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Climbing the Mountain: The 2007 Arkansas Soybean Market Price Pattern

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The 2007 Arkansas soybean market opened the year with much upward promise and, despite some periodic setbacks, rarely lost the view (Figure 1). The first trading day was Thursday, January 3, and the fifteen established markets reported average prices of \$6.81 to \$7.08 per bushel. The simple statewide average of these markets first climbed above the \$7.50 level on January 23 and reached a statewide average over \$8.00 on February 21. Selected individual markets had exceeded the \$8 level on the previous day. This seemingly lofty price was short-lived as the statewide average began a retreat on the next market day that soon fell to the mid-\$7 range. The low point of the fall was \$7.11 on April 24, but the market was only catching its breath. By June 1, the \$8 mark had again been exceeded and prices eventually reached \$8.34 on June 18. The post planting months in Arkansas historically have stabilized or corrected the soybean market price as South American harvest is completed and U.S. plantings become more definite. In 2007, prices backed down and even briefly fell below the \$8.00 on June 21. A sudden 39 cent gain on

June 29 lifted the state average to \$8.26, but the wind faded in these market sails to the point of seeing a sub-\$8 price by July 17. Prices remained under \$8 through August 27 except for a single week in early August, but never experienced the normal harvest season crash as illustrated in 2006 (Figure 2). Instead, the 2007 market suddenly caught fire around Labor Day, bursting through \$8.00 and never looking back. By September 14, the \$9 per bushel level was reached. The \$10 price was reached on November 16 and \$11.00 was exceeded on December 11. The 2007 crop ended the calendar year at \$11.65 on December 31. The anticipated \$12.00 beans had not materialized in 2007, but the statewide market opened 2008 at \$12.01, touched \$13.00 on February 8, and had exceeded \$14.00 per bushel on February 25.

Over the 2007 calendar year, Arkansas soybeans had averaged \$8.45 per bushel with a maximum statewide daily price of \$11.88 on December 26 and a minimum of \$6.86 on January 10. The top daily price among the 15 individual markets was \$12.06, seen at West Memphis on December 26. Wynne had the lowest daily price of the year with \$6.68 on January 10. Looking

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over the entire calendar year, the top Arkansas average market price was \$8.56 at West Memphis (Table 1). A fairly small price range was found across the 15 reporting markets. Lowest average market prices were at Jonesboro with \$8.30 and Augusta with \$8.31. Readers should note that these are simple averages and are not weighted by the volume of grain handled at each respective location.

In summary, 2007 was a year of climbing soybean prices. Have we reached the mountaintop? Early January prices suggested some market uncertainty with days of 50 cent losses and other days of 49 cent gains. The statewide daily average had not

exceeded \$12.50 although some individual markets surpassed \$12.70 per bushel on selected days. A fresh price surge has now occurred in February to push the cash price above the \$15 mark. Producers should strongly consider locking in a profit for at least a portion of their 2008 crop when the opportunity exists. This strategy will require a good estimate of production cost per acre in addition to soybean market price. Producers may not sell at the market high, as the 2007 price pattern shows, but the current high market prices indicate more potential for downside price movement than upside and no one knows whether the traditional annual price pattern will return in 2008.

