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Three Corners: FAPRI Examination of Farm Bill Alternatives

(Darnell B. Smith, 515/294-1184)

(William H. Meyers, 515/294-1184)

During 1995, the U.S. 104th Congress will evaluate the food and agricultural policy situation and consider new legislation. This periodic review and resulting omnibus legislation, commonly called the farm bill, provides the opportunity to carefully reexamine agricultural programs and policies. The programs being reviewed, some of which expire in 1995, deal with price and income support, trade, conservation, research, domestic food assistance, credit, crop insurance, and rural development.

Without a 1995 Farm Bill, permanent statutes incompatible with current national economic objectives, global trading rules, and federal budget or regulatory policies would take effect (*Congressional Research Service Farm Bill Report*). At this time there is general agreement on only one item of the 1995 Farm Bill discussions—that the final result will differ from its predecessors.

To aid legislative deliberations, the Food and Agricultural Policy Research Institute (FAPRI) researchers at Iowa State University and the University of Missouri-Columbia have analyzed three program alternatives. The three alternative analyses requested by Congress represent "corner" scenarios because their program emphasis is based on a different set of philosophies regarding current farm problems, the future of production agriculture in the United States, and the evolution of its rural communities.

The scenarios that were evaluated represent three discrete directions for policy change and emphasis in 1995:

1. No Program. This alternative eliminates the existing structure of target prices, deficiency payments, (Continued, page 4)

The Current Situation In Iowa

The Story Behind the Hog Breeding Herd Revision: When is a Breeding Animal Not a Breeding Animal?

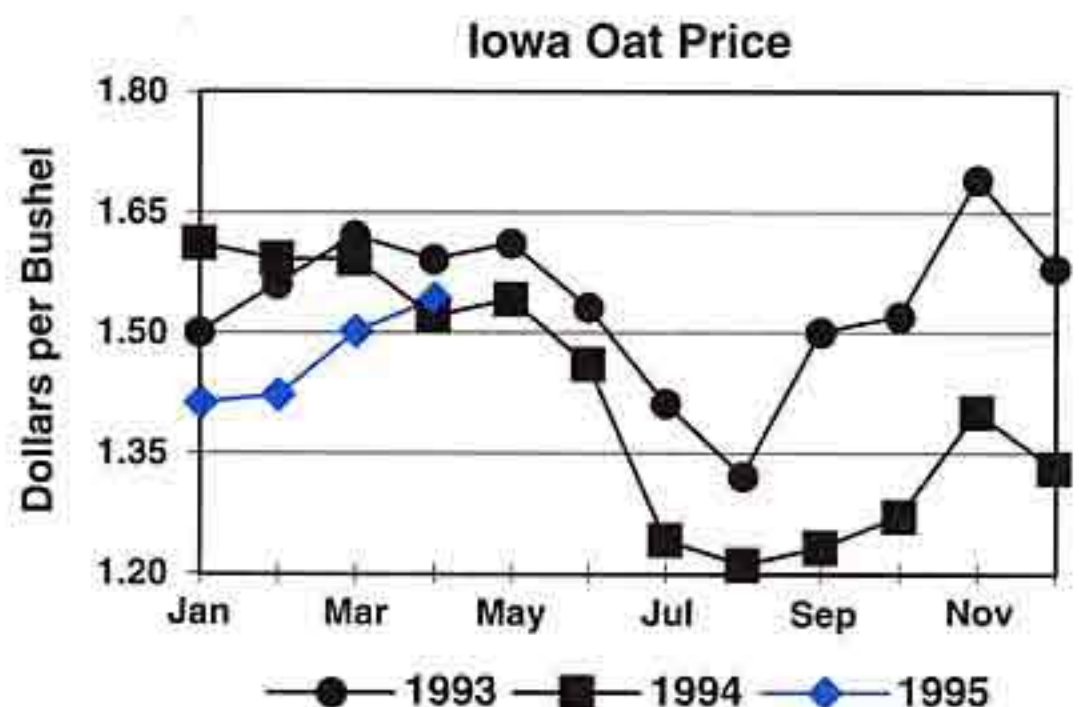
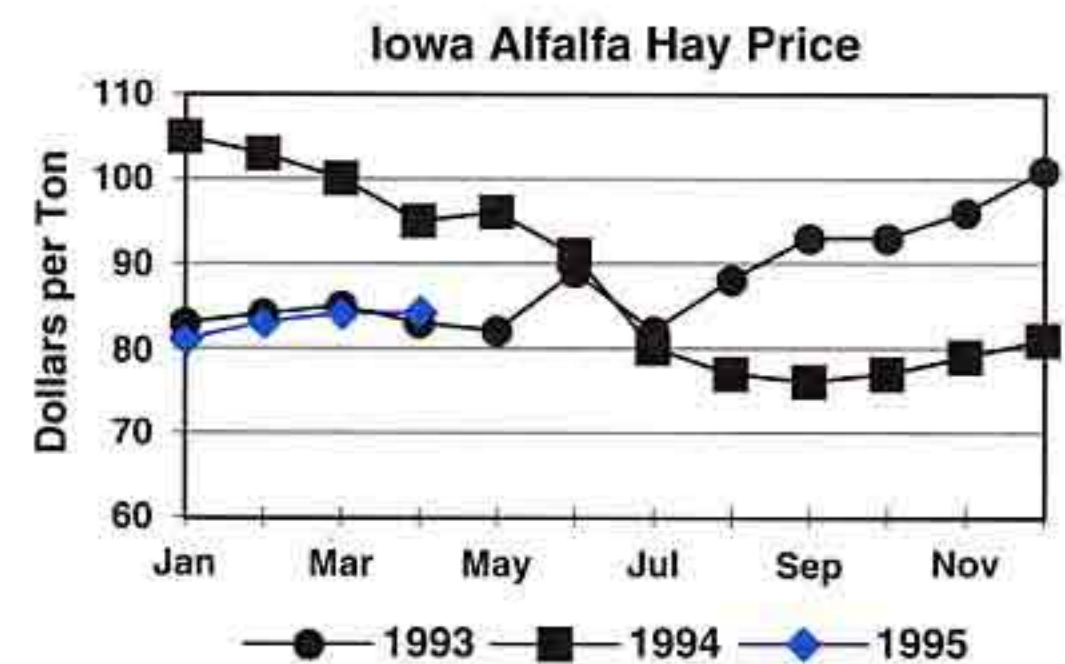
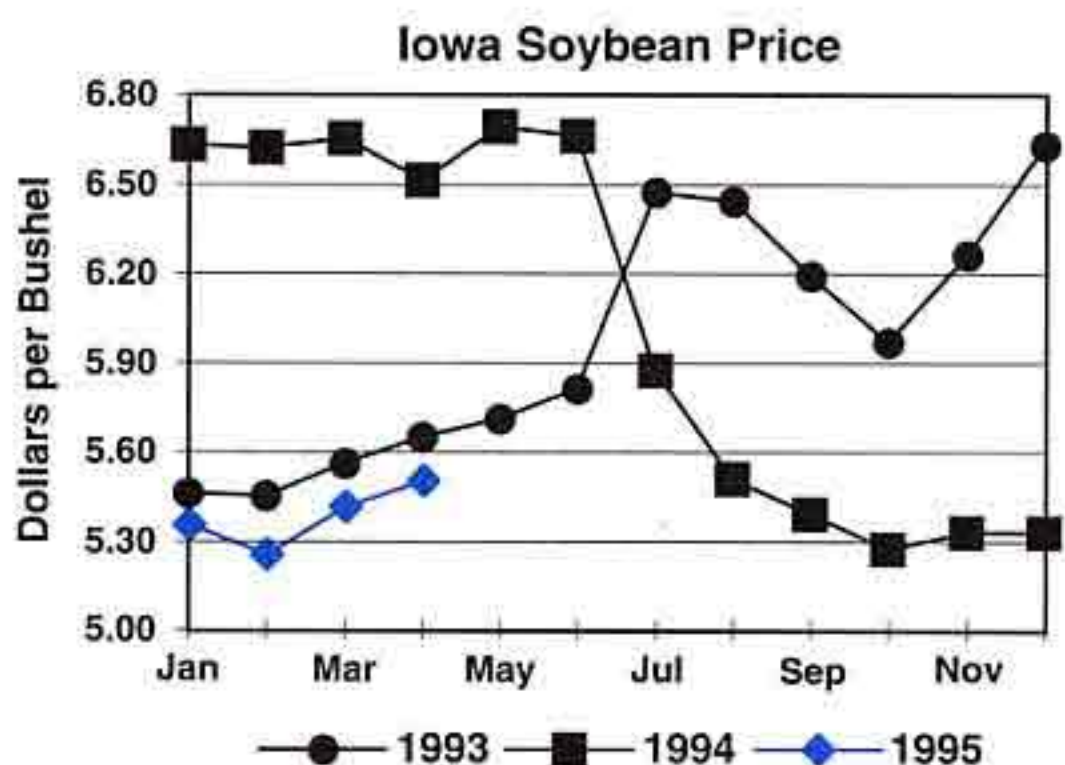
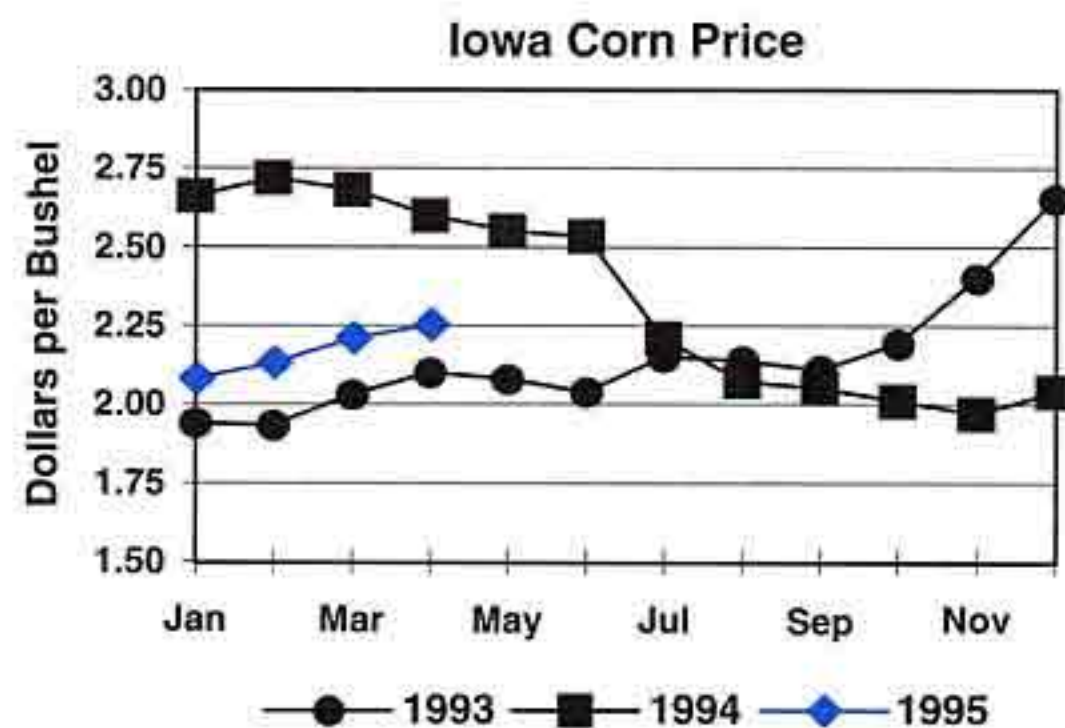
(Seth D. Meyer)

