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Farm income for many wheat, feed grain, cotton and rice farmers across the country has declined since the passage of the 1996 farm bill. Lower farm incomes have been a result of lower commodity prices and in many locations low yields due to adverse weather. The absence of a counter cyclical safety net program (such as deficiency payments) in the 1996 farm bill has allowed farm incomes to decline as prices weakened. Concern over low incomes has caused the Congress to approve an emergency assistance in each of the last three years (USDA, 1998, 1999 and 2000).

Despite the emergency assistance bills to help raise farm incomes, many commercial farmers in the South continue to experience cash flow problems (Smith and Richardson). FAPRI's January 2000 Baseline projected slow price recovery over the next five years due to low demand growth relative to supply. In the absence of policy changes providing additional assistance, the outlook for representative farms in the South is for high probabilities of cash flow deficits over the next five years (Adams and Richardson).

As Congress begins its debate for the 2002 farm bill, there have been calls for a counter cyclical safety net that will provide a better basis for targeting longer term planning than exists with ad hoc emergency assistance. Further subsidization of the multi-peril crop insurance (MPCI) program has been proposed, as well as reliance on a farm and ranch risk management (FARRM) account to help farmers. A whole farm revenue income support program and several variations of national income supplement programs have been put forward. A comprehensive analysis of different safety net alternatives using a common methodology is needed so farmers and policy makers can make objective comparisons.

The objective of this paper is to quantitatively analyze the economic effects of alternative safety net/insurance programs on farmers in the Southern United States. The objective is accomplished by simulating representative crop farms in the South over the 2001-2005 planning horizon for alternative safety net options. The simulated net present value distributions for the farms are compared using certainty equivalents to determine the value of alternative safety net options to feed grain, cotton and rice farms in the South.

The farm safety net options are simulated using a general farm level income and policy simulation model (FLIPSIM) described in detail by Richardson and Nixon. The FLIPSIM model is appropriate for the present study because it is capable of simulating a wide range of crop farms under alternative farm program and safety net provisions. The model develops numerous performance variables that can be used to quantify the economic impacts of alternative scenarios on crop farms, such as the farm's after-tax net present value.

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Safety Net Options

Policy options that reduce risk on net farm income could be considered to be a safety net. The options analyzed in this paper range from the catastrophic (CAT) crop insurance coverage program to a whole farm revenue income program. Three MPCI options are included as a point of reference. A common theme among the options analyzed is that they are all dependent on the individual producer's revenues. In other words, the payment is triggered by low yields or incomes on a producer's farm rather than based on national or regional revenues, incomes, prices, or yields.

The safety net options are analyzed without premiums to facilitate side-by-side comparison of MPCI provisions to a whole farm revenue program that lacks premium information. The advantage of assuming a zero premium for all of the options is that they could be ranked based on their net benefits to the farm. The level of premium and subsidy for a safety net option is thus put back in the policy realm. Each of the safety net options analyzed is briefly described in the next section.

CAT

The Federal Crop Insurance Reform Act of 1994 introduced the catastrophic (CAT) crop insurance coverage. CAT was authorized for feed grains, oilseeds, wheat, cotton, and rice to replace the ad-hoc programs used in the past for disaster relief. For a fee of $60 per crop producers can insure their crops at 50 percent of their actual production history (APH) yield and 55 percent of the projected market price, which is determined by the USDA's Risk Management Agency. Indemnities from CAT are calculated by multiplying production loss below 50 percent of APH times 55 percent of the market price. Funding for CAT comes solely from the USDA. There are currently 85 crops that are eligible for coverage under CAT.

MPCI

The USDA's oldest insurance coverage is multi-peril crop insurance. Under MPCI, producers can elect to insure from 50 to 75 percent of each crop's APH yield and from 55 to 100 percent of price. Indemnities for MPCI are calculated and paid according to the selected coverage in the same manner as indemnities for CAT. MPCI policies are offered by private companies, which are in turn reinsured by the government to decrease the risk to these companies. The USDA also offers producers a variable rate subsidy on the premium for different coverage levels of the MPCI policy. For this paper, the study analyzed 100 percent premium subsidy for three levels of yield and price coverage: 50/100, 65/100, and 75/100.

