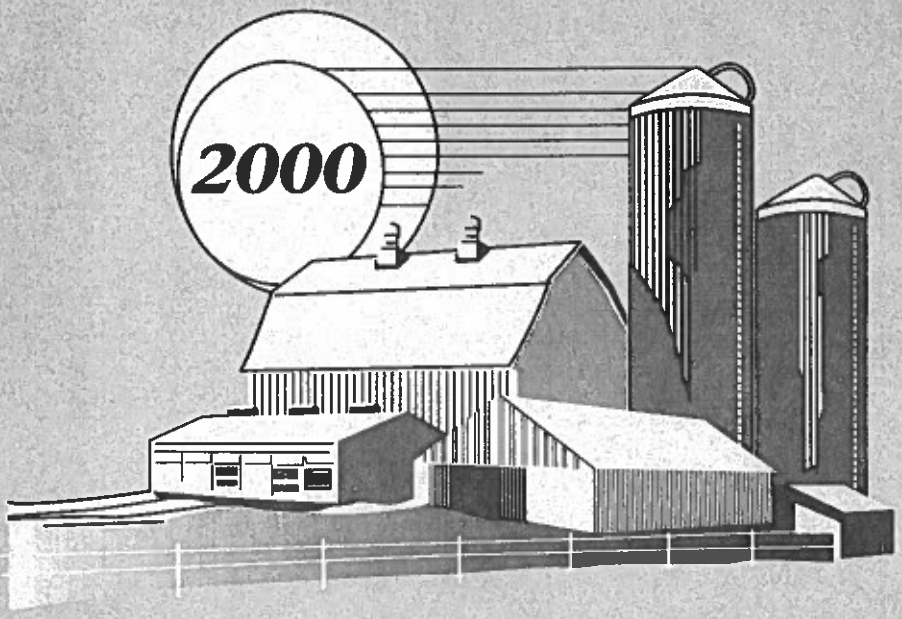
❖ ARKANSAS ❖ AGRICULTURE SITUATION AND OUTLOOK



Bruce Ahrendsen, Eric Wailes
Bruce Dixon, H.L. Goodwin, Jr., Tony Windham

ARKANSAS AGRICULTURAL EXPERIMENT STATION
Division of Agriculture — University of Arkansas
June 2000 — Research Series 474

Editing and cover design by Robin Bodishbaugh

Arkansas Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville. Milo J. Shult, Vice President for Agriculture and Director; Charles J. Scifres, Associate Vice President for Agriculture. PS1.00600PM65.The Arkansas Agricultural Experiment Station follows a nondiscriminatory policy in programs and employment.

ISSN:0099-5010 CODEN:AKAMA6

ARKANSAS AGRICULTURE 2000 SITUATION AND OUTLOOK

Bruce Ahrendsen
Associate Professor
Department of Agricultural Economics and Agribusiness
University of Arkansas

Eric Wailes
Professor
Department of Agricultural Economics and Agribusiness
University of Arkansas

Bruce Dixon
Professor
Department of Agricultural Economics and Agribusiness
University of Arkansas

H.L. Goodwin, Jr.
Associate Professor
Department of Agricultural Economics and Agribusiness
University of Arkansas

Tony Windham
Section Leader - Agricultural Economics
Extension Economist - Management
Coorperative Extension Service
University of Arkansas

Arkansas Agricultural Experiment Station
Fayetteville, Arkansas 72701

SUMMARY

Many farmers in Arkansas and other parts of the United States are experiencing financial stress. The purpose of this report is to highlight the situation of Arkansas farmers and to offer an outlook for 2000. The report emphasizes the production, price, income, financial, farmland value, and interest rate outlook for Arkansas farmers and considers the impact of the macroeconomy on agriculture. The contribution of poultry production to the Arkansas agricultural economy is also presented and analyzed.

Key Words: Crop, Livestock, Catfish, Poultry, Horticulture Production, Price, Income, Financial Situation, Farmland Value, Macro Economy, Interest Rate, Poultry Contribution

CONTENTS

ARKANSAS AGRICULTURE
2000 SITUATION AND OUTLOOK

Bruce L. Ahrendsen, Eric J. Wailes, Bruce L. Dixon,
H. L. Goodwin, Jr., and Tony E. Windham[1]

EXECUTIVE SUMMARY

❑ Price prospects in 2000 for Arkansas crop agriculture are weak. For the major crops produced and marketed by Arkansas farmers—soybeans, rice, and cotton—market prices in 2000 are expected to be at or below loan rates, not unlike last year's abysmal market returns. New crop futures prices facing farmers as of mid-February compared to a year ago are as follows:

Crop	Contract month	2000	1999
Soybeans	September	$5.33	$4.75
Rice	November	$3.02	$3.17
Cotton	October	$0.6125	$0.577
Wheat	July	$2.94	$2.64
Corn	September	$2.47	$2.26

---

[1] Drs. Ahrendsen, Wailes, Dixon, and Goodwin are associate professor, professor, professor, and associate professor in the Department of Agricultural Economics and Agribusiness, University of Arkansas, and Dr. Windham is section leader–agricultural economics and extension economist–management, Cooperative Extension Service, University of Arkansas. Drs. Ahrendsen and Dixon are principals of the Center for Farm and Rural Business Finance, which is jointly sponsored by the University of Arkansas and University of Illinois. Dr. Wailes is a principal in the Arkansas Global Rice Policy project, jointly funded with the Food and Agricultural Policy Research Institute, University of Missouri. Dr. Goodwin is an economist in the Center for Excellence in Poultry Science, University of Arkansas. The authors gratefully acknowledge the research assistance of Ms. Diana Danforth, Ms. Karen Strain, Ms. Leisha Vance, Mr. Shi Zhaolin, Ms. Adria Christian, and Ms. Julie Many.

❑ Income prospects for Arkansas crop farmers in 2000 are heavily influenced by the bearish price outlook, loan-deficiency payments (LDPs), and other direct government payments. Based on normal yields and projected 2000 market prices and LDPs, the net returns per acre to farmers for non-land assets and management are as follows:

Crop	Projected 2000 net returns	Typical range
Soybeans, dryland	–$5/acre	$60 to 100/acre
Soybeans, irrigated	$59/acre	$80 to 120/acre
Rice	$10/acre	$40 to 90/acre
Cotton, dryland	–$14/acre	$20 to 80/acre
Cotton, irrigated	$21/acre	$20 to 80/acre
Corn, irrigated	–$6/acre	$50 to 110/acre
Sorghum, irrigated	$10/acre	$10 to 40/acre

❑ The 1996 Farm Bill increased price and income risks for farmers by decoupling payments from production decisions, leaving only loan rates as price protection for many crop farmers. Loan deficiency payments and market loan gains were heavily relied upon by Arkansas producers during the 1999 crop year, totaling $380 million by April 2000. Two other types of direct government payment were extremely important to Arkansas. Direct income assistance for the 1999 crop year amounted to $261 million from Production Flexibility Contract payments and $261 million from emergency Market Loss Assistance payments.

❑ Market value of Arkansas agriculture is projected to improve for all sectors in 2000 compared with 1999 as a result of more production and/or improved prices:

	1999 Million $	2000 Million $	Change
Field Crops	1533.7	1638.6	6.8%
Livestock	493.3	544.1	10.3%
Poultry	2678.0	2808.0	4.8%
Horticulture	27.7	29.4	6.1%

❑ The income and financial conditions of farmers are forecast to decline in 2000.

- U.S. net farm income is forecast to decrease 10.2%.
- Direct government payments are forecast to be 47% and 40% of U.S. net farm income in 1999 and 2000, even without any new emergency assistance in 2000.
- On average, government payments in the 1990s have been more important to Arkansas farmers than to U.S. farmers as a whole.
- Arkansas agricultural loan officers' opinions and USDA forecasts of cash income and debt repayment difficulties are discussed.
- Loan officers from the eastern third of the state expect 14% of their farm borrowers to have cash flow problems, while those from the rest of the state expect 7% to have such cash flow problems. When asked about what percentage of farm borrowers will require some type of debt reorganization, loan officers from the eastern third of Arkansas indicated 24% and loan officers from the rest of the state indicated 8%.
- Three USDA production regions that cover portions of Arkansas are forecast to have decreases in farm net cash income of 38%, 18%, and 16% from 1999 to 2000; these are all steeper declines than U.S. farmers on average.
- Significant percentages of farms in the three regions represented in Arkansas (31%, 26%, and 26%) are forecast by the USDA to have negative net cash income in 2000.
- In addition, 23%, 16%, and 13% of farms in the three regions represented in Arkansas are forecast by USDA to have debt repayment difficulties in 2000. Having these difficulties does not necessarily mean that farmers will be forced to liquidate their operations and quit farming, although some may. It does mean, however, that these farmers will likely need to renegotiate their repayment plans with creditors.

❑ Farm real estate values are important to Arkansas farmers.

- Seventy-five percent of the value of Arkansas' total farm assets is farm real estate.

- Arkansas farm real estate values have trended upward, like U.S. values.
- Agricultural loan officers from the eastern third of Arkansas thought farm real estate values increased slightly in1999, and they expect values to decrease in 2000. Loan officers from the rest of the state thought farm real estate values increased in1999, and they expect them to do the same in 2000.

❑ The macro economy and interest rates are important to agriculture. Export dependency is higher for Arkansas agriculture than for the rest of the United States. This makes Arkansas agriculture more vulnerable to exchange rate, interest rate, and price volatility.

- Arkansas agriculture is more dependent on exports, which results in more price variability and exposure to exchange rate risk and economic growth in the rest of the world. The annual value of Arkansas farm exports ranges between $2.5 and $3.0 billion. The leading exports are rice, soybeans, cotton, wheat, and poultry.
- The U.S. economy is growing and unemployment is low, resulting in strong domestic demand for agricultural products.
- The strength of the U.S. dollar is dampening any increase in agricultural exports.
- Because of the strong growth of the U.S. economy, the Federal Reserve is expected to increase interest rates, resulting in higher credit costs.
- Agricultural loans may be offered at a variety of rates, but banks and Farm Credit Services are continuing to compete for agricultural loans.

❑ Arkansas is a national leader in poultry production, which is important to Arkansas agriculture.

- Arkansas was ranked second nationally in broiler production, fourth in turkey production, and eighth in table egg production in 1997.
- Poultry results in more than 60% of the market value of agricultural products sold and government payments for 34 Arkansas counties.

- Poultry production in Arkansas accounts for an increasing percentage of the market value of agricultural products sold and government payments.

PRODUCTION AND PRICE SITUATION AND OUTLOOK

Arkansas has an extremely diverse production agriculture. This section of the study discusses the production and price situation and outlook for four categories of agricultural production in Arkansas: field crops, livestock and catfish, poultry, and horticulture. Field crops include soybeans, rice, cotton, wheat, corn, and grain sorghum and had a 32% share of the market value of Arkansas agriculture in 1999 (Figure 1).[2] Livestock and catfish include feeder calves, milk, feeder pigs, and catfish and account for 10% of the market value of Arkansas agriculture. Poultry includes broilers, turkeys, and eggs and has a 57% share of market value. Finally, horticultural products included in this study are tomatoes, watermelons, pecans, apples, grapes, blueberries, peaches, and strawberries for a 1% share of market value. This is not intended to be an all-inclusive list of agricultural products produced in Arkansas, but some products such as nursery and ornamental products are necessarily omitted because of data limitations.