Figure 1

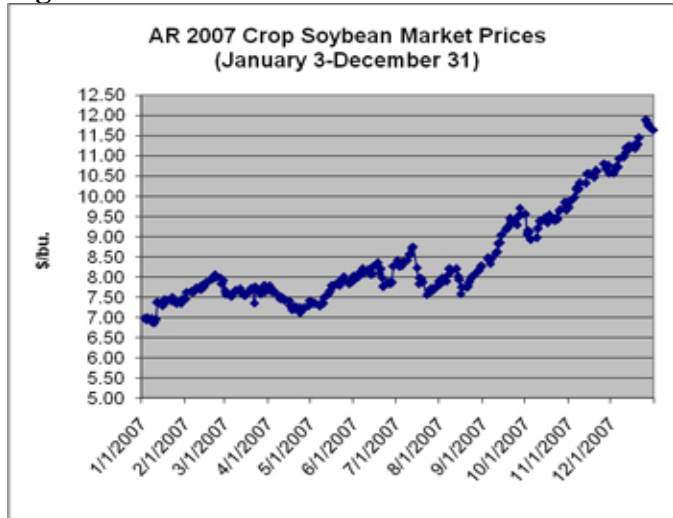


Figure 2

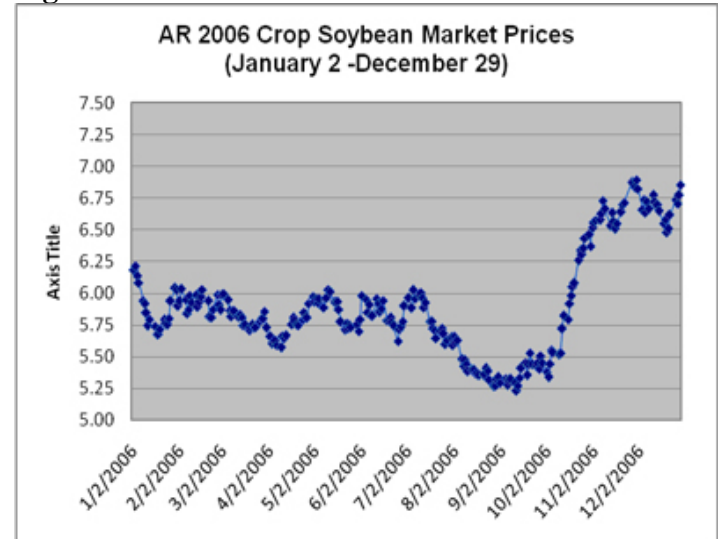


Table 1

2007 Annual Average Arkansas Country Elevator Cash Prices - No. 1 Yellow Soybean							
Jonesboro	Wynne	Wheatley	Pendleton	Blytheville	Dermott	West Memphis	Helena
8.30	8.35	8.42	8.53	8.51	8.41	8.56	8.51
Old Town /Elaine	Osceola	Augusta	Pine Bluff	Des Arc	Little Rock	Stuttgart	State Average
8.49	8.51	8.31	8.49	8.39	8.48	8.51	8.45

Macroeconomic Impacts on Agriculture

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The U.S. macro economy is certainly in a volatile phase due to the credit turmoil caused by the subprime mortgage market swoon. While macroeconomic forecasting is always a dicey prospect, this year is “dicier” than most. Nonetheless, with the surging demand for ethanol and other bio-fuels, it seems likely that many in agriculture will have a strong year but surprises might happen.

In calendar year 2007 real growth in gross domestic product (GDP) was 2.2% according to Bureau of Economic Analysis (BEA) data which was down from 2.9% in 2006. Growth in the fourth quarter of 2007 was a seasonally adjusted 0.6%. Obviously there is substantial concern that the economy is headed for a recession. Consumers drove growth in 2007 and investment expenditures drew GDP growth down with investment showing negative growth during the first and fourth quarters of 2007. The slump in residential housing led the drop in investment. In a February 12, 2008, release by the Philadelphia Federal Reserve Bank, a survey of 50 forecasters estimates 2008 GDP growth at 1.8% with the third and fourth quarters having the highest estimated growth at 2.8%.

The beginning of 2007 faced the uncertainties of the continuing trade deficit and the relatively low value of the dollar and both continue to be concerns. The currently, rapidly depreciating dollar should help exports and limit imports. But oil prices are denominated in dollars. So the depreciating dollar will increase import costs, at least in the short-run, as the U.S. adjusts to higher, real fuel prices. The U.S. economy made such an adjustment in the 1980s and there is no reason to assume it cannot do it again. But it will not be easy or quick.