Whole Farm Revenue Program

Whole Farm Revenue Program (WFRP) is a proposed safety net program insuring a producer's whole farm revenue. Whole farm revenue is defined as harvested acreage times yield times national price plus livestock revenue. Under this program a producer's guaranteed whole farm revenue is calculated using a moving five-year Olympic average of a producer's annual production multiplied by national average price for each of the corresponding years. Guaranteed revenue is assumed to be protected at either 80 percent or 90 percent of the five-year moving average.

FARRM

One of the provisions of the Taxpayer Relief Act of 1998 was a proposal for farm and ranch risk management (FARRM) accounts. FARRM accounts were proposed to allow farmers to defer taxes on up to 20 percent of their net income for up to five years. The portion of their net income, which a farmer chose to defer, would be set-aside in an interest bearing FARRM account for up to five years. Withdrawals from this account were assumed to be permitted when ending cash reserves are negative and was applied to the current net income and taxed in that year. In this manner a farmer could distribute net income from good years to years with low incomes.

In summary, the seven safety net options analyzed for the present study are:

- CAT,
- MPCI with three levels of coverage: 50/100, 65/100, and 75/100,
- WFRP with two coverage levels 80 and 90 percent of a five year olympic moving average of total revenue excluding government payments, and
- FARRM with up to 20 percent of net farm income diverted to a tax sheltered savings account to be used when cash flows are negative.

Representative Farms

Fourteen representative grain, cotton, and rice farms in the AFPC database are used for the safety net analysis. Most of the representative farms were first developed in 1989 using panels of farmers assembled by local extension specialists or university economists. The representative farms have been updated on a three-year basis since then. Two farms were developed in each area to capture local economies to size. The smaller farm reflects the typical size full-time commercial operation in each area. The larger farm reflects an owner/operator commercial farm that is two to three times larger than the typical size farm.

The characteristics for the representative farms used for the present study are summarized in Table 1. The feed grain farms were in the Texas Northern Plains (TXNP1600 and TXNP6700), in Central Missouri (MOCG1700 and MOCG3300), and in South Carolina (SCG1500 and SCG3500). The cotton farms were in the Texas Southern Plains (TXSP1682 and TXSP3697) and in Tennessee (TNC1675 and TNC3800). The rice farms were in Texas (TXR2118 and TXR3750) and in Arkansas (ARR2645 and ARR3400).

The farms are assumed to have 20 percent debt on land, machinery, and livestock in 1996. Actual prices, yields and policy values for 1996-1999 are used to simulate the farms to a common starting point in 2001 for each of the safety net options. For the present study it is assumed the farms used no risk reduction program over the 1996-1999 period and adopted the assumed safety net option for the 2000-2005 period.

Baseline Assumption

Under the Base situation the representative farms are assumed to not take advantage of any of the seven safety net/insurance options analyzed. The farm program and price assumptions for the analyses come from the January 2000 FAPRI Baseline. The farm program assumption implicit in the FAPRI Baseline is that the 1996 farm would be extended through 2005 with the AMTA payment rates in 2002 held constant for 2003-2005.

Probability distributions of annual crop prices for 500 iterations of the January 2000 Baseline simulated by FAPRI are used as input to FLIPSIM. Annual yields for 2000-2005 are simulated as multivariate empirical distributions based on ten years of historical yields for actual farms in the study areas, using the procedure described by Richardson, Klose and Gray. The simulation procedure insured that the same yields and prices are observed for each of the safety net options. Therefore, the only difference between the simulation results for the safety net options is the assumed yield or revenue protection assumptions for the options.

Results

The ability of each safety net option to protect the representative farm's net cash farm income (NCFI) is presented in Table 2. NCFI is defined in this analysis as total receipts less total cash expenses. Table 2 reports, in thousands of dollars, the mean simulated average NCFI in 2005 and the standard deviation of NCFI for each of the representative farms under the eight alternatives analyzed.