Field Crops

The price outlook for the 1999 Arkansas crops has not improved significantly since last fall. At the time of publication, commodity futures prices for most field crops are at or below the commodity loan rates. Only corn and wheat futures have improved to levels above the loan rate. Price supports through the loan deficiency payment (LDP) program have been important for cotton, rice, soybeans, and wheat. Cotton and rice have also benefited from loan activity through the marketing loan gains. As of April 2000, Arkansas had received $380 in LDPs and marketing loan gains for the 1999 crop year. Other government income support targeted to Arkansas crop producers includes Production Flexibility Contract (PFC)[3] payments and Market Loss Assistance (MLA) payments of $522 million, which is an increase from the previous year's $403 million. For the 1999 crop year,

---

[2] It should be noted that market value is determined by multiplying market price by production, and no government payments are included. The shares would most likely change if government payments were included.

[3] PFC payments are also known as Agricultural Market Transition Assistance (AMTA) payments.

MLA payments of $261 million will be paid to producers who also qualified for the PFC payments of $261 million.[4]

Net market returns for the 2000 Arkansas crops based on current price projections and Arkansas Cooperative Extension Service cost of production estimates are shown in Tables 1 and 2. Table 1 shows market returns to Arkansas producers at specified yields for the anticipated 2000 price range. The net return estimates presented are calculated as the difference between revenue and variable costs of production and a return to land, based on a 25% crop share rent. Net returns above operating costs and rent reflect payment for non-land assets (including tractors and equipment) as well as payment for management and other fixed costs such as taxes. The midpoint price for soybeans, rice, and cotton is the anticipated market price plus loan deficiency payments. The midpoint price for corn and grain sorghum is the anticipated market price. Table 2 reflects production risk by presenting the market returns to producers at a specified price for alternative yield levels. The price situation for Arkansas crops remains bleak. As was the situation last year, a fairly major weather-related problem may need to occur to cause a significant reversal in crop prices during 2000.

The market value shares of Arkansas field crops, excluding government payments, are presented in Figure 2. Rice leads the way, with a 38% share of market value, followed by soybeans (30%), cotton (22%), wheat (8%), corn (1%), and sorghum (1%).

Soybeans. Arkansas is the ninth leading soybean-producing state, accounting for about 4% of U.S. production. The average market value of farm production was only $460 million for 1998 and 1999, compared with $790 million for 1996 and 1997 (Table 3). Harvested soybean acreage in 1999 was 3.35 million; 1.765 million of those acres were irrigated. The average yield in 1999 was 28 bu/acre. Total production was 93.8 million bushels. The expected season average market price is $4.95/bu, which will result in total market value of $464.3 million. As of March 9, 2000, LDPs of $71.8 million were received by Arkansas soybean producers on 77.3 million bushels for an average LDP of $0.93/bu.[5] An additional 3.7 million bushels were redeemed at the loan repayment rate, receiving market loan gains of $0.97/bu.

---

[4] For more information on government programs see the USDA, Farm Service Agency home page at *www.fsa.usda.gov*

[5] Soybean LDP is based on the difference between the applicable county loan rate and the announced loan repayment rate established at the applicable county FSA office based on the previous day's market price.

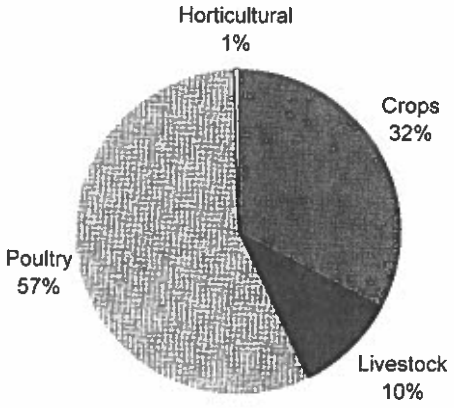


Figure 1. 1999 market value shares of Arkansas agriculture. Source: USDA, NASS.

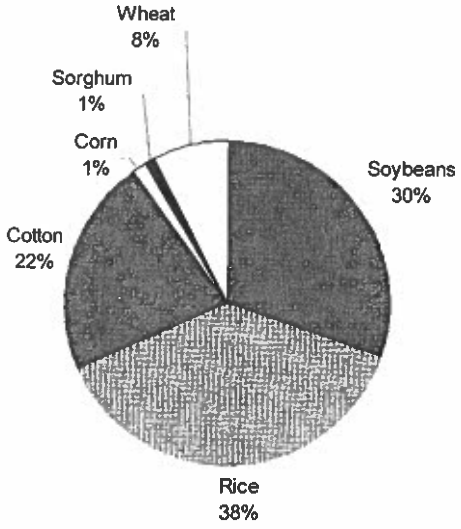


Figure 2. 1999 market value shares of Arkansas field crops. Source: USDA, NASS.

Table 1. Market returns to Arkansas producers at specified yields for the anticipated 2000 price range.

Soybeans–Dryland	**25 bu/acre**				
Price $/bu	*$5.00*	*$5.20*	*$5.40*	*$5.60*	*$5.80*
Specified operating costs	$106	$106	$106	$106	$106
Returns above operating costs	$19	$24	$29	$34	$39
Returns above operating + 25% rent	–$12	–$9	–$5	–$1	$3
Soybeans–Irrigated	**45 bu/acre**				
Price $/bu	*$5.00*	*$5.20*	*$5.40*	*$5.60*	*$5.80*
Specified operating costs	$123	$123	$123	$123	$123
Returns above operating costs	$102	$111	$120	$129	$138
Returns above operating + 25% rent	$46	$53	$59	$66	$73
Rice	**130 bu/acre**				
Price $/bu	*$2.50*	*$2.75*	*$3.00*	*$3.25*	*$3.50*
Specified operating costs	$282	$282	$282	$282	$282
Returns above operating costs	$43	$75	$108	$140	$173
Returns above operating + 25% rent	–$39	–$14	$10	$34	$59
Cotton–Non-Irrigated	**600 lb/acre**				
Price $/lb	*$0.52*	*$0.56*	*$0.60*	*$0.64*	*$0.68*
Specified operating costs	$284	$284	$284	$284	$284
Returns above operating costs	$28	$52	$76	$100	$124
Returns above operating + 25 % rent	–$50	–$32	–$14	$4	$22
Cotton–Irrigated	**900 lb/acre**				
Price $/lb	*$0.52*	*$0.56*	*$0.60*	*$0.64*	*$0.68*
Specified operating costs	$384	$384	$384	$384	$384
Returns above operating costs	$84	$120	$156	$192	$228
Returns above operating + 25% rent	$–33	–$6	$21	$48	$75
Corn–Irrigated	**150 bu/acre**				
Price $/bu	*$2.00*	*$2.12*	*$2.24*	*$2.36*	*$2.48*
Specified operating costs	$258	$258	$258	$258	$258
Returns above operating costs	$42	$60	$78	$96	$114
Returns above operating + 25% rent	–$33	–$19	–$6	$8	$21
Grain Sorghum–Irrigated	**60 cwt/acre**				
Price $/cwt	*3.25*	*3.5*	*3.75*	*4*	*4.25*
Specified operating costs	$158	$158	$158	$158	$158
Returns above operating costs	$37	$52	$67	$82	$97
Returns above operating + 25% rent	–$12	–$1	$10	$22	$33

Note: Returns above operating + 25% rent are returns to non-land assets and management.

Source: Authors' computations are based on University of Arkansas Cooperative Extension Service budgets.

Table 2. Market returns to Arkansas producers at specified prices for alternative yield levels.

Soybeans–Dryland	**$5.40/bu**				
Yield bu/ac	*15*	*20*	*25*	*30*	*35*
Specified operating costs	$106	$106	$106	$106	$106
Returns above operating costs	–$25	$2	$29	$56	$83
Returns above operating + 25% rent	–$45	–$25	–$5	$15	$36
Soybeans–Irrigated	**$5.40/bu**				
Yield bu/ac	*35*	*40*	*45*	*50*	*55*
Specified operating costs	$123	$123	$123	$123	$123
Returns above operating costs	$66	$93	$120	$147	$174
Returns above operating + 25% rent	$19	$39	$59	$80	$100
Rice	**$3.00/bu**				
Yield bu/ac	*110*	*120*	*130*	*140*	*150*
Specified operating costs	$282	$282	$282	$282	$282
Returns above operating costs	$48	$78	$108	$138	$168
Returns above operating + 25% rent	–$35	–$12	$10	$33	$55
Cotton–Non-Irrigated	**$0.60/lb**				
Yield lb/ac	*400*	*500*	*600*	*700*	*800*
Specified operating costs	$284	$284	$284	$284	$284
Returns above operating costs	–$44	$16	$76	$136	$196
Returns above operating + 25% rent	–$104	–$59	–$14	$31	$76
Cotton–Irrigated	**$0.60/lb**				
Yield lb/ac	*700*	*800*	*900*	*1,000*	*1,100*
Specified operating costs	$384	$384	$384	$384	$384
Returns above operating costs	$36	$96	$156	$216	$276
Returns above operating + 25% rent	–$69	–$24	$21	$66	$111
Corn–Irrigated	**$2.24/bu**				
Yield bu/ac	*130*	*140*	*150*	*160*	*170*
Specified operating costs	$258	$258	$258	$258	$258
Returns above operating costs	$33	$56	$78	$101	$123
Returns above operating + 25% rent	–$39	–$23	–$6	$11	$28
Grain Sorghum–Irrigated	**$3.75/cwt**				
Yield cwt/ac	*40*	*50*	*60*	*70*	*80*
Specified operating costs	$158	$158	$158	$158	$158
Returns above operating costs	–$8	$29	$67	$104	$142
Returns above operating + 25% rent	–$46	–$18	$10	$39	$67

Note: Returns above operating plus 25% rent are returns to non-land assets and management.

Source: Authors computations based on University of Arkansas Cooperative Extension Service budgets.

Soybean-harvested acreage in Arkansas for 2000 is expected to increase from 3.35 million acres in 1999 to 3.45 million acres (Figure 3, Table 3). Expected returns prior to planting in 1999 favored rice relative to soybeans. In 2000, expected net returns to irrigated soybeans are favorable relative to rice (Table 1), resulting in an anticipated shift in acreage. Assuming normal yields and no reduction in the loan rate for soybeans from its current level at $5.26/bu, the baseline projections by the Food and Agricultural Policy Institute (FAPRI) and the USDA suggest lower 2000/01 soybean market prices, as a result of expected record acreage and higher ending stocks. FAPRI projects soybean prices to decline from $4.77 in 1999 to $4.24 in 2000 while USDA sees prices declining from $4.90 to $4.25. This translates into an Arkansas farm price for soybeans in the range of $4.40 to $4.60. Soybeans, nevertheless, remain profitable as a result of the LDP, which may be expected to range between $0.90 and $1.10/bu. The price range (market + LDP) used in Table 1 for soybeans is $5.00 to 5.80/bu. An assumed yield of 25 bu/acre for non-irrigated soybeans results in negative and low net returns in the range of -$12 to $3 per acre. With timely rainfall, non-irrigated soybeans with yields of 35 bushels at $5.40/bu can be expected to give a net return of $36/acre (Table 2). An assumed yield of 45 bu/acre for irrigated soybeans gives positive returns in the range of $46 to $73/acre.