The March 1, 1995, *Hogs and Pigs* report showed a significant revision of Iowa's December 1, 1994, breeding herd inventory figures. The breeding herd inventory was revised up 100,000 head to 1.5 million from the initial release of the December 1, 1994, inventory report. This decreased the previously calculated liquidation by one-third, with breeding herd inventory falling 12 percent from September 1, 1994, to December 1, 1994, rather than 18 percent. With a revision in the breeding herd of 100,000 head in Iowa, the question becomes, did the USDA estimation procedure miss the real story of the period? To answer this question, we must look at the procedure and definitions involved.

The producers were surveyed in the opening days of December to indicate the number of head in their breeding and market herds. The definition of breeding animals is sows and gilts bred or to-be-bred. The producer may have a number of light gilts in the finisher and intend to keep a certain number of them, but may not have made a decision as to which ones he will breed. The number he anticipates breeding will be counted in the breeding herd. This shows clearly that the initial estimate for breeding herd numbers is a report that is at least in part "an intention to breed."

This is the case with the December 1, 1994, *Hogs and Pigs* report. The survey was conducted at its usual time, which happened to coincide with the bottom of the market when cwt. prices were near \$28. With the current low prices and uncertainty about the future, many producers may have responded to the survey by saying that many lighter gilts, and even some bred sows, would be heading to market. This led to the report which showed an 18 percent decline in the Iowa breeding herd inventory. Given this drop in numbers, the report was labeled bullish for future prices.

With this in mind, many producers retained those gilts and bred sows that they intended to market, and added them to the breeding herd. In retrospect, this means that those animals were in fact members of the breeding herd in December, and the revision is necessary. It is unfortunate that the bottom of the market occurred during the survey period by the USDA, however they cannot second guess the farmers'



responses, and the initial breeding herd figure must therefore be taken as a statement of intentions only.

The March *Hogs and Pigs* report showed a decline in Iowa's breeding herd inventory of 50,000 head from one quarter earlier, leaving it at 1.45 million head. The inventory numbers across the United States indicate that the liquidation phase of the current hog cycle may be slowing.

Budget Cut Proposals

(William H. Meyers, 515/294-1184)

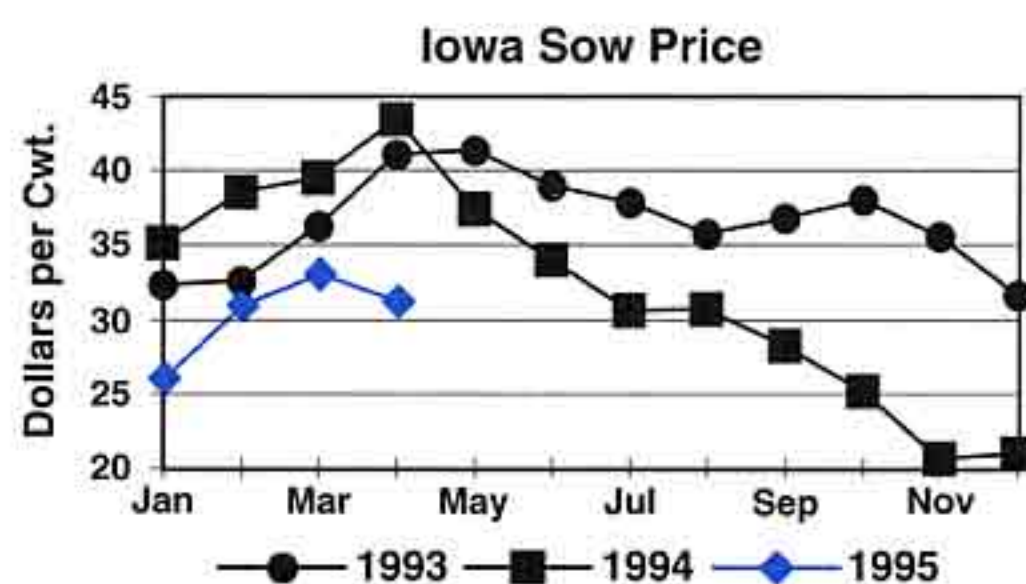
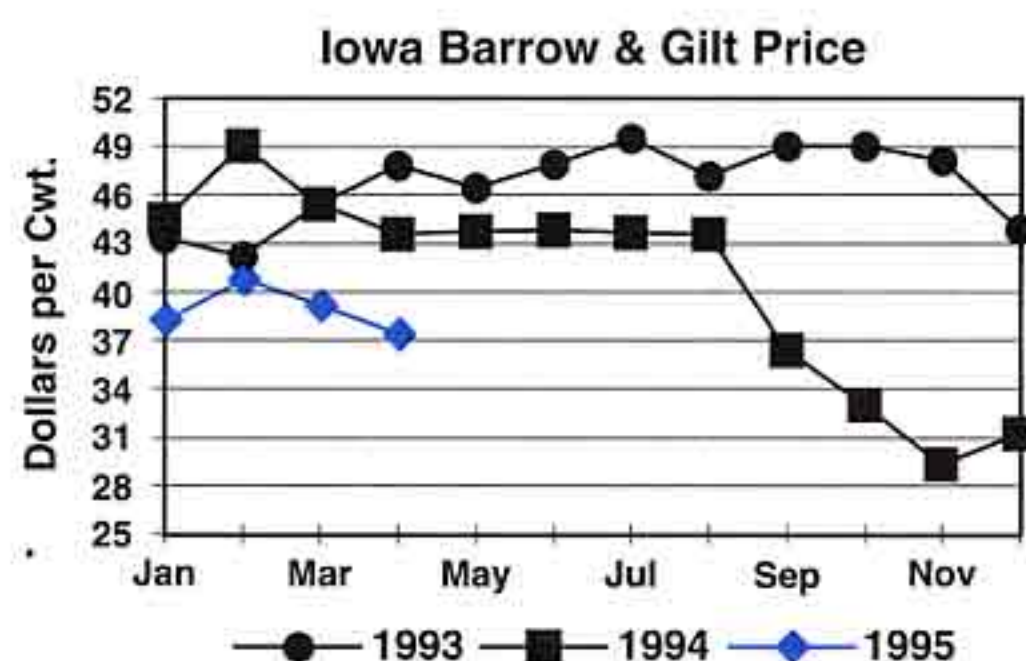
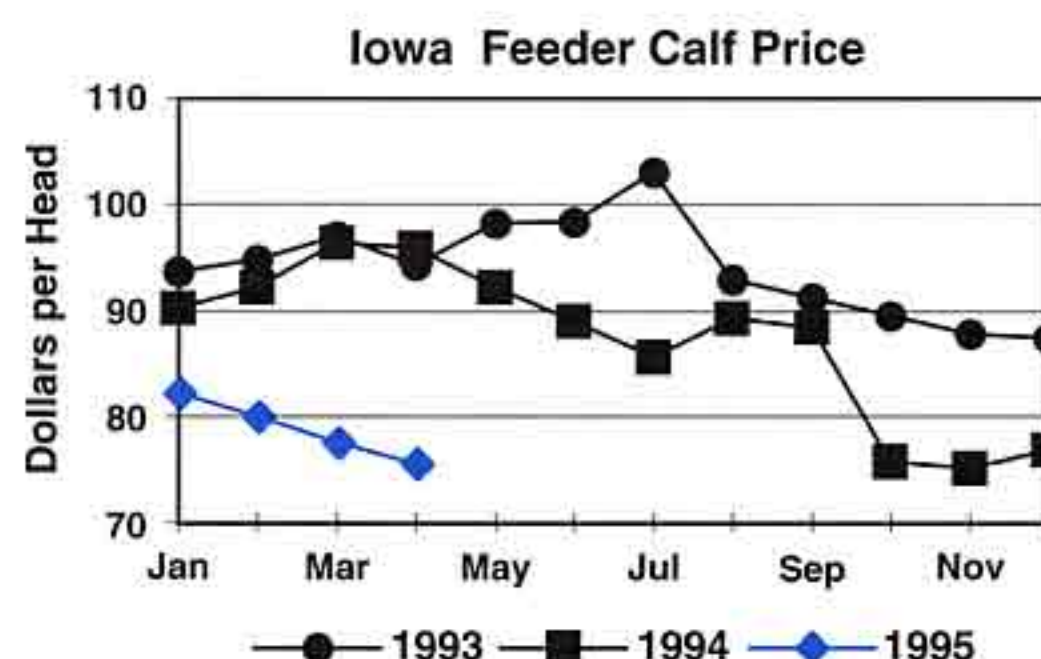
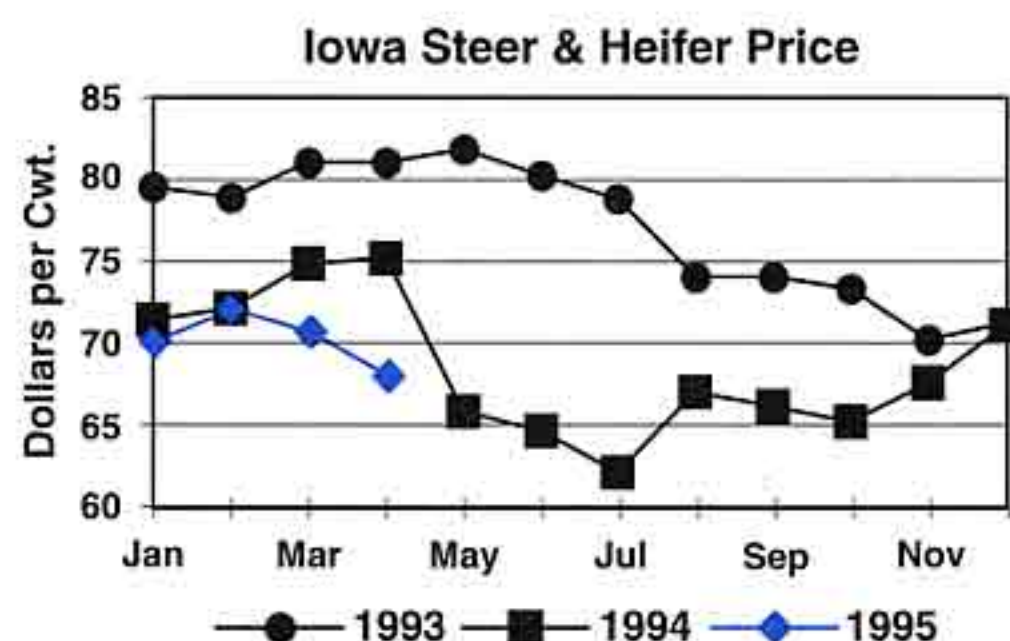
(Darnell B. Smith, 515/294-1184)