Most of the options in this analysis benefited the NCFI position for the representative farms. Relative to the baseline, the average NCFI either remains the same or increases for all of the safety net alternatives except the FARRM accounts option. Six of the seven safety net alternatives are also able to reduce the standard deviation of NCFI or keep it at the same level. The combined effect of the changes in average NCFI and its standard deviation is the reduction of the relative risk associated with the projected NCFI in 2005 for each of the representative farms in this analysis.

Evidence of the benefits of safety net programs on the farms analyzed can be seen on the large South Carolina grain farm (SCG3500) and the large Tennessee cotton farm (TNC3800). The baseline projection for average NCFI in 2005 on SCG3500 was $311,550 with a standard deviation of $291,070. When insured with CAT and MPCI50 coverage, SCG3500 realized a slight improvement in NCFI. Under higher coverages of MPCI, NCFI reached $350,860 with a standard deviation of $269,660 for the SCG3500 farm. The whole farm revenue program was the most beneficial for SCG3500, with an annual average NCFI of $350,270 and a standard deviation of $259,340 for WFRP90 coverage. The relative benefits to NCFI in 2005 are even greater for the TNC3800 farm. Projected NCFI for the baseline is $41,050 with a standard deviation of $360,740 for the TNC3800 farm. Insuring TNC3800's production with only CAT increases average NCFI to $62,790 with a standard deviation of $335,910. MPCI75 increases TNC3800's average NCFI to $134,120 with a standard deviation of $275,210 and WFRP90 increases average NCFI to $160,300 with a standard deviation of $243,230.

The benefits to NCFI that the representative farms received under the CAT, MPCI and WFR net options were not obtained when the farms were analyzed under the FARRM option. None of the farms in this analysis realized a significant change from the baseline in the average value of NCFI or the standard deviation of NCFI, and most farms realized a drop in average NCFI under the FARRM option. The positive effects of the tax deferment created through a FARRM account is offset by the increased interest charges paid on operating loans for larger amounts than would be necessary if funds were not in the FARRM account.

The option that generated the highest average annual NCFI in 2005 on a majority of the farms analyzed was the WFRP90 alternative, with the MPCI75 alternative generating the next highest values of average NCFI. One of the shortcomings of the MPCI coverage for many of the farms was that MPCI only insures a selected category of crops for yield risk. In contrast the WFRP options are not limited to specific crops but include all farm related production activities.

Another area of consideration is the effect of safety net programs on the equity position of the representative farms. Table 3 illustrates the equity position of the representative farms in this study by presenting the simulated percentage change in real net worth (RNW) from January 1, 2001 to December 31, 2005. Average values for the percentage change in RNW and its corresponding standard deviation are reported in Table 3 for each representative farm under each of the eight safety net options.

The results presented in Table 3 for change in RNW follow much of the same patterns as those presented in Table 2 for NCFI. The safety net options are all beneficial relative to the baseline with increasing averages and decreasing standard deviations, indicating a decrease in the relative risk associated with changing RNW. The FARRM option shows little significant improvement from the baseline for the change in RNW of the representative farms; however, most of the farms show a slight increase in the average change in RNW under FARRM. This result can be attributed to the classification of the FARRM account as an asset in the calculation of RNW. The change in RNW reaffirms the NCFI results that the most beneficial options for the representative farms in this analysis are the WFRP and MPCI coverages.

Table 4 describes the relative preferences for the safety net options across the representative farms based on certainty equivalents. The table values indicate the net value of each safety net option that a risk averse producer would have to forgo to accept the average NCFI of the baseline scenario with no safety net. The values represent the absolute change between the certainty equivalent of the average NCFI from 2001 to 2005 for each safety net option and the certainty equivalent of the average NCFI for the baseline. The certainty equivalent is the deterministic value a decision-maker with a given index of risk aversion would accept to be indifferent to a value that is subject to risk. In this case, the table values are reported as the difference between average NCFI for the safety net and the baseline for a risk averse decision maker.

The differences expressed in the table are adjusted for the relative risk aversion associated with the income stream of each farm. A positive value on the table indicates that a risk averse producer on the specified farm would be better off choosing the safety net option over the baseline scenario. Negative values indicate that a risk averse producer would generally not choose the safety net option over the baseline.