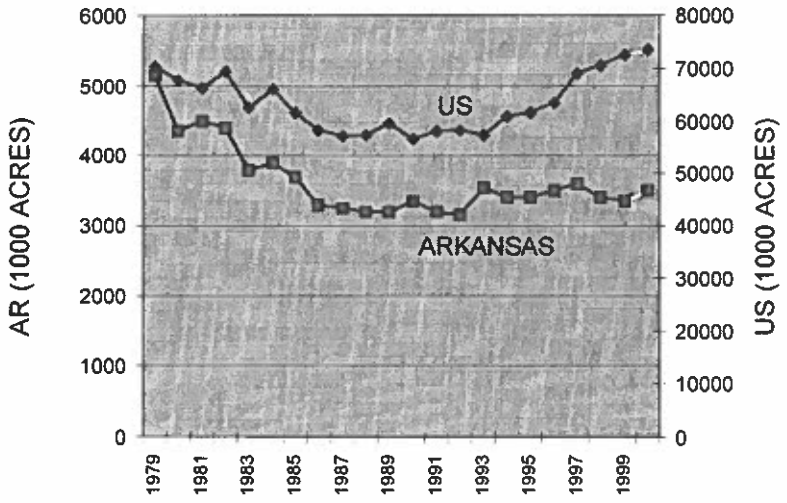


Figure 3. Soybean harvested acres. Source: USDA, NASS for historical data and authors' estimates for 2000.

Table 3. Production, prices, and market value of Arkansas crops, 1990-2000.

	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01P
Soybeans											
Acres harvested, thous.	3,350	3,200	3,160	3,550	3,400	3,400	3,500	3,600	3,400	3,350	3,450
Yield, bushels	27	28	33	26	34	26	32	30.5	25	28	30
Production, thous. bu	90,450	89,600	104,280	92,300	115,600	88,400	112,000	109,800	85,000	93,800	103,500
Price, $/bu	5.91	5.71	5.64	6.65	5.69	6.85	7.36	6.88	5.38	4.95	4.55
Market value, thous. $	534,560	511,616	588,139	613,795	657,764	605,540	824,320	755,424	457,300	464,310	470,925
Rice											
Acres harvested, thous.	1,200	1,260	1,380	1,230	1,420	1,340	1,170	1,390	1,525	1,646	1,525
Yield, bushels	111	118	122	112	127	121	137	127	129	131	130
Production, thous. bu	133,333	148,400	168,667	138,033	179,867	162,289	159,900	176,067	196,556	215,809	198,250
Price, $/bu	3.04	3.46	2.67	3.59	2.93	4.11	4.59	4.44	3.99	2.70	2.97
Market value, thous. $	405,000	513,538	450,087	495,057	527,729	667,494	733,941	782,000	784,552	582,684	588,803
Cotton											
Acres harvested, thous.	750	980	980	970	970	1,110	990	965	900	960	1,000
Yield, pounds	692	772	823	541	877	635	793	837	645	715	745
Production, thous. bales	1,081	1,576	1,681	1,094	1,772	1,468	1,636	1,683	1,209	1,430	1,552
Price, $/lb	0.657	0.571	0.557	0.572	0.677	0.734	0.707	0.657	0.635	0.483	0.488
Market value, thous. $	340,904	431,950	449,432	300,369	575,829	517,206	555,193	530,751	368,503	331,531	363,560

continued

Table 3. Continued

	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01P
Corn											
Acres harvested, thous.	73	80	95	90	90	85	230	185	215	100	100
Yield, bushels	95	100	130	91	120	115	125	125	100	130	132
Production, thous. bu	6,935	8,000	12,350	8,190	10,800	9,775	28,750	23,125	21,500	13,000	13,200
Price, $/bu	2.62	2.58	2.29	2.53	2.31	3.10	2.65	2.51	1.85	1.75	2.25
Market value, thous. $	18,170	20,640	28,282	20,721	24,948	30,303	76,188	58,044	39,755	22,750	29,700
Sorghum											
Acres harvested, thous.	275	270	410	215	245	185	220	150	130	125	125
Yield, bushels	66	57	76	58	75	71	74	74	53	78	75
Production, thous. bu	18,150	15,390	31,160	12,470	18,375	13,135	16,280	11,100	6,890	9,750	9,375
Price, $/bu	2.25	2.40	2.14	2.31	2.03	2.91	2.95	2.57	1.88	1.70	2.20
Market value, thous. $	40,838	36,936	66,682	28,806	37,301	38,223	48,026	28,527	12,953	16,575	20,625
Wheat											
Acres harvested, thous.	1,400	930	850	1,040	880	1,000	1,240	820	900	920	1090
Yield, bushels	35	22	46	40	46	47	54	48	51	56	55
Production, thous. bu	49,000	20,460	39,100	41,600	40,480	47,000	66,960	39,360	45,900	51,520	59,950
Price, $/bu	3.12	2.77	3.51	2.86	3.20	3.61	4.38	3.49	2.73	2.25	2.75
Market value, thous. $	152,880	56,674	137,241	118,976	129,536	169,670	293,285	137,366	125,307	115,920	164,863

P = projected.

Source: USDA, NASS for historical data. Projections for 2000/01 are estimated using baseline projections published by FAPRI and USDA and current market reports.

Rice. Arkansas is the leading rice producing state, accounting for 46% of all U.S. rice output in 1999, 53% of long-grain, and 28% of medium-/short-grain (Figure 4). In 1999, Arkansas farmers harvested a record rice acreage, 1.646 million. Yields averaged 131 bu/acre and total output was a record 216 million bushels. Arkansas produced 181 million bushels of long-grain rice based on an average yield of 130 bu/acre on 1.394 million acres. Medium-/short-grain production was 35 million bushels from 251 thousand acres with an average yield of 138 bu/acre. The record 1999 rice production, not only for Arkansas but for the U.S. as a whole, coupled with only slight growth in domestic and export markets in 1999 is expected to result in much larger ending stocks—82 million bushels compared to only 49 million bushels in 1998 [Arkansas Global Rice Model (AGRM)]. The average Arkansas rice price is projected by the AGRM to decline for the 1999 crop to $2.70/bu compared with an average price of $4.34/bu for the 1996-98 marketing years. Therefore, the market farm value of 1999 Arkansas rice production is anticipated to be approximately $583 million, compared with an average of $766 million per year over the previous three years, 1996-1998.

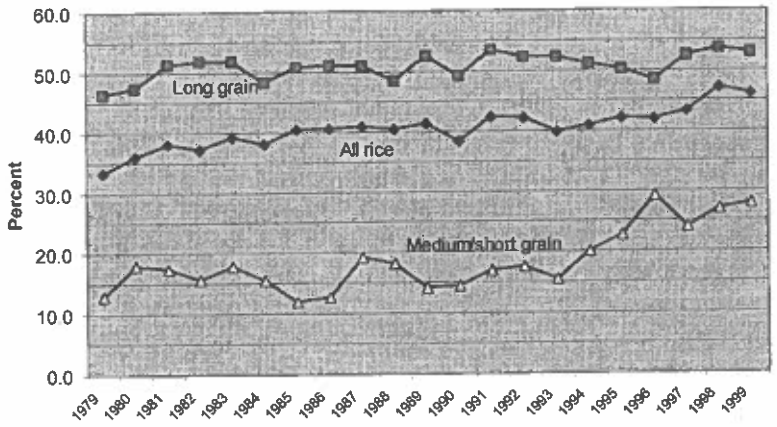


Figure 4. Arkansas share of U.S. rice production by type. Source: USDA, NASS for historical data and authors' estimates for 2000.

Price support for the 1999 crop is available through the LDP and market loan gain payments.[6] Additional income support is provided by the PFC payment of $1.27/bu and the MLA payment of $1.27/bu. As of March 9, 2000, price support payments for rice, averaging $0.63/bu, from the LDPs were $59.6 million on 78.4 million bushels. Marketing loan gains, averaging $0.86/bu, on a loan repayment quantity of 58 million bushels were $50.4 million. An additional 141.5 million bushels currently remain under loan and are eligible for marketing loan gains, subject to payment limitations and other program requirements.

The outlook for the 2000 crop is strongly influenced by the lower current and futures rice prices. As a result, AGRM projects Arkansas rice acreage to decline 7% from last year near the 1998 level of 1.525 million acres (Figure 5). Most of the anticipated reduction will be in long-grain, 1.29 million acres compared with 1.39 last year. Medium-grain rice acreage is projected to drop slightly, from 250,000 acres in 1999 to 240,000 in 2000. Normal weather would place average yields at 130 bu/acre for a total 2000 crop estimate of 198.3 million bushels. The AGRM model projects some strengthening in long-grain rice prices and an overall average price for Arkansas producers near the loan rate at $2.97/bu. The projected price range used in Table 1 is $2.50 to $3.50/bu. The price range results in net returns in the range of –$39 to $59/acre.

Cotton. Arkansas typically ranks fifth among states in value of cotton production. Cotton acreage harvested has been variable since the 1991 crop year, ranging from a low of 900,000 in 1998 to a high of 1.110 million acres in 1995 (Table 3). The annual value of the crop at the farm level has averaged $488 million for 1996-98. Prices below the loan rate over the past year have resulted in a projected farm market value for 1999 of only $332 million. The LDP payments to Arkansas cotton producers in 1999 have averaged $0.20/lb, for a total payment of $39.5 million. Nearly 480 million lb were placed into the loan program, and market loan gain payments have averaged $0.21/lb, for a total market gain of $96.4 million as of March 9, 2000.

The outlook for 2000 is slightly more favorable for cotton. Market prices are expected to strengthen on the basis of stronger domestic mill and export demand. Both FAPRI and USDA baseline projections indicate a

---

[6] The LDP for rice is based on the difference between the loan rate (varies by state and rice type) and the announced world rice price, which is calculated weekly by the USDA.

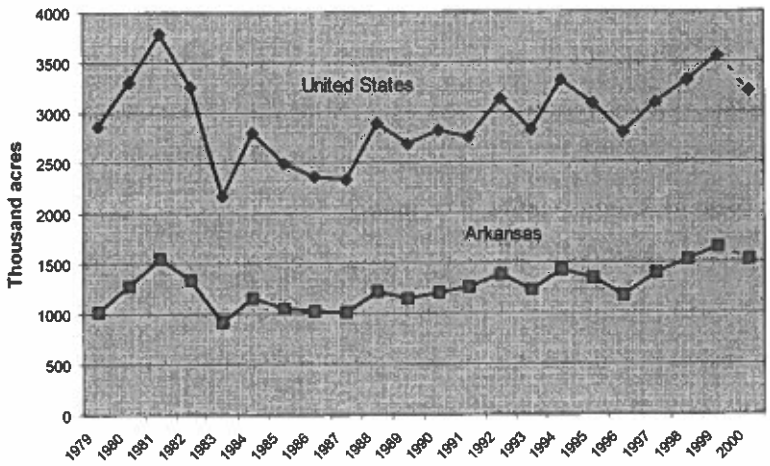


Figure 5. U.S. and Arkansas rice acreage. Source: USDA, NASS for historical data and authors' estimates for 2000.

modest increase in U.S. cotton plantings for 2000. Arkansas area harvested is expected to increase from 960,000 acres in 1999 to 1 million for 2000. Projected market price of $0.488/lb will result in market returns of $364 million. With prices still below the loan rate, an LDP plus market price could generate an assumed price range of $0.52 to $0.68/lb (Table 1). At these prices, net returns are expected in the range of –$50 and $22 per acre for dryland cotton and –$32 to $75 per acre for irrigated cotton in 2000.