The U.S. House and Senate have now made specific proposals for budget cuts that are designed to eliminate the federal budget deficit by the year 2002. These proposals still have to go through the process of floor debate, passage by each body, conference between the two bodies, passage of the conference report, and approval or veto by President Clinton. A Presidential veto would imply further voting and perhaps further changes to these proposals in the Congress. Although there are numerous opportunities for these figures to change, the initial figures give a strong indication of where things are going.

The original Senate Budget Committee Chairman's mark-up called for cuts of \$9.7 billion in agriculture program budget authority (function 350) over the next five years and \$14.3 billion over the next seven years. Of these amounts, \$7.98 billion and \$11.78 billion, respectively, come under the jurisdiction of the Senate Committee on Agriculture, Nutrition, and Forestry. The main programs covered by Function 350 are commodity programs, the export enhancement program, the market promotion program, GSM credits, and crop insurance. The CRP is in a separate category and may escape further cuts, since it is already assumed in the Congressional Budget Office (CBO) baseline to be cut nearly in half.

Senator Grassley led the fight for a successful "sense of the Senate" resolution in the Budget Committee that limits the Function 350 cuts under the agriculture committee jurisdiction to \$5.595 billion over the five-year period. Following this path would require that \$2.385 billion more be cut elsewhere, such as food, nutrition, and conservation programs and research. This resolution is not binding but may indicate support on the committee for limiting agriculture cuts.

The House called for cuts of \$9 billion over five years and \$17 billion over seven years in roughly the same



Average Farm Prices Received By Iowa Farmers

	Mar 1995	Feb 1995	Mar 1994
		\$/Bushel	
Corn	2.21	2.13	2.68
Soybeans	5.41	5.25	6.65
Oats	1.50	1.42	1.59
		\$/Ton	
Alfalfa	84.00	83.00	100.00
All Hay	81.00	80.00	96.00
		\$/Cwt.	
Steers & Heifers	70.70	72.00	74.80
Feeder Calves	77.40	79.80	96.30
Cows	40.70	42.10	0.00
Barrows & Gilts	39.10	40.70	45.40
Sows	33.00	30.90	39.50
Sheep	26.40	34.90	29.60
Lambs	73.20	67.20	58.00
		\$/Lb	
Turkeys	0.38	0.37	0.00
		\$/Dozen	
Eggs	0.37	0.35	0.00
		\$/Cwt.	
All Milk	12.40	12.20	13.10
		\$/Head	
Milk Cows	NA	NA	NA

Iowa Farm Income Indicators

	1994	1993	1992
		Million Dollars	
Crop Cash Receipts			
Jan - Dec Total	5,034	4,174	4,810
Livestock Cash Receipts			
Jan - Dec Total	5,105	5,829	5,600

set of programs. The House needs to make larger cuts in general, because of the tax cuts that were part of their package. If the size of the tax cuts is limited by Senate objections, cuts in agriculture programs would likely be closer to the Senate figures.

It seems quite likely that the budget for agriculture programs will be cut by \$6 billion to \$8 billion over the next five years, and there may also be an effort to put a cap on spending in any one year.

CARD/FAPRI Analysis

Three Corners: FAPRI Examination of Farm Bill Alternatives

(Continued from page 1)

loan rates, export enhancement, and dairy price supports, as well as many speciality programs such as for cottonseed oil and sunflower. It also eliminates Acreage Reduction Programs (ARP) and the 0-50/85 program.

2. Marketing Loan Program. Under this option, target prices, loan rates, ARPs, and 0-50/85 would disappear and be replaced by a system of recourse marketing loans, with loan rates set in proportion to each other. Soybeans would be added to the commodity programs. Export Enhancement is eliminated, but dairy and other speciality programs are retained.

3. Revenue Assurance. This alternative would do away with target prices, marketing loans, ARPs, and 0-50/85. Instead, producers would be ensured of receiving 70 percent of revenue, based on a five-year moving average of county price times a producer's five-year average yield. In addition, transition payments would start at 80 percent of historic deficiency payments in 1996 and decline to zero percent by the year 2000. Export enhancement, dairy, and other speciality programs are retained. In all scenarios, the Conservation Reserve Program is assumed to decline to the 17 million-acre level projected by the Congressional Budget Office, while none of the scenarios incorporate annual ARPs.

Across the scenarios, the safety net configuration, especially in terms of income enhancement and risk sharing, shows considerable variation. Other than crop insurance, the safety net is completely gone in the no-program scenario. The marketing loan option provides some reduction of price risk, and enhancement of income, but has basically the same budget outlays as current programs. Revenue assurance offers significant reduction of cash flow risk for producers and provides substantial budgetary savings, but reduces the level of government support for producers by eliminating the direct income transfer aspect of current programs (i.e., deficiency and loan deficiency payments would be eliminated).

Comparison of Scenarios and FAPRI Baseline

When compared to the 1995 FAPRI baseline, the estimated effects on selected variables, as illustrated in the included table, show significant early variation

Average Annual Effects on Selected Variables

Area Planted to 8 Major Crops (corn, sorghum, barley, oats, soybeans, wheat, cotton, rice)

	Crop Years	
	1996/87-2000/01	2003/04
Baseline Value	254 million acres	263.3 million acres
Marketing Loan	Up 2.92 million acres	Up 1.20 million acres
Revenue Assurance	Down 1.38 million acres	Down 0.10 million acres
No Program	Down 4.98 million acres	Down 4.80 million acres

Crop Receipts	Calendar Years	
	1996-2000	2004
Baseline Value	\$93.25 billion	\$107.2 billion
Marketing Loan	Down \$1.73 billion	Down \$2.85 billion
Revenue Assurance	Down \$0.57 billion	Down \$0.42 billion
No Program	Down \$1.48 billion	Down \$2.20 billion

Government Payments	Calendar Years	
	1996-2000	2004
Baseline Value	\$8.03 billion	\$4.86 billion
Marketing Loan	Up \$1.79 billion	Down \$0.17 billion
Revenue Assurance	Down \$3.58 billion	Down \$3.75 billion
No Program	Down \$6.10 billion	Down \$3.75 billion

Net Farm Income	Calendar Years	
	1996-2000	2004
Baseline Value	\$43.48 billion	\$52.45 billion
Marketing Loan	Down \$1.16 billion	Down \$2.97 billion
Revenue Assurance	Down \$2.87 billion	Down \$2.55 billion
No Program	Down \$6.89 billion	Down \$4.05 billion

Estimated Insurance Indemnities

	Fiscal Years	
	1996-2000	2004
Baseline Value*	\$1.06 billion	\$1.05 billion
Marketing Loan	No Change	No Change
Revenue Assurance	Up \$0.47 billion	Up \$0.65 billion
No Program	No Change	No Change

Net CCC Outlays

	Fiscal Years	
	1996-2000	2004
Baseline Value	\$8.36 billion	\$5.62 billion
Marketing Loan	Down \$0.59 billion	Up \$0.10 billion
Revenue Assurance	Down \$3.83 billion	Down \$4.39 billion
No Program	Down \$7.54 billion	Down \$5.43 billion

* Estimated as 80 percent of total crop insurance indemnities

across the alternatives. The effects also show that farm income generally tends to converge toward the end of the period. The reader should note that the farm income numbers in the various scenarios do not include any estimated crop insurance or Revenue Assurance indemnities, nor do they reflect any other risk reduction benefits that producers would receive. Thus, our results would tend to underestimate the benefits to producers from increased insurance

payments and reduction of cash flow risk. The article following this one explains the process of estimating these nonmonetary benefits.

Marketing Loan

In the Marketing Loan program, plantings would increase by about 2 million acres annually; however, crop receipts decline by roughly \$2 billion per year. The decline in crop receipts in the early years is offset by higher government payments; but by the year 2004, government payments also decline slightly. From the point of view of government program efficiency, the analysis indicates that net CCC outlays are virtually unchanged over the full period, while net farm income declines by \$2 billion per annum. This implies that when compared to the baseline continuation of current programs, this alternative is less efficient, as it costs the same to operate but results in less income to producers.

Revenue Assurance

For Revenue Assurance, area planted and crop cash receipts average very close to baseline levels over the full projection period while net CCC outlays decrease by approximately \$4.5 billion annually. The loss of government payments is offset in the early years by the decoupled transition payments provision. Due to increased market orientation, the reduction in government payments does not fully impact net farm income, as income declines by less than \$3 billion on average. In the final year, among the three options, net farm income is highest for Revenue Assurance. Thus, an efficiency gain is achieved compared to the other alternatives. This efficiency gain occurs even without inclusion of insurance indemnities benefits.

No Program

The No-Program analysis shows steep declines in area planted, cash receipts, government payments, net farm income, and government expenditures. This plan, like Revenue Assurance, demonstrates efficiency gains from the market orientation as CCC outlays drop more than net farm income declines. However, in this scenario the declines in income are severe enough to warrant real concern about disruption in financial sectors, especially since all safety nets are removed except crop insurance.