For most of the farms, WFRP90 produced the greatest benefits over the baseline. Overall, the next most preferred option is the MPCI75. Preferences for the WFRP80, the MPCI65, and the MPCI50 options alternate depending on the make of receipts for the farm. Preferences for the whole farm revenue and the multi-peril crop insurance programs switch depending on the enterprises on the farm, the income level and size of the farm, and the coverage level of the safety net option.

Over the 14 representative Southern crop farms, ten gained the greatest benefit from WFRP90 and four gained the most from MPCI75 (Table 4). The TXNP feed grain farms and the TXSP cotton preferred the MPCI75 safety net option to a whole farm revenue program. The differences between the NCFI gains for the different safety net options reveal that these farms have a strong preference for MPCI75 over WFRP90. On the TXNP1600 grain farm, the added benefit of MPCI75 over WRFI90 amounts to $16,800 in average annual NCFI. This level of conviction or preference is similarly fairly high for the other three farms that prefer MPCI75 to WFRP90.

The level of conviction or preference for WFRP90 over the MPCI75 is moderate to small for the Central Missouri and South Carolina farms (MOCG and SCG). These farms are diversified, growing three to four crops, and yield risk is relatively lower than for the dry land crops on the Texas grain and cotton farms. The strong preference for the whole farm revenue safety net option by the rice farms (TXR and ARR) over an MPCI75 option was due to relatively low yield risks for these farms and the high price risk for rice.

The CAT option is the least generally preferred program for risk averse producers on the representative farms. The CAT program produces more relative benefit for risk averse producers with a high level of production variability. For the Texas Southern Planes farms (TXSP), risk averse producers prefer CAT over WFRP80. The average NCFI above the baseline is very close for both programs, but the CAT option produces slightly more benefit when dealing with downside risk.

Based on the certainty equivalents, the FARRM account program is not preferred over the baseline for all but one of the representative farms. The net benefit over the baseline for that farm (TNC1675) is marginal. The FARRM program can only be beneficial for highly solvent farms that are able to set aside part of their annual net income to offset years where cash flows are negative. The drawback of the program is that setting aside part of the current year's net income hinders the ability to pay down long-term and operating loans and thus effectively increasing the subsequent interest expenses. This impact was evident in most of the representative farms.

Summary

This paper analyzed the economic impacts of several alternative safety net programs on farms in the Southern United States. Fourteen representative crop farms were simulated using FLIPSIM to compare the effects of alternative safety net programs on net cash farm income over the 2001-2005 planning horizon. The safety net options compared in this analysis included CAT, MPCI at 50/100, 65/100, and 75/100, whole farm revenue program at 80 and 90 percent, and the FARRM account program.

Analysis of the expected value and variability of net cash farm income and changes in real net worth indicated that most of these safety net programs tend to accomplish their goals of reducing risk and stabilizing income. The whole farm revenue program at the 90 percent level provided the best income support and risk reduction on most (10 of 14) of the farms. The MPCI at the 75/100 was close in providing the second highest level of support, followed by the MPCI at the 65/100 level and the whole farm revenue program at the 80 percent level. CAT coverage provided marginal benefit to net income, relative to the baseline. The FARRM account program was least effective and generally detrimental in providing income enhancement or risk reduction. The FARRM accounts tended to reduce annual NCFI due to reducing cash available to cover production and interest expenses in subsequent years.

The stochastic simulation allowed for the evaluation of certainty equivalents for each safety net option incorporating risk. The comparison of the certainty equivalent of each option to the baseline showed that most options were preferred to no program by risk averse producers. Based on absolute differences of certainty equivalents, risk ranking of producer preferences resulted in similar conclusions to the comparison of NCFI and changes in real net worth. The analysis of certainty equivalents showed that CAT and lower yield coverage elections of MPCI were not very effective for irrigated farms and that there is a high level of indifference between comparable election levels of MPCI and whole farm revenue program for farms that produce only MPCI listed crops. In all but one case, FARRM was shown to produce negative benefit relative to the baseline and was therefore not preferred by most risk averse producers.