Corn and Grain Sorghum. Corn and grain sorghum have had average farm level values in Arkansas from 1996 to 1998 of $57 million and $29 million, respectively (Table 3). Corn-harvested area peaked at 230,000 acres in 1996 but fell to only 100,000 acres in 1999. An expected season average market price of $1.75/bu will result in a market value for Arkansas corn of $22.7 million in 1999. Sorghum acreage has also declined since 1996. In 1999, 125,000 acres were harvested. Production of 9.75 million bushels at an expected season average price of $1.70/bu will generate a market value of $16.6 million for the 1999 crop. LDP payments supported Arkansas feed-grain producers with an average LDP for corn of $0.27/bu on 9.7 million bushels and an average LDP for sorghum of $0.20/bu on 7.36 million bushels.

No change in area planted to corn and sorghum is projected for Arkansas in 2000. Feed-grain prices have strengthened in the new year. Market crop futures prices for 2000 have moved well above the loan rate. Export demand for feed grains has expanded, together with dry weather in the Midwest, is the primary market driver. A dry production year in 2000 could tighten corn supplies dramatically and push prices toward the $3.00/bu level. At the specified price of $2.24/bu, the range of net returns to corn in Arkansas at various yields is –$39 to $28 per acre (Table 2). Grain sorghum returns are expected to fall in the range of –$46 to $67 per acre at various yields when the price is $3.75/cwt.

Wheat. Arkansas produces soft-red winter wheat, which has had an annual farm level value of $186 million from 1996 to 1998 (Table 3). Since 1996, Arkansas wheat-area harvested has fallen below 1 million acres. Production in 1999 was 51.5 million bushels, valued at $2.25/bu, for a total market value of $115.9 million. LDP payments averaged $0.49/bu on 48.4 million bushels, for a total price support payment of $23.9 million to Arkansas wheat producers in 1999.

The USDA estimates that 1.15 million acres of winter wheat were planted in Arkansas for the 2000 crop. Wheat futures in mid-March traded in the upper $2.00/bu range. Therefore, a larger crop with improved prices is projected to generate a market value of $165 million in 2000 compared with $116 million in 1999.

Livestock

The livestock and poultry sector outlook is being driven by the anticipated continuation of low grain and soybean meal prices. Expanded poultry and pork production in response to the cheaper feed costs beginning in 1997 resulted in downward pressure on poultry and pork prices in 1998 and 1999, and consequently, returns—especially to hog producers—remained negative throughout 1999. Lower pork production in 2000 and a slowdown in the poultry sector output growth are expected to result in positive returns to both pork and poultry sectors in the coming year. Beef cattle inventory nationwide is expected to continue to decline, and with fewer calves, feeder calf prices are expected to remain strong, providing expected positive returns to cow-calf operations. Milk prices declined in 1999, reducing net returns to dairy farmers. Despite low feed prices, returns to dairy farming are not expected to recover as the structure of the industry continues to shift from small to larger herd sizes, there is higher milk output per cow, and consequently continuing downward price pressure.

The market value shares of Arkansas livestock and catfish in 1999 are presented in Figure 6. The livestock categories are limited to feeder calves, with a share of 58%, milk at 17%, and feeder pigs at 12%. Catfish has a 13% share. Categories omitted include finished cattle, bait fish, and specialty livestock such as rabbits and others.

Pork. Arkansas producers account for approximately 1.6% of U.S. hog breeding inventory. Since 1994, the Arkansas breeding herd inventory on December 1 has remained constant at 110,000 head (Table 4). Annual sow farrowings (December-November) have averaged 217,000, with an average litter size of 8.82 pigs. Total annual pig crop averaged 1.914 million head. Market hog inventory as of December 1, 1999, was 600,000 head, the lowest level in more than 10 years. Based on national projections by FAPRI and USDA, almost no changes are expected in the Arkansas breeding and market hog inventories for December 1, 2000. Recovery in both sow and market hog prices, however, will increase the value of Arkansas total breeding and market hog inventory from $48.3 million in 1999 to $55.7 million in 2000. The outlook for 2000 is approximately 220,000 sow farrowings. With an average litter size of 8.5 pigs, total expected pig crop for Arkansas will be 1.87 million pigs. The reduction in 1999 of the national breeding

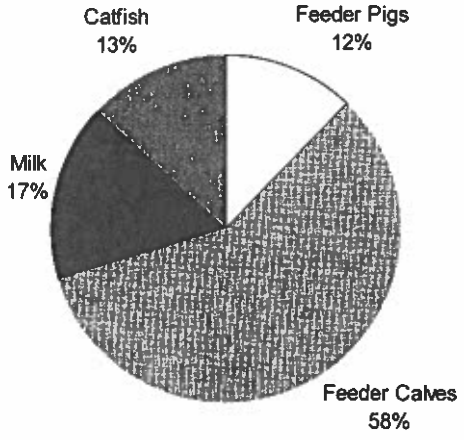


Figure 6. 1999 market value shares of Arkansas livestock and catfish sales. Source: USDA, NASS.

Table 4. Production, prices, and market value of Arkansas livestock and catfish, 1993-2000.

	93	94	95	96	97	98	99	00P
Hogs								
Hog Inventory								
Breeding inventory, thous. head	120	110	110	110	110	110	110	107
Sows farrowed, thous. head	189	203	209	217	225	225	223	220
Pigs per litter	9.12	8.92	9.30	8.63	8.45	8.48	8.48	8.5
Pig crop, thous head	1,723	1,810	1,944	1,872	1,901	1,907	1,891	1,870
Feeder pig price, $/cwt	81.75	64.75	59.00	69.50	97.50	62.00	80.12	104.92
Market value of pig crop, mil. $	56.34	46.88	45.88	52.04	74.14	47.29	60.60	78.48
Market inventory, thous. head	770	660	680	715	750	640	600	603
Value per head, $	81	57	75	100	79	46	68	78
Total inventory value, mil. $	72.09	43.89	59.25	82.50	67.94	34.50	48.28	55.69
Cattle								
Cow inventory, Jan 1, thous. head	824	928	969	952	956	919	928	928
Cow value, $/cwt	39.10	43.30	37.20	28.30	33.70	31.90	32.20	39.00
Cattle on feed, Jan 1, thous. head	17	10	13	18	19	10	15	11
Calf crop, thous. head	790	850	860	870	830	840	850	842
Calf value, $/cwt	72.00	79.80	58.40	51.40	78.80	77.80	84.20	96.00
Market value of calf crop, mil. $	227.52	271.32	200.90	178.87	261.62	261.41	286.28	323.33

continued

Table 4. Continued.

	93	94	95	96	97	98	99	00P
Dairy Cattle								
Ave. inventory, thous. head	63	61	60	56	53	45	42	40
Ave. value per cow, $	1,100	1,120	1,090	1,000	1,010	1,010	1,200	1,050
Total value, mil. $	69.3	68.3	65.4	56.0	53.5	45.5	50.4	42.0
Milk per cow, lb	12,206	12,344	12,150	12,054	11,981	12,000	12,381	12,450
Production, mil. lb	769	753	729	675	635	540	520	498
Price/cwt	13.60	13.90	13.80	16.00	14.50	15.60	15.70	14.00
Production value, mil. $	104.6	104.7	100.6	108.0	92.1	84.2	81.6	69.7
Catfish								
Water surface acres	19,700	19,000	19,500	23,000	28,500	25,000	31,000	35,000
Sales, thous. lb	47,823	47,754	51,137	63,417	76,113	68,000	87,500	99,413
Price per lb	0.71	0.77	0.80	0.82	0.73	0.74	0.74	0.73
Market value, mil. $	34.04	36.81	41.03	52.21	55.51	51.14	64.75	72.57

P = projected.

Source: USDA, NASS for historical data. Projections for 2000 are estimated using baseline projections by FAPRI and USDA and current market reports.

herd inventory will result in a lower total U.S. pig crop, keeping feeder pig prices strong throughout 2000. The market value of Arkansas pig crop is projected to increase in 2000 to $78.5 million compared with $60.6 million in 1999.

Beef Cattle. Inventory of beef cows and heifers in Arkansas on January 1, 2000, was 928,000 head, the same as in the previous year. Arkansas ranks 12th in beef cow inventory, with approximately 2.7% of the national herd. FAPRI and USDA projections indicate a further contraction in the national beef cow inventory until 2003. With declining cow numbers, the presence of fewer cattle on feed is expected to provide stronger prices for feeder calves throughout 2000 and into 2001. Following negative or breakeven returns on cow-calf operations for the past several years, positive returns in the range of $20 to $30 per cow are expected for the next three to four years.

Arkansas cattle producers market most of their calf crop out of state. Inventory of cattle on feed on January 1 has ranged between 10,000 and 20,000 head since 1993. Current cow and heifer inventory is expected to produce a calf crop of approximately 842,000 head in 2000, depending on adequate pasture conditions throughout the year. The market value of the calf crop is projected to increase to $323 million in 2000.

Dairy Cattle. The Arkansas dairy industry continues to experience a decline in its average annual milk cow inventory (Table 4). The average herd size throughout 1999 was 42,000 head, averaging 12,381 lb of milk per cow, for total production of 520 million lb. Lower milk prices in 2000 are expected to pressure milk cow numbers even lower to 40,000. Higher milk output per cow will only partially offset the decline in cow numbers, with total production expected to fall to approximately 500 million lb. The market value of milk production is projected to decline to $70 million in 2000.

Catfish

The Arkansas catfish industry is one of the fastest growing sectors of the Arkansas agricultural economy. Relatively low feed prices, strong domestic demand, and low interest rates have fueled the profitability in catfish production. Water surface acreage in Arkansas has increased to 35,000 as of January 1, 2000, nearly double the pond surface area in 1993 (Table 4). Sales in 2000 are projected to reach almost 100 million lb. The USDA projects national catfish sales poundage to increase between 5 and 7% in 2000,

while farm prices are expected to decline slightly from $0.74/lb in 1999. The value of Arkansas catfish sales is expected to exceed $72 million.

Poultry

The market value shares of Arkansas poultry are presented in Figure 7. Although broilers dominate the poultry category with an 82% share, eggs (11%) and turkeys (7%) are significant products with market values of $288 million and $199 million in 1999.