A few items included in the forthcoming FAPRI report on policy options for the 1995 Farm Bill, but not listed above, should be briefly discussed. Along with the

declines in farm income across all scenarios, land values also show decreases compared to baseline values. In 2004, the final year of the projection period, all three of the scenarios have nominal land values projected above what they were in 1994, though not as high as they would be with continuation of current programs. The baseline projects a 15 percent increase in average nominal land values from 1994 to 2004 compared with 11.6 percent for the Marketing Loan option, 8.6 percent for the Revenue Assurance option, and 5.4 percent for the No-Program option. However, some regions would see nominal land values decline from current levels, the most severe declines being under a No-Program option. The implication is that only with the No-Program option are financial markets likely to be severely strained. There would be regional variation with elimination of commodity programs of course. For instance, rice net returns decline significantly compared to a relatively modest impact on corn net returns. Thus, some regions would find credit markets strained more severely than others.

Conclusions

The three policy options discussed here share one policy continuation (CRP is continued) and one major policy shift (ARPs and 0/50-85/92 programs are eliminated). Also, as crop base restrictions are eliminated, with the exception of the Marketing Loan option, the market drives production decisions and shifts of acreage between crops. For the Marketing Loan option, production decisions are driven by the loan rates rather than the market prices. Further, in all scenarios government stockholding is reduced and, for the most part, stocks of most commodities remain low compared to historical patterns.

Farm income tends to decline in all of the alternatives and the decline in the No-Program option is severe enough to generate real concerns about disruption of financial/credit sectors. Land values decline relative to baseline projections, but average nominal land values at the end of the period are higher than 1994 in all scenarios. It is interesting to note that in the year 2004, even without insurance indemnities or nonmonetary risk reduction benefits included in the analysis, net farm income is highest for the Revenue Assurance alternative. And if increased insurance benefits are added, net farm income, plus increased insurance benefits under this plan, recovers to levels close to the baseline and at a much lower cost to the U. S. government.

Risky Business: Measuring Monetary and Nonmonetary Benefits of Insurance Programs

(Darnell B. Smith, 515/294-1184)

(Dermot J. Hayes, Associate Professor of Economics, 515/294-6217)

Because farmers are exposed to a relatively large amount of business risk, aspects of government farm programs designed to remove or reduce risk can be of particular importance. Given a choice between a very risky activity and a slightly less profitable activity with much lower risk, many farmers (or their bankers) will choose the less risky activity. These aspects of programs can be viewed in terms of having a direct monetary impact on expected profitability, and an indirect, very illusive, nonmonetary impact on producer welfare. In the final analysis, it may not be preferable to have programs that increase expected profitability but also increase volatility in a producer's cash flow. It may be more desirable to have a program that results in slightly lower levels of expected profitability but reduces cash flow volatility and reduces producer risk.

It is very difficult to incorporate these risk effects into policy models because it is impossible to anticipate weather patterns and other sources of risk over the projection period. However, if we completely ignore these risk effects, policy analysis results will be biased against programs that are designed primarily to reduce risk. A comparable situation exists if one is evaluating two employment opportunities that have the same salary but only one provides full medical insurance coverage. The income numbers are the same, but the full remuneration package is much different. This issue is particularly important to the revenue assurance farm bill proposal because, under this plan, in an "average" year (i.e., the type of year incorporated in most projections and baselines), no farmer would receive a cash payment, but the risk structure is much different.

For Iowa's agricultural producers and rural communities, this question translates into, "Is the value of a dollar's worth of government payments received in bad crop years when cash flow is strained any different from a dollar in payments made in good years when cash is more abundant?" Technically, the answer to this question is that a dollar is just a dollar. However, if we remember the floods of 1993, the underlying value of disaster payments that prevented financial chaos for families all over the Midwest was higher than if that same amount of money were to be transferred

today. The subsequent question is how does one go about measuring the benefits associated with risk transfer or reduction?

How to Measure Risk Reduction

The method economists use to measure the benefits of risk reduction revolves around how much individuals would be willing to pay to have their risk eliminated or reduced. To do this, we calculate the amount of money typical producers would be willing to accept for certain in exchange for the risky outcome they might otherwise face. For example, suppose a farmer expects to make an average of \$50,000 per year raising hogs, but would be just as happy making \$45,000 per year raising hogs if all the revenue uncertainty associated with raising hogs were eliminated. Then we can say that the certainty equivalent of a \$50,000 per year hog operation is \$45,000. Here \$50,000 is the expected average revenue and \$45,000 is the "certainty equivalent" return.

This situation is similar to the common practice of purchasing homeowners insurance. Even though homeowners pay in far more in premiums than they ever expect to collect in indemnities, the value of risk reduction outweighs the costs. Because the risk associated with even one occurrence has the potential to be catastrophic, people generally are willing to pay premiums over and above indemnities in order to reduce risk.

These concepts have implications for the interpretation of results presented in the previous article on farm bill analysis. All three of the scenarios analyzed and discussed in the previous article have fundamentally different risk structures for producers. Yet, due to the inherent difficulty of measuring benefits of risk reduction, no measure of changes in producer risk was provided, nor did we indicate how producer welfare is impacted by these changes. This, again, is equivalent to comparing job salaries but not inquiring about health insurance coverage.

Revenue Assurance Benefits

To partially compensate for these difficulties, researchers at CARD have utilized standard procedures in economics to evaluate how a "typical" Iowa farmer would benefit from a Revenue Assurance program. This research shows that, at the 70 percent guarantee level, for each dollar of government spending on revenue assurance, farmers generally receive at least two dollars worth of benefits (see CARD Briefing Paper

95-BP 7). Therefore, as a rule of thumb, revenue assurance benefits to producers can be calculated by multiplying the insurance indemnities by two.

Now, taking the FAPRI numbers on indemnities and net farm income listed in the previous section and employing the "95-BP 7" rule of thumb, we have:

Estimated Annual Insurance Benefits (calculated as two times insurance indemnities)

Fiscal Years	1996-2000	2004
Baseline Value	\$2.12 billion	\$2.10 billion
Marketing Loan	No Change	No Change
Revenue Assurance	Up \$0.94 billion	Up \$1.3 billion
No-Program	No Change	No Change

Average Annual Net Farm Income Plus Estimated Insurance Benefits (in dollar terms)

Fiscal Years	1996-2000	2004
Baseline Value	\$45.60 billion	\$54.55 billion
Marketing Loan	\$44.44 billion	51.58 billion
Revenue Assurance	\$43.67 billion	\$53.30 billion
No-Program	\$38.71 billion	\$50.50 billion

Average Annual Net Farm Income Plus Estimated Insurance Benefits (percent change from baseline)

Fiscal Years	1996-2000	2004
Baseline Value	\$45.60 billion	\$54.55 billion
Marketing Loan	Down 2.5%	Down 5.4%
Revenue Assurance	Down 4.2%	Down 2.3%
No-Program	Down 15.1%	Down 7.4%

The listed values illustrate that in the early years, the Marketing Loan program has a slightly higher combined worth to producers than Revenue Assurance, albeit at a much higher government cost. At the end of the projection period, however, Revenue Assurance surpasses the Marketing Loan program by almost \$2 billion. Interestingly, if one makes a comparison to the baseline that includes government insurance benefits, the Revenue Assurance proposal returns benefits to producers similar to baseline values and with significant taxpayer savings.

CARD 1995 Iowa Baseline Results

(Darnell B. Smith, 515/294-1184)

(Greg Pautsch, 515/294-6296)

CARD's 1995 Iowa baseline, the set of benchmark numbers used to determine how agricultural policies at the federal level affect local Iowa farmers, was recently completed (*Iowa Agriculture 1995*). The ten-year projections are based on the FAPRI analysis of U.S. and world markets and represent a composite of model results and judgments regarding future Iowa, U.S., and international crop and livestock production, consumption, and trade. The baseline results are not a forecast, but instead represent a scenario conditional upon Iowa, U.S., and international income growth assumptions and continuation of current agricultural policies.

An important U.S. agricultural policy assumption driving the baseline results concerns the Conservation Reserve Program (CRP). The analysis uses the Congressional Budget Office (CBO) assumption of a 15 million acre extension for the entire United States in 2000. Also, the same proportion of contracts extended by the CBO from 1996-2000 are used for contracts expiring after 2000. These policy assumptions imply that 179,500 acres are added to Iowa CRP acreage in 1995 and the total Iowa CRP acreage is 1.7 million acres in 2004. The CRP program favors a shift to corn and soybeans and allows smaller Acreage Reduction Program (ARP) rates.

The baseline projections for Iowa corn, soybeans, and net farm income are highlighted here.

Iowa Corn

The 1993 Iowa corn yields, 80 bushels per acre, were the lowest in twenty years due to the massive flooding. As a result, the season average corn price rose \$0.50 per bushel from the previous marketing year. In 1994, excellent growing conditions produced a record corn crop. Iowa corn yields averaged 152 bushels per acre and production exceeded 1.9 billion bushels. In 1995, Iowa corn planted acreage returns to 12.2 million acres from the 1994 level of 13 million acres. Higher corn prices are expected due to an ARP rate of 7.5 percent and CRP renewals favoring corn and bean acreage. Corn prices strengthen moderately after 1997 due to stronger exports, increased feed use from broilers, and reduced acreage from CRP contract renewals.

Iowa Soybeans

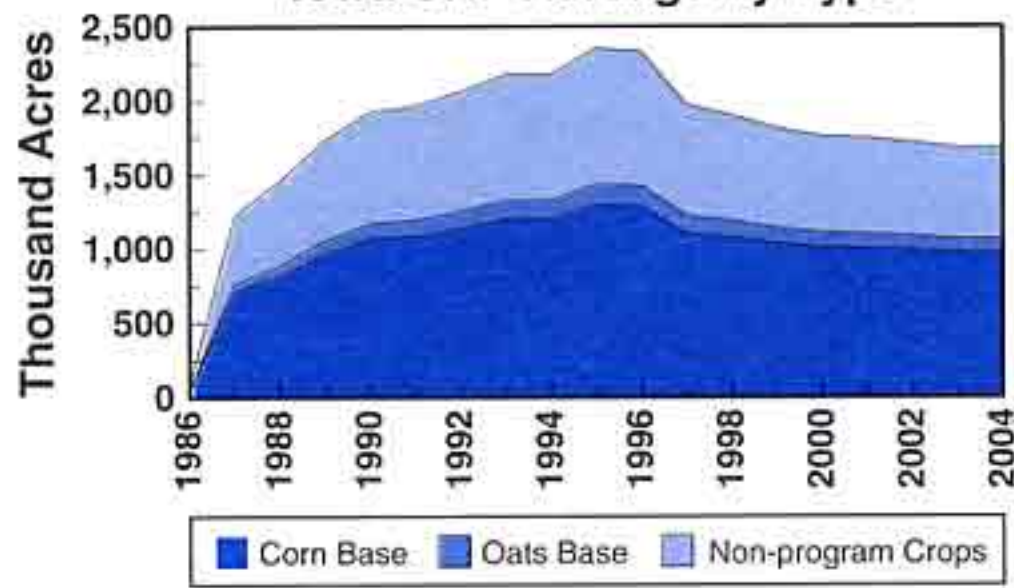
The 1993 flood also caused soybean yields of 31 bushels per acre, the lowest in twenty years. The reduced yields caused soybean prices to rise \$0.96 per bushel from the previous marketing year. Excellent growing conditions produced 1994's record soybean crop of 447.27 million bushels with yields of 51 bushels per acre. With the abundant supply, Iowa soybean prices returned to "normal," falling \$1 per bushel from the last year's flood season average. In 1995, Iowa soybean planted acres are projected to decrease slightly as the soybean to corn ratio favors corn at planting. Also, acreage expansion moderated by CRP renewals becomes focused on corn and bean acres.

