	18,359	791	0	18,439	93,796	15,864
TGP	18,359	791	0	18,439	93,796	15,864



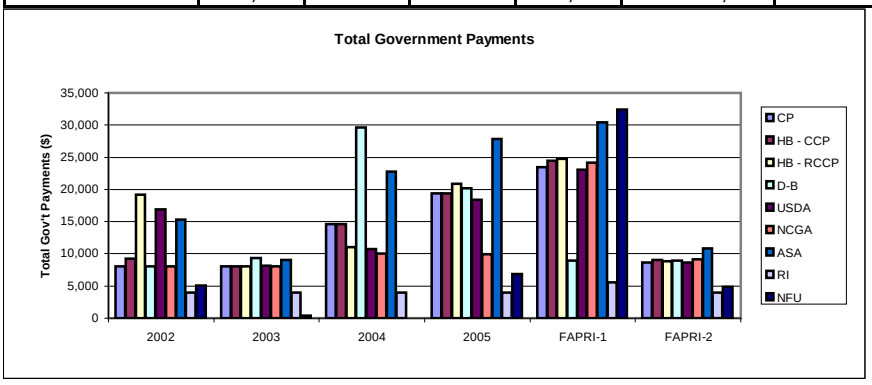
Appendix B4. Estimated government payments for Faribault 1 (Fa1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	331,196	373,867	355,655	355,549	299,226	416,327
CP					360,355	439,838
CCP	0	0	15,225	18,375	16,044	1,023
DP	21,435	21,435	21,435	21,435	21,435	21,435
LDP	0	0	1,151	8,461	23,651	1,054
TGP	21,435	21,435	37,810	48,271	61,129	23,511
HB - CCP					363,749	441,168
CCP	3,565	0	15,225	18,375	19,438	2,352
DP	21,435	21,435	21,435	21,435	21,435	21,435
LDP	0	0	1,151	8,461	23,651	1,054
TGP	24,999	21,435	37,810	48,271	64,523	24,841
HB - RCCP					363,659	440,512
RCCP	30,012	0	6,285	22,083	19,347	1,697
DP	21,435	21,435	21,435	21,435	21,435	21,435
LDP	0	0	1,151	8,461	23,651	1,054
TGP	51,446	21,435	28,871	51,979	64,433	24,185
Durbin-Brown					323,351	440,443
S-RCCP	22,495	0	6,290	22,102	2,690	2,681
DP	21,894	21,894	21,894	21,894	21,435	21,435
TGP	0	0	0	2,820	24,125	24,116
USDA	44,389	21,894	28,184	46,816	359,284	439,760
RCCP					18,206	714
DP	0	0	0	0	21,894	21,894
LDP	21,435	21,435	21,435	21,435	19,958	825
TGP	0	0	5,914	4,120	60,058	23,433
NCGA	21,435	21,435	27,349	25,555	363,492	442,189
BRP					388	20
DP	21,344	2,625	31,780	35,629	21,435	21,435
RCCP	21,435	21,435	21,435	21,435	42,444	4,407
TGP	0	0	8,057	14,102	64,267	25,862
ASA	42,779	24,060	61,271	71,166	380,158	447,150
CCP					32,883	8,296
DP	0	0	0	0	21,435	21,435
LDP	10,717	10,717	10,717	10,717	26,615	1,093
TGP	10,717	10,717	10,717	10,717	80,932	30,823
RI					317,963	427,063
RI	16,209	942	0	14,366	8,020	19
1/2 DP	16,209	942	0	14,366	10,717	10,717
TGP	13,909	13,909	13,909	13,909	18,737	10,737
NFU					384,760	433,904
CCCP	17,257	1,104	0	23,482	85,535	17,577
TGP	17,257	1,104	0	23,482	85,535	17,577



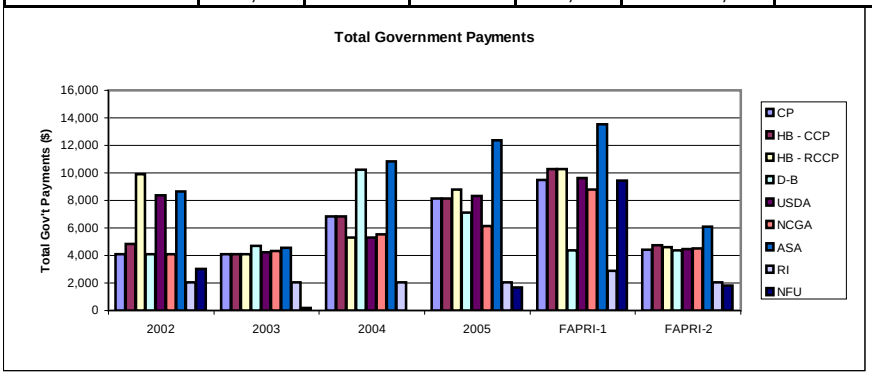
Appendix B5. Estimated government payments for Faribault 2 (Fa2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	109,673	133,727	123,115	124,643	123,506	176,592
CP					146,976	185,222
CCP	0	0	6,179	7,457	6,125	305
DP	8,018	8,018	8,018	8,018	8,018	8,018
LDP	0	0	419	3,932	9,328	307
TGP	8,018	8,018	14,616	19,407	23,470	8,630
HB - CCP					148,011	185,618
CCP	1,245	0	6,179	7,457	7,159	701
DP	8,018	8,018	8,018	8,018	8,018	8,018
LDP	0	0	419	3,932	9,328	307
TGP	9,263	8,018	14,616	19,407	24,505	9,026
HB - RCCP					148,235	185,449
RCCP	11,194	0	2,551	8,962	7,383	532
DP	8,018	8,018	8,018	8,018	8,018	8,018
LDP	0	0	419	3,932	9,328	307
TGP	19,211	8,018	10,988	20,912	24,729	8,857
Durbin-Brown					132,468	185,587
S-RCCP	0	1,318	21,630	12,180	944	977
DP	8,018	8,018	8,018	8,018	8,018	8,018
TGP	8,018	9,336	29,648	20,198	8,962	8,995
USDA					146,611	185,230
RCCP	8,701	0	2,553	8,970	7,182	239
DP	8,158	8,158	8,158	8,158	8,158	8,158
LDP	0	0	0	1,311	7,765	241
TGP	16,859	8,158	10,711	18,438	23,105	8,638
NCGA					147,675	185,764
BRP	0	0	0	0	21	0
DP	8,018	8,018	8,018	8,018	8,018	8,018
RCCP	0	0	1,982	1,960	16,130	1,155
TGP	8,018	8,018	10,000	9,978	24,169	9,172
ASA					153,933	187,431
CCP	7,300	1,065	11,860	13,299	11,642	2,500
DP	8,018	8,018	8,018	8,018	8,018	8,018
LDP	0	0	2,932	6,553	10,766	321
TGP	15,318	9,083	22,810	27,870	30,426	10,839
RI					129,031	180,604
RI	0	0	0	0	1,516	3
1/2 DP	4,009	4,009	4,009	4,009	4,009	4,009
TGP	4,009	4,009	4,009	4,009	5,525	4,012
NFU					155,942	181,437
CCCP	5,097	382	0	6,834	32,435	4,845
TGP	5,097	382	0	6,834	32,435	4,845