Broilers. Arkansas broiler production continues to expand as both domestic and export markets grow. Production in 1999 is expected to exceed 5.9 billion pounds (Table 5). Despite weaker broiler prices in 1999, low feed prices help to maintain profitability in the industry. Hatchery egg sets in early 2000 suggest that a 4-5 percent expansion in production is likely in 2000. Based on USDA and FAPRI projections for total U.S. broiler production, Arkansas share at approximately 14.5% is projected to reach 6.2 billion pounds in 2000. Slightly improved prices are projected and market value in 2000 is estimated to be $2.3 billion.

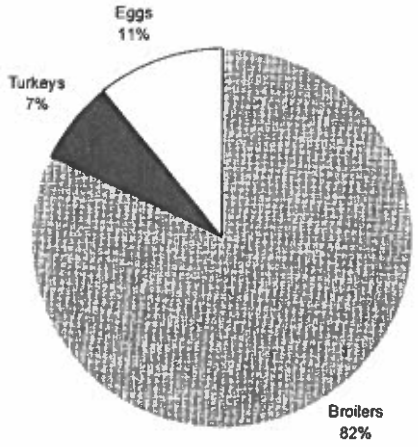


Figure 7. 1999 market value shares of Arkansas poultry sales. Source: USDA, NASS.

Table 5. Arkansas poultry production, prices, and market value, 1994-2000.

	94	95	96	97	98	99P	00P
Broilers							
Production, mil. lbs	4,854	4,983	5,660	5,599	5,619	5,921	6,207
Price, ¢/lb	37.5	35.5	37.5	37.5	38.0	37.0	37.2
Market value, mil. $	1,820	1,769	2,122	2,096	2,135	2,191	2,309
Turkeys							
Production, mil. head	25	26	28	30	28	27	27
Price, ¢/lb	44.0	45.0	44.0	41.0	40.0	0.41	0.41
Market value, mil. $	224	241	232	215	198	199	199
Eggs							
Production, mil.	3,803	3,608	3,433	3,215	3,233	3,458	3,595
Table eggs, mil.	1,774	1,481	1,311	1,071	1,116	1,238	1,200
Hatch eggs, mil.	2,029	2,127	2,122	2,144	2,117	2,220	2,398
Price, cents/dozen	104.0	97.9	105.0	103.0	97.8	100	100
Market value, mil. $	330	294	300	276	263	288	300

P = projected.

Source: USDA, NASS for historical data. Projections for 2000 are estimated using baseline projections by FAPRI, USDA, and current market reports.

Turkeys. While total U.S. turkey production is projected by USDA and FAPRI to increase in 2000, Arkansas producers have indicated in the USDA intentions survey that they will not expand and will produce at the same level as 1999 (Table 5). Prices are also expected to remain stable and market value of Arkansas turkey production is therefore projected at $199 million, the same as in 1999.

Eggs. Approximately two-thirds of the Arkansas egg production is for hatching rather than table use. As a result, average price received for Arkansas eggs is typically much higher than the average table egg price in the United States. Arkansas layers account for approximately 20% of U.S. hatchery eggs but less than 2% of U.S. table egg output, for an overall share of total U.S. egg production of 4.5%. Expansion in the broiler industry in 2000 will require an increase in Arkansas hatch egg production, reaching nearly 3.6 billion eggs. Average prices are expected to remain at $1 per dozen, and the market value of the Arkansas egg industry is projected to reach $300 million in 2000.

Horticultural Crops

In 1999, Arkansas fruit and nut sales had a market value of $11.5 million (0.1% of national production). Apples, blueberries, grapes, peaches, pecans, and strawberries account for nearly all of the fruit and nut market sales in Arkansas. Commercial vegetables generated a market value of $20.1 million (0.2% of national production). Tomatoes and watermelons accounted for $16.2 million of the commercial vegetable sales (Table 6).[7] Acreage in horticultural crops in general has declined in the 1990s by approximately 10%. Leading the decline in area production are grapes, watermelons, blueberries, and apples. Acreage for tomatoes and peaches has expanded, and these crops have become the highest value Arkansas horticultural crops, with 52% and 13% shares, respectively (Figure 8). Following tomatoes and peaches in terms of market value shares in 1999 are pecans (10%), grapes (8%), watermelons (7%), blueberries (4%), apples (4%), and strawberries (2%).

Apples. Arkansas has a bearing acreage of 900 acres out of the total 462,000 acres in U.S. apple production. Yields in Arkansas for the past two years have been below normal (Table 6). Production in 1999 was only 5.4 million lb, of which 4.2 million were utilized (1.1 million were not harvested, and 0.1 million were harvested but not sold). Average market value was $0.238 per pound for total market sales of $1 million. The production outlook for 2000 is highly dependent upon weather conditions. Assuming 900 acres and an improvement in yields to 7000 lb per acre, utilized production is projected to be 6.0 million lb. FAPRI projects stable prices for apples into 2000. At $0.24/lb, total market value is projected at $1.4 million for 2000.

Grapes. Arkansas vineyards have declined in area from 2200 in 1993 to 1400 in 1999. Yields have fluctuated between 3.0 and 5.6 tons per acre (Table 6). 1999 yield was 3.5 tons and total production was 4900 tons while utilized production was 4800 tons. Average Arkansas market price was $473/ton, near the U.S. average of $478, for a total market value of $2.3 million. Only 17% of the 1999 crop was sold in the fresh table market compared to 35% in 1997 and 24% in 1998. The1999 market price of fresh grapes in Arkansas was $620/ton compared to the processor market (wine and juice)

---

[7] The only horticultural crops included in this study are crops with available data. For example, nursery crops are not included because nursery crop data are not available.

price of $443/ton. The 2000 outlook is based on area of 1400 acres with a projected yield of 4 tons/acre and utilized production of 5500 tons. FAPRI projects a 5% price increase for 2000. At $500/ton, the average market value for the Arkansas grape crop in 2000 is projected to be $2.75 million.

Blueberries. Production area for blueberries in Arkansas has declined from a level of 700 acres in 1995 to only 450 in 1999. Yields have fluctuated from a low of 1670 lb per acre in 1996 to a high of 3000 lb in 1997. Total production in 1999 was 1.21 million lb, with 1.13 million lb utilized. Nearly all (1.03 million lb) Arkansas blueberries are marketed into the fresh market and somewhat earlier than the major producing northern states such as Michigan and New Jersey. Consequently, the average price for Arkansas blueberries averaged slightly higher at $1.07/lb compared with the national average of $0.886/lb. Projections for 2000 are based on an acreage of 450, with a resulting production of 1.08 million lb and market value of $1.2 million.

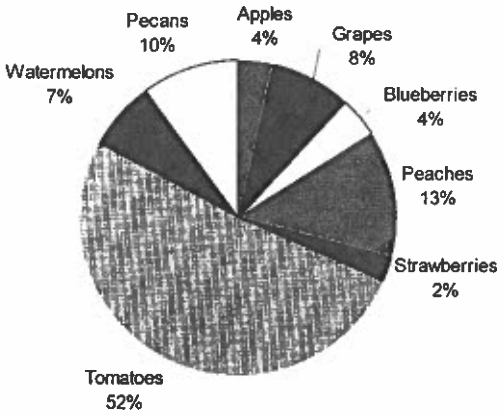


Figure 8. 1999 market value shares of Arkansas horticultural sales. Source: USDA, NASS.

Table 6. Production, prices, and market value of Arkansas horticultural crops, 1993-2000.

	93	94	95	96	97	98	99	00P
Apples								
Area harvested, acre	1,000	1,000	900	900	900	900	900	900
Yield, lb/acre	12,000	8,000	10,000	7,000	8,000	5,000	6,000	7,000
Production,* thous. lb	11,000	7,500	9,500	5,800	7,100	3,600	4,200	6,000
Price, $/lb	0.164	0.164	0.143	0.178	0.289	0.227	0.238	0.240
Market value, thous. $	1,809	1,228	1,357	1,031	2,053	816	1,001	1,440
Grapes								
Area harvested, acre	2,200	2,000	2,000	1,600	1,400	1,300	1,400	1,400
Yield, tons/acre	3.64	3.00	4.00	5.63	4.64	3.50	3.50	4.00
Production, tons	5,500	5,500	7,000	8,000	5,500	4,430	4,800	5,500
Price, $/ton	493	476	634	629	586	497	473	500
Market value, thous. $	2,710	2,619	4,438	5,035	3,225	2,202	2,268	2,750
Blueberries								
Area harvested, acre	700	700	700	600	550	500	450	450
Yield, lb/acre	2,860	2,430	2,430	1,670	3,000	1,800	2.510	2,400
Production, thous. lb	2,000	1,700	1,700	1,000	1,650	900	1,130	1,080
Price, $/lb	0.964	0.972	1.060	1.480	0.998	1.000	1.070	1,100
Market value, thous. $	1,928	1,652	1,800	1,480	1,646	902	1,212	1,188
Peaches								
Area harvested, acre	2,500	2,700	2,700	2,700	2,700	2,800	2,800	2,800
Yield, lb/acre	9,600	2,960	7,410	440	5,300	4,460	4,290	4,500
Production, thous. lb	22,000	8, 000	18,000	1,100	14,300	11,100	10,500	12,400
Price, $/lb	0.140	0.245	0.177	0.155	0.290	0.328	0.340	0.340
Market value, thous. $	3,069	1,960	3,189	171	4,142	3,639	3,575	4,216
Strawberries								
Area harvested, acre	230	180	180	170	210	180	210	210
Yield, cwt/acre	30	30	67	21	71	44	52	50
Production, thous. cwt	7	5	12	4	15	8	11	10.5
Price, $/cwt	55	65	70	75	85	65	62	63
Market value, thous. $	385	325	840	300	1,275	520	682	662
Tomatoes								
Area harvested, acre	790	1,100	1,000	1,000	1,100	1,400	1,500	1,500
Yield, cwt/acre	300	290	260	130	210	240	225	250
Production, thous. cwt	237	319	260	130	231	336	338	375
Price, $/cwt	23.00	31.00	42.00	38.00	34.00	34.50	41.80	42.50
Market value, thous. $	5,451	9,889	10,920	4,940	7,854	11,592	14,128	15,937

continued

Table 6. Continued.

	93	94	95	96	97	98	99	00P
Watermelons								
Area harvested, acre	3,400	3,000	2,400	2,600	2,700	2,200	2,400	2,400
Yield, cwt/acre	180	180	100	110	150	145	115	140
Production, thous. cwt	612	540	240	286	405	319	276	336
Price, $/cwt	4.90	4.70	8.00	6.00	5.00	6.50	7.50	6.50
Market value, thous. $	2,999	2,538	1,920	1,716	2,025	2,074	2,070	2,184
Pecans								
Production, thous. lb	1,500	1,500	1,600	1,200	3,500	550	3,800	1,000
Price, $/lb	0.660	0.960	1.140	0.900	0.671	1.030	0.718	1.00
Market value, thous. $	990	1,440	1,820	1,080	2,349	565	2,728	1,000

* Production reported in this table is the output utilized, i.e., the amount sold plus the quantities used at home or held in storage. It excludes unharvested production and quantities harvested but not sold, used at home, or in storage.

P = projected.

Note: The only horticultural crops listed are crops that have data available. For example, nursery crops are not listed because data are unavailable.

Source: USDA, NASS. Projections are based on FAPRI baseline study and current market reports.