The ten-year projection shows a stronger overall soybean demand throughout the ten-year projection period, due to increased soybean exports along with greater domestic and industrial uses.

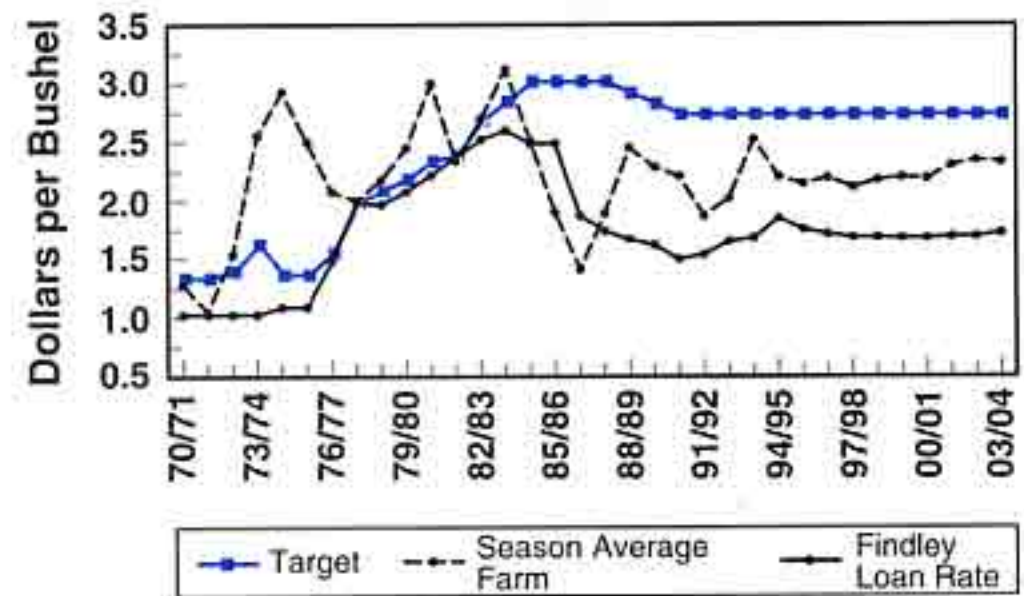
Iowa Net Farm Income

The 1993 flood had disastrous regional effects on Iowa farms. Iowa net farm income plummeted nearly 1.4 billion dollars, but U.S. crops cash receipts actually increased. In Iowa, corn and soybean cash receipts fell \$440 and \$97 million, respectively. The reduced Iowa crop caused livestock feed expenses to rise \$35 million. Federal disaster assistance of \$300 million paid to Iowa farmers in 1993 and 1994 slightly lessened the effects of the flood. In 1994, net farm income showed mixed results. Corn and soybean cash receipts increased, while weak hog and cattle prices forced livestock cash receipts to decrease. In the aggregate, 1994 Iowa net farm income increased \$1.9 billion from the previous year. The outlook over the ten-year projection period shows continued short-run weakness in hog and cattle prices with moderate improvements toward the end of the baseline period. Crops cash receipts show continued strength throughout the baseline. Overall, Iowa net farm income remains relatively stable throughout the projection period due to decreased cash receipts from livestock and declines in direct government payments.