This analysis showed that most of the safety net options could provide viable income supports and risk reduction benefits for crop farmers. Since premiums were not included, premiums and subsidies would have to be set by policy makers, recognizing that high premiums would eliminate all of the benefits for some programs. Additionally, the results suggest that the FARRM program will provide little or no benefit unless large subsidies or favorable interest rates accompany the program. The CAT program could provide more benefits if the trigger level and payment rates were increased. The MPCI program provides considerable benefits to farmers, and recent policies to increase the subsidy provide direct benefits of higher incomes and lower risk to farmers. A whole farm revenue program could provide substantial benefits to producers if the premiums were low. It is possible that a form of the revenue program could replace farm programs as an income stabilization mechanism. Based on the findings in this paper, further research along these lines is needed.

References

Adams, G. and J.W. Richardson. "Exploring Options for a New Farm Bill." Invited Paper at the Southern Agricultural Economics Association Annual Meeting, January 29-31, 2001, Ft. Worth, Texas.

Food and Agricultural Policy Research Institute (FAPRI). *FAPRI 2000 U.S. Agricultural Outlook. Staff Report 1-00*, Iowa State University, January 2000.

Richardson, J.W. and C.J. Nixon. "Description of FLIPSIM: A General Firm Level Policy Simulation Model." Bulletin 1528, Texas Agricultural Experiment Station, July 1986.

Richardson, J.W., S.L. Klose, and A.W. Gray. "An Applied Procedure for Estimating and Simulating Multivariate Empirical (MVE) Probability Distributions in Farm-Level Risk Assessment and Policy Analysis." Southern Journal of Agricultural Economics, 32, 2(August 2000): 299-315.

Richardson, J.W., K. Schumann, P. Feldman. "Simetar: Simulation for Excel to Analyze Risk." Department of Agricultural Economics, Texas A&M University, Mimeo, September 2000.

Smith, E.G. and J.W. Richardson. "Impacts of Alternative Price and Income Support Programs on Economic Viability of Representative Grain and Cotton Farms." AFPC Briefing Report, July 2000.

U.S. Department of Agriculture, Office of Communications News Release. "USDA to Provide $2.8 Billion in Loss Assistance." Release 0450.98, Washington, DC, October 1998.

_____. "Glickman Extends Sign-up for Crop Loss Disaster Assistance Program to April 9." Release 0090.99, Washington, DC, March 1999.

_____. "USDA Providing Record Assistance to Farmers." Release 0348.00, Washington, DC, October 2000.

Table 1. Characteristics of Representative Crop Farms in the South.

	TXNP1600*	TXNP6700	MOCG1700	MOCG3300	SCG1500	SCG3500	TXSP1682
County	Moore	Moore	Carroll	Carroll	Clarendon	Clarendon	Dawson
Total Cropland	1,600	6,700	1,700	3,300	1,500	3,500	1,682
Acres Owned	160	1,100	850	1,600	500	1,400	606
Acres Leased	1,440	5,600	850	1,700	1,000	2,100	1,076
Assets ($1000)							
Total	450	2,878	2,521	4,329	1,042	3,861	766
Real Estate	128	896	1,744	3,198	717	2,551	333
Machinery	294	1,389	435	638	311	931	433
Other & Livestock	29	593	342	492	13	379	0
2000 Gross Receipts ($1,000)	428	1,710	368	717	489	1,526	524
2000 Planted Acres	1,568	6,030	1,700	3,300	1,954	4,400	1,564

	TXSP3697	TNC1675	TNC3800	TXR2118	TXR3750	ARR2645	ARR3400
County	Dawson	Fayette	Haywood	Wharton	Wharton	Arkansas	Arkansas
Total Cropland	3,697	1,675	3,800	2,118	3,750	2,645	3,400
Acres Owned	1,627	225	1,520	318	1,688	815	1,020
Acres Leased	2,070	1,450	2,280	1,800	2,062	1,830	2,380
Assets ($1000)							
Total	1,798	1,033	8,485	762	2,649	2,297	3,851
Real Estate	969	527	6,929	230	1,327	1,232	2,042
Machinery	759	321	1,340	261	650	578	992
Other & Livestock	70	185	216	272	672	487	818
2000 Gross Receipts ($1,000)	1,045	576	1,342	492	1,403	682	967
2000 Planted Acres	3,164	1,675	4,100	1,110	2,975	2,325	3,500

*Representative farm names are abbreviated using the state name for the first two letters and the region or crop as the third and fourth letters. The numbers in the farm name indicate the number of cropland acres on the farm.

Table 2. Net Cash Farm Income in 2005 for Representative Crop Farms Under Alternative Safety Net Options.

	BASE	CAT	MPCI50	MPCI65	MPCI75	WFR80	WFR90	FARRM
				($1,000)				
TXNP1600								
Average	32.98	51.23	66.39	81.18	92.15	60.19	75.46	32.65
Std Dev	150.81	137.94	128.81	120.98	116.15	123.61	114.91	150.33
TXNP6700								
Average	208.34	238.35	263.63	284.44	299.96	239.31	266.62	203.66
Std Dev	365.11	347.21	338.71	337.10	337.63	319.72	306.50	363.78
MOCG1700								
Average	134.70	138.70	142.11	147.91	153.30	145.59	155.80	134.22
Std Dev	95.23	91.01	88.31	84.76	82.26	83.75	77.19	95.23
MOCG3300								
Average	225.63	234.03	241.27	252.40	262.36	248.86	267.82	222.57
Std Dev	178.83	169.77	163.60	156.42	151.31	154.67	142.71	178.43
SCG1500								
Average	56.72	59.30	62.47	66.16	71.36	63.85	73.32	55.77
Std Dev	100.59	98.46	97.11	95.52	94.17	94.88	90.22	100.32
SCG3500								
Average	311.55	318.56	327.26	336.18	350.86	326.50	350.27	302.98
Std Dev	291.07	285.38	279.77	275.12	269.66	276.39	259.34	290.96
TXSP1682								
Average	58.54	65.55	73.06	78.91	84.61	63.93	72.28	58.52
Std Dev	74.95	69.36	64.47	61.31	58.73	69.67	64.60	74.95
TXSP3697								
Average	197.32	212.75	229.04	241.65	252.67	218.81	242.00	194.22
Std Dev	188.81	175.24	162.78	154.23	147.88	168.49	154.83	188.07
TNC1675								
Average	-36.58	-33.00	-29.27	-26.99	-23.09	-27.82	-16.91	-36.34
Std Dev	108.77	104.05	100.54	98.84	96.12	99.14	93.27	108.77
TNC3800								
Average	41.05	62.79	85.90	113.24	134.12	121.04	160.30	40.39
Std Dev	360.74	335.91	313.50	290.49	275.21	269.07	243.23	360.46
TXR2118								
Average	24.50	26.81	28.97	32.51	35.97	37.92	48.34	22.56
Std Dev	60.77	55.51	52.48	47.89	44.14	44.75	39.85	59.89
TXR3750								
Average	-76.99	-70.30	-61.63	-49.02	-35.88	-34.98	2.19	-74.65
Std Dev	183.09	170.63	161.30	146.16	132.70	135.54	117.08	182.43
ARR2645								
Average	138.62	141.72	145.26	148.33	151.57	143.11	152.81	135.00
Std Dev	81.95	78.79	75.91	73.67	71.86	77.46	70.14	81.74
ARR3400								
Average	259.08	263.20	267.35	271.47	275.33	269.07	283.86	258.43
Std Dev	119.19	113.51	109.27	104.86	101.61	105.55	92.50	119.10

Table 3. Change in Real Net Worth 2001-2005 for Representative Crop Farms Under Alternative Safety Net Options.

	BASE	CAT	MPCI50	MPCI65	MPCI75	WFR80	WFR90	FARRM
				($1,000)				
TXNP1600								
Average	-27.31	-12.72	-8.70	-5.16	-2.75	-19.66	-15.63	-20.65
Std Dev	204.86	24.63	19.83	16.74	15.10	185.05	171.61	82.51
TXNP6700								
Average	-3.17	-2.15	-1.36	-0.76	-0.31	-2.12	-1.26	-2.79
Std Dev	7.66	6.63	6.11	5.87	5.71	6.48	6.12	7.88
MOCG1700								
Average	0.66	0.79	0.89	1.06	1.24	1.05	1.39	1.01
Std Dev	1.42	1.35	1.30	1.25	1.22	1.23	1.15	1.56
MOCG3300								
Average	0.38	0.53	0.66	0.85	1.02	0.81	1.13	0.68
Std Dev	1.63	1.51	1.43	1.35	1.30	1.36	1.26	1.77
SCG1500								
Average	-4.43	-4.19	-3.91	-3.58	-3.13	-3.85	-3.14	-4.17
Std Dev	4.69	4.53	4.41	4.27	4.13	4.45	4.24	4.97
SCG3500								
Average	0.38	0.53	0.71	0.90	1.22	0.73	1.23	0.84
Std Dev	3.03	2.94	2.85	2.78	2.69	2.86	2.70	3.33
TXSP1682								
Average	-7.42	-5.68	-3.97	-2.74	-1.59	-6.61	-5.34	-7.41
Std Dev	11.38	10.06	9.03	8.38	7.80	11.16	10.93	11.40
TXSP3697								
Average	1.28	2.05	2.79	3.31	3.78	2.05	2.87	1.72
Std Dev	5.59	5.07	4.63	4.35	4.14	5.41	5.18	5.97
TNC1675								
Average	-18.66	-18.07	-17.50	-17.17	-16.55	-17.22	-15.48	-18.58
Std Dev	9.63	8.89	8.44	8.24	7.91	8.99	8.80	9.59
TNC3800								
Average	-3.09	-2.87	-2.63	-2.36	-2.15	-2.20	-1.72	-3.08
Std Dev	2.31	2.16	2.04	1.91	1.82	1.78	1.65	2.33
TXR2118								
Average	-6.17	-5.83	-5.55	-5.08	-4.63	-4.05	-2.52	-5.65
Std Dev	4.38	3.83	3.55	3.13	2.78	2.99	2.64	4.24
TXR3750								
Average	-6.80	-6.52	-6.18	-5.69	-5.21	-4.94	-3.28	-6.49
Std Dev	4.51	4.10	3.80	3.38	3.03	3.18	2.72	4.42
ARR2645								
Average	0.07	0.18	0.30	0.40	0.52	0.34	0.80	0.39
Std Dev	1.50	1.42	1.35	1.29	1.26	1.29	1.16	1.60
ARR3400								
Average	1.04	1.12	1.21	1.28	1.37	1.39	1.85	1.42
Std Dev	1.17	1.09	1.03	0.98	0.94	0.93	0.82	1.28

Table 4. Net Difference of Average Annual Net Cash Farm Income for Alternative Safety Net Options for Representative Crop Farms Adjusted for Relative Risk Aversion.

	CAT	MPCI50	MPCI65	MPCI75	WFR80	WFR90	FARRM
				($1,000)			
TXNP1600	19.3	34.5	49.2	60.0	30.0	43.2	(0.1)
TXNP6700	26.7	48.6	66.0	79.5	29.1	53.7	(4.0)
MOCG1700	4.3	7.8	13.7	19.4	13.3	24.5	(0.4)
MOCG3300	11.5	20.6	33.4	44.4	30.9	51.3	(2.7)
SCG1500	2.9	6.0	9.8	15.1	7.1	15.6	(0.5)
SCG3500	10.3	21.8	32.2	50.1	23.2	50.6	(2.7)
TXSP1682	12.6	22.9	29.2	36.7	6.0	13.4	(0.0)
TXSP3697	17.1	34.3	46.8	57.9	13.1	29.5	(0.8)
TNC1675	4.5	8.5	10.9	14.9	13.4	26.3	0.2
TNC3800	37.2	71.5	109.4	135.1	138.5	187.9	(0.2)
TXR2118	2.8	4.9	8.4	11.8	17.4	29.7	(3.8)
TXR3750	14.1	25.9	42.7	58.3	68.6	110.5	(0.3)
ARR2645	3.6	7.4	10.6	14.2	8.9	22.6	(4.3)
ARR3400	6.0	11.3	16.2	21.4	21.9	45.3	(1.1)