Peaches. Bearing acreage of peaches in Arkansas has increased from 2500 in 1993 to 2800 by 1998 (Table 6). Yields of peaches are highly variable in Arkansas, primarily as a result of freezing temperatures during the flowering period. The yield range over the past seven years has been as low as 440 lb/acre to a high of 9600/acre. In 1999, yields were average at 4290 lb/acre, for a total production of 12 million lb and utilized production of 10.5 million lb (1.3 million lb were unharvested and 0.2 million lb were harvested but not utilized). Arkansas peach producers enjoyed their highest price over the past seven years in 1999 at $0.34/lb, well above the U.S. average for non-Clingstone-type peaches of $0.25/lb. The 2000 outlook for peaches is good, with no killing freeze to date. Assuming peach orchard acreage of 2800 and a yield of 4500 lb/acre, projected production is 12.4 million lb. FAPRI projects no change in price in 2000 from the 1999 level; consequently, the projected value of the Arkansas peach crop in 2000 is $4.2 million.

Strawberries. Production of strawberries in Arkansas is limited by acre-

age of only 210. Yet strawberries are a high-value crop and generated as much as $1.3 million in revenue in 1997 (Table 6). As with other horticultural crops, strawberry yields have been variable in the range of 21 to 67 cwt/acre. The 1999 production was excellent, with yields of 52 cwt/acre and total utilized production of 10,920 cwt. All the Arkansas production is sold in the fresh market, and the average market price received in 1999 was $62/cwt, which was also the national average price. The 2000 outlook is based on no change in the production acreage and yields of 50 cwt/acre, resulting in a projected production of 10,500 cwt. A slight increase in farm price is projected by FAPRI. The projected market price of $63/cwt results in an expected market value for Arkansas strawberries of $662,000.

Tomatoes. Arkansas producers have expanded tomato production and in 1999 planted 1600 acres and harvested 1500 (Table 6). Over the past seven years, yields have ranged between 130 and 300 cwt/acre. The 1999 total production was 338,000 cwt and was valued at an average market price of $41.80/cwt, substantially above the national average price of $25.90/cwt. Total value of the crop in 1999 was $14.1 million. The outlook for 2000 for Arkansas tomatoes is based on a harvested area of 1500 acres and yields of 250 cwt/acre, for a total output of 375,000 cwt. FAPRI projects a 1.6% price increase for 2000, resulting in a projected price in Arkansas of $42.50/cwt. Total projected value of Arkansas tomato production in 2000 is $15.9 million.

Watermelons. Area harvested for watermelons has declined from 3400 acres in 1993 to only 2400 acres in 1999. Yields have ranged between 110 and 180 cwt/acre over the past seven years. Price in1999 was high at $7.50/cwt compared with the U.S. average of $6.50. Total market value of the crop was just over $2 million. Production in 2000 is projected to be 336,000 cwt based on acreage of 2400 and an average yield of 140 cwt/acre. If priced at an average market value of $6.50/cwt, the total projected value of Arkansas watermelons in 2000 is $2.18 million.

Pecans. Production of pecans in Arkansas was 3.8 million lb in 1999, the highest level over the past seven years. Producers in Arkansas received $0.718/lb, for a total crop value of $2.7 million. Production in nuts typically declines markedly following a year of high output. Therefore, the 2000 outlook for Arkansas pecan production is based on a projection of 1 million pounds. This production pattern is expected nationwide for pecan output, and therefore, higher prices are expected. With a projected price of $1/lb, the value of the Arkansas pecan crop in 2000 is $1 million.

FARM INCOME AND FINANCIAL SITUATION AND OUTLOOK

Before considering the financial situation and outlook for Arkansas farmers, it is worthwhile to consider the financial situation and outlook for all U.S. farmers. The USDA forecasts that U.S. net farm income for 2000 will be $39.7 billion, which is 10.2% less than the $44.2 billion in 1999. Most of this decrease in the forecast is the result of the USDA including lower direct government payments and assuming that no new emergency assistance to farmers will be authorized by Congress in 2000. Farmers received a record-level $20.6 billion in direct government payments in 1999 and are forecast to receive $15.9 billion in 2000. Government payments to farmers have been an increasingly critical component of net farm income. Direct government payments are forecast to be 47% and 40% of net farm income in 1999 and 2000, respectively, whereas government payments were only 20% of net farm income for 1990 through 1998. Again, remember that no new emergency assistance was assumed when 2000 net farm income was forecast. If any new emergency assistance is authorized by Congress in 2000, direct government payments could approach or exceed 50% of net farm income.

Income forecasts are not available for Arkansas, but direct government payments have historically been even more important to Arkansas farmers than to U.S. farmers on average, particularly crop farmers. Arkansas farmers received 28% of their net farm income from direct government payments during 1990 through 1998, compared with 20% for U.S. farmers as a whole. A February 2000 survey of commercial bank and Farm Credit loan officers from the eastern third of Arkansas indicated that government payments were extremely important to their farm borrowers. In fact, on average, the loan officers indicated that government payments were up to three times as high as net farm income in 1999. Thus these farmers would have experienced severe losses without government payments in 1999. Loan officers from the rest of the state indicated that government payments were much less important to their farm borrowers in general. However, government payments were important to some of their borrowers in areas such as Southwest Arkansas and the Arkansas River Valley.

Although USDA has not provided an income forecast for Arkansas, it has provided income forecasts for regions of the United States that include portions of Arkansas. The USDA recently constructed a new set of regions depicting geographic specialization in production of U.S. farm commodities. Arkansas farms fall into three separate regions: Mississippi Portal, Eastern Uplands, and Southern Seaboard (Figures 9 and 10).

The Mississippi Portal region is perhaps the best region for grouping farms with similar production specialities. This region also happens to be

the smallest geographical region in the United States (Figure 9). The Mississippi Portal includes the eastern third of Arkansas (Figure 10), which corresponds to Arkansas statistical reporting districts 3, 6, and 9. The Mississippi Portal region is dominated by crop farms producing cotton, rice, and soybeans.

The largest area of Arkansas is located in the Eastern Uplands region, which includes the mountainous areas of the United States east of the Rocky Mountains (Figure 9). The Eastern Uplands includes the western third and much of Central Arkansas (Figure 10), which corresponds to Arkansas statistical reporting districts 1, 2, 4, 5, and 7. Typical farms in this region produce cattle, poultry, and burley tobacco. Although there is not any tobacco production in Arkansas, there is plenty of cattle and poultry production.

The smallest area of Arkansas is represented in the Southern Seaboard region. This region includes the south central portion of Arkansas (Figure 10), which corresponds to Arkansas statistical reporting district 8. The Southern Seaboard region is a large and diverse area (Figure 9) and is said by USDA to include cattle, poultry, and general field crop farms, which would seem to be a fair description of production agriculture in South Central Arkansas.

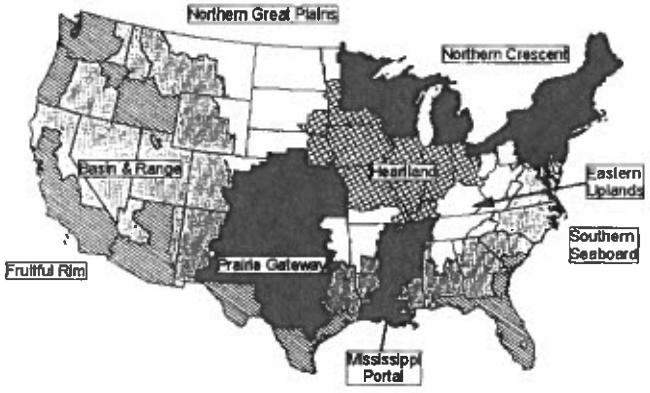


Figure 9. USDA farm resource regions. Source: USDA Web site.

Figure 10. USDA farm resource regions in Arkansas. Source: USDA Web site.

USDA forecasts of farm business net cash income for farms located in the Mississippi Portal, Eastern Uplands, and Southern Seaboard and with gross sales of $50,000 or more are presented in Table 7. All U.S. farm businesses are forecast to average $69,700 of net cash income in 2000, an 11% decrease from $78,400 per farm in 1999. The region with the largest percent decrease in net cash income is forecast to occur in the Mississippi Portal region. Farm business net cash income in this region is forecast to fall from $78,000 in 1999 to $48,400 in 2000, a 38% decrease. The bulk of this decrease is likely due to lower government payments.

Farmers in the Eastern Uplands and Southern Seaboard regions are also forecast to have decreasing net cash income. Eastern Uplands farm business net cash income per farm is forecast to decrease 16% from $40,400 in 1999 to $34,100 in 2000. Likewise, Southern Seaboard farm business net cash income is forecast to decrease 18% from $70,800 in 1999 to $58,300 in 2000. These decreases in net cash income are partially due to poorer prospects in 2000 for general field crop and poultry farmers in the United States. Also, tobacco and peanut farms are forecast to have lower income in 2000. Tobacco and peanut farms are representative of some farms in the Eastern Uplands and Southern Seaboard regions, but they are hardly representative of farms in Arkansas.

U.S. beef cattle farms are forecast to have a slightly better year in 2000 than in 1999. Hog farms are forecast to have more than a 50% increase in net cash income for 2000. Farms that are forecast to have a worse year in 2000 than in 1999 include cotton, rice, soybean, wheat, corn, tobacco, peanut, poultry, dairy, and specialty crop farms such as vegetable, fruit, nursery, and greenhouse farms. Depending on the type of farm, the causes

Table 7. Farm business average net cash income and percent of farms with debt repayment problems.

	Average 1994-98	1998	1999F	2000F
	$1000 per farm			
Farms* in:				
United States	61.6	78.6	78.4	69.7
Mississippi Portal	78.6	78.5	78.0	48.4
Eastern Uplands	35.5	42.1	40.4	34.1
Southern Seaboard	60.1	80.6	70.8	58.3
	Percentage of farms with negative net cash income			
United States		17.7	17.3	22.4
Mississippi Portal		23.1	20.4	30.6
Eastern Uplands		18.7	19.8	25.8
Southern Seaboard		17.5	19.6	25.6
	Percentage of farms with debt repayment problems			
United States		12.5	11.2	13.9
Mississippi Portal		16.9	14.4	22.9
Eastern Uplands		13.4	14.9	16.3
Southern Seaboard		8.9	10.0	12.9

* Farm businesses with gross sales of $50,000 or more.

F = forecast.

Source: USDA, Economic Research Service, April 24, 2000.

for the worse year include forecasts of lower government payments, decreased commodity prices, and higher production expenses.

Even more troubling than the forecasted declines in net cash income for the regions that represent Arkansas farms are the percentages of farms that are forecast to have negative net cash income in 2000 (Table 7). Nearly 31% of farms in the Mississippi Portal region are forecast to have negative net cash income in 2000, the largest percentage of any region in the United States. The Eastern Uplands and Southern Seaboard regions follow closely behind, with nearly 26% of farms forecasted to have negative net cash

income in 2000. This compares with 22% of U.S. farms forecasted to have negative net cash income.

Survey responses from Arkansas agricultural loan officers collected during February 2000 indicate that some farmers will have difficulty with cash flow in their operations in 2000. That is, these farmers will have difficulty meeting financial obligations in a timely manner. Loan officers in Arkansas corresponding to the Mississippi Portal region indicate that 14% of their borrowers will have cash flow problems in 2000, whereas loan officers in the Eastern Uplands and Southern Seaboard regions of Arkansas said that 7% of their borrowers would have cash flow problems.