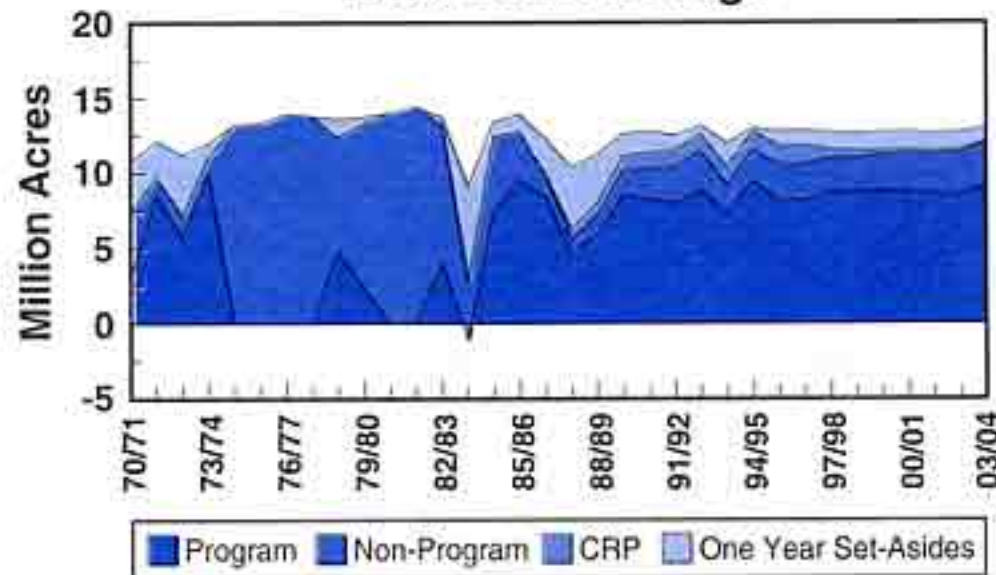
Iowa CRP Acreage by Type



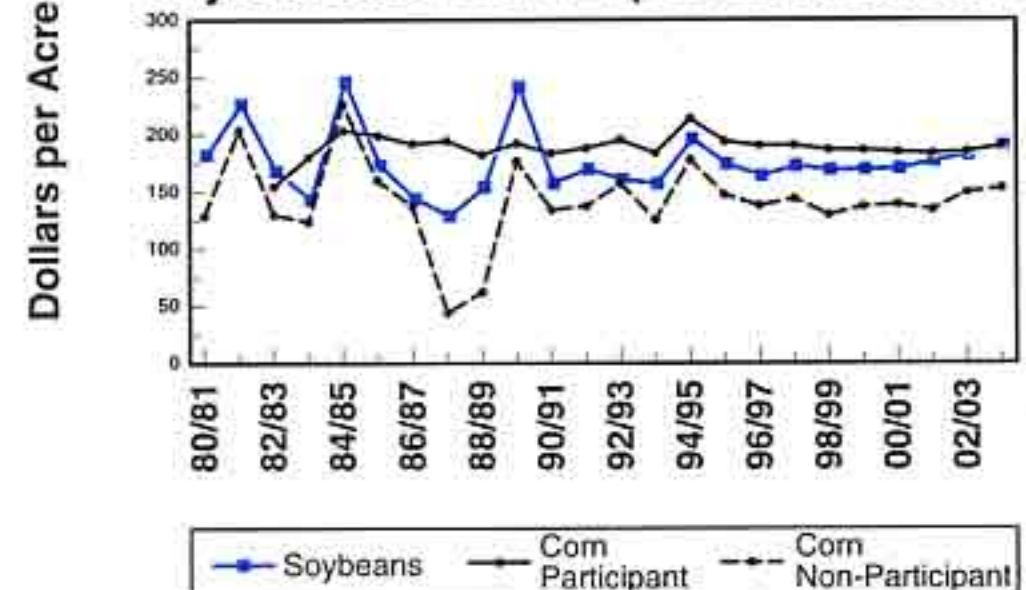
Iowa Corn Prices



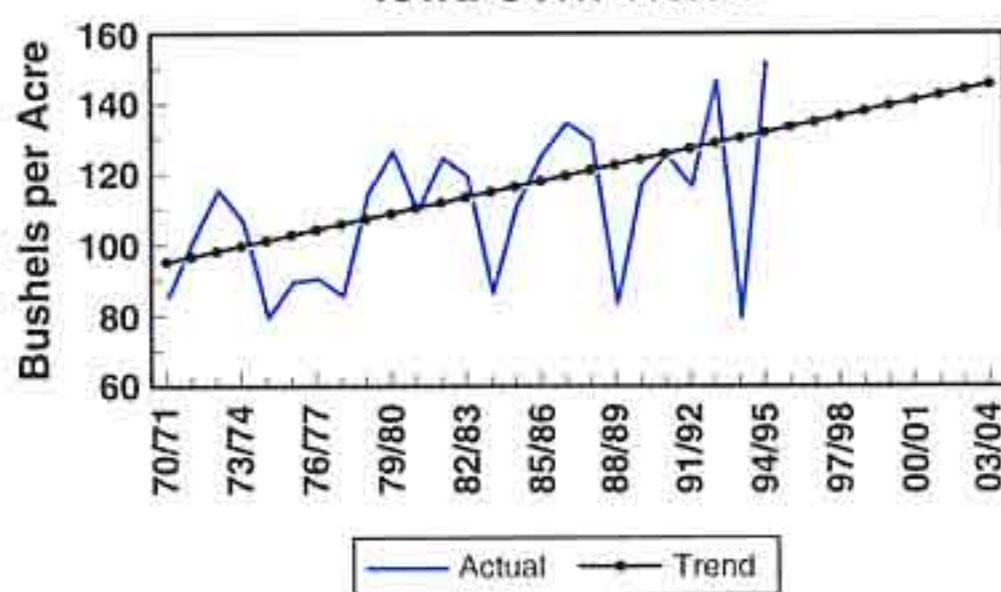
Iowa Corn Acreage



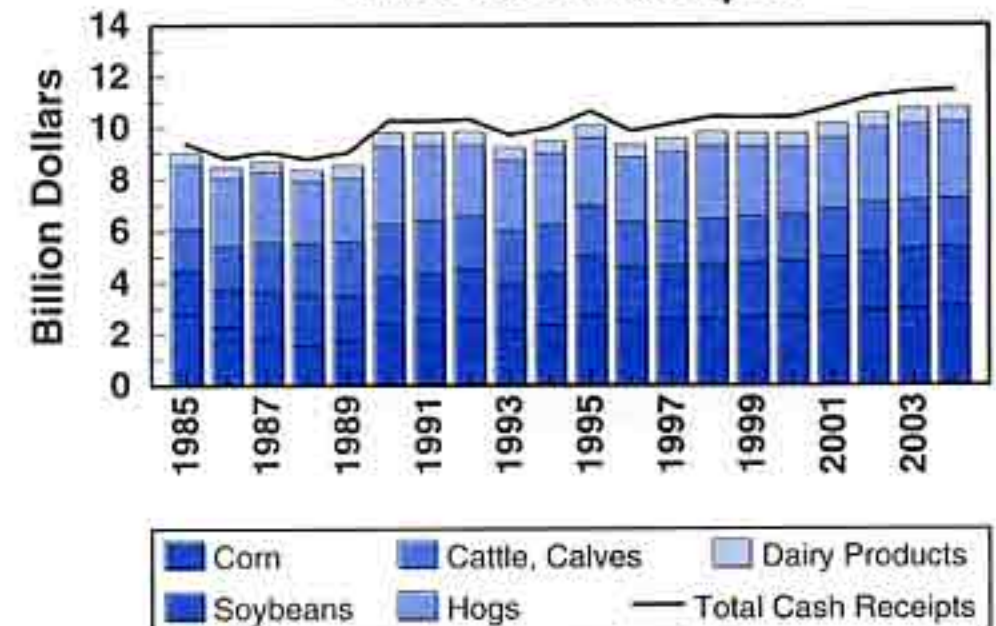
Soybean and Corn Expected Net Returns



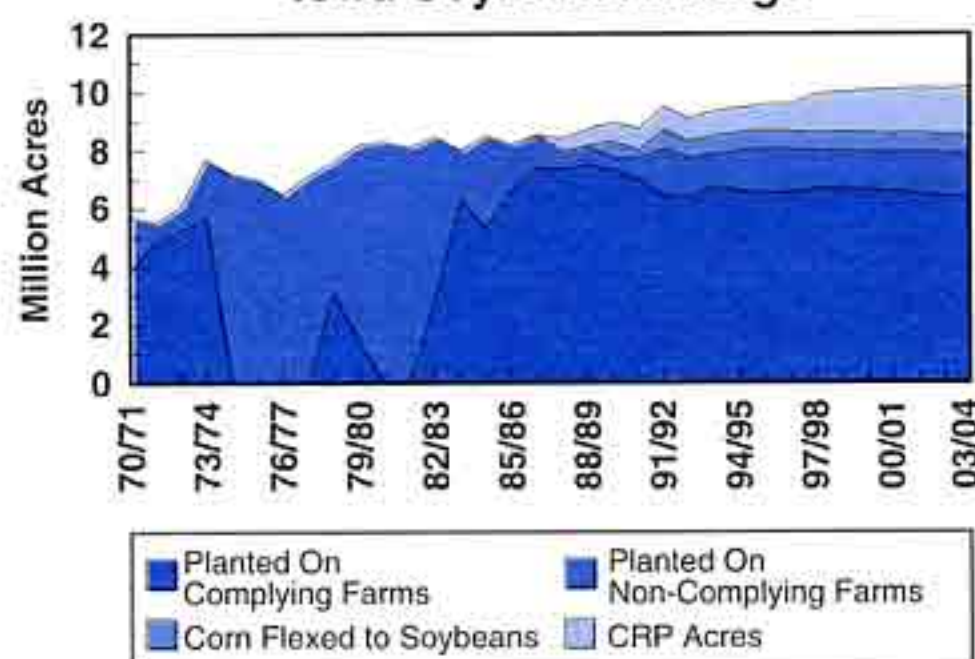
Iowa Corn Yields



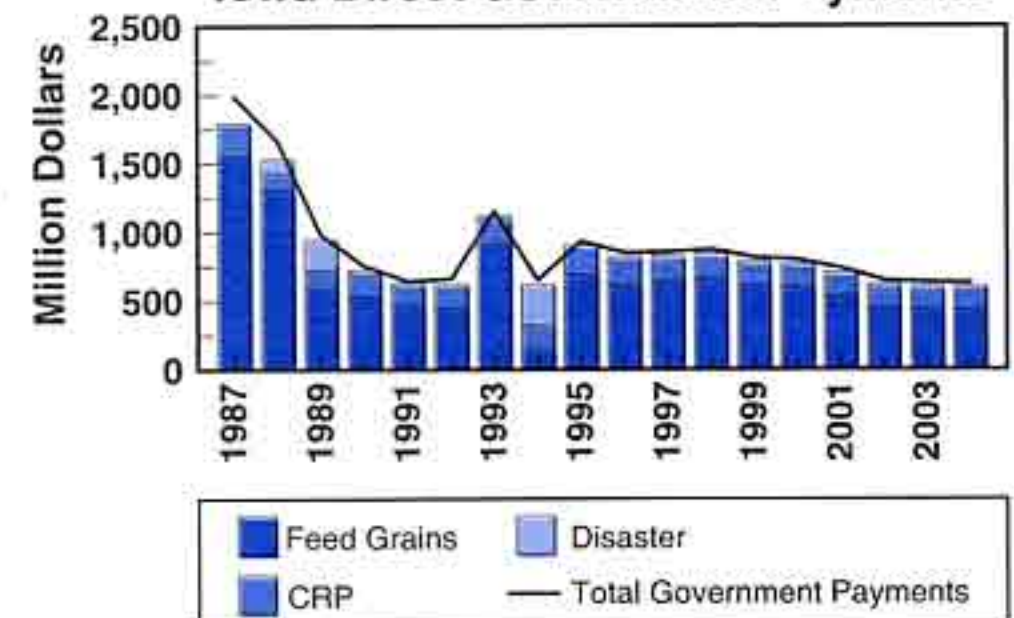
Iowa Cash Receipts



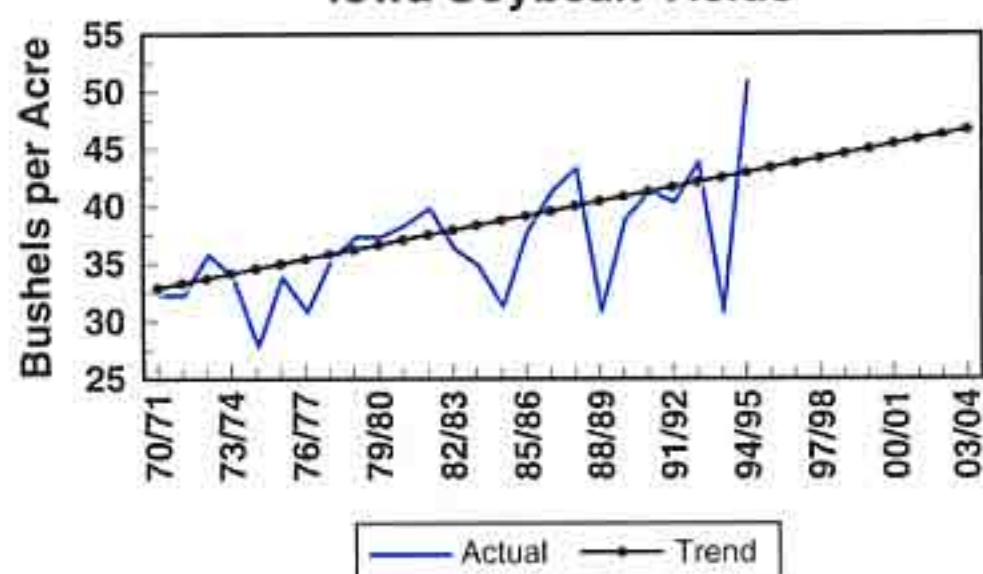
Iowa Soybean Acreage



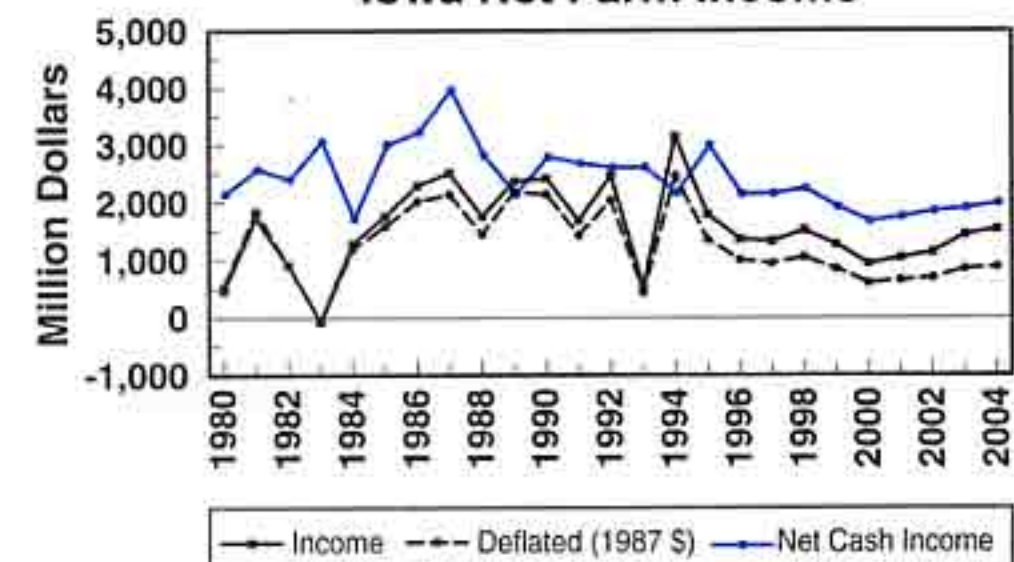
Iowa Direct Government Payments



Iowa Soybean Yields



Iowa Net Farm Income



Special Articles

Specialty Soybeans: New Markets for Iowa

(Dermot J. Hayes, Associate Professor of Economics, 515/294-6185)

Imagine what would happen to U.S. car sales if U.S. automakers offered only one model in one color. In all likelihood, car sales would fall as low-end customers turned to motorbikes and high-end customers purchased expensive imports. This would occur even if there were economies associated with producing only a single model.

Now consider how U.S. corn and soybeans are marketed. In order to capture storage and transportation economies, beans from different farms and states are commingled before sale. If this system were to change so that individual customers could purchase exactly the characteristics they require, it would create a revolution in Iowa agriculture with particular importance to the emerging biotechnology industry.

Think of corn and beans as packets of ingredients, some of which are useful to particular industries and some of which are not. Thanks to biotechnology, we will have the ability to enhance the characteristics of interest through gene manipulation. Under the right circumstances, both corn and beans will serve as foodstock for the biotechnology industry, and because of Iowa's dominance in these crops, the state will become a prime business location for biotechnology firms, much as it is for seed companies today.

The key to the success of these new marketing opportunities is for the marketing system to evolve so that the identity of a particular variety is maintained from planting all the way to the final customer. This has been slow to occur because it costs at least \$0.50/bushel to preserve the identity of a particular load of beans. Also, because of the risks associated with creating and growing new varieties, contracts have been required between the grower and the seed company or soybean buyer.

Many producers are wary of contract production. They believe that it involves some loss of freedom and some legal involvement.

CARD Studies Soybean Industry

The Center for Agricultural and Rural Development (CARD) recently completed two projects dealing with specialty soybeans for the Iowa Soybean Promotion

Board (ISPB). In the report "The Future of Iowa Soybean Industry," we examined the advantages and disadvantages of contracting. Benefits include:

1. Specialty soybean production requires the voluntary participation of farmers. This means that those farmers who grow beans under contract will be better off than would otherwise be the case.
 2. Because it costs at least \$0.50/bushel to maintain the identity of soybeans through the marketing process, specialty soybeans will not compete with commodity soybeans. This means that specialty beans will be sold only into new or niche markets. Increases in specialty soybean production will then mean increases in demand for soybeans.
 3. Unlike hog or chicken production, specialty crop production requires large tracts of land, and this land is already owned by Iowa's corn and soybean farmers. This means that specialty soybean production will not drive existing producers out of business. Any expansion in specialty soybean business will simply drive up land prices.
 4. Optimally, specialty soybean production requires a dense concentration of producers near a central elevator. Iowa is therefore an ideal location for this industry.
 5. The extra costs associated with specialty crop production are a form of added value that will increase economic activity within the state.
 6. Specialty crop production allows customers to transfer market signals directly to producers, thereby increasing the efficiency of the free market process.
- These advantages mean that most, if not all, Iowans will benefit as the commodity marketing system becomes more specialized.

CARD Directory Locates Specialty Industry

The second CARD soybean project evolved naturally from the first. We wanted to know whether the soybean industry saw a future in specialty production, and we also wanted to do whatever we could to expand knowledge among producers and soybean buyers about the structure of the existing industry within the state.

First, we mailed a preliminary survey to all seed companies and elevators within the state asking if they

were currently involved in the specialty soybean market, if they were interested in becoming involved, and where they thought the industry would be by the year 2000.

We received an enthusiastic response, in part because all the respondents expected continued strong gains in the share of soybeans sent into specialty markets. (The average participant predicted that 20 percent of all soybean sales would be identity preserved by the year 2000.)

We then sent out a much more detailed survey asking those companies already in the specialty business to document their involvement in each of the specialty markets we had identified. This information has been published in a 128-page specialty soybean directory. Call Dermot Hayes, CARD, at 515/294-6185, or Greg Ehm, ISPB, at 515/223-1423, to inquire about receiving a free copy.

Where Do We Go from Here?

While creating the specialty soybean directory we discovered that the specialty soybean business is already important and is growing rapidly. As the marketing system undergoes the transformation from a commodity-based system to a system that competes on characteristics, the Iowa soybean sector will be able to offer new customers exactly those characteristics they want. Our sense is that Iowa is at the forefront of the transition, and that Iowans will receive much of the reward.

Many of the new customers for Iowa's specialty soybeans and corn will locate near the source of production. These companies will employ geneticists, molecular biologists, and engineers to create products that we cannot begin to describe today. With some luck and continued managerial attention, the state could become home to an industry that will create as many uses for corn and soybeans as the computer industry has for the silicone chip.

Emerging Issues

Hard Choices

(William H. Meyers, 515/294-1184)

(Darnell B. Smith, 515/294-1184)

As we go to press, both the Senate and House are acting on proposals to put the federal budget on a path to be balanced by 2002. The budget cuts proposed by both bodies are substantial but those proposed by the

House are larger, since the Senate has rejected the tax cuts adopted by the House. Although the budget debates in the House and Senate and between the House and Senate are far from over, the expectation is that the Agriculture Committees will be asked to reduce farm program spending by \$1.5 billion to \$2 billion per year over the next seven years.

Spending caps are also being considered. Although it is not clear whether credit would be granted for years in which actual expenditures are below projections, Congressional focus is now on constraining actual expenditures in any given year as well as on changes in total expenditures over the budget period.

As the budget amounts and rules are being resolved, debate will focus on alternative ways of changing programs to reduce farm program spending and possibly to reduce the year-to-year variability of spending. These will be hard choices, as cuts of this magnitude are difficult to achieve without reducing farm income. Moreover, the different ways to achieve the proposed reductions involve a broad range of distributional impacts by commodity, region, and type of farm.

Budget Cut Options

As of this writing, FAPRI has not yet analyzed specific options to achieve a particular budget target. However, studies that have been done can be used to gain some insight into likely impacts. The cost and net farm income impacts of several options are summarized and compared below:

1. 25 percent Flex. Increasing flex acres reduces payment acres and reduces participant returns and participation rates, while giving farmers more flexibility in using base acres for other crops. An analysis of increasing flex acres from the current 15 percent to 25 percent estimates a budget savings of \$1.28 billion per year and a net farm income loss of \$1.1 billion per year (*FAPRI Report 3-95*). This implies that net farm income declines \$85 for each \$100 of budget savings. It also indicates that an increase to 25 percent flex is not sufficient to meet current budget targets, so this approach would require higher flex rates and/or other program cuts.
2. Elimination of 0-50/85 Program. The 0-50/85 Program pays farmers 85 percent of deficiency payments on base area where less than 85 percent of permitted plantings are actually planted. For rice, 50 percent of base acres must be planted to qualify.

Elimination of this program is estimated to save \$280 million per year and reduce net farm income by \$150 million per year (*FAPRI Report 4-95*). This makes a very small contribution to budget savings, but net farm income declines only \$54 for each \$100 of budget savings.

3. Major program reform. FAPRI recently evaluated three major alternatives to current programs, all of which, at a minimum, eliminated current target prices, ARPs, and 0-50/85 (see "Three Corners" article in this issue). In other respects these options are quite different from each other, but two of them have estimated budget savings that are greater than those currently being proposed by Congress. These two are the No Program scenario and the Revenue Assurance scenario. In these two scenarios, we can roughly approximate the impacts of smaller budget cuts by giving the "excess budget savings" back to farmers in the form of decoupled cash payments. (Of course, Congress could also use some of the "excess budget savings" to restore some of the planned cuts in market development, conservation, or research.)

Budget Cut Impacts

The following assumptions are made to find these approximate impacts. We use a target budget reduction of \$1.6 billion per year and subtract this from the estimated budget savings in each of the two scenarios. This difference constitutes the "excess budget savings" that is assumed to be distributed to farmers in the same way that transition payments are made in the Revenue Assurance scenario. That is, they are paid in proportion to the average target and marketing loan deficiency payments over the last five years. These payments are assumed to have no impact on production decisions, so they change net farm income but do not alter the market results of the previous analysis. The payments are set in advance, so they involve no budget exposure beyond these certain payments. A five-year period is used for these approximations, though a seven-year analysis would not differ greatly. The results are presented in the table below.

The No Program scenario is estimated to save \$7.54 billion per year, so \$5.94 billion is available for annual decoupled payments. As a result, the adjusted net farm income drops by less than \$1 billion per year compared with current program levels. This implies that net farm income would drop about \$60 for each \$100 of budget savings.

Estimated Impact of \$8 Billion Cuts on No-Program and Revenue Assurance

	Five-Year Total (billion \$)	Annual Average (billion \$)
Assumed Cut in Agriculture	8.0	1.60
No-Program Estimates		
FAPRI estimate of No Program Savings	37.7	7.54
Surplus for decoupled payments	29.7	5.94
FAPRI estimate of No-Program NFI	182.9	36.58
Added decoupled payments	29.7	5.94
Adjusted No Program NFI	212.6	42.52
Change from Baseline	-4.8	-0.96
Revenue Assurance Estimates		
FAPRI estimate of Revenue Assurance savings	15.0	3.00
Surplus for decoupled payments	7.0	1.40
FAPRI estimate of Revenue Assurance NFI	203.1	40.61
Added decoupled payments	7.0	1.40
Adjusted Revenue Assurance NFI	210.1	42.01
Increase in government-financed indemnities	2.3	0.47
Estimated value of increased insurance*	4.7	0.93
Adjusted NFI plus increased insurance value	214.7	42.94
Change from Baseline	-2.7	-0.54
Baseline Estimate		
FAPRI estimate of current program NFI	217.4	43.48

*Total amounts derived from "Risky Business" averages, pg. 8.

The Revenue Assurance scenario is estimated to save \$3 billion per year, after accounting for the increased government contribution of \$0.47 billion per year to replace the current crop insurance with revenue assurance. This leaves \$1.4 billion available for annual decoupled payments, in addition to transition payments already included in the program design. The adjusted net farm income drops by \$1.47 billion. However, this scenario differs from the others in that an average annual increase of nearly \$.5 billion in government financed insurance indemnities also can be expected. This difference in cash flow by itself would reduce the farm income decline to about \$1 billion or \$60 for each \$100 of budget savings. The "Risky Business" article in this issue indicates that the value of government financed insurance in terms of reducing cash flow risk has been estimated at two times the indemnities payments. Using this factor, net farm income plus the value of insurance drops by \$.54 billion per year compared with current program levels. This measure of farm sector well-being, therefore, falls by about \$34 for each \$100 of budget savings.

The main reason that the adjusted No Program and adjusted Revenue Assurance scenarios indicate a smaller income loss per dollar of budget savings compared with increasing flex acres is that these scenarios remove more of the current program constraints, and farming efficiency increases. We have assumed that the decoupled payments are distributed exactly like recent deficiency payments, so as to retain the benefit distribution of current programs. However, Congress could decide to target these payments in another way. As long as they would remain decoupled from production decisions, the principal impact would be on the distribution of income rather than on the level of income in agriculture.

The few options presented here are limited because we have not yet done analyses for specific levels of budget savings. However, these scenarios provide some indication of how the impacts can differ under different methods of achieving budget savings.