The 2008 GDP growth is forecasted to be less than in 2007. The general concerns seem to be about inflation (4.1% in 2007) and a recession. The recent Federal Reserve efforts to stimulate the economy by increasing the money supply have weakened exchange rates. In 2007 investment shrank by 4.6%, down from 2.7% growth in 2006. The strength in investment for 2007 was structures (plant) at an impressive 13.2% growth rate. However, investment growth in residential housing was down 16.9% in 2007 from 2006. Consumption and government expenditures grew at 2.9% and 2.1%, respectively, but are proportionately large components of GDP than investment. Exports increased by 7.9% from 2006 but this was somewhat offset by imports growing by 2.0%. The 2007 disparity contributed to a \$712.7 billion trade deficit on the goods and services portion of the current account. The trade deficit in 2007 was smaller compared to \$763.2 in 2006.

Unemployment, Interest Rates and Oil Prices

The employment situation has become a concern. The Bureau of Labor Statistics (BLS) reports the February 2008 national unemployment rate at 4.8% compared with 4.5% in February 2007. Nonfarm payroll employment went down by 63,000 in February 2008. Although the unemployment rate is below the 5.0% mark which is generally considered a “full-employment” rate, there is still strong concern about a recession. Total jobs in the U.S. increased by a little over 2.0 million from February 2007 to February 2008. In Arkansas, total non-farm seasonally adjusted employment increased from 1.205 million in January 2007 to a preliminary estimate of 1.208 million in December 2007. Although more people are employed in Arkansas, the labor force grew even more so that the Arkansas unemployment rate of 5.3% in January 2007 increased to 5.5% in December 2007 with both figures seasonally adjusted.

For agriculture the biggest factors coming from the domestic macro economy are interest rates, oil prices and exchange rates. Short term interest rates started decreasing during September 2007 as indicated by the federal funds rate. The federal funds rate, which the Federal Reserve targets in

determining the money supply, started 2007 at 5.25%. By year's end it was 4.25%. On March 18, 2008, the Fed lowered it to 2.25%. With weakness in residential housing and the current drop in stock prices, it is hard to see any interest rate increases this year. Other short-term interest rates decreased accordingly over 2007. The prime rate began 2007 at 8.25% and the January 2008 rate was 6.98% which went down to 5.25% on March 18, 2008. Longer term rates changed slightly during 2007. Ten-year U.S. government securities adjusted for constant maturities started 2007 at 4.76% and ended the year at 4.10%; the high for the year was 5.1% in June. The February 2008 rate was 3.74%. The Philadelphia Fed survey projects an average 3.76% for the ten-year bond rate for 2008 and a 4.39% average in 2009. r

Farm interest rates are also low from a historical context but rose during the first two quarters of 2007 before decreasing in the last two quarters. Data from the Board of Governors of the Federal Reserve System show an average effective interest rate on non real estate bank loans of 8.3% in 2007, the same as in 2006. Farm loan interest rates hit a decade low of 5.0% during the fourth quarter of 2003. Farm interest rates at banks could go lower if the Fed continues cutting the federal funds rate. But at the current 2.25%, the Fed may be running out of room. Similar patterns of fluctuating farm real estate interest rates for 2007 appear in data from the Chicago Federal Reserve Bank district but at lower levels. Farm real estate loans were at 7.67% in the first quarter of 2007 and at 7.09% in the fourth quarter of 2007.

Interest rates are not likely to get much lower during 2008. The Fed must also be concerned with keeping inflation low and steady. The federal funds rate is decreased by the Fed buying bonds and that means increasing the money supply. Increases in the money supply usually foreshadow higher inflation if money growth exceeds productivity growth. Inflation of 4.1% was larger in 2007 than the 2.5% recorded in 2006. On a seasonally adjusted basis, the two money supply aggregates (M1 and M2) grew at very different rates in 2007 (January 2007 to January 2008). M1 decreased 0.6% in 2007. And

an increase in M2 of 5.8% was not unexpected with real GDP growth of 2.2% and inflation around 4.1%.

Oil prices in 2008 could continue to be highly volatile. The rapid growth over 2007 in commodity prices, particularly agricultural commodities, is driven by the oil price which has grown rapidly in recent months, see Fig. 1. Oil prices determine the economic viability of ethanol and other bio-fuels. A collapse in oil prices could cause a bust in agriculture. The recent suspicion that the world might be entering a commodity bubble is ominous. Clearly housing and equity markets have recently taken big hits. Investor flight to safety has driven up U.S. government security prices. So the rising price of fuel, while clearly partially caused by demand factors like soaring growth in India and China, might also be caused by investors seeking high returns in commodity markets. Such speculative demand could be contributing to the build-up in commodity prices. If this is a bubble, its bursting would be hard on agriculture.

Exchange Rates and Exports

Overall, exchange rates indicate a distinctly weakened dollar in the near and medium term which should increase agricultural export demand. The broad index of the U.S. dollar against foreign currencies indicates a depreciating dollar during 2007 from 108.5 in 2006 to 103.4 in 2007. In the past year the U.S. dollar weakened relative to the euro, yen and Canadian dollar. Looking into the future, the USDA's Economic Research Service (ERS) projects a depreciation of the dollar through 2011 with moderate appreciation through 2017, the end of the forecast period. Moreover, ERS's 2008-2017 baseline projections forecast that stronger international economic and population growth will provide good markets for U.S. agricultural exports, such that agricultural exports will continue to grow despite an appreciating U.S. dollar.

Agricultural exports for fiscal 2007 were a very strong \$81.9 billion, up substantially from 2006. ERS forecasts an increase to \$91 billion in agricultural exports in 2008 with an increase to \$103.4 billion in 2017. Although agricultural

imports also increased from 2006 to 2007 to a total of \$70 billion, exports increased more resulting in an increase in the agricultural trade surplus from \$4.6 billion in 2006 to \$11.9 billion in 2007.

Production Expenses

ERS is predicting net cash income of \$94.1 billion in 2008 compared with \$87.4 billion in 2007. This increase in net cash income is predicted despite forecasts of increased cash expenses for production agriculture. Cash expenses are forecast to increase in 2008 to \$238.1 billion, an increase of \$10.9 billion from 2007 or a 4.8% increase which is less than the estimated 11.0% increase from 2006 to 2007. The most recent run-up in oil prices might push costs even higher. Of particular concern are energy prices. ERS estimates a 14.9% increase in total fuel, fertilizer and electricity expenses from 2007 which is the same increase that occurred last year. While an increase in oil prices directly affects farm input costs, it can also affect export demand if high energy costs constrain foreign development. Although ERS forecasts crude oil prices to rise modestly in 2008-2009, a slight decline is forecast in 2010-2013. However, it is difficult to forecast such movements.

Farm wages are likely to rise modestly in 2008. ERS estimates that hired and contract labor expenses will rise by 4.6% nationwide which is less than the 7.0% estimated from 2006 to 2007. With the weakening employment situation coupled with increased inflation, wages increases are likely but probably modest.

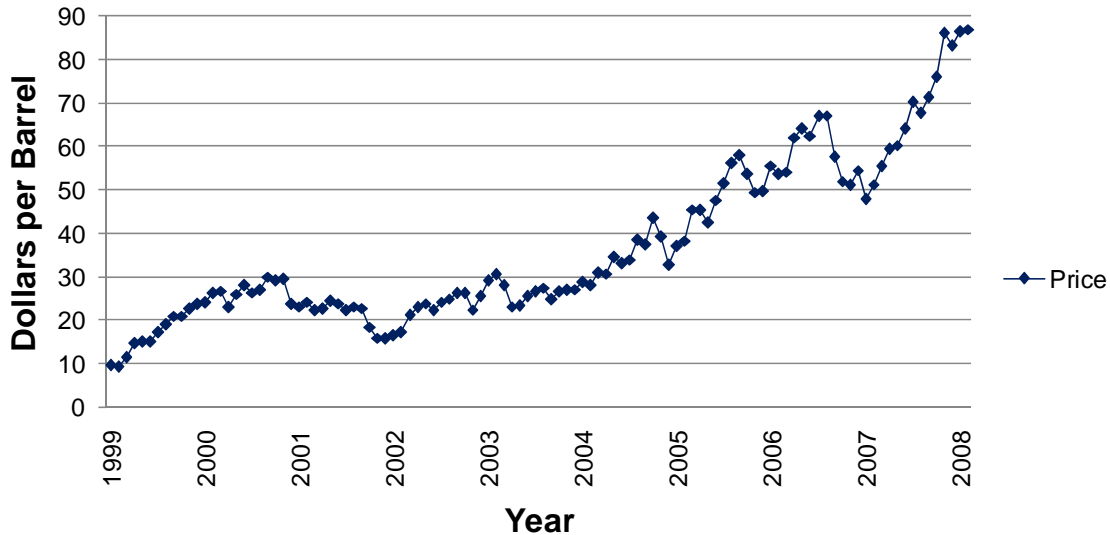
Conclusions

There is not a clear trend for U.S. GDP growth. Near term it looks like a mild U.S. recession is possible. While other nations are not as directly

affected by the subprime meltdown in the U.S., it is clear that there is a global credit crunch. The best hope is that the steps being taken by various central banks will calm financial markets worldwide so growth will continue strong demand for U.S. agricultural products. Domestic interest rates have dropped relative to recent years but are not likely to go much lower. Rising unemployment rates are easing upward pressure on wages but increasing inflation could neutralize or offset the downward forces. The indirect effect of rising oil prices together with increasing worldwide demand for commodities has led to skyrocketing commodity prices and a net boon to agriculture even though they have also led to tremendous cost increases—particularly to the livestock and poultry sectors. The increased demand for agricultural products as energy inputs will drive higher revenues and profits for those agricultural sectors providing such inputs.

The weakening dollar among major trading partners will be good for agricultural exports over the next year. But with a continuing U.S. current account deficit, foreign holders of dollars will want to buy U.S. assets other than treasury debt which is offering mediocre returns. U.S. farm land is appreciating quite smartly. With low exchange rates, U.S. farmland might seem cheap to foreign dollar holders. This could increase farm land prices even faster! The overall U.S. economy will not likely have a strong year but many in agriculture will—barring highly adverse weather. But the phenomenal run-up in crop commodity prices is due largely to surging energy demand and limited energy supply. A major technological breakthrough that converts sunlight into electricity much cheaper—and not using agricultural processes—would likely reverse the current agricultural boom as such technology is developed and adopted.

Fig.1. Monthly US Crude Oil Prices
(trough February 2008)