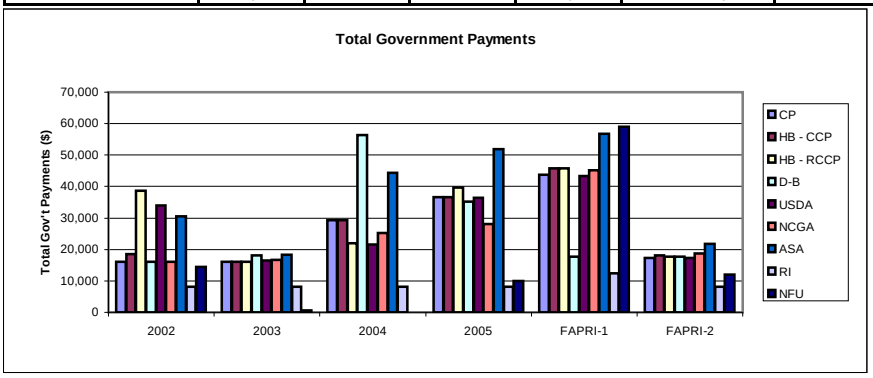
Appendix B6. Estimated government payments for Goodhue 1 (Go1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	53,364	49,677	29,458	31,391	28,362	40,240
CP					37,849	44,668
CCP	0	0	2,627	3,171	2,977	224
DP	4,116	4,116	4,116	4,116	4,116	4,116
LDP	0	0	86	850	2,393	89
TGP	4,116	4,116	6,829	8,137	9,486	4,429
HB - CCP					38,643	44,969
CCP	738	0	2,627	3,171	3,772	524
DP	4,116	4,116	4,116	4,116	4,116	4,116
LDP	0	0	86	850	2,393	89
TGP	4,854	4,116	6,829	8,137	10,281	4,729
HB - RCCP					38,629	44,842
RCCP	5,783	0	1,085	3,811	3,758	397
DP	4,116	4,116	4,116	4,116	4,116	4,116
LDP	0	0	86	850	2,393	89
TGP	9,898	4,116	5,286	8,777	10,267	4,602
Durbin-Brown					32,717	44,596
S-RCCP	0	586	6,109	2,979	239	240
DP	4,116	4,116	4,116	4,116	4,116	4,116
TGP	4,116	4,701	10,225	7,094	4,355	4,356
USDA					37,993	44,702
RCCP	4,144	0	1,085	3,814	3,395	168
DP	4,223	4,223	4,223	4,223	4,223	4,223
LDP	0	0	0	283	2,012	70
TGP	8,367	4,223	5,309	8,321	9,631	4,462
NCGA					37,160	44,761
BRP	0	0	0	0	4	0
DP	4,116	4,116	4,116	4,116	4,116	4,116
RCCP	0	187	1,409	2,007	4,678	405
TGP	4,116	4,303	5,524	6,123	8,798	4,521
ASA					41,907	46,338
CCP	4,517	453	6,119	6,859	6,704	1,890
DP	4,116	4,116	4,116	4,116	4,116	4,116
LDP	0	0	600	1,417	2,725	93
TGP	8,632	4,569	10,835	12,392	13,545	6,098
RI					31,267	42,298
RI	0	0	0	0	847	0
1/2 DP	2,058	2,058	2,058	2,058	2,058	2,058
TGP	2,058	2,058	2,058	2,058	2,904	2,058
NFU					37,801	42,063
CCCP	3,035	168	0	1,656	9,438	1,823
TGP	3,035	168	0	1,656	9,438	1,823