Weather Uncertainty and Financial Risk

(Darnell B. Smith, 515/294-1184)

It could well be that for many agricultural producers in the United States, the financial risk due to unusual weather conditions is greater today than at any time in the recent past. The two primary reasons are: (1) Increasing budgetary pressure in Washington, implying that less support for agriculture will be forthcoming in future years, and (2) Last year's federal crop

insurance reform, replacing agricultural disaster assistance with low-cost catastrophic (CAT) coverage, offers only minimal risk reduction, at best.

Other articles in this issue have highlighted the expectation of reduced payments to producers as, even without budget cuts, baseline projections already incorporate future payment declines. It, therefore, taxes the imagination to envision that over the medium term, future support to agriculture will, on average, be anything but less than current levels.

Effects of CAT

Although CAT replaced disaster assistance, the coverage level is, at most, 30 percent of expected revenue (50 percent of yield times 60 percent of price) and even then, half the crop must be lost before any indemnities are paid at all. This means that for midrange losses, the losses most likely to occur, producers who did not choose to buy increased coverage will receive no indemnities whatsoever from CAT. For example, suppose an Iowa corn producer expects 150 bushels per acre at a price of \$2.40 per bushel. This producer could lose up to 75 bushels per acre and not be eligible for any indemnities at all. With the 50 percent yield deductible, the yield must drop below 75 bushels before coverage kicks in. For each bushel lost past the 50 percent deductible, however, the producer receives payment at 60 percent of expected price ($\$2.40 \times .6 = \1.44 per bushel). So, in this example, if the producer harvests 70 bushels per acre, the covered losses are \$7.20 per acre (5 bushels at a rate of \$1.44). For every 100 acres, this producer receives \$720 in insurance and \$16,800 in market receipts for a total of \$17,520. The \$720 payment covers only 3.75 percent of the \$19,200 in lost market revenue.

A comparison with the proposed Revenue Assurance program may prove useful in illustrating differences in risk exposure. If we assume that realized market price is equal to the expected price, \$2.40, then the per acre assured revenue for the above example equals .70 times 150 times \$2.40, or \$252 per acre. In our example, actual market revenue is \$168 per acre, with the covered indemnities equaling \$84 per acre with total receipts of \$25,200 for each 100 acres planted. Thus, this coverage provides producers with an assured cash flow large enough to cover variable cost and some proportion of other costs and expenditures. And in situations of midrange losses, the kind most likely to occur, Revenue Assurance offers a much greater degree of cash flow risk reduction than the CAT.

Revenue Insurance and Revenue Assurance

Interestingly, USDA has officially proposed that a pilot revenue "insurance" program be stipulated in the 1995 Farm Bill. Although all of the details have not been worked out, it appears that producers would be offered a choice between traditional yield insurance and revenue insurance. Reportedly, revenue insurance coverage would involve the same level of federal underwriting and incentives for buyups in coverage as exist with current federally sponsored crop insurance. However, it is not clear what administrative instruments would be employed to bring this about. Also, pilot programs have, in general, not been very successful, as it is hard to change the policy environment for some individuals while, at the same time, keeping everything else the same. Thus, the structure of the proposed pilot program would affect whether or not it became a useful risk management tool for producers.

It is also important to distinguish a pilot revenue *insurance* program from a pilot revenue *assurance* program. Whereas, a pilot revenue insurance program could likely be successful under a variety of structures, a pilot revenue assurance program would be very difficult to implement successfully. This is because with the proposed revenue insurance plan, producers would only be giving up yield coverage in return for the higher coverage levels that could be offered for revenue insurance (in general, premiums for revenue insurance are less than yield insurance, making the coverage level higher for a fixed expenditure). From a risk management standpoint, revenue insurance is a better tool for most producers because of the higher coverage levels attainable. Thus, the participation rate for this type of a pilot would likely be quite high. With a revenue assurance pilot, on the other hand, because producers would be asked to give up expected deficiency payments in return for revenue coverage, there would likely be lower participation in the pilot, especially for highly subsidized crops such as cotton and rice. Therefore it would quite probably fail.

The general shift in policy emphasis from income enhancement toward better risk management is not unique to the U.S. policy scene. Other developed nations, such as Canada, New Zealand, and the European Union, also have seen policy shifts along these lines.

Different alternative policies will, by their nature, have much different risk structures. It is important to understand these differences during the present policy debate. Currently, the financial risks due to unusual

weather events are probably higher than they have been in a long time. It is hoped that with more discussion of risk differences, producers and policymakers can address these issues in policy debates and in business planning.

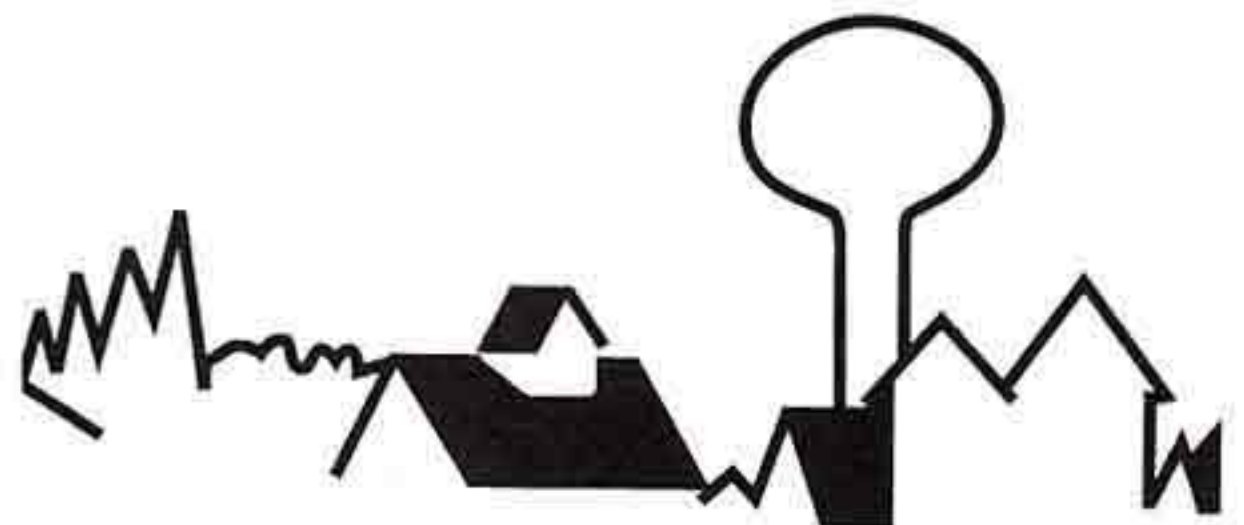
Fall Ag Policy Conference to Focus on Livestock Issues

December 13, 1995, is the date set for CARD's annual Fall Agricultural Policy Conference. This year's theme is "New Directions for the Livestock Industry," a continuation of the conference series on "Changes and Choices for Agriculture and Rural Communities." The 1995 event will be held at Kirkwood Community College in Cedar Rapids, Iowa, from 8:30 am to 4:30 pm. This year's policy conference is jointly sponsored by CARD, the Leopold Center for Sustainable Agriculture, ISU Extension, and the Agribusiness Committee of the Cedar Rapids Chamber of Commerce.

Many aspects of the challenges facing the livestock industry will be covered at the conference. Among the general areas to be discussed are production, processing, marketing, development, positioning for the future, and the role of government. The tentative registration fee is \$35, which covers the day's activities, refreshment breaks, lunch, and materials.

Planning committee members include Dennis Keeney and Rich Pirog of the Leopold Center; Linda Bostwick, Mike Duffy, Mark Edelman, Phil Hufferd, Ron Irvin, and Mark Settle of ISU Extension; Keith Chapman of Kirkwood Community College; Tami Gillmore of KHAK Radio; Tom Glanz of Norwest Bank; Tom Plaht of Farm Credit Services of the Midlands; Terry Reilly of *Iowa Farmer Today*; Tim Stearns of Firststar Bank; Pete Thurman of Federal Hybrid Seed; and Mary Adams, Keith Heffernan, William Meyers, Judith Pim, and Stanley Johnson of CARD.

More information about the Fall Agricultural Policy Conference will appear in the September issue of the *Iowa Ag Review*. For an update on current planning activities, call Judith Pim at CARD, 515/294-6257.



Meet The Staff

Keith Heffernan joined CARD in November 1994 as assistant director. He brings to CARD an extensive background in agricultural policy development and implementation. Heffernan has previously been executive director of the Iowa Corn Growers Association and director of public affairs for the Iowa Farm Bureau Federation. In these positions, Heffernan worked with farmers to develop favorable agricultural policies and programs at the local, state, and federal levels. In addition, he spent six years in state government in management positions related to economic development and was an agricultural advisor to Governor Branstad. Thanks to this experience, he has a unique appreciation and understanding of the workings of government.

Keith's responsibilities at CARD include budget, personnel, and systems management. However, one of the key challenges for Heffernan will be to identify opportunities for application of CARD's research to Iowa. Although CARD's findings are prepared for specific clients, frequently the results are applicable and have significance for the state. An example is a recent EPA project to study water quality in the Dallas, Texas, area where there was a significant presence of large dairy cow operations. The findings in this research project, with some modifications, had direct applications to confinement livestock facilities in Iowa and were very useful to the Iowa Pork Producers and other groups. The results of these studies relating to agricultural programs, environmental issues, rural development, and international commodity programs have a great impact on Iowa, and Heffernan will coordinate efforts with the various agriculture and commodity groups, agribusinesses, and state leaders to identify research needs and provide information.



Keith Heffernan

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95-WP 129. "The Economic, Environmental, and Fiscal Impacts of a Targeted Renewal of Conservation Reserve Program Contracts." **B. Babcock, P.G. Lakshminarayan** and **J. Wu**. February 1995.

95-WP 130. "The Budgeting and Resource Allocation Effects of Revenue Assurance." **D. Hennessy, B. Babcock**, and **D. Hayes**. February 1995.

95-WP 131. "Optimal Design of a Voluntary Green Payment Program Under Asymmetric Information." **Junjie Wu** and **Bruce A. Babcock**. February 1995.

95-WP 132. "Net Returns of Alternative Crops on Flood-Prone Land: Louisa County, Iowa, and Saline County, Missouri." **John Kruse, Paul Mitchell, Aziz Bouzaher**, and **Darnell Smith**. February 1995.

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FAPRI Outlook Publications

#1-95. "FAPRI 1995 U.S. Agricultural Outlook." **FAPRI Staff**. June 1995.

#2-95. "FAPRI 1995 International Agricultural Outlook." **FAPRI Staff**. May 1995.

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