Impact of Feed Costs on Catfish Production

H. Scott Stiles, Extension Economist and Carole R. Engle, Professor, Aquaculture/Fisheries Center UAPB

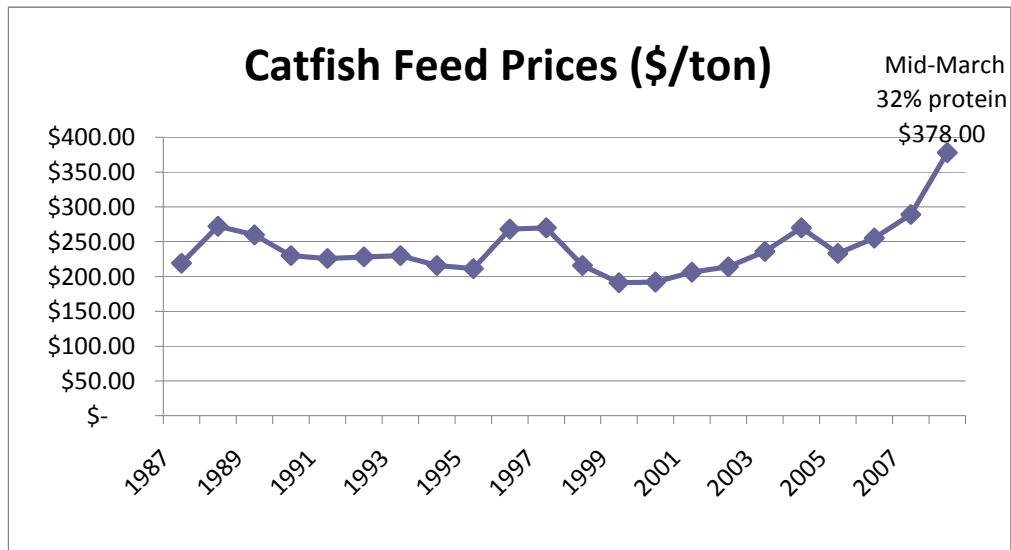
Background

Sharp increases in grain and oilseed prices during 2007 pushed catfish feed prices to historically high levels (Fig. 1). Figure 1 shows annual feed prices from 1987 to 2007. Over this time period, annual average feed prices ranged from a low of \$191/ton (1999) to a high of \$289/ton (2007). The average annual price of feed from 1987-2007 is near \$235/ton. These historically high feed prices have raised many questions regarding the break-even catfish price needed to cover fixed and variable production costs.

Feed Impact on Production Costs

According to the Arkansas catfish budgets, feed costs compose 45-47% of total operating costs (variable costs) and 35-36% of total costs (including all non-cash costs such as depreciation and interest on the total investment in the business). The 20-year average price of fish feed (32% protein) over the period 1987 to 2006 was \$232/ton. At this 20-yr average feed price, breakeven prices above operating (variable) costs range from \$0.52/lb (60-acre farm) to \$0.54/lb (1,007-acre farm), and breakeven prices above total costs range from \$0.74/lb (60-acre farm) to \$0.68/lb (1,007-acre farm). In general, catfish costs of production increase by \$50/acre with every \$10/ton increase in the price of catfish feed. Table 1 shows the costs of production for feed prices from \$225/ton to \$400/ton for each of the five farm sizes in the Arkansas catfish budgets.

Figure 1



Source: Private feed industry sources.

Table 1. Breakeven Costs of Production for Catfish Raised on Five Farm Sizes at Feed Costs of \$250/ton to \$400/ton.

Farm size	Breakeven prices	Feed prices (\$/ton)								
		Above	225	250	275	300	325	350	375	400
60-acre	Variable costs		0.51	0.54	0.57	0.60	0.63	0.66	0.69	0.72
	Total costs		0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.93
131-acre	Variable costs		0.52	0.55	0.58	0.61	0.64	0.66	0.69	0.72
	Total costs		0.72	0.75	0.77	0.80	0.83	0.86	0.89	0.92
256-acre	Variable costs		0.53	0.56	0.59	0.62	0.65	0.68	0.71	0.74
	Total costs		0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.89
431-acre	Variable costs		0.53	0.56	0.59	0.62	0.65	0.68	0.71	0.74
	Total costs		0.68	0.71	0.74	0.76	0.79	0.82	0.85	0.88
1007-acre	Variable costs		0.54	0.57	0.59	0.62	0.65	0.68	0.71	0.74
	Total costs		0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.87

Note:

The UAPB Aquaculture/Fisheries Center has spreadsheets of the Arkansas catfish budgets that can be used to estimate costs of production at different feed prices. The spreadsheets are based in EXCEL. To receive a copy, please contact Casandra Byrd-Hawkins at 870-575-8123

We hope you find our newsletter useful. If you have any comments or questions regarding these articles, or would like to make suggestions for future articles, contact the editor.

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