

Benefit to Washington Wheat Producers Associated with Increased Farmer Program Flexibility

T. Randall Fortenbery
Thomas B. Mick Endowed Chair
School of Economic
Sciences WSU

Introduction

Wheat farmers signing up for U.S. farm program benefits in early 2015 were asked to select between a revenue based program (Agricultural Risk Coverage – ARC) or a price based program (Price Loss Coverage - PLC). Once a choice was made, the choice was binding over the entire life of the 2014 Farm Bill. This created a challenge because the two programs generate very different benefit streams under different market scenarios. The ARC program generally provides superior benefits if prices stay above the PLC target price (\$5.50 per bushel for wheat), or if producers expected significant yield variation over the life of the farm bill. If market prices fall below the PLC target, and yields are stable or increasing, the PLC program will generally provide greater protection.

Two different decision aids were developed with grants from USDA to help producers make their program decisions. However, both required producers to predict prices through the entire life of the farm bill in order to generate comprehensive comparisons of the two programs. Because of the way ARC payments are generated (they employ an Olympic average of both yields and prices over the previous 5 years), producers during the early 2015 sign up period could determine with certainty what their ARC and PLC payments would be for the 2014/2015 crop year, and make a very accurate guess as to program payments for the 2015/2016 marketing year. Beyond those years, they had to predict prices to determine which

program would be more attractive. The tools USDA developed included long-term price forecasts from both USDA and FAPRI (Food and Agricultural Policy Institute at the University of Missouri). The initial forecasts extended 10 years, but these forecasts are updated annually and there can be significant changes to later year forecasts in the annual updates.

Because of the certain or near certain coverage levels afforded by ARC for the 2014 and 2015 wheat harvests at the time of sign up, most Washington producers elected the ARC program. About 90 percent of Washington wheat base was enrolled in ARC county (where county average yields are combined with the national average price to determine benefits), about 4 percent in ARC individual (where individual proven farm yields are combined with national average prices), and about 6 percent of total wheat base acres were enrolled in PLC. At the time of sign up FAPRI forecasts did not show any year with average prices significantly below the PLC trigger of \$5.50 per acre. However, USDA price forecasts were lower, forcing producers to essentially choose between the two forecasts in determining which program was likely to offer them the best long term benefits.

Since the initial sign up in early 2015, wheat prices have declined significantly. Lower prices for the 2016 wheat crop compared to both the initial FAPRI and USDA forecasts, combined with record or near record yields, has resulted in estimated PLC protection for the 2016 crop significantly outweighing estimated protection from ARC coverage.

Measurement Flexibility Benefits

The analysis presented here looks at the potential benefits that could have been received by Washington wheat producers if there had been more flexibility in program

participation; specifically, if producers could have moved between ARC and PLC as official USDA and FAPRI price forecasts were revised each year. As noted earlier, the information available at the time of sign-up already verified that ARC would generally provide a better safety net for both 2014 and 2015, so this analysis examines the potential cost to producers of not being able to change their election for the 2016 crop once the 2016 price forecast updates from USDA and FAPRI were released (USDA updates their 10-year price forecasts for all major commodities in mid-February each year, just ahead of the annual Agricultural Outlook Forum that occurs in late February; FAPRI releases their updated 10-year forecast every March).

For the analysis I combined the ARC County and ARC individual wheat acres (meaning that I do not account for individual yields on ARC individual acres, but assign them county average yields), and also treat irrigated acres as if they are non-irrigated in those counties that report yields for both types of production. In other words, I only calculate benefits to farmers in counties where there are established irrigated yields based on non-irrigated yields.

USDA has provided total base acres in each state enrolled in each program (ARC vs. PLC), but they do not publicly report the acreage split by county. As a result, I assume the split between ARC and PLC is the same in each county, and matches the state wide average split. While this is likely not true, it is anticipated this assumption does not have a significant impact on the calculated benefits associated with flexibility. Since benefit yields under the ARC program vary by county, some type estimate of county splits between ARC and PLC is necessary.

Table 1 shows the total potential benefits by county for Washington for 2014, 2015, and estimates for 2016 (a couple of minor wheat producing counties are missing because USDA data was not available for the entire time period considered). The actual FSA yields are not yet available for 2016, so the estimate is based on NASS yields for the counties in which those have been reported, and the state average yield for those counties for which NASS yields were not available. The PLC payments are based on 2015 PLC yields reported by USDA.

The difference in the 2016 estimated ARC payments and the potential 2016 PLC payments if all eligible program acres were enrolled and switched to PLC is \$170,110,277. However, since all potential acres are not enrolled for annual benefits, and since all producers might not have elected to switch even given the option, a better comparison might be the per acre benefit estimate. This is calculated as the total benefit by program, divided by all Washington wheat acres in each program, as reported by USDA during then initial sign-up period in early 2015. On average, if a producer was allowed to switch from ARC to PLC for the 2016 harvest, his/her farm program benefit would have increased from \$24.39 per wheat base acre to \$85.82 per wheat base acre.

The Signal to Switch

In order for producers to realize the benefits of switching between ARC and PLC, they would need some indicator that switching is beneficial. As noted above, the initial decision tools developed to aid producers in making their program elections included a set of price forecasts over the life of the farm bill from two different sources, USDA and FAPRI. Unfortunately, the price forecasts did not agree on which program would likely be the most attractive after 2015. Both agreed that for the 2014 and 2015 crop ARC would provide the

most protection.

Beginning in 2016, however, the initial FAPRI forecast still favored an ARC election (FAPRI forecasted prices would only fall below the PLC trigger by 20 cents per bushel or so in any given year), while the USDA forecasts began to favor ARC over PLC in later years if yields were average or better. As noted earlier, both sets of forecasts are updated annually.

Table 2 shows the revised price forecasts from each entity in early 2016. If producers would have been allowed to switch in, say, April each year, the forecast information available from both entities would clearly have favored switching from ARC to PLC for the 2016 crop. While FAPRI price expectations were still considerably above the USDA price forecasts in 2016, both revealed an increased likelihood that PLC program benefits would dominate ARC benefits in 2016. Further, it is highly likely that the forecasts to be released in February and March 2017 would encourage producers to elect PLC for the 2017 harvest if that were an option.

It is probable that the lack of flexibility has resulted in lower total program payments to producers by USDA, thus minimizing strains on the federal budget. Further, any local Farm Service Agency (FSA) office costs associated with allowing flexibility have been avoided. However, forcing producers to make an irreversible decision that is binding over several years with minimal information beyond the first year or two has proven quite costly to producers. If the current USDA and FAPRI price forecasts are realized as we approach the end of the 2014 Farm Bill, then many producers will have elected program coverage, based on early information, that provides the smallest level of protection over the majority of years covered by current farm legislation.

Additional Impacts

In addition to the direct effect on wheat farm income, reduced program flexibility affects the income potential of businesses farmers buy goods and services from. Based on results from a recent study evaluating the impact of the Washington wheat sector to the broader Washington economy,¹ the forgone \$170.1 million that could have been earned by switching all program wheat acres from ARC to PLC would have resulted in another \$60,601,917 in income to businesses where producers would have spent their additional dollars, and this would have occurred primarily in rural Washington communities. All told, then, the total potential benefit to Washington associated with increased farm program flexibility in 2016 would have been \$230,711,917. This is the combined potential income increases to both wheat farmers and the businesses they and their employees frequent resulting from a full conversion from the ARC to the PLC program for the 2016 Washington wheat crop.

¹ Economic Contributions of the Wheat Cluster to the Washington Economy (2016). Available from http://ses.wsu.edu/wp-content/uploads/2016/09/2014_Final_Wheat_Impacts_v2.pdf

Table 1.

Potential Payments based on Total State Wide Program enrollment in 2014¹

	2014		2015		2016		
	ARC	PLC	ARC	PLC ²	ARC	PLC	Switching ARC to PLC
Adams	\$12,658,010	0	\$12,849,798	\$614,304	\$11,164,578.57	\$1,711,994.28	\$26,724,561.48
Asotin	\$1,061,561	0	\$1,077,645	\$55,267	\$1,021,904.61	\$154,022.33	\$2,404,318.30
Benton	\$4,768,354	0	\$4,840,601	\$173,427	\$4,840,601.29	\$483,320.89	\$7,544,732.50
Chelan	\$26,419	0	\$26,819	\$782	\$26,357.01	\$2,179.64	\$34,024.63
Columbia	\$4,020,637	0	\$4,026,400	\$218,751	\$3,989,629.08	\$609,633.46	\$9,516,496.08
Douglas	\$5,545,029	0	\$5,629,045	\$305,923	\$5,501,111.87	\$852,573.28	\$13,308,833.64
Ferry	\$49,414	0	\$48,545	\$1,746	\$43,420.75	\$4,865.87	\$75,957.12
Franklin	\$2,275,903	0	\$2,310,386	\$214,873	\$0.00	\$598,826.07	\$9,347,790.69
Garfield	\$1,386,589	0	\$3,564,290	\$204,530	\$3,030,761.73	\$570,002.80	\$8,897,853.79
Grant	\$5,554,351	0	\$5,638,507	\$500,141	\$0.00	\$1,393,835.79	\$21,758,046.03
Island	\$0	0	\$20,449	\$1,307	\$19,515.32	\$3,642.56	\$56,861.04
Kittitas	\$0	0	\$6,004	\$12,125	\$192,594.35	\$33,791.51	\$527,491.98
Klickitat	\$1,492,015	0	\$1,514,621	\$90,604	\$1,424,002.90	\$252,502.26	\$3,941,609.12
Lincoln	\$16,185,747	0	\$16,430,986	\$896,493	\$0.00	\$2,498,421.78	\$39,000,846.82
Okanogan	\$328,059	0	\$36,285	\$16,996	\$0.00	\$47,364.96	\$739,376.22
Skagit	\$0	0	\$123,812	\$9,252	\$136,503.94	\$25,785.63	\$402,518.68
Snohomish, North King	\$0	0	\$0	\$683	\$10,892.06	\$1,902.17	\$29,693.26
Spokane	\$5,146,161	0	\$5,224,133	\$299,697	\$4,881,566.97	\$835,221.16	\$13,037,963.63
Stevens	\$393,211	0	\$450,155	\$20,229	\$398,497.57	\$56,376.18	\$880,043.01
Walla Walla	\$11,084,050	0	\$10,967,130	\$589,804	\$10,444,885.46	\$1,643,714.72	\$25,658,704.36
Whatcom	\$0	0	\$16,570	\$900	\$15,812.95	\$2,508.78	\$39,162.54
Whitman	\$21,230,275	0	\$21,551,946	\$1,173,195	\$20,402,508.89	\$3,269,558.46	\$51,038,439.31
Yakima	\$298,397	0	\$286,090	\$61,836	\$0.00	\$172,329.57	\$2,690,097.94
State-wide Total	\$93,504,182.26	\$0.00	\$96,640,216.28	\$5,462,863.66	\$67,545,145.31	\$15,224,374.14	\$237,655,422.16
Per total program acre based on 2014 sign-up	\$33.76	\$0.00	\$34.90	\$30.79	\$24.39	\$85.82	\$85.82

1) Actual payments in 2014 and 2015 were likely less for a couple of reasons. If an individual farm has fewer than 10 base acres, it is not eligible for program benefits except under specific circumstances. Second, even for eligible enrolled acres producers must sign up each year with the local FSA office to receive program benefits. Some absentee land lords and others may not follow through each year. Total ARC payments to Washington producers in 2014 (across all program crops) were reported by USDA to total over \$95 million. However, for the 2015 crop they estimated total statewide ARC payments (through May 2016) of \$87.2 million, thus total payments for all program crops appeared to be significantly less than potential payments for just wheat. Several things could explain the relatively large potential wheat payment for 2015 compared to the USDA reported payments. First, some producers may not have realized they had to register with FSA each year to receive benefits, and failed to do so for the 2015 crop. Second, the assumption that the split between ARC and PLC in each individual county reflects the state average could affect the results. If counties with the largest yields are more heavily weighted towards the PLC election, then the potential ARC payments are over stated. However, given that the benefit of flexibility afforded by switching between ARC and PLC is calculated as a net benefit (i.e. after subtracting the ARC benefit to be received in the absence of switching) this actually results in a lower bound estimate associated with switching (since the 2015 ARC payments appears over-stated, it is likely that the estimated 2016 ARC payment is also overstated since it uses the same 2014 potential acreage number).

2) Actual PLC payments for Washington (across all program crops) for 2015 was reported by USDA to be \$220,991 (through May 2016). However, PLC was the default program choice for anyone with base not explicitly electing a program. It is likely that land owners who did not explicitly sign up for a program in early 2015 also did not follow through with annual sign ups at their local FSA offices. Thus, it seems probable that there are significant number of potential PLC payment acres that are simply not active in the program.

Table 2.

	U.S. Wheat Price Forecasts from Early 2016 - \$/bu										
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/2026
FAPRI	\$4.99	\$4.97	\$5.04	\$5.25	\$5.36	\$5.40	\$5.44	\$5.42	\$5.38	\$5.34	\$5.26
USDA	\$5.00	\$4.40	\$4.50	\$4.60	\$4.65	\$4.70	\$4.75	\$4.80	\$4.85	\$4.90	\$4.95