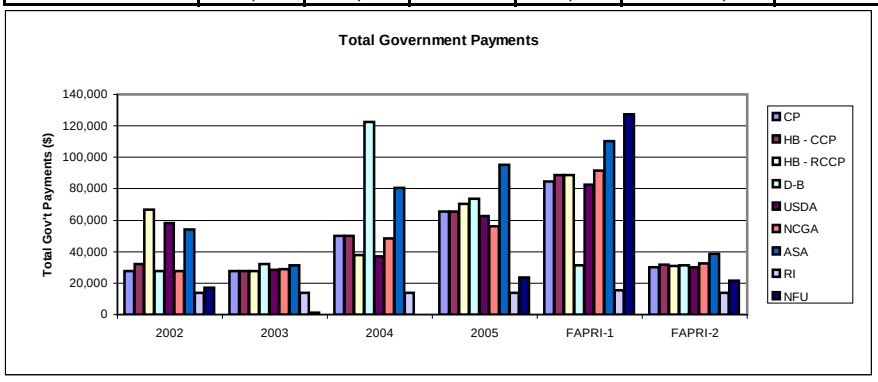
Appendix B7. Estimated government payments for Goodhue 2 (Go2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	252,131	223,011	206,577	204,414	183,841	258,984
CP					227,555	276,309
CCP	0	0	12,541	15,136	12,357	610
DP	16,109	16,109	16,109	16,109	16,109	16,109
LDP	0	0	623	5,432	15,248	607
TGP	16,109	16,109	29,273	36,677	43,714	17,325
HB - CCP					229,594	277,095
CCP	2,479	0	12,541	15,136	14,396	1,395
DP	16,109	16,109	16,109	16,109	16,109	16,109
LDP	0	0	623	5,432	15,248	607
TGP	18,588	16,109	29,273	36,677	45,753	18,111
HB - RCCP					229,679	276,701
RCCP	22,480	0	5,177	18,190	14,481	1,002
DP	16,109	16,109	16,109	16,109	16,109	16,109
LDP	0	0	623	5,432	15,248	607
TGP	38,589	16,109	21,909	39,731	45,838	17,717
Durbin-Brown					201,498	276,658
S-RCCP	0	1,976	40,233	19,093	1,548	1,565
DP	16,109	16,109	16,109	16,109	16,109	16,109
TGP	16,109	18,085	56,342	35,202	17,657	17,674
USDA					227,186	276,269
RCCP	17,556	0	5,181	18,206	14,151	427
DP	16,381	16,381	16,381	16,381	16,381	16,381
LDP	0	0	0	1,811	12,813	477
TGP	33,938	16,381	21,563	36,398	43,345	17,285
NCGA					229,032	277,736
BRP	0	0	0	0	80	2
DP	16,109	16,109	16,109	16,109	16,109	16,109
RCCP	0	593	9,221	12,061	29,002	2,641
TGP	16,109	16,702	25,330	28,170	45,190	18,751
ASA					240,559	280,660
CCP	14,487	2,162	23,821	26,711	23,262	4,935
DP	16,109	16,109	16,109	16,109	16,109	16,109
LDP	0	0	4,363	9,054	17,347	632
TGP	30,595	18,271	44,293	51,874	56,718	21,676
RI					196,294	267,042
RI	0	0	0	0	4,398	3
1/2 DP	8,054	8,054	8,054	8,054	8,054	8,054
TGP	8,054	8,054	8,054	8,054	12,452	8,057
NFU					242,922	271,016
CCCP	14,400	533	0	9,950	59,080	12,032
TGP	14,400	533	0	9,950	59,080	12,032



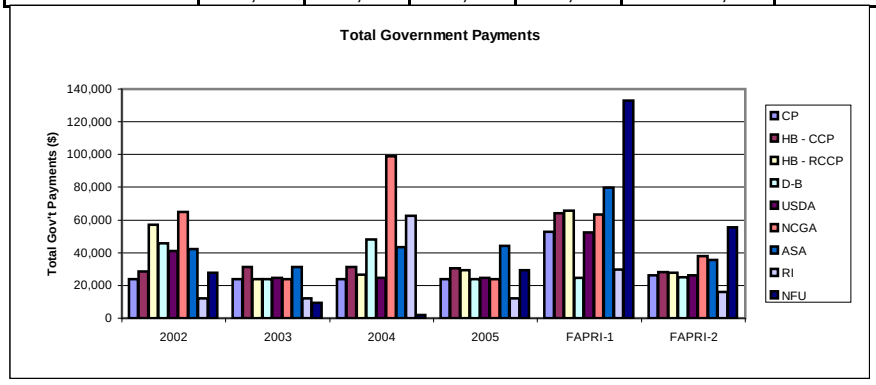
Appendix B8. Estimated government payments for Goodhue 3 (Go3)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI 1**	**FAPRI 2**
Mkt Rev	330,932	366,269	483,791	458,669	437,235	624,816
CP					521,817	654,946
CCP	0	0	20,612	24,876	21,158	1,167
DP	27,819	27,819	27,819	27,819	27,819	27,819
LDP	0	0	1,656	12,780	35,606	1,143
TGP	27,819	27,819	50,086	65,475	84,582	30,129
HB - CCP					525,778	656,449
CCP	4,472	0	20,612	24,876	25,119	2,671
DP	27,819	27,819	27,819	27,819	27,819	27,819
LDP	0	0	1,656	12,780	35,606	1,143
TGP	32,290	27,819	50,086	65,475	88,544	31,633
HB - RCCP					526,077	655,734
RCCP	38,893	0	8,509	29,896	25,418	1,956
DP	27,819	27,819	27,819	27,819	27,819	27,819
LDP	0	0	1,656	12,780	35,606	1,143
TGP	66,712	27,819	37,984	70,495	88,842	30,918
Durbin-Brown					468,670	656,246
S-RCCP	0	4,166	94,784	45,841	3,617	3,611
DP	27,819	27,819	27,819	27,819	27,819	27,819
TGP	27,819	31,985	122,603	73,659	31,436	31,430
USDA					519,730	654,902
RCCP	29,700	0	8,516	29,921	24,397	840
DP	28,359	28,359	28,359	28,359	28,359	28,359
LDP	0	0	0	4,260	29,739	887
TGP	58,058	28,359	36,874	62,540	82,495	30,086
NCGA					528,864	657,449
BRP	0	0	0	0	52	3
DP	27,819	27,819	27,819	27,819	27,819	27,819
RCCP	0	1,229	20,771	28,465	63,759	4,811
TGP	27,819	29,047	48,590	56,283	91,629	32,633
ASA					547,511	663,368
CCP	26,497	3,554	41,197	46,191	41,559	9,542
DP	27,819	27,819	27,819	27,819	27,819	27,819
LDP	0	0	11,592	21,300	40,898	1,192
TGP	54,315	31,372	80,608	95,309	110,276	38,552
RI					452,835	638,726
RI	0	0	0	0	1,691	0
1/2 DP	13,909	13,909	13,909	13,909	13,909	13,909
TGP	13,909	13,909	13,909	13,909	15,600	13,909
NFU					564,525	647,335
CCCP	17,257	1,104	0	23,482	127,291	21,657
TGP	17,257	1,104	0	23,482	127,291	21,657



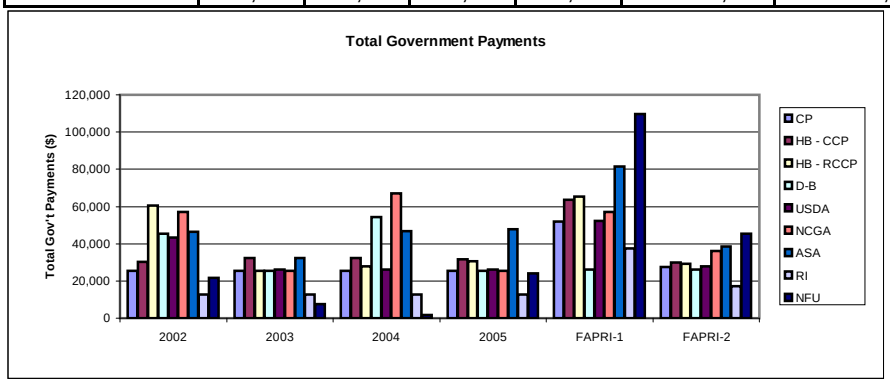
Appendix B9. Estimated government payments for Pennington 1 (Pe1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	312,611	436,329	153,834	344,853	289,557	365,144
CP					342,330	391,426
CCP	0	0	0	0	14,486	1,259
DP	24,028	24,028	24,028	24,028	24,028	24,028
LDP	0	0	0	0	14,259	995
TGP	24,028	24,028	24,028	24,028	52,773	26,282
HB - CCP					353,697	393,446
CCP	4,524	7,082	7,082	6,466	22,036	3,266
DP	24,028	24,028	24,028	24,028	24,028	24,028
LDP	0	0	0	0	18,075	1,007
TGP	28,552	31,110	31,110	30,494	64,139	28,301
HB - RCCP					355,099	392,858
RCCP	33,207	0	2,593	5,356	20,803	2,406
DP	24,028	24,028	24,028	24,028	24,028	24,028
LDP	0	0	0	0	20,711	1,280
TGP	57,234	24,028	26,621	29,384	65,541	27,714
Durbin-Brown					314,389	389,998
S-RCCP	21,568	0	23,949	0	804	826
DP	24,028	24,028	24,028	24,028	24,028	24,028
TGP	45,595	24,028	47,976	24,028	24,832	24,854
USDA					341,778	391,435
RCCP	16,424	0	0	0	15,252	909
DP	24,574	24,574	24,574	24,574	24,574	24,574
LDP	0	0	0	0	12,395	807
TGP	40,999	24,574	24,574	24,574	52,221	26,291
NCGA					352,754	403,183
BRP	0	0	39,028	0	3,614	2,825
DP	24,028	24,028	24,028	24,028	24,028	24,028
RCCP	40,881	0	36,044	0	35,555	11,186
TGP	64,909	24,028	99,100	24,028	63,197	38,039
ASA					369,390	400,783
CCP	18,189	7,082	19,289	20,131	32,303	10,087
DP	24,028	24,028	24,028	24,028	24,028	24,028
LDP	0	0	0	0	23,502	1,524
TGP	42,217	31,110	43,317	44,159	79,833	35,639
RI					319,371	381,320
RI	0	0	50,477	0	17,800	4,162
1/2 DP	12,014	12,014	12,014	12,014	12,014	12,014
TGP	12,014	12,014	62,491	12,014	29,814	16,176
NFU					422,665	420,491
CCCP	27,872	9,281	1,844	29,351	133,108	55,347
TGP	27,872	9,281	1,844	29,351	133,108	55,347



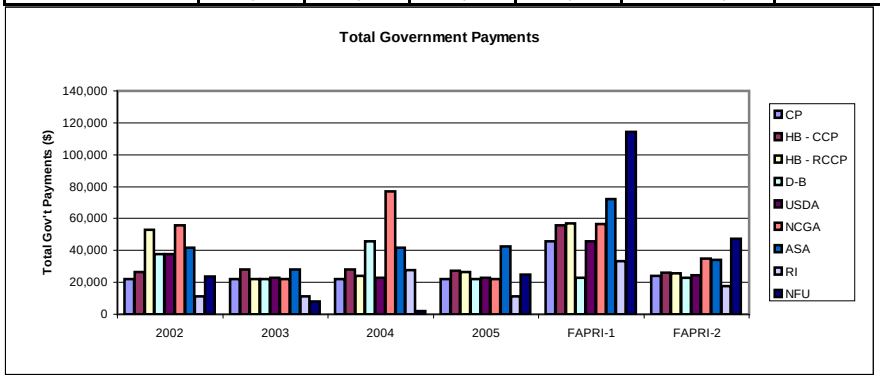
Appendix B10. Estimated government payments for Pennington 2 (Pe2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	235,432	365,816	215,391	322,601	236,132	300,393
CP					288,145	328,043
CCP	0	0	0	0	15,022	1,462
DP	25,354	25,354	25,354	25,354	25,354	25,354
LDP	0	0	0	0	11,637	834
TGP	25,354	25,354	25,354	25,354	52,013	27,651
HB - CCP					299,758	330,297
CCP	4,937	7,022	7,022	6,412	23,454	3,710
DP	25,354	25,354	25,354	25,354	25,354	25,354
LDP	0	0	0	0	14,818	841
TGP	30,292	32,377	32,377	31,766	63,626	29,904
HB - RCCP					301,460	329,690
RCCP	35,141	0	2,571	5,311	22,250	2,868
DP	25,354	25,354	25,354	25,354	25,354	25,354
LDP	0	0	0	0	17,723	1,075
TGP	60,495	25,354	27,925	30,666	65,328	29,298
Durbin-Brown					262,350	326,608
S-RCCP	19,864	0	28,849	0	863	861
DP	25,354	25,354	25,354	25,354	25,354	25,354
TGP	45,218	25,354	54,204	25,354	26,217	26,215
USDA					288,349	328,197
RCCP	17,248	0	0	0	15,875	1,121
DP	26,001	26,001	26,001	26,001	26,001	26,001
LDP	0	0	0	0	10,342	682
TGP	43,249	26,001	26,001	26,001	52,217	27,804
NCGA					293,200	336,508
BRP	0	0	6,817	0	2,188	1,215
DP	25,354	25,354	25,354	25,354	25,354	25,354
RCCP	31,652	0	34,980	0	29,526	9,546
TGP	57,006	25,354	67,151	25,354	57,068	36,116
ASA					317,769	338,782
CCP	21,092	7,022	21,454	22,567	36,112	11,749
DP	25,354	25,354	25,354	25,354	25,354	25,354
LDP	0	0	0	0	20,170	1,286
TGP	46,447	32,377	46,808	47,921	81,637	38,389
RI					273,567	317,742
RI	0	0	0	0	24,757	4,672
1/2 DP	12,677	12,677	12,677	12,677	12,677	12,677
TGP	12,677	12,677	12,677	12,677	37,434	17,349
NFU					345,835	345,755
CCCP	21,580	7,475	1,789	23,975	109,703	45,363
TGP	21,580	7,475	1,789	23,975	109,703	45,363



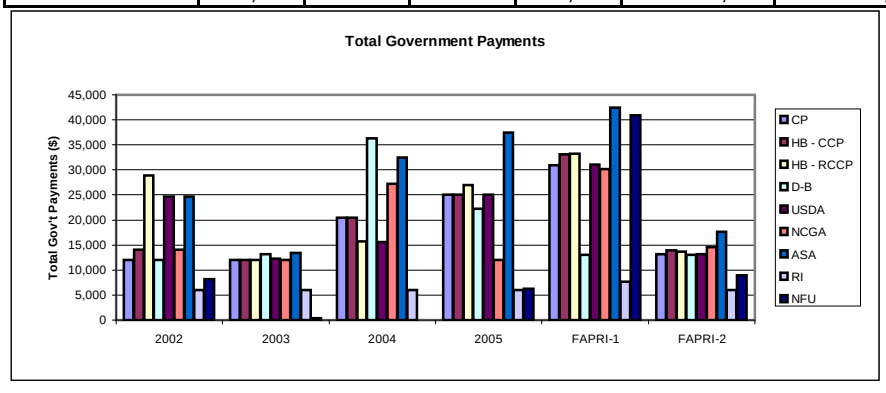
Appendix B11. Estimated government payments for Pennington 3 (Pe3)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	211,727	306,231	161,303	282,368	208,154	264,017
CP					253,784	288,236
CCP	0	0	0	0	13,042	1,316
DP	22,121	22,121	22,121	22,121	22,121	22,121
LDP	0	0	0	0	10,467	782
TGP	22,121	22,121	22,121	22,121	45,630	24,219
HB - CCP					263,919	290,268
CCP	4,419	5,820	5,820	5,314	20,557	3,345
DP	22,121	22,121	22,121	22,121	22,121	22,121
LDP	0	0	0	0	13,087	785
TGP	26,540	27,941	27,941	27,435	55,765	26,251
HB - RCCP					265,113	289,554
RCCP	30,728	0	2,131	4,402	19,317	2,446
DP	22,121	22,121	22,121	22,121	22,121	22,121
LDP	0	0	0	0	15,521	971
TGP	52,849	22,121	24,252	26,523	56,959	25,537
Durbin-Brown					231,073	286,952
S-RCCP	15,565	0	23,625	0	798	814
DP	22,121	22,121	22,121	22,121	22,121	22,121
TGP	37,686	22,121	45,746	22,121	22,919	22,935
USDA					253,819	288,312
RCCP	14,992	0	0	0	13,609	931
DP	22,732	22,732	22,732	22,732	22,732	22,732
LDP	0	0	0	0	9,324	632
TGP	37,724	22,732	22,732	22,732	45,665	24,295
NCGA					264,901	298,882
BRP	0	0	18,852	0	3,201	2,402
DP	22,121	22,121	22,121	22,121	22,121	22,121
RCCP	33,565	0	36,136	0	31,424	10,342
TGP	55,686	22,121	77,109	22,121	56,746	34,865
ASA					280,451	298,190
CCP	19,696	5,820	19,467	20,591	32,629	10,920
DP	22,121	22,121	22,121	22,121	22,121	22,121
LDP	0	0	0	0	17,547	1,132
TGP	41,817	27,941	41,588	42,711	72,296	34,173
RI					241,609	281,496
RI	0	0	16,785	0	22,394	6,418
1/2 DP	11,060	11,060	11,060	11,060	11,060	11,060
TGP	11,060	11,060	27,845	11,060	33,454	17,479
NFU					322,580	311,370
CCCP	23,501	8,090	1,860	24,851	114,426	47,353
TGP	23,501	8,090	1,860	24,851	114,426	47,353



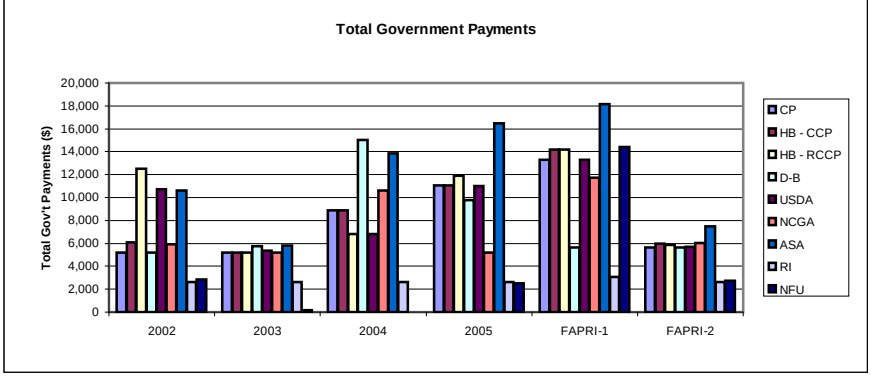
Appendix B12. Estimated government payments for Pipestone 1 (Pi1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	123,269	132,661	126,740	145,087	125,899	173,476
CP					156,886	186,634
CCP	0	0	8,048	9,713	8,865	609
DP	12,020	12,020	12,020	12,020	12,020	12,020
LDP	0	0	377	3,285	10,102	530
TGP	12,020	12,020	20,445	25,017	30,987	13,159
HB - CCP					159,031	187,438
CCP	2,088	0	8,048	9,713	11,010	1,414
DP	12,020	12,020	12,020	12,020	12,020	12,020
LDP	0	0	377	3,285	10,102	530
TGP	14,108	12,020	20,445	25,017	33,132	13,963
HB - RCCP					159,125	187,108
RCCP	16,863	0	3,322	11,673	11,104	1,084
DP	12,020	12,020	12,020	12,020	12,020	12,020
LDP	0	0	377	3,285	10,102	530
TGP	28,882	12,020	15,719	26,978	33,226	13,633
Durbin-Brown					138,946	186,522
S-RCCP	0	1,101	24,304	10,190	1,027	1,027
DP	12,020	12,020	12,020	12,020	12,020	12,020
TGP	12,020	13,121	36,324	22,209	13,047	13,047
USDA					157,014	186,676
RCCP	12,325	0	3,325	11,683	10,224	468
DP	12,309	12,309	12,309	12,309	12,309	12,309
LDP	0	0	0	1,095	8,582	422
TGP	24,634	12,309	15,634	25,087	31,115	13,200
NCGA					156,101	188,097
BRP	0	0	0	0	4	0
DP	12,020	12,020	12,020	12,020	12,020	12,020
RCCP	2,034	0	15,182	0	18,178	2,602
TGP	14,054	12,020	27,201	12,020	30,201	14,622
ASA					168,330	191,115
CCP	12,661	1,388	17,848	20,009	19,173	5,073
DP	12,020	12,020	12,020	12,020	12,020	12,020
LDP	0	0	2,641	5,475	11,238	547
TGP	24,681	13,407	32,509	37,503	42,431	17,640
RI					133,631	179,487
RI	0	0	0	0	1,722	1
1/2 DP	6,010	6,010	6,010	6,010	6,010	6,010
TGP	6,010	6,010	6,010	6,010	7,732	6,011
NFU					166,752	182,423
CCCP	8,130	353	0	6,311	40,853	8,948
TGP	8,130	353	0	6,311	40,853	8,948



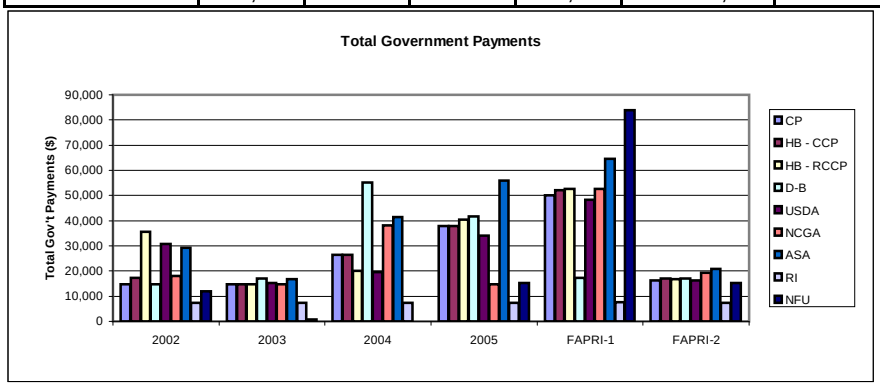
Appendix B13. Estimated government payments for Pipestone 2 (Pi2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	51,256	60,293	46,165	56,103	50,893	71,337
CP					64,185	76,999
CCP	0	0	3,553	4,288	3,884	259
DP	5,214	5,214	5,214	5,214	5,214	5,214
LDP	0	0	131	1,551	4,194	189
TGP	5,214	5,214	8,898	11,053	13,292	5,662
HB - CCP					65,079	77,327
CCP	894	0	3,553	4,288	4,778	588
DP	5,214	5,214	5,214	5,214	5,214	5,214
LDP	0	0	131	1,551	4,194	189
TGP	6,108	5,214	8,898	11,053	14,186	5,990
HB - RCCP					65,085	77,175
RCCP	7,310	0	1,467	5,154	4,784	436
DP	5,214	5,214	5,214	5,214	5,214	5,214
LDP	0	0	131	1,551	4,194	189
TGP	12,524	5,214	6,812	11,919	14,192	5,838
Durbin-Brown					56,530	76,981
S-RCCP	0	532	9,827	4,549	424	431
DP	5,214	5,214	5,214	5,214	5,214	5,214
TGP	5,214	5,745	15,041	9,763	5,637	5,644
USDA					64,212	77,014
RCCP	5,383	0	1,468	5,158	4,442	192
DP	5,335	5,335	5,335	5,335	5,335	5,335
LDP	0	0	0	517	3,541	150
TGP	10,718	5,335	6,803	11,011	13,319	5,677
NCGA					62,615	77,383
BRP	0	0	0	0	0	0
DP	5,214	5,214	5,214	5,214	5,214	5,214
RCCP	714	0	5,410	0	6,508	832
TGP	5,928	5,214	10,623	5,214	11,722	6,046
ASA					69,056	78,835
CCP	5,404	613	7,739	8,675	8,220	2,089
DP	5,214	5,214	5,214	5,214	5,214	5,214
LDP	0	0	917	2,585	4,729	195
TGP	10,618	5,826	13,870	16,475	18,163	7,499
RI					53,940	73,944
RI	0	0	0	0	440	0
1/2 DP	2,607	2,607	2,607	2,607	2,607	2,607
TGP	2,607	2,607	2,607	2,607	3,047	2,607
NFU					65,300	74,051
CCCP	2,851	153	0	2,529	14,407	2,715
TGP	2,851	153	0	2,529	14,407	2,715



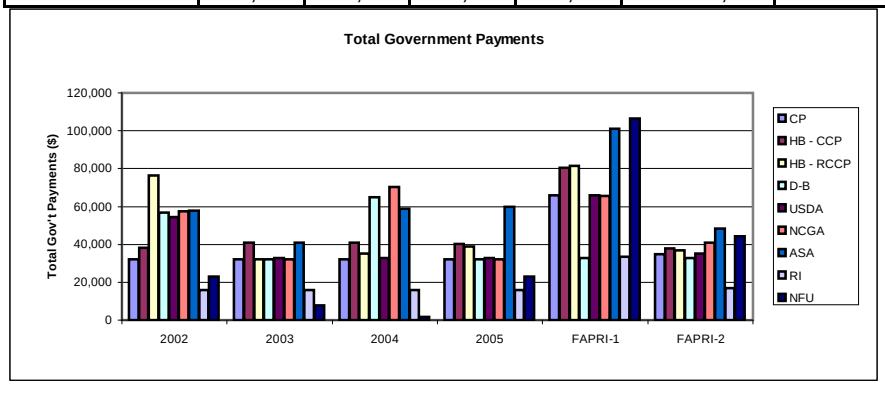
Appendix B14. Estimated government payments for Pipestone 3 (Pi3)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	187,798	221,718	213,890	343,141	301,855	427,264
CP					351,840	443,576
CCP	0	0	10,807	13,042	11,189	631
DP	14,846	14,846	14,846	14,846	14,846	14,846
LDP	0	0	672	9,916	23,950	836
TGP	14,846	14,846	26,324	37,804	49,985	16,312
HB - CCP					354,042	444,406
CCP	2,421	0	10,807	13,042	13,392	1,461
DP	14,846	14,846	14,846	14,846	14,846	14,846
LDP	0	0	672	9,916	23,950	836
TGP	17,267	14,846	26,324	37,804	52,187	17,142
HB - RCCP					354,377	444,005
RCCP	20,768	0	4,461	15,674	13,726	1,059
DP	14,846	14,846	14,846	14,846	14,846	14,846
LDP	0	0	672	9,916	23,950	836
TGP	35,614	14,846	19,979	40,436	52,522	16,740
Durbin-Brown					319,040	444,319
S-RCCP	0	2,294	40,223	26,735	2,339	2,209
DP	14,846	14,846	14,846	14,846	14,846	14,846
TGP	14,846	17,139	55,069	41,580	17,185	17,054
USDA					350,135	443,501
RCCP	15,735	0	4,465	15,687	13,062	442
DP	15,146	15,146	15,146	15,146	15,146	15,146
LDP	0	0	0	3,305	20,072	649
TGP	30,881	15,146	19,611	34,139	48,280	16,237
NCGA					354,381	443,501
BRP	0	0	0	0	5	0
DP	14,846	14,846	14,846	14,846	14,846	14,846
RCCP	3,084	0	23,317	0	37,676	4,349
TGP	17,930	14,846	38,162	14,846	52,526	19,195
ASA					366,444	448,196
CCP	14,413	1,863	21,996	24,661	22,431	5,212
DP	14,846	14,846	14,846	14,846	14,846	14,846
LDP	0	0	4,704	16,527	27,312	874
TGP	29,258	16,709	41,546	56,034	64,589	20,932
RI					309,405	434,687
RI	0	0	0	0	127	0
1/2 DP	7,423	7,423	7,423	7,423	7,423	7,423
TGP	7,423	7,423	7,423	7,423	7,550	7,423
NFU					385,789	442,575
CCCP	11,826	674	0	15,179	83,934	15,311
TGP	11,826	674	0	15,179	83,934	15,311



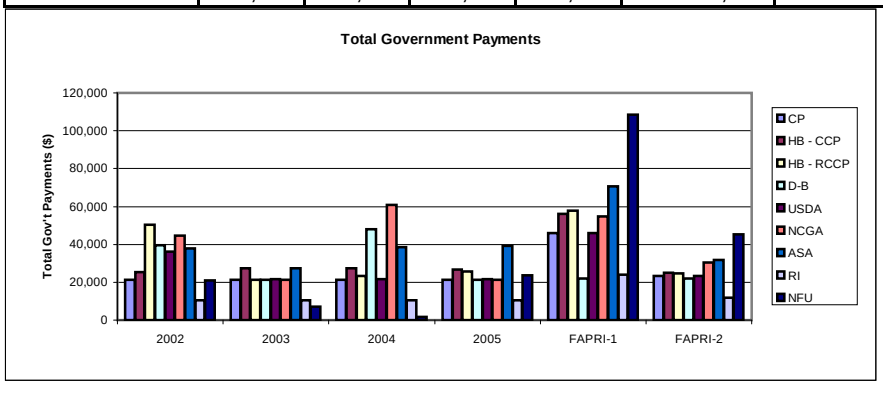
Appendix B15. Estimated government payments for Polk 1 (Po1)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	358,712	421,367	291,559	331,929	279,262	355,437
CP					345,250	390,291
CCP	0	0	0	0	19,521	1,836
DP	31,976	31,976	31,976	31,976	31,976	31,976
LDP	0	0	0	0	14,492	1,042
TGP	31,976	31,976	31,976	31,976	65,989	34,854
HB - CCP					359,582	393,217
CCP	6,172	9,007	9,007	8,224	29,977	4,753
DP	31,976	31,976	31,976	31,976	31,976	31,976
LDP	0	0	0	0	18,367	1,051
TGP	38,148	40,984	40,984	40,200	80,320	37,780
HB - RCCP					360,662	392,321
RCCP	44,285	0	3,298	6,813	28,317	3,599
DP	31,976	31,976	31,976	31,976	31,976	31,976
LDP	0	0	0	0	21,107	1,309
TGP	76,261	31,976	35,274	38,789	81,400	36,884
Durbin-Brown					312,186	388,376
S-RCCP	24,894	0	32,769	0	948	963
DP	31,976	31,976	31,976	31,976	31,976	31,976
TGP	56,870	31,976	64,746	31,976	32,924	32,939
USDA					345,156	390,437
RCCP	21,781	0	0	0	20,638	1,390
DP	32,768	32,768	32,768	32,768	32,768	32,768
LDP	0	0	0	0	12,489	842
TGP	54,549	32,768	32,768	32,768	65,894	35,000
NCGA					345,002	396,292
BRP	0	0	0	0	689	180
DP	31,976	31,976	31,976	31,976	31,976	31,976
RCCP	25,562	0	38,196	0	33,075	8,699
TGP	57,538	31,976	70,172	31,976	65,740	40,855
ASA					380,420	403,626
CCP	25,965	9,007	26,689	28,017	45,229	14,671
DP	31,976	31,976	31,976	31,976	31,976	31,976
LDP	0	0	0	0	23,953	1,542
TGP	57,941	40,984	58,665	59,993	101,158	48,189
RI					312,880	372,261
RI	0	0	0	0	17,630	836
1/2 DP	15,988	15,988	15,988	15,988	15,988	15,988
TGP	15,988	15,988	15,988	15,988	33,618	16,824
NFU					385,585	399,820
CCCP	22,888	7,872	1,698	23,139	106,323	44,383
TGP	22,888	7,872	1,698	23,139	106,323	44,383



Appendix B16. Estimated government payments for Polk 2 (Po2)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	209,396	325,613	210,624	304,993	225,697	287,497
CP					271,748	310,779
CCP	0	0	0	0	12,899	1,171
DP	21,175	21,175	21,175	21,175	21,175	21,175
LDP	0	0	0	0	11,976	935
TGP	21,175	21,175	21,175	21,175	46,051	23,281
HB - CCP					281,800	310,779
CCP	4,040	6,095	6,095	5,565	19,715	2,990
DP	21,175	21,175	21,175	21,175	21,175	21,175
LDP	0	0	0	0	15,212	945
TGP	25,215	27,270	27,270	26,740	56,103	25,111
HB - RCCP					283,392	312,259
RCCP	29,297	0	2,231	4,610	18,801	2,353
DP	21,175	21,175	21,175	21,175	21,175	21,175
LDP	0	0	0	0	17,719	1,233
TGP	50,472	21,175	23,407	25,785	57,695	24,761
Durbin-Brown					247,679	309,428
S-RCCP	18,389	0	26,794	0	807	756
DP	21,175	21,175	21,175	21,175	21,175	21,175
TGP	39,564	21,175	47,969	21,175	21,982	21,931
USDA					271,614	310,874
RCCP	14,447	0	0	0	13,727	925
DP	21,679	21,679	21,679	21,679	21,679	21,679
LDP	0	0	0	0	10,510	772
TGP	36,127	21,679	21,679	21,679	45,916	23,377
NCGA					280,483	317,884
BRP	0	0	0	0	557	318
DP	21,175	21,175	21,175	21,175	21,175	21,175
RCCP	23,439	0	39,802	0	33,054	8,893
TGP	44,614	21,175	60,978	21,175	54,785	30,386
ASA					296,315	319,437
CCP	16,646	6,095	17,356	18,171	29,367	9,312
DP	21,175	21,175	21,175	21,175	21,175	21,175
LDP	0	0	0	0	20,075	1,452
TGP	37,821	27,270	38,532	39,346	70,618	31,939
RI					249,703	299,177
RI	0	0	0	0	13,418	1,092
1/2 DP	10,588	10,588	10,588	10,588	10,588	10,588
TGP	10,588	10,588	10,588	10,588	24,005	11,679
NFU					334,047	332,713
CCCP	20,987	7,112	1,769	23,639	108,349	45,216
TGP	20,987	7,112	1,769	23,639	108,349	45,216



Appendix B17. Estimated government payments for Polk 3 (Po3)

					Projections	
	2002	**2003**	**2004**	**2005**	**FAPRI-1**	**FAPRI-2**
Mkt Rev	41,663	94,437	98,554	89,726	78,416	101,873
CP					91,478	108,522
CCP	0	0	0	0	4,157	117
DP	6,499	6,499	6,499	6,499	6,499	6,499
LDP	0	0	0	0	2,407	33
TGP	6,499	6,499	6,499	6,499	13,063	6,649
HB - CCP					94,765	108,771
CCP	924	2,739	2,739	2,501	5,707	362
DP	6,499	6,499	6,499	6,499	6,499	6,499
LDP	0	0	0	0	4,143	36
TGP	7,424	9,238	9,238	9,000	16,350	6,898
HB - RCCP					96,089	108,840
RCCP	8,797	0	1,003	2,072	5,649	289
DP	6,499	6,499	6,499	6,499	6,499	6,499
LDP	0	0	0	0	5,525	178
TGP	15,296	6,499	7,502	8,571	17,674	6,967
Durbin-Brown					85,016	108,483
S-RCCP	10,343	0	251	0	101	110
DP	6,499	6,499	6,499	6,499	6,499	6,499
TGP	16,843	6,499	6,750	6,499	6,601	6,610
USDA					91,520	108,518
RCCP	4,594	0	0	0	4,600	87
DP	6,520	6,520	6,520	6,520	6,520	6,520
LDP	0	0	0	0	1,984	38
TGP	11,115	6,520	6,520	6,520	13,104	6,645
NCGA					94,869	110,453
BRP	0	0	0	0	58	36
DP	6,499	6,499	6,499	6,499	6,499	6,499
RCCP	13,480	0	373	0	9,896	2,044
TGP	19,980	6,499	6,873	6,499	16,453	8,579
ASA					97,360	109,281
CCP	1,447	2,739	3,206	3,024	5,666	625
DP	6,499	6,499	6,499	6,499	6,499	6,499
LDP	0	0	0	0	6,779	283
TGP	7,947	9,238	9,706	9,523	18,944	7,407
RI					84,000	105,465
RI	0	0	0	0	2,335	343
1/2 DP	3,250	3,250	3,250	3,250	3,250	3,250
TGP	3,250	3,250	3,250	3,250	5,584	3,592
NFU					111,956	115,566
CCCP	7,966	3,962	928	12,919	33,540	13,693
TGP	7,966	3,962	928	12,919	33,540	13,693