If they have a relatively small shortage of net cash farm income or if the shortage is temporary, many farmers can often continue to operate by relying on non-farm income, by making minor adjustments to the farm operation, or by drawing on working capital to maintain the liquidity of the business. However, if a farmer experiences a relatively large shortage of net cash farm income or if the shortage persists over a long period of time, the situation usually requires negotiating with creditors and somewhat dramatic restructuring of assets and liabilities.

A significant percentage of farmers in each region of the United States are experiencing debt repayment difficulties as a result of low income, high debt, or both. However, the Mississippi Portal region at 23% has a larger percentage of farms forecasted to have debt repayment difficulties for 2000 than any other region in the United States (Table 7). Farms expected to have debt repayment difficulties are those with high debt repayment obligations relative to the amount of farm income available to service those obligations. At 16%, the Eastern Uplands region also has a large percentage of farms facing debt repayment difficulties if USDA's forecast proves accurate. The Southern Seaboard region is forecast to have 13% of its farms with debt repayment difficulties, which compares to a U.S. average of 14%. The fact that farmers have debt repayment difficulties does not necessarily mean that they will be forced to liquidate their operations and quit farming, although some may. It does mean, however, that these farmers will likely need to renegotiate their repayment plans with creditors.

How do these USDA forecasts of percentages of farms expected to have debt repayment difficulties compare with Arkansas loan officers' forecasts? Agricultural loan officers surveyed in the Mississippi Portal region of Arkansas expect 24% of their farm borrowers to need some type of debt reorganization such as rescheduling payments and refinancing debt. These same lenders also indicate that 11% of their farm borrowers will be required to have Farm Service Agency loan guarantees and 2% will be denied credit. Corresponding percentages from a similar survey a year earlier were 36%, 16%, and 5%. If these numbers are a reliable indication of fi-

nancial problems in Eastern Arkansas, fewer farmers this year than last year are expected to have difficulties. Perhaps the loan officers are expecting another emergency spending bill this year and did not expect it last year.

Loan officers in the Eastern Uplands and Southern Seaboard regions of Arkansas indicate that 8% of their farm borrowers will require debt reorganization, 22% of their borrowers will need Farm Service Agency loan guarantees, and 13% will be denied credit in 2000. So according to these agricultural loan officers, a larger share of farmers in the eastern third of the state will require debt reorganization than in the rest of the state. However, smaller shares of farmers in the eastern third of the state will need Farm Service Agency guarantees or will be denied credit than in the rest of the state.

Undoubtedly, direct government payments are extremely important to many U.S. and Arkansas farms during this period of low prices, particularly crop farms in the Mississippi Portal region, although some dairy and hog farms have also received payments as a result of emergency assistance over the past two years. Without the direct government payments made in 1998 and 1999 and those previously authorized to be paid in 2000, many more farms would be having negative net cash income and would be experiencing debt repayment problems. Of course, if emergency assistance payments are again authorized in 2000 at the same level as they were in 1999, fewer farms will have financial difficulties. Are emergency government payments a long-run solution for the low prices received by many American farmers? Would Congress be as willing to fund emergency assistance for agriculture if there were government deficits or if the general economy were in a recession and experiencing high unemployment? No, but these payments are assisting some farmers in the short-run. The debate in Congress on possible long-run solutions has only just begun. However, the market cure for low prices will ultimately rely on having more worldwide demand and less worldwide supply of agricultural production.

FARM REAL ESTATE VALUES

Farm real estate is a significant share of farm assets in Arkansas and the United States. In 1998, farm real estate contributed 75% of the value of all farm assets for Arkansas and 77% for the United States. Therefore, changes in the value of farm real estate say a great deal about changes in the value of all farm assets and the solvency of many farm businesses. Farm real estate serves as collateral for much of the credit extended to farm businesses. Of course, the total assets of farmers who rely heavily on leased farmland will be less affected by changing real estate values than farmers who own most of their farmland.

Arkansas farm real estate values have been following an upward trend from January 1, 1987—when farmland was $724 per acre—to January 1, 2000, when it was $1250 per acre (Figure 11). The United States also experienced an upward trend in farm real estate values over the same period, increasing from $599 per acre to $1050 per acre. The rate of growth in farm real estate values for Arkansas has been similar to that of the United States over this period.

Farm real estate values are heavily dependent on the primary use of the real estate. For instance, Arkansas crop land values without buildings were $968, $1030, $1080, and $1080 per acre on January 1 of 1997, 1998, 1999, and 2000, respectively. The difference between irrigated and non-irrigated crop land is not as large as might be expected. Values of irrigated crop land as of January 1, 1997-2000, were $1070, $1140, $1180, and $1190, and those for non-irrigated crop land were $880, $940, $1000, and $980 per acre, for an average difference of $195 per acre. Values of Arkansas pasture land without buildings were $890, $910, $960, and $1000 per acre over the same four years, respectively. Although farm real estate values are also dependent on development potential and recreational uses of the real estate, changes in the values of farm real estate that has been and will be primarily used for agricultural production are more indicative of the fortunes of farming.

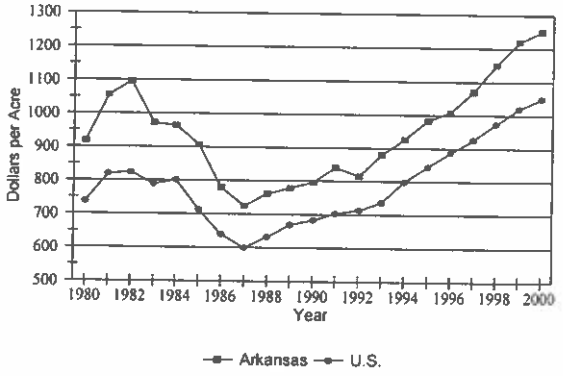


Figure 11. Farm real estate values: land and buildings. Source: USDA/ERS AREI Updates, Agricultural Resources, and Web site.

Arkansas agricultural loan officers at commercial banks and Farm Credit Services were contacted in February 2000 to get their opinion on changes in farmland values. Loan officers from the eastern third of Arkansas thought that farmland values had increased 1% in 1999 and expect farmland values to fall 3% in 2000. Loan officers from the rest of the state were more optimistic about farmland values. They thought that farmland values had increased 5% in 1999 and would increase 3% in 2000. Although the differences in percentage changes between eastern Arkansas and the rest of the state are not statistically significant, these results are consistent with the suspicion that farmland used to produce field crops such as cotton, rice, soybeans, and wheat in the eastern third of the state is not faring as well as farmland used to produce cattle and poultry in the rest of the state. However, these results are also consistent with the suspicion that there may be less development potential and recreational uses on average for eastern Arkansas farmland than for the rest of the state.

MACROECONOMIC IMPACTS ON AGRICULTURE

The economy in general, both within the United States and worldwide, has major impacts on agriculture. The U.S. economy is very strong. Real gross domestic product (GDP) has grown continually since it "bottomed out" in the first quarter of 1991. While the rate of growth has varied over the last nine years, this expansion has been an unusually long period of growth by historical standards.

In the fourth quarter of 1999, the growth in real GDP was 6.9% following the third quarter growth of 5.7%. These two growth rates have undoubtedly spurred the Federal Reserve to raise short-term interest rates. If such GDP growth persists, it seems reasonable to expect the Federal Reserve to continue raising short-term interest rates. The increases are also motivated by historically low levels of unemployment. For the United States as a whole, the unemployment rate was 4.1% in December 1999 and 4.0% in January 2000. In Arkansas, the December unemployment rate was 4.2%, indicating a fully employed workforce. Thus not surprisingly, personal disposable income continues to grow in the United States.

One can conveniently divide the agricultural macro economy into two components: demand for agricultural products (food and fiber) and supply of agricultural products. Given the high U.S. disposable income, domestic demand for food and fiber will likely remain strong. For Arkansas agricultural producers, international demand for food and fiber is also important. Demand for exports is dependent on the income levels in importing countries and the exchange rates. In 1997-1998, the "Asian flu" struck the world, causing the GDP to decline in some countries (Japan, Malaysia,

Indonesia, Thailand) and their currencies to depreciate relative to the dollar. As a result, overall international demand for agricultural imports declined. Although USDA is only projecting a slight 1% increase in U.S. exports for 2000, none of the increase is coming from Asia. However, Asian countries are no longer in recession, so there should be no lessening in demand for exports as a result of recession. At the time of publication, the dollar does not appear to be strengthening against other currencies, but more interest rate increases by the Federal Reserve could lead to a strengthening dollar.

The major macro effects on agricultural supply are likely to be cost of credit, tightened labor supplies, and higher wages and fuel costs. As the Federal Reserve increases interest rates, the cost of credit will rise correspondingly. Rising rates could also erode national land values because of the rising cost of borrowing and the discounting of future income from land. Nationally farm wages have risen rapidly. On a seasonally adjusted basis, farm wages rose 10% from 1996 to 1998, and farm wages rose another 4.7% from 1998 through November 1999. These increases are greater than the rate of inflation. Finally, on-farm fuel costs have risen rapidly. From November 1998 to November 1999, the index of fuel prices paid by U.S. farmers rose from 78 to 116. This is an increase of 49% in one year! This is due in part to the strengthening economies worldwide and to the supply-restricting efforts of OPEC (the Organization of the Petroleum Exporting Countries). A decrease in animal feed costs has partially offset this increase, but field crop producers do not receive this benefit.

In summary, the strong U.S. and worldwide economies will help demand for agricultural products. However, such growth also causes certain farm input costs to rise. These macro factors clearly play a part in overall farm revenues and costs. However, it should also be clear that weather is still the primary cause of large fluctuations in annual prices. And not even Federal Reserve Board Chairman Alan Greenspan, despite his nearly mythic powers, has found a way to control temperatures and precipitation.

ARKANSAS AGRICULTURAL INTEREST RATES IN 2000

The cost of credit is an important factor in production agriculture. In mid- to late February a number of loan officers at commercial banks and Farm Credit Service branches were asked about their current interest rates on agricultural loans. Loans were divided into two categories: operating loans and farm real estate loans. In total, 28 offices were contacted throughout the state, with 17 from the eastern part of the state and 11 from the western and central sections. Respondents were asked to state their current rates and what they thought the rates would be in June.

Current rates are fairly uniform across the state. For operating loans, current rates ranged from 8.50 to 10.25%, indicating that there are some price differences. However, the average rate was 9.24%, and the average interest rate for the east was not significantly dfferent from the average for the rest of the state. The projected rate for June was 9.41%. This increase is consistent with indications in the media that the Federal Reserve will likely continue to raise rates the first half of 2000. In fact, several respondents indicated that the basis for their forecast for increasing interest rates is the expectation of higher rates by the Federal Reserve.

In February 2000, farm real estate loans ranged from 8.75 to 10.25%. Some of this variation can likely be attributed to different types of arrangements such as length of the loan. The mean rate for the 28 institutions was 9.25%, with a projection to 9.48% in June. As with the operating loans, there was no noticeable association between rate levels and geographical location.

