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Southern Farmers' Exposure to Income Risk Under the 1996 Farm Bill

Ronald D. Knutson, Edward G. Smith, David P. Anderson, and James W. Richardson

ABSTRACT

This paper investigates the farm-level impacts of the 1996 farm bill on the South. Focus group perceptions of risk sources, observed acreage changes, and the farm-level impact of increased price risk are evaluated. Focus group respondents ranked price and yield as the two most important sources of risk, and diversification was ranked highly as a risk-management tool. Limited data suggest that acreage shifts among crops are occurring in the South, presumably aided by the 1996 farm bill. Higher probabilities of cash flow deficits are estimated for cotton and rice relative to feedgrain, wheat, and oilseed operations.

Key Words: acreage shifts, income risk, policy risk, risk perception.

Arguably, since the 1930s, what farmers produce has been greatly influenced by farm programs (Duffy). While policy has changed markedly in terms of the nature and objectives of price supports, income subsidies, and production controls, up to the enactment of the 1996 farm bill, farmers' program base acres were primary determinants of what was produced. Provisions for limited flexibility under the 1990 bill provided some latitude for adjustment in cropping patterns, followed by the implementation of virtual flexibility and decoupled payments in the 1996 bill.

The South, defined as the 14-state area bounded by Texas, Oklahoma, Missouri, Arkansas, Tennessee, Kentucky, and Virginia, produces many program crops that are relatively unique to this region. These include cotton, rice, peanuts, and tobacco. However, the region is characterized by agronomic conditions that allow the production of a variety of other crops including corn, soybeans, and wheat. Under previous farm bills, many of the farms in this region may not have had the base acres on which to grow these crops. Even after the enactment of the 1990 bill, these farms may have been constrained by the lack of specialized equipment, capital rationing, adapted varieties, and/or production management skills.

The 1996 farm bill not only affects farmers in terms of what they produce, it also affects their level of risk exposure. As noted in the companion proceedings paper by Ray et al. (published in this journal issue), the magnitude and form of additional risk exposure is the subject of debate. The central issues in this debate appear to involve whether the decoupling and flexibility provisions of the farm bill make the supply response more elastic. A related argument said to reduce price risk is that with increased flexibility, farmers will be free to incrementally adjust to changing market conditions. Here, the issue is whether the adjustment is likely to be of sufficient magnitude

Knutson, Smith, and Richardson are professors, and Anderson is an assistant research scientist, all in the Department of Agricultural Economics, Texas A&M University.

Table 1. Texas and Kansas Focus Group Perceptions of Importance of Sources of Risk, 1997

Sources of Risk	Focus Group Rankings[a]		
	Texas	Kansas	Combined
Commodity price variability	4.4	4.7	4.5
Commodity yield variability	4.3	4.3	4.3
Changes in input costs	4.1	4.1	4.1
Changes in environmental regulations	4.0	4.1	4.0
Unforeseen litigation	4.0	3.6	3.9
Changes in machinery costs	3.9	3.7	3.9
Injury, illness, or death of operator	3.7	3.9	3.8
Changes in interest rates	3.7	3.9	3.8
Availability of skilled labor	3.7	3.8	3.7
Family health problems	3.7	3.8	3.7

Source: Texas and Kansas Risk Management Education Teams.
[a] Rankings based on a five-point scale, where 5 = very important, and 1 = not important.

and in the right direction to lead to greater stability. There is no intuitive reason to anticipate that increased flexibility will assure that southern farmers will make the right production decisions in consideration of what farmers in the aggregate are likely to do. The 1996 farm bill did not repeal either the fallacy of composition or the cobweb theorem of farmer decisions.

The purpose of this paper is to investigate the farm-level impacts of the 1996 farm bill on the South. We do this through the use of three research techniques: (*a*) presenting the results of a series of producer and lender focus groups, where the central issue involved the participants' perceptions of risk exposure and risk-management tools under the 1996 farm bill; (*b*) presenting data on what farmers have done in terms of shifting cropping patterns; and (*c*) discussing the farm-level impacts of the risk results presented in the proceedings companion paper by Ray et al. While this paper certainly does not provide answers to all the issues at hand, it does serve to raise a number of questions that merit further study.

Farm-Level Perceptions of Risk

In the fall of 1997, the Texas and Kansas Risk Management Education Teams conducted a series of 23 focus group meetings, comprised of 101 producers, 22 lenders, and 14 representatives of other agribusiness firms. Seventeen of the focus groups were conducted in the Texas Panhandle and the Southern Plains, while the remaining six were conducted in central and western Kansas.

The focus group participants were asked to rate 21 individual sources of risk on a five-point scale, where 5 = very important, and 1 = not important. Table 1 lists the 10 most important sources of risk as perceived by the participants in these Texas and Kansas focus groups. As indicated by the average scores, the four most important sources of risk were the same in both states. The two highest ranking risk sources were price and yield. Price risk is decidedly farm-bill related, although the magnitude may be debated. Kansas respondents rated price risk higher (4.7) than did their Texas counterparts (4.4). Both rated yield risk the same (4.3). The impact of the farm bill on yield risk is likely small, although the elimination of annual acreage reduction programs brings less productive lands back into production and reduces the producers' ability to address critical agronomic concerns, such as weed control on idle acreage. Thus, the lands put back into production from the set-aside program and the Conservation Reserve Program (CRP) likely will have a higher level of associated yield risk. Changes in input costs are farm-bill related from the perspective of feed costs to livestock, dairy, and poultry producers. Although not farm-bill related, the high ranking of environmental risk signals

Table 2. Texas and Kansas Focus Group Perceptions of Importance of Risk-Management Tools, 1997

Risk-Management Tools	Focus Group Rankings[a]		
	Texas	Kansas	Combined
Debt management	4.2	3.7	4.0
Enterprise diversification	4.0	4.0	4.0
Forward contract selling	3.9	3.9	3.9
Liability insurance	3.8	4.0	3.9
Hedging the selling price	3.9	3.7	3.9
Government program participation	3.8	3.7	3.7
Commodity options	3.7	3.8	3.7
Cash contingency reserves	3.6	3.9	3.7
Operator life insurance	3.7	3.6	3.7
Multi-peril crop insurance	3.7	3.7	3.7
Using futures to hedge	3.6	3.9	3.7
Being a low-cost producer	3.6	3.6	3.6
Off-farm investments	3.6	3.6	3.6
Using variety of production techniques	3.5	3.6	3.5
Purchasing health insurance	3.4	3.5	3.4

Source: Texas and Kansas Risk Management Education Teams.
[a] Rankings based on a five-point scale, where 5 = very important, and 1 = not important.

farmers' increased concerns over changes in these regulations as a source of risk.

Farmers' perceptions of the importance of risk-management tools likewise provide insight into the changing roles of farm programs versus individual management initiative in reducing risk. The focus group participants were asked to rank the relative importance of 35 risk-management tools on the same five-point scale. The 15 highest rated risk-management tools are presented in table 2. It is not surprising that debt management and forward selling (contract or hedging) ranked in the top five.

What is interesting is the high ranking of enterprise diversification and liability insurance (with combined rankings of 4.0 and 3.9, respectively). Diversification has always been recognized by economists as a risk-management tool. Sustainable agriculture advocates have charged that prior to the 1990 bill, farm programs fostered a monoculture, thus thwarting the environmental benefits associated with diversification (National Research Council). Farmers perceive diversification as a major risk-management tool and, under the flexibility provisions of the 1996 farm bill, they will be able to more effectively utilize it for this purpose. These farmers obviously are looking for alternatives that reduce risk.

Farm program participation is still recognized as an important risk-management tool—reflecting the fact that, while decoupled, substantial lump-sum transition payments are an important component of farmers' profit margin. What is more interesting is that multi-peril crop insurance, as a farm program, ranks in the middle third of the top 15 risk-management tools (at 3.7) and below the operator's own life insurance policy but higher than health insurance (table 2). This is especially noteworthy given that commodity yield was ranked second as the most important source of risk (table 1).

The focus group discussions revealed that farmers perceive they operate in a more risky environment, although no attempt was made to segregate how much of that perception was due to the 1996 farm bill. While government programs are important, they are not perceived as the primary means of reducing risk; i.e., farmers recognize that successful risk reduction is primarily a function of their own individual initiative. They also recognize that

changes in the farm program give them greater latitude for reducing risk through diversification.

The area comprising the Texas Panhandle and Southern Plains is not set forth here as being representative of the South. However, cotton is the largest revenue-producing crop in the South. Interestingly, peanuts are achieving increasing prominence in the region with quota transfers being allowed within-state. Likewise, Kansas also is not representative of farmers in the South, although it is the largest wheat- and sorghum-producing state, and is seeing substantial diversification into corn.

Impacts of the 1996 Farm Bill on Cropping Patterns

After the 1996 farm bill was enacted, the Texas Agricultural and Food Policy Center (AFPC) representative farms (Richardson and Nixon 1982) were updated with the help of our farmer panels. During this updating process, extensive discussions occurred regarding potential changes in cropping patterns associated with the new flexibility provisions, and anticipated changes in the supply/demand balance favoring increased demand for feed grains and oilseeds relative to cotton and rice [Food and Agricultural Policy Research Institute (FAPRI)].

These discussions revealed that farmers are reluctant to change cropping patterns unless there is a significant profit incentive to do so. It was concluded that farmers participating in these panels require around $50 per acre extra in anticipated profit before making major changes in their crop mix. The reason for this relatively high opportunity cost lies in the perceived costs associated with acquiring additional cultural and management expertise, the relative risks associated with producing alternative crops, the impact on economies of specialization scale, and additional required investments in specialized equipment.

Realistically, in terms of revealed changes in cropping patterns, to date there is only one year of experience under the 1996 farm bill. That is, the bill's implementation provisions were sufficiently delayed in the 1996 crop year so that farmers, especially in the South, had already made their cropping decisions. Nationally, for crop year 1997, increases in production were certainly impacted by changes in the CRP and the set-aside program, and by weather impacts—not necessarily by long-term shifts in production patterns due to changing profit margins and risk exposure.

However, analyses of state data in the South reveal some interesting acreage shifts. The 1997 planted acreages of corn, wheat, sorghum, soybeans, cotton, and rice were examined in comparison to the 1994–96 average for the 14 southern states (table 3). Planted acreage for the period 1994–96 was analyzed as a benchmark because producers likely had adjusted to the limited flexibility provisions contained in the 1990 farm bill, and annual acreage reduction requirements were modest relative to earlier periods. There were no acreage reduction requirements for wheat during this period. Rice producers had to idle 5% of their base in 1995, cotton producers 11% in 1994, and corn producers 7.5% in 1995 in order to retain program benefits.

The data suggest a shift of acres from cotton and rice to corn and soybeans in the Mississippi Delta region. Cotton acreage declined in 1997 from the 1994–96 average in Louisiana, Mississippi, and Arkansas by 34%, 23%, and 9%, respectively. These three Delta states also show declines in rice acres by 1%, 8%, and 9%, respectively. Planted corn acres in 1997 for Arkansas, Louisiana, and Mississippi were increased 52%, 66%, and 35%, respectively, over the 1994–96 average. Soybean planted acreage for 1997 increased by 9%, 22%, and 8% over the three-year average in Arkansas, Louisiana, and Mississippi, respectively (table 3).

Texas and Oklahoma likewise shifted acres to feed grains, although more to sorghum than corn. Sorghum acres in 1997 increased 31% and 9% in Oklahoma and Texas, respectively. It would appear that the increased sorghum acres in Oklahoma came out of cotton, where acres declined 42% (143,000 acres) from the 1994–96 average. Texas cotton acres in 1997 were 352,000 below the three-year average, but were above 1994 plantings. Soybean acres

Table 3. Changes in 1997 Planted Acres of Southern States from the 1994–96 Average

	Planted Acres (000s)											
	Corn		Wheat		Sorghum		Soybeans		Cotton		Rice	
State	Avg. 1994–96	1997	Avg. 1994–96	1997	Avg. 1994–96	1997	Avg. 1994–96	1997	Avg. 1994–96	1997	Avg. 1994–96	1997
AL	283	300	123	145	18	14	293	350	524	535	0	0
AR	145	220	1,127	880	230	210	3,483	3,800	377	342	1,323	1,200
FL	120	175	19	17	0	0	37	45	93	109	0	0
GA	527	550	397	400	62	65	413	430	1,242	1,440	0	0
KY	1,310	1,400	647	700	22	10	1,173	1,173	0	0	0	0
LA	362	600	113	130	124	150	1,107	1,350	958	630	578	570
MS	407	550	202	220	65	50	1,850	2,000	1,287	985	272	250
MO	2,267	2,900	1,400	1,100	563	500	4,433	4,500	401	380	152	90
NC	933	950	673	750	23	20	1,267	1,350	671	670	0	0
OK	182	210	6,967	6,800	397	520	297	320	343	200	0	0
SC	0	340	317	300	13	6	570	600	286	290	0	0
TN	693	730	573	560	26	15	1,143	1,300	610	500	0	0
TX	2,117	2,100	5,933	6,000	3,300	3,600	253	380	5,884	5,532	325	290
VA	460	500	293	280	0	0	510	510	84	101	0	0

Table 4. FAPRI November 1997 Baseline Prices and Contract Payment Rates, 1996–2005

Baseline	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Crop Prices										
Corn ($/bu.)	2.70	2.59	2.46	2.41	2.45	2.49	2.56	2.63	2.69	2.75
Wheat ($/bu.)	4.30	3.56	3.30	3.43	3.52	3.66	3.73	3.63	3.74	3.71
Cotton ($/lb.)	0.6930	0.6894	0.6610	0.6606	0.6664	0.6724	0.6789	0.6841	0.6861	0.6916
Sorghum ($/bu.)	2.34	2.30	2.33	2.27	2.34	2.38	2.45	2.50	2.54	2.60
Soybeans ($/bu.)	7.38	6.45	5.98	5.95	5.92	6.08	6.12	6.31	6.35	6.56
Rice ($/cwt)	9.90	9.68	9.37	9.34	9.34	9.36	9.41	9.46	9.51	9.53
Annual Contract Payment Rates										
Corn ($/bu.)	0.2508	0.2807	0.3762	0.3657	0.3344	0.2717	0.2612	0.2612	0.2612	0.2612
Wheat ($/bu.)	0.5238	0.6126	0.6528	0.6327	0.5725	0.4620	0.4519	0.4519	0.4519	0.4519
Cotton ($/lb.)	0.0703	0.0725	0.0772	0.0745	0.0682	0.0553	0.0536	0.0536	0.0536	0.0536
Sorghum ($/cwt)	0.3233	0.3265	0.4381	0.4172	0.3859	0.3129	0.3024	0.3024	0.3024	0.3024
Rice ($/cwt)	2.7655	2.7257	2.9427	2.8352	2.5964	2.0990	2.0203	2.0203	2.0203	2.0203

Source: FAPRI, "November 1997 U.S. Agricultural Baseline."

in Texas increased 50% over the 1994–96 average to 380,000 acres in 1997 (table 3).

Some acreage shifts were indicated in other parts of the South as well. Tennessee cotton acres decreased 18% (110,000 acres) in 1997 from the three-year average. Over the same time period, soybean acres increased by 14% (157,000 acres). Missouri acreages show declines in rice, wheat, sorghum, and cotton, and increases in corn and soybeans. Some caution should be used in interpretation because the changes in the Missouri cotton and soybean acres are within the ranges observed over the 1994–96 period. Corn and wheat acres increased in Kentucky, while corn, wheat, soybean, and cotton acres increased in Alabama. Cotton acres also appear to increase in Georgia, Florida, South Carolina, and Virginia (table 3).

Impacts of the 1996 Farm Bill on Representative Farms

To analyze the farm-level impacts of the 1996 farm bill, we used the AFPC's set of representative crop farms (Richardson and Nixon 1982). Emphasis in this analysis was placed on the effects of increased price and income risk resulting from the farm bill provisions largely related to the substitution of decoupled lump-sum payments for the target price.

The FAPRI November 1997 baseline, which projects prices over the crop year period 1997–2005, was utilized (table 4). The assumption is that policy will be as specified in the 1996 farm bill over this time period, with payments at the 2002 level through 2005.

The farm-level analysis was performed with AFPC's Farm-Level Income and Policy Simulator (FLIPSIM) model developed by Richardson and Nixon (1986). FLIPSIM is a computer model that simulates, under price and yield risk, the annual economic activities of a farm using accounting equations, identities, and probability distributions. Among the model outputs are the variables that make up an income statement, cash flow, balance sheet, and financial ratios describing the economic viability of the farm. Stochastic yields and prices are used to calculate empirical probability distributions for key variables.

The representative farms in this study include southern feedgrain, cotton, and rice farms. Two risk scenarios were analyzed:

(*a*) A historical risk scenario (denoted "history") based on the detrended price variance. This scenario, in essence, assumes that the same level of price and yield risk would exist over the 1997–2005 period as existed over the 1986–96 period.

(*b*) The variance determined by Ray et al. (see proceedings paper published in this journal issue) under the 1996 farm bill pro-

visions (POLYSYS). Ray et al. do not address sorghum and rice. For the purpose of our analysis, we assume the same increase in price variance due to corn for sorghum and cotton for rice.

The difference between the historical level of risk and the risk level estimated by Ray et al. is an estimation of the increased annual price risk incurred as a result of the 1996 farm bill. Identical price mean levels were utilized in each scenario. Under the POLYSYS scenario, corn and sorghum price variability was increased by the equivalent of a 92% increase in the coefficient of variation. The coefficient of variation was increased 57% for wheat, 45% for soybeans, and 17% for cotton and rice.

The impacts of the two policy/risk scenarios were measured by two variables generated by the FLIPSIM model: (*a*) the level of net cash farm income described as gross farm receipts, including government payments, minus all cash expenses; and (*b*) the probability that net cash farm income would be less than additional cash outflows including principal payments, family living withdrawals, income taxes, and machinery cash replacement costs (i.e., the probability of an annual cash flow deficit that must be financed from accumulated cash reserves or refinanced through external sources).

The results of the analyses are provided in table 5 for a set of eight representative farms. The three representative feedgrain farms are located in central Missouri, the Texas Northern Plains, and South Carolina; cotton farms are located in the Texas Southern Plains, Texas Coastal Bend, and Mississippi; and the rice farms are in Arkansas and Louisiana. A brief description of each farm is included in appendix table A1.

Increased price variability is expected to increase mean net cash farm incomes, given the marketing loan safety net common to both price risk scenarios. The minimum and maximum net cash farm incomes, however, likely will expand under the increased price risk scenario, although not symmetrically; that is, it is likely the minimum level will be reduced less than the maximum level will increase due to the marketing loan safety net.

Net Cash Farm Income

As anticipated, the mean net cash farm income levels increase on the eight southern farms analyzed. The increases in average net cash farm incomes range from 1.4% on the Texas Southern Plains cotton farm to 15.5% on the Texas Coastal Bend cotton operation (table 5). Mean net cash farm incomes on the other six farms increased from 3% to 6%.

The increases in mean average net cash farm incomes, however, do not come as a windfall. The minimum average net cash farm incomes experienced over the 1997–2005 period decline marginally on the Missouri, Texas Northern Plains, and South Carolina grain farms, as well as on the Texas Coastal Bend cotton and the Louisiana rice farms under the expanded price risk scenario. The marginal declines in minimum expectations for average net cash farm incomes range from as little as $490 (2%) annually on the Louisiana rice operation, to $23,600 (71%) on the South Carolina grain farm (table 5).

The minimum annual average net cash farm income over the 1997–2005 period actually increases modestly on the Texas Southern Plains cotton farm ($1,700), the Mississippi cotton farm ($4,500), and the Arkansas rice farm ($1,550). The reason for the apparent contradiction in expectations rests on the dependence of these farms on cotton and rice receipts. The marketing loan provisions in cotton and rice have been effective in providing a downside safety net due to lower price expectations. This safety net alone will not result in improved expectations for net cash farm incomes over the 1997–2005 period. However, when coupled with the increased positive benefits that run with higher prices due to reduced interest expense, the minimum net cash farm incomes increase and improve.

Probability of Annual Cash Flow Deficits

The increased price risk projected by Ray et al. shows differential impacts on the feedgrain

Table 5. Net Cash Farm Income and Probability of Annual Cash Flow Deficits for Representative Southern Grain, Cotton, and Rice Farms, 1997–2005

	Missouri Grain		Texas NP Grain		South Carolina Grain	
	History	POLYSYS	History	POLYSYS	History	POLYSYS
Net Cash Farm Income ($000s)						
1997–2005 Avg.	209.45	216.75	119.76	126.23	177.00	185.41
1997–2005 Std. Dev.	27.33	34.37	19.94	28.47	44.71	54.89
1997–2005 Min.	144.25	136.96	55.33	44.82	33.32	9.69
1997–2005 Max.	304.60	340.75	185.49	222.32	320.36	372.69
Prob. Annual Cash Flow Deficit (%)						
1997	25.00	26.00	11.00	18.00	26.00	30.00
1998	30.00	30.00	12.00	20.00	30.00	33.00
1999	6.00	7.00	20.00	21.00	48.00	49.00
2000	26.00	27.00	37.00	41.00	27.00	29.00
2001	13.00	15.00	26.00	33.00	35.00	34.00
2002	17.00	18.00	25.00	31.00	40.00	43.00
2003	26.00	29.00	43.00	45.00	42.00	49.00
2004	25.00	28.00	50.00	51.00	30.00	35.00
2005	13.00	15.00	32.00	42.00	25.00	31.00

	Texas SP Cotton		Texas CB Cotton		Mississippi Cotton	
	History	POLYSYS	History	POLYSYS	History	POLYSYS
Net Cash Farm Income ($000s)						
1997–2005 Avg.	82.40	83.56	33.27	38.42	92.82	98.59
1997–2005 Std. Dev.	29.86	30.06	37.30	39.47	65.73	67.05
1997–2005 Min.	−0.10	1.60	−48.44	−52.44	−71.81	−67.30
1997–2005 Max.	148.95	150.25	130.87	149.43	248.39	257.77
Prob. Annual Cash Flow Deficit (%)						
1997	47.00	47.00	64.00	65.00	50.00	49.00
1998	48.00	47.00	57.00	58.00	53.00	52.00
1999	59.00	58.00	65.00	63.00	56.00	54.00
2000	55.00	55.00	78.00	70.00	63.00	63.00
2001	59.00	59.00	79.00	80.00	75.00	73.00
2002	60.00	60.00	80.00	79.00	74.00	72.00
2003	60.00	60.00	87.00	84.00	78.00	78.00
2004	63.00	61.00	88.00	83.00	82.00	79.00
2005	63.00	62.00	91.00	89.00	85.00	84.00

	Arkansas Rice		Louisiana Rice	
	History	POLYSYS	History	POLYSYS
Net Cash Farm Income ($000s)				
1997–2005 Avg.	133.02	137.69	66.13	68.81
1997–2005 Std. Dev.	26.96	29.51	14.83	16.12
1997–2005 Min.	57.20	58.75	27.58	27.09
1997–2005 Max.	186.04	197.01	92.08	97.12

Table 5. (Continued)

	Arkansas Rice		Louisiana Rice	
	History	POLYSYS	History	POLYSYS
Prob. Annual Cash Flow Deficit (%)				
1997	30.00	29.00	36.00	35.00
1998	47.00	46.00	50.00	48.00
1999	57.00	53.00	68.00	64.00
2000	33.00	33.00	70.00	66.00
2001	42.00	44.00	83.00	81.00
2002	51.00	52.00	89.00	84.00
2003	53.00	51.00	94.00	92.00
2004	72.00	69.00	92.00	87.00
2005	65.00	60.00	83.00	77.00

Note: NP = Northern Plains, SP = Southern Plains, and CB = Coastal Bend.

and wheat farms as compared to those farms more dependent on cotton and rice. Over the 1997–2005 period, the average probability that the farm will have to draw on past cash reserves or refinance to meet all cash obligations increases by 1.6 percentage points on the Missouri farm, 5.0 percentage points on the Texas Northern Plains farm, and 3.3 percentage points for the South Carolina farm. The opposite occurs for the predominantly cotton and rice farms. On these farms, the probability that the farm cannot meet annual cash flow needs actually improves from 1–3 percentage points. Again, the difference is due to the more effective downside safety net for cotton and rice compared to wheat, feedgrains, and oilseeds.

The marginal improvement in the cash flow probabilities for cotton and rice and the mean expected levels in net cash farm incomes, however, should not be interpreted to imply that producers will prefer these crops over wheat, feedgrains, and oilseeds. The overall probability of annual cash flow deficits is substantially higher for the cotton and rice farms than for the feed grain, wheat, and oilseed operations.

Conclusions and Implications

The Texas and Kansas risk management teams found that producers perceive commodity price variability as the most important risk-management issue they face. When higher levels of price variability were estimated and introduced in a farm-level context, representative grain farms faced higher mean net cash farm incomes, but also more risk (i.e., higher probability of annual cash flow deficits). The representative farm analysis supported the focus group perceptions in the Texas and Kansas grain-producing areas.

Producers in the focus groups identified government program participation in the top half of important risk-management tools. Interestingly, the marketing loan program for cotton and rice may aid those producers relatively more than grain producers in reducing risk.

While it is impossible to conclude definitive trends in acreage shifts given only one year of operation under the 1996 farm bill, survey results, expected returns relative to variable risk cost exposure, and the general economies on the representative farms suggest that the farm bill provisions will favor feedgrains, wheat, and oilseeds over cotton and rice.

Regardless of the debate on the relative increase or decrease in the risk exposure on farms and agribusinesses due to the 1996 farm bill, there is little controversy that agriculture faces considerable risk. Risk management is a major concern of producers and agribusinesses. The profession likely will allocate considerable research, extension, and teaching resources for developing an understanding of the complexities of the risk management challenge.

References

Duffy, P.A. "Is the New Deal Dead? Government, Economics, and the Rural South." *J. Agr. and Appl. Econ.* 29,1(1997):1–15.

Food and Agricultural Policy Research Institute (FAPRI). "November 1997 U.S. Agricultural Baseline." FAPRI, University of Missouri-Columbia, November 1997.

National Research Council. *Alternative Agriculture.* Washington DC: National Academy Press, 1989.

Richardson, J.W., and C.J. Nixon. "Description of FLIPSIM V: A General Firm-Level Policy Simulation Model." Bull. No. B-1528, Texas Agr. Exp. Sta., Texas A&M University, College Station, 1986.

———. "Producer Preference for a Cotton Farmer-Owned Reserve: An Application of Simulation and Stochastic Dominance." *West. J. Agr. Econ.* 7(1982):123–32.

Texas and Kansas Risk Management Education Teams. "Producer and Agribusiness Perspectives of Risk Management Needs." Texas Agr. Ext. Ser., Texas A&M University, College Station, 1998.

Table A1. Characteristics of Representative Farms in Missouri, Texas, South Carolina, Mississippi, Arkansas, and Louisiana

		Representative Farms							
Characteristics		MO Grain	TX Grain	SC Grain	TX SP Cotton	TX CB Cotton	MS Cotton	AR Rice	LA Rice
Cropland Acres									
Total		1,500	1,600	1,500	1,682	1,700	1,635	1,260	1,100
Owned		750	320	500	653	300	735	440	50
Leased		750	1,280	1,000	1,029	1,400	900	820	1,050
Assets ($000s)									
Total		1,782	568	934	613	512	1,546	1,388	304
Real Estate		1,345	185	567	295	286	944	736	78
Machinery		361	316	271	288	216	541	585	197
Other & Livestock		76	68	96	29	10	62	67	29
Debt/Asset Ratios									
Total		0.21	0.16	0.17	0.18	0.19	0.21	0.19	0.20
Intermediate		0.28	0.15	0.13	0.16	0.18	0.22	0.19	0.20
Long Run		0.19	0.20	0.20	0.19	0.19	0.19	0.19	0.19
1996 Gross Receipts ($000s)[a]									
Total		390.4	376.5	618.0	295.6	421.0	887.7	572.3	329.2
Corn	$	171.2	186.0	192.4	0.0	0.0	0.0	0.0	0.0
	%	43.9	49.4	31.1	0.0	0.0	0.0	0.0	0.0
Sorghum	$	0.0	68.7	0.0	0.0	126.5	0.0	0.0	0.0
	%	0.0	18.2	0.0	0.0	30.0	0.0	0.0	0.0
Wheat	$	45.9	121.9	386.2	0.0	0.0	0.0	59.7	0.0
	%	11.7	32.4	62.5	0.0	0.0	0.0	10.4	0.0
Soybeans	$	163.2	0.0	39.4[a]	0.0	0.0	123.2	73.7	52.9
	%	41.8	0.0	6.4	0.0	0.0	13.9	12.9	16.1
Cotton	$	0.0	0.0	0.0	240.1	294.5	764.4	0.0	0.0
	%	0.0	0.0	0.0	81.2	70.0	86.1	0.0	0.0
Medium-Grain Rice	$	0.0	0.0	0.0	0.0	0.0	0.0	226.0	95.7
	%	0.0	0.0	0.0	0.0	0.0	0.0	39.5	29.1
Long-Grain Rice	$	0.0	0.0	0.0	0.0	0.0	0.0	211.9	177.6
	%	0.0	0.0	0.0	0.0	0.0	0.0	37.0	53.9

Table A1. (Continued)

Characteristics		Representative Farms							
		MO Grain	TX Grain	SC Grain	TX SP Cotton	TX CB Cotton	MS Cotton	AR Rice	LA Rice
Additional Peanuts	$	0.0	0.0	0.0	45.2	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	15.3	0.0	0.0	0.0	0.0
Other Receipts	$	10.0	0.0	0.0	10.3	0.0	0.0	1.0	3.0
	%	2.6	0.0	0.0	3.5	0.0	0.0	0.2	0.9
1996 Planted Acres									
Total		1,500.0	1,600.0	1,500.0	1,239.0	1,700.0	1,565.0	1,160.0	1,100.0
Corn	No.	550.0	470.0	600.0	0.0	0.0	0.0	0.0	0.0
	%	36.7	29.4	40.0	0.0	0.0	0.0	0.0	0.0
Sorghum	No.	0.0	280.0	0.0	0.0	935.0	0.0	0.0	0.0
	%	0.0	17.5	0.0	0.0	55.0	0.0	0.0	0.0
Wheat	No.	250.0	642.0	750.0	0.0	0.0	0.0	145.0	0.0
	%	16.7	40.1	50.0	0.0	0.0	0.0	12.5	0.0
Soybeans	No.	700.0	0.0	900.0[a]	0.0	0.0	640.0	319.0	361.9
	%	46.7	0.0	10.0	0.0	0.0	40.9	27.5	32.9
Cotton	No.	0.0	0.0	0.0	961.0	765.0	925.0	0.0	0.0
	%	0.0	0.0	0.0	77.6	45.0	59.1	0.0	0.0
Medium-Grain Rice	No.	0.0	0.0	0.0	0.0	0.0	0.0	348.0	189.1
	%	0.0	0.0	0.0	0.0	0.0	0.0	30.0	17.2
Long-Grain Rice	No.	0.0	0.0	0.0	0.0	0.0	0.0	348.0	350.9
	%	0.0	0.0	0.0	0.0	0.0	0.0	30.0	31.9
Fallow	No.	0.0	208.0	0.0	0.0	0.0	0.0	0.0	198.1
	%	0.0	13.0	0.0	0.0	0.0	0.0	0.0	18.0
Additional Peanuts	No.	0.0	0.0	0.0	95.0	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	7.7	0.0	0.0	0.0	0.0
CRP	No.	0.0	0.0	0.0	183.0	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	14.8	0.0	0.0	0.0	0.0

Note: TX SP is Texas Southern Plains, and TX CB is Texas Coastal Bend.

[a] South Carolina double-crops 750 acres of soybeans on wheat.