As a final note, all the responses of current interest rates were at or below 10.25%, the legal rate that would have been in effect in February if the Arkansas usury law still applied to banks. Last year, the Financial Modernization Act was passed, allowing banks to charge rates above the Usury Law rate of 500 basis points (5 percentage points) above the Federal Reserve's discount rate. Given the interest rate responses, it appears that banks are continuing to compete for agricultural loans and that the ability to charge higher rates has not had a significant impact on average interest rates.

Special Article:
The Contribution of Poultry Production to Arkansas Agriculture

Poultry production in Arkansas is conducted on over 6000 individually owned family farms operating under contract with poultry integrators. The typical poultry farm in Arkansas includes beef cattle (generally a cow-calf operation) and possibly hay production. Most of these farming operations are reliant upon family labor and have at least one family member engaged in off-farm employment. This family-based commercial poultry production includes broiler, turkey, and table egg production, which are ranked second, fourth, and eighth nationally, respectively. According to the most recent U.S. Census of Agriculture, poultry production sales directly contributed over $2.5 billion to the Arkansas economy in 1997.

Poultry production in Arkansas is primarily concentrated in the western half of the state, but all except eight Arkansas counties report at least some market value of poultry products sold; an additional 18 counties report less than 10% of the total market value of agricultural products sold and government payments from poultry production. As indicated in Fig-

ure 12, heavy poultry production in Arkansas occurs west of a line stretching from Sharp County in the northeast, then southwest to Morrilton, south to Hot Springs, and finally southeast to Crossett. In total, 15 Arkansas counties derive more than 80% of their total market value of agricultural products sold and government payments from poultry. An additional 19 counties derive between 60 and 80% from poultry. These 34 counties accounted for 47% of Arkansas market value of agricultural products sold and government payments in 1992 and 52% in 1997.

Total market value of poultry sales in Arkansas has increased both in nominal and real terms since 1978, according to U.S. Census of Agriculture data (Figure 13). Sales from poultry in 1978 totaled $900 million and had increased to $2520 million in 1997. Although part of the increase is due to inflation, sales adjusted for inflation using the GDP deflator for the United States nonetheless increased during this 20-year period. Considering this trend in light of the total market value of agricultural products sold and government payments in Arkansas, it is apparent that the relative importance of poultry production to Arkansas agriculture is increasing (Table 8, Figure 14). The share of total market value of agricultural products sold and government payments derived from poultry production was 36.4% in 1978 and 44.9% in 1997.

Some problems may arise if these sales figures are used as a proxy for farm income. Current estimates of poultry industry sales may well repre-

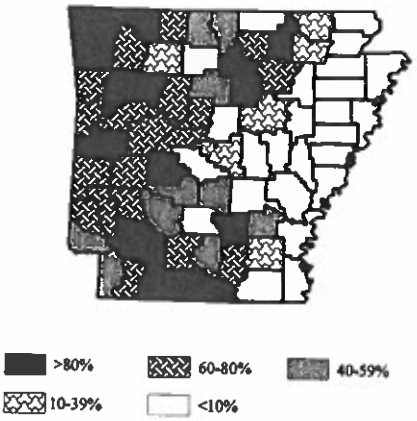


Figure 12. Percentage of market value of agricultural products sold and government payments from poultry by county, 1997. Source: U.S. Census of Agriculture.

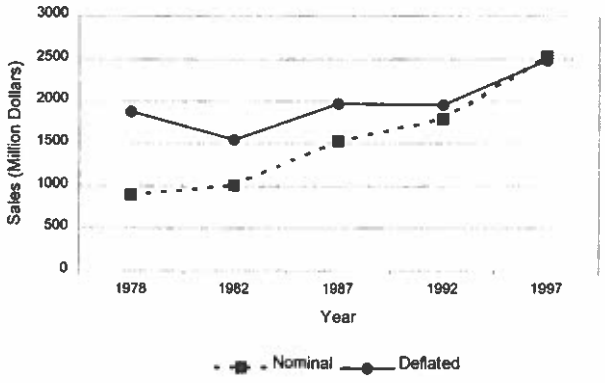


Figure 13. Arkansas market value of poultry products sold, 1978-1997. Source: U.S. Census of Agriculture.

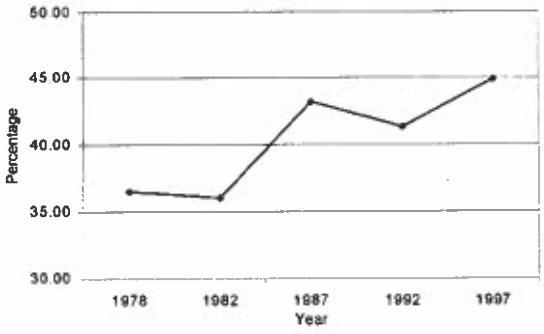


Figure 14. Percentage of Arkansas market value of agricultural products sold and government payments from poultry, 1978-1997. Source: U.S. Census of Agriculture.

Table 8. Arkansas market value of agricultural products sold plus government payments and market value of poultry sold, billions of dollars, 1978 - 1997, selected years.

Year	Total market value + government payments	Poultry sold	Percentage of total from poultry
1978	2.49	0.90	36.43
1982	2.83	1.02	35.95
1987	3.50	1.54	43.23
1992	4.35	1.80	41.27
1997	5.62	2.52	44.89

Source: U.S. Census of Agriculture.

sent a smaller share of net income than sales from crops and livestock as a result of reporting difficulties connected with expenditures for inputs such as feed and medication; expenses for chicks, feed, and medications are borne by the integrator. Conversely, the actual proportion of these sales attributable to the farmer are lower than indicated, since farmer producers are paid on a fixed per pound basis net of the integrator input costs, roughly about 20% of the farm wholesale value of the live poultry. Further complicating the farm impact is the fact that most poultry operations have co-production of beef cattle made more profitable by the presence of poultry (litter increases the productivity of pastures and hay meadows). Therefore, it is difficult to accurately assess the total impact of poultry on Arkansas net farm income.

REFERENCES

U.S. Department of Agriculture, Economic Research Service. "Agricultural Resources." AR-31, June 1993.

U.S. Department of Agriculture, Economic Research Service. "Updates on Agricultural Resources and Environmental Indicators." AREI Updates, No. 15, December 15, 1996.

U.S. Department of Agriculture, Economic Research Service. "Agricultural Income and Finance Situation and Outlook." AIS-73, December 1999.

U.S. Department of Agriculture, Economic Research Service. Web site. Farm Business Economics Briefing Room. *www. econ.ag.gov/briefing/farmincome* February 17 and April 24, 2000.

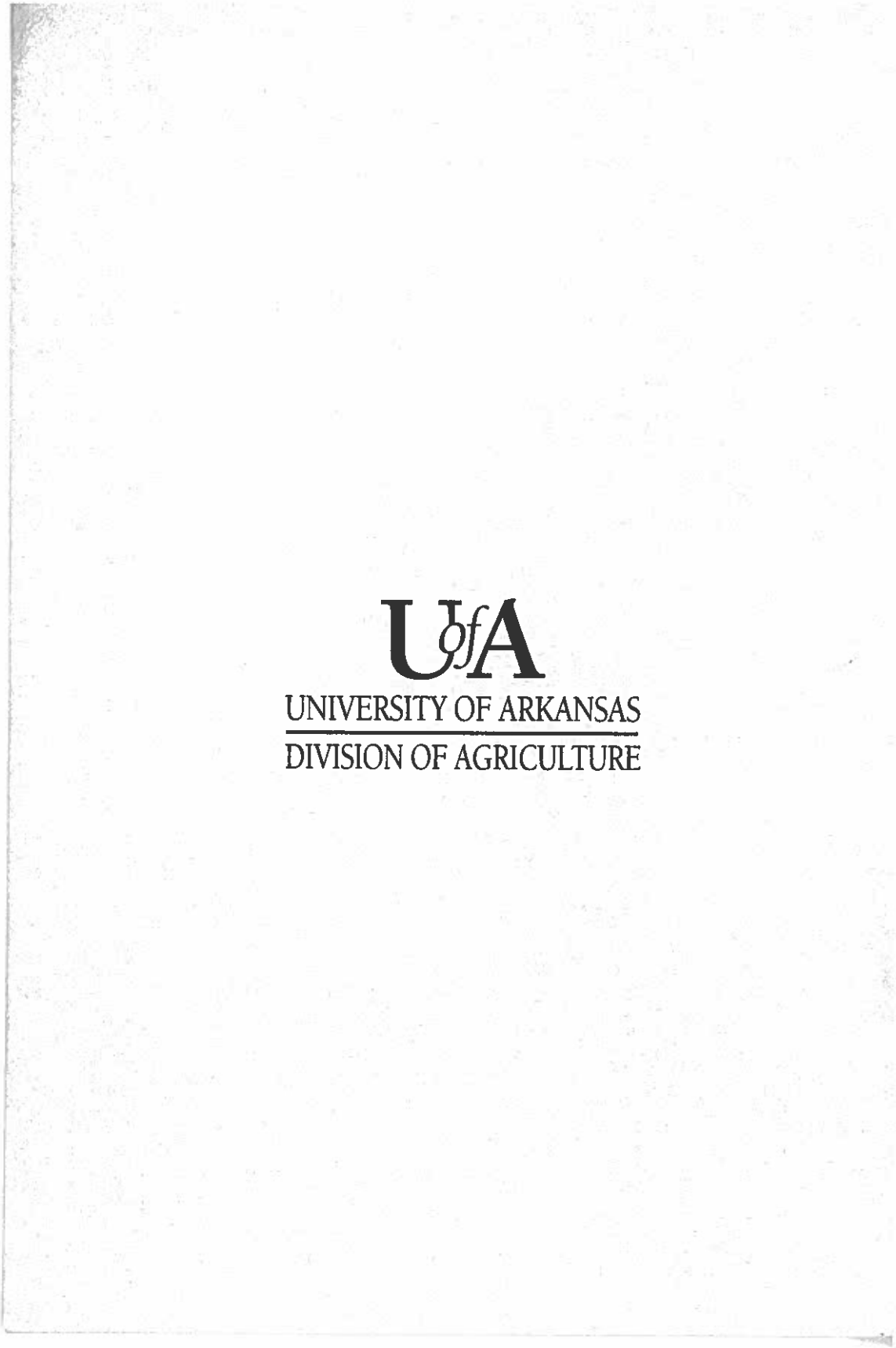
U.S. Department of Agriculture, Farm Service Agency. Web site. *www.fsa.usda.gov* February 17 and April 20, 2000.

U.S. Department of Agriculture, Economic Research Service. "Agricultural Outlook." AO-271, May 2000.

U.S. Department of Agriculture, National Agricultural Statistics Service. *1997 Census of Agriculture*. Washington, DC.

U.S. Department of Commerce, Bureau of the Census. *Census of Agriculture*. Washington, DC. 1978, 1982, 1987, and 1992 issues.

University of Arkansas, Division of Agriculture, Cooperative Extension Service. "Estimating 2000 Costs of Production." Various issues of AG publications by Tony E. Windham, Kelly J. Bryant, and Jennifer Sills. November 1999.


UofA
UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE