OUTLOOK FOR U.S. AGRICULTURE

Keith Collins
Chief Economist, U.S. Department of Agriculture

This presentation opens the door to fuller discussions of the outlook for U.S. and world agriculture to take place over the next two days. My remarks provide an overview of agricultural markets for the near-term and the implications for the U.S. farm economy. I will also discuss in a little more detail several key puzzling issues related to this outlook. They include grain prices, planting flexibility, ethanol production, the cattle cycle, and price volatility.

Over the last 2 years, this forum has emphasized the longer term outlook and I have summarized that in my past comments. This year, once again, we are making available to participants an outstanding document that presents a detailed assessment of the next 10 years. I will not summarize that today because, for the first time, we are incorporating into the regular program a special session on the 10-year outlook to be presented tomorrow. I want to recognize the Economic Research Service for the critical role they play in the development of the long-term analysis and its preparation. Without them, we would not have this long-term view.

Macroeconomic Environment

One can go a long way in addressing the prospects for agricultural markets by knowing how strong world food demand will be and knowing how global crop yields will turn out. Although we can say little of yields for 1997, we can say something about underlying demand strength by looking at its two major determining factors: global incomes and prices.

Global incomes look like they will support strong food demand in 1997, which is good news for food exporting nations such as the U.S. Real global Gross Domestic Product (GDP) increased 1.9 percent annually during 1990-1995. Last year, it rose 2.9 percent, and that helped keep global food demand strong despite high commodity prices. In 1997, world GDP is again expected to grow near 3 percent, providing another firm base for food demand. In Europe, recovery from the slowdown in 1996 is expected to boost GDP, but a downside is Japan, where GDP is expected to be cut in half from the 1996 level, as the stock market declines, taxes increase, and banking sector difficulties continue.

In developing economies, where income growth drives food demand, GDP is expected to grow at about the same as 1996's 5.5 percent. Asian growth may slow a little but be offset by improvements in Latin America. For example, in 1997, Mexico's real GDP is forecast to rise over 4 percent, compared with a 7 percent decline only two years ago.

Almost every major country in the world is expected to have positive real growth in 1997. Each of the 28 OECD economies is expected to grow for the first time in 10 years. The only drag continues to be the Former Soviet Union, where positive growth is still a couple of years away.

From a consumer's viewpoint, global incomes look favorable for 1997, and the same can be said for global commodity prices. At the end of 1996, U.S. export prices for all commodities were still strong relative to the early 1990's averaging about 12 percent above the 1990-95 average. However, during the second quarter of 1996, U.S. farm product export prices were nearly 35 percent above the average of the first half of the 1990's, so the prices global buyers are facing are coming down and should continue to do so as grain supplies rebuild in 1997.

One price factor to watch in 1997 is exchange rates. The dollar is now about 20 percent stronger against the yen than it was in 1995. That has the effect of raising U.S. export prices and will partly offset some of the U.S. crop price declines in 1997. It will especially hurt meat and other high value exports whose prices are not dropping in 1997. Some positive news for U.S. exporters is that although the dollar is strengthening generally, its real value, in agricultural trade-weighted terms, is now only moderately above the level of the past two years when measured against West European currencies and Asian currencies, excluding Japan. And the Mexican peso continues to show stability at about 7.9 pesos per dollar.

The stronger dollar will also add to the U.S. trade deficit which will be a restraining factor on U.S. economic growth. Even so, the U.S. economy is expected to grow at nearly 2.5 percent during 1997. Two related important underlying factors are energy prices and interest rates. Farmers faced 11 percent higher fuel costs in 1996, spending a total of $6.3 billion, as crude oil prices rose from $17 a barrel in 1995 to over $22 in late 1996. Fuel spending will be up a little in 1997, but we expect crude oil prices to drop back down toward $20 as the year unfolds.

On the interest rate front, there could be a slight rise in 1997 reflecting the above-trend GDP growth of the past few quarters and the tighter labor market which could boost wage gains. However, the outcome will depend on the Federal Reserve, which must also consider the offsetting effects of lower expected food and energy price increases and lower prices for imports due to the strength of the dollar. Farmers' total interest expenses will be a little over $13 billion, about the same as the past 2 years. (Tables 1 and 2 provide summary performance indicators for U.S. agriculture.)

Market Developments

Grain, soybeans and cotton. A year ago, this forum was deeply concerned about the looming shortage of grains and the prospect for a major disruption of livestock production and escalating consumer food prices. We had seen a 10-16 month run-up in corn, wheat, and soybean prices and were expecting further price increases Grains did turn out to be in short supply, and prices soared to levels not predicted at this forum or anywhere else, as grain stocks reached record or near-record lows and domestic and export demand was strong.

Now, a year later, the moderating effect of larger 1996 crops is evident. Monthly average farm-level wheat prices have fallen steadily from the record high last May to below $4.00 per bushel in January--a 31 percent drop. Corn prices have declined by about 41 percent from the record high last July but leveled out to $2.63 per bushel in December and January. In contrast, soybean prices which peaked in August, but not at a record level, declined 12 percent through November but have increased since then to $7.16 per bushel in January.

Where do we go from here? Wheat prices are expected to remain under considerable pressure as U.S. and global carryover stocks rise, although not to high levels by historical standards. Last year's high wheat prices caused foreign wheat acreage to expand by 5 percent which resulted in the harvest of record or near-record crops. That was the largest annual increase in foreign wheat area recorded in our database which starts in 1960. This increase, and reduced yields, made the U.S. the only major wheat exporter with a decrease in wheat supplies in 1996/97. So, U.S. exports had to decline, we said so, and sales have plummeted in recent months as foreign exporters, such as Argentina and Australia, have been aggressive exporters. U.S. sales are expected to remain slow through this summer because of large exportable supplies in competing exporters.

For the 1997/98 season, we expect U.S. production similar to this year. However, smaller crops are expected in all the major competing exporters except the EU. This should provide an opportunity for a recovery in U.S. exports. However, the degree of a recovery from the reduced level of 950 million bushels expected this season will depend importantly on the size of our crop, and on whether China's wheat imports bounce back from the 4 million tons of imports expected this season to something nearer the 10-million-ton average imports of the previous 5 years.

Outlook Puzzle #1--How low will wheat prices go?

Averaged over 1980-95, farm prices for wheat bottom out at about 94 percent of the season-average price in July and peak at 106 percent of the season-average by May (figure 1). Based on the forecast season-average price for wheat of $3.45 per bushel for 1997/98, monthly prices would reach a low of $3.25 per bushel in July and then rise to $3.65 by May 1998 (figure 2). However, in years of significant stock growth since 1980, that is, when stocks rose 20 percent or more from the previous year, wheat prices exhibited a different pattern, starting higher and declining more early in the crop year, and reaching a trough in late summer before generally rising through May, but below the price-pattern levels average over all years. Under this stocks-growth pattern, 1997/98 wheat prices would bottom out at about $3.35 in September and rise to $3.55 in May 1998.

This year's corn prices may be relatively firmer than wheat. While corn carryover stocks are expected to more than double by September, they are still expected to be below 1 billion bushels, which is relatively tight. And, feed and industrial uses are rising. However, exports will be down

this season as corn from Argentina, South Africa and China, and barley from Canada and the EU, are causing increased competition. In 1997, U.S. production is forecast to rise again, but higher exports and domestic use are expected to limit another increase in carryover stocks by September of 1998 to only around three hundred million bushels.

Outlook Puzzle #2--Will ethanol perform?

High corn costs caused corn used in ethanol to fall 26 percent in 1995/96 to 396 million bushels from 533 million the year before. Corn costs will be lower this year and gasoline prices a little higher than in recent years, so a recovery to 440 million bushels is expected for 1996/97. Further gains are expected in 1997/98, but it will likely be at least another year before use returns to the 1994/95 level. The peak ethanol production period is in the fall and early winter when HFCS production is down and the winter oxygenate program is in effect. Unfortunately, ethanol production this past fall did not snap back sharply, which limits the prospects for this season, but year-over-year production increases are likely as the year progresses. While the corn used in ethanol between 1994/95 and 1996/97 is expected to drop about 90 million bushels, corn used in HFCS and beverage alcohol is expected to rise about 60 million. Increasing HFCS and beverage alcohol exports will help support corn industrial use while ethanol recovers.

Soybean stocks are going in the opposite direction of wheat and corn. By this September, soybean stocks are projected at the lowest level in 20 years, which will mean an increase in farm level soybean prices in 1996/97. What is going on? First, Brazil had a reduced crop last year, which opened markets globally for the U.S. and even made Brazil a U.S. customer this past fall. Second, China imported record quantities this fall. During the fourth quarter, China bought 950,000 tons of soybean meal compared with zero the year before. That is nearly 8 percent of total world trade purchased in one calendar quarter by one country. China's needs now appear to be met, and with record soybean production in both Argentina and Brazil now coming on, U.S. exports are expected to slow during the March-September period. In 1997, a modest increase in production is expected and a return to a more typical export level, which should raise 1997/98 carryover stocks.

For cotton, the extremely tight stocks of last summer, which led to 800,000 bales of U.S. cotton imports, making the U.S. one of the world's largest cotton importers, are now behind us. Imports have slowed to a trickle as the U.S. has just completed harvesting the second largest crop ever. U.S. mill use is up with the continuing strong economy, cotton textile exports are up and imports down. Stocks, however, will rise 80 percent by August, as cotton exports have fallen in the face of 10 straight years of flat global demand and smaller imports by China. In the western hemisphere, cotton use continues to grow, but elsewhere in the world, growth in textile demand is

increasingly being met by manmade fiber, a challenge the U.S. cotton industry must deal with if exports are to grow in the future.

Other crops. Among other crops, rice has taken a surprising turn. Reflecting reduced returns to planting under the 1996 Farm Bill, 1996 production and exports are down, as expected. However, late harvests in Asia and tight long grain supplies worldwide have boosted prices and some suggest U.S. rice area may even increase in 1997. For sugar, the major development is the level of imports in 1996/97, which is now expected to total 2.27 million short tons, after the January TRQ allocation of 220,000 tons was canceled because the forecast U.S. stocks-to-use ratio was above 15.5 percent. Imports remain well above the Farm Bill trigger for recourse loans of 1.5 million tons. Among fruits and vegetables, the recent Florida freeze demonstrates weather will play a critical role in production. Sharp losses of snap beans, squash, tomatoes and peppers have boosted prices and will likely cause the CPI for fresh vegetables during January to June to be more than double the increase expected before the freeze.

Outlook Puzzle #3--What will farmers plant this spring?

In 1996, 335 million acres were planted to principal crops, the highest level since 1986, and up about nearly 17 million acres from 1995. With producers responding to rising prices, corn and wheat acreage accounted for 90 percent of the increase, sorghum and soybean acreage were also up, and rice, cotton, and minor oilseed acreage were down.

Cropland available for 1997 planting to principal crops is as large as last year, and in addition, as much as 1-2 million acres withdrawn early from the CRP in 1996 might be planted. About 22 million acres currently enrolled in the CRP are under contracts that expire at the end of September and some of that acreage is likely to be available for 1998 planting but not 1997.

Planted acreage this year is likely to be down slightly from 1996 largely because of plantings of other crops on failed wheat acres last year. Land that is planted to wheat, then replanted to another crop, such as sorghum, is counted twice in the planted acres total. Total wheat acreage is expected to be down because of the 7 percent decline in winter wheat acreage and lower price expectations than a year ago for spring wheat plantings. Corn and soybean acreage is likely to increase capturing some of the wheat land. Corn could total 81 million acres, near where it might have been last year had planting weather not been bad. Soybeans, with current favorable prices, could reach 64.5 million acres, or even exceed 65 million, the highest since 1984. Rice acreage with favorable prices may increase marginally to 2.9 million, and cotton acreage could decline slightly to 13.8 million, as feed grains and soybeans look attractive.

Although larger stocks of wheat and corn will be carried into 1997/98 than a year earlier, U.S. grain stocks are relatively tight and soybean stocks are the lowest since 1976. With normal weather, 1997/98 could see wheat production the same as 1996's 2.28 billion bushels and stocks rise toward 550 million bushels. Corn production could total close to 9.6 billion bushels, the second highest ever, and stocks rise to more than 1.2 billion bushels. Soybean production could total 2.5 billion, and with lower exports, stocks could rise to 220 million bushels. Season-average prices would be below 1996/97 and export supplies (total supply less domestic use and normal carryover stocks) would rise. But, U.S. crops will face especially strong competition given large competitor supplies.

Livestock and poultry. One of the most startling developments in the recent outlook has been in the cattle market. First, the cattle cycle turned, and second, the export boom went flat. Over the past year and a half, drought, record-high feed grain prices, high hay prices, low cattle prices and adverse winter weather have persistently forced cows to slaughter. In 1996 beef cow slaughter rose 24 percent and calf slaughter also rose 24 percent. Large late summer and fall placements into feedlots are keeping beef supplies up now. The January 1, 1997, U.S. cattle inventory showed the impact of ranchers' efforts to reduce herds. There were 103.5 million cattle on farms and ranches at the start of 1996 and 101.2 million at the start of 1997, the first decline in the U.S. cattle inventory since 1990.

Adding to the grief of ranchers, exports weakened during the second half of 1996. Exports in the first half of 1996 were more than 20 percent above a year earlier, but second- half exports declined about 12 percent.Exports increased at an annual average rate of 16 percent during 1991-95. In Japan, where more than half of U.S. beef exports went in 1996, concerns over E. coli and BSE appear to have slowed consumption. In 1997, U.S. beef exports are expected to rise, especially in the second half, particularly to countries like Mexico and South Korea and to Japan although the rising dollar is a new factor that could limit increases.

Outlook Puzzle # 4--What are the risks of the downhill part of the cattle cycle?

This 101 million head inventory on January 1 marks the start of the downturn in the cattle cycle. Cattle cycles over the past several decades have averaged 6 years of cattle numbers building followed by 4 years of numbers declining. So, for sometime into the future, we will see fewer calves born, fewer heifers retained, fewer feeder calves available to feedlots, fewer steers fed and fewer slaughtered and lower retail supplies of beef. This could go on for several years. In 1996, beef production was up 1.2 percent. In 1997, we expect a slight decline, and in 1998, a decline of 4 to 5 percent. The upshot is feedlots will have to pay more for a reduced supply of feeder cattle. If corn prices come down, feedlots will want feeder cattle even more. Feeder cattle prices could become quite strong next fall and into 1998. By late 1997, fed

cattle could be over $70 per cwt, as they were this past fall, but feeder cattle could be in the mid-$70, compared with the mid-$60's this past fall. This will mean better news for cow-calf producers. After taking losses estimated at $18 per cow in 1995 and $39 in 1996, returns could recover in 1997 but are still expected to be negative. By 1998, returns should be strongly positive and that would provide and incentive to rebuild herds. But once that decision is made, the biological lags mean another 2-3 years before cattle inventories stop the decline.

Now combine this story with the fact that grain stocks, particularly corn and soybean, remain relatively low. A bad weather year in 1997 could again cause high feed prices, resume the heavy herd liquidation, stop rebuilding of the hog breeding inventory, and set the stage for a serious increase in retail beef and other meat prices in 1998. Because meat and poultry accounts for 15 percent of the at-home CPI for food, such a scenario would truly be a consumer concern.

Hogs and poultry. Very briefly, the hog inventory, like cattle, is down compared with a year ago and pork production in early 1997 will likely be below last year's level. Producers indicated plans to increase farrowings in the first quarter of 1997 then reduce them during the second. If they follow through, pork production would pick up by the third quarter but for the year as a whole, remain about the same as in 1996. With production stable and increased exports expected, hog prices may average about $2 per cwt over the 1996 average of about $53.50 per cwt.

Broiler exports, fueled by economic growth around the world, and like beef and pork exports, have been another remarkable story in the 1990's that will continue in 1997. Exports were equal to 6 percent of U.S. production in 1990 and over 17 percent in 1996. After record high broiler prices in 1996, feed costs coming down, and firm meat prices in 1997 as beef and pork production do not increase, broiler production is expected to rise 6 percent this year. Poultry will account for all of the increase in 1997 U.S. meat production. Exports are forecast up again with Russia, Hong Kong, China and Japan, the major buyers.

Dairy. The last major market I want to profile is dairy. Farmers' milk receipts were a record $23 billion in 1996, making milk one of agriculture's major commodities. Although many producers enjoyed record-high incomes, many did not, particularly those facing high feed costs, poor forage and low productivity. In addition, milk prices fell sharply between September, when a record high was reached, and December. For the 1995/96 marketing year, the all-milk price averaged a record-high $14.42. In January 1997, it was $13.60, 40 cents below a year earlier. This price is likely to go lower over the next couple of months. Dairy producers are expressing much concern over the decline and calling for various forms of Federal action. Given the direction of Federal policy toward greater reliance on the market, will the market improve for dairy producers? We think so. Milk production for the calendar year 1997 is forecast to rise only 1 percent over 1996, which itself was down 1 percent from 1995. So the market is in balance with milk

production rising with population, and government surplus removals on a milkfat basis expected to be about 0.6 billion pounds, the second lowest in the last 27 years. In that environment, the all-milk price will follow the Basic Formula Price up this spring and average $13.70 for the calendar year, the second highest level in the past 16 years.

Dairy producers sell a seasonal perishable product with little use of options, futures or forward pricing arrangement. The price changes dairy producers have faced this year brings me to a concluding concern for this forum.

Outlook Puzzle #5--Is price volatility really more of an issue today?

With elimination of acreage reduction programs, low and capped marketing loan rates, and minimal government stocks, some are concerned that prices will be more volatile. This concern has been amplified by tight grains stocks and the run up and decline in grain prices over the past 2 years. This, in turn, has affected livestock, poultry and milk markets. A premise is that prices will be more volatile without government intervention and with privately-held stocks that are smaller than past levels owned or supported by the government.

Are prices now more volatile than in the past? One simple measure is based on the coefficient of variation of monthly and annual average farm prices (tables 3 and 4). Using this measure, over the past four decades, the 1970's had the greatest intra-year and year-to-year price volatility for major commodities (see tables). Domestic supply- and export demand shocks in the early 1970's led to high price volatility throughout the agricultural sector. The 1970's were similar to the 1980's in that dependence on foreign markets was great, stocks fell, government intervention was limited, and land uses returned to production from the Soil Bank. In the 1980's, prices were less volatile than in the previous decade and volatility for most commodities thus far in the 1990's has been about the same or less than in the 1980's. This review does not provide much information about future price volatility and the consequences of much less government intervention. For corn and wheat, both farm and futures prices were more volatile in 1996 than over 1991-95. Whether this is indicative of more volatile prices in the years ahead remains to be determined.

Even so, farmers and first buyers have reason to be concerned. Greater planting flexibility, trade liberalization, and more private stockholding tend to be stabilizing forces. But several factors suggest greater variability in the future. They include: smaller government stocks, greater exposure to foreign policy shifts and foreign supply shocks as trade liberalization becomes more important, and increased frequency of weather problems.

From a producer perspective, more volatile prices than in the past could signal a need for risk management tools to deal with price and income variability. Whether or not prices will be more volatile is uncertain. However, producers can no longer transfer price risks to the government through high nonrecourse loan rates and storage subsidies. Instead, they will rely on private sector risk management mechanisms, a key subject of this forum.

Implications for the State of the Farm Economy

Entering 1997, the U.S. agricultural economy is in a relatively strong position. Areas of concern continue to be producers in regions affected by bad weather and cattle and dairy producers who have had to reduce cash balances or incur debt to withstand financial pressures in 1996. Farm cash receipts set a record of nearly $200 million in 1996, with crop receipts rising well above the average of the 1990's and livestock receipts at about the average. This year, total receipts are likely to decline a little, as lower grain receipts reduce the total return to crops. Livestock receipts will rise as cattle more than offset the decline in dairy. Overall production expenses will rise a little but be held in check by lower feed costs. Consequently, net cash farm income is forecast to decline to about half way between the $57 billion of 1996 and the $49 billion of 1995, making it about equal to the average of the 1990's.

The farm sector balance sheet is expected to improve again in 1997 as asset values rise more than debt increases. Farm real estate values have risen every year since the mid 1980's and a 5-percent increase is expected in 1997. Farmers will take on more debt for the fifth year in a row but the overall debt-to-asset ratio is expected to decline to a healthy range of 14.5-15.0 percent.

Taxpayers will see stability in farm program costs with direct government payments, forecast at $7.6 billion for 1997, would account for only 3.5 percent of gross farm income. By the expiration of the 1996 Farm Bill, government payments are expected to drop to 2.6 percent of gross farm income.

Consumers will see a year of modest food price inflation in 1997. In 1996, food prices rose 3.3 percent above the 1995 level but below what many expected, given the record high levels of grain and milk prices. Meat and dairy product prices will restrain food price increases, keeping them in the range of 2.5-3.0 percent.

In 1997, American agriculture will continue to adjust to the increasing risks that accompany changes in domestic farm and trade policy as well as the profusion of new technologies and marketing arrangements that are emerging. These risk-creating changes will also provide the chance to lower costs, improve products, shift risks and open new markets internationally.

TABLE 1. ECONOMIC INDICATORS FOR U.S. AGRICULTURE (billion $)

Item	Avg. 1990-94	1995	1996f	1997f 1/
Farm receipts 2/	181.7	185.7	200.4	193.7
Assets	879.5	978.0	1,035.3	1,094.1
Liabilities	140.6	150.8	155.3	159.0
Equity	738.9	827.2	880.0	935.1
Farm real estate ($/acre)	723.0	832.0	890.0	na
Exports	41.3	54.6	59.8	56.5
CCC outlays (fiscal year)	10.6	6.0	4.6	7.8
Government payments	9.6	7.3	7.8	7.6

f=forecast

1/ From "Agricultural Baseline Projections to 2005, Reflecting the 1996 Farm Act," USDA, February 1997. 2/ Includes farm-related income.

TABLE 2. RETURNS ($/unit) 1/

Item	Avg. 1990-94	1995	1996e	1997f
Corn (acre)	167.18	192.17	202.85	197
Wheat (acre)	88.26	97.55	115.05	80
Soybeans (acre)	133.32	163.05	185.40	175
Cotton (acre)	224.30	149.95	286.00	226
Hogs (100 lbs)	6.98	5.42	11.03	13.47
Cow/calf (per cow)	86.33	-17.68	-38.98	-27.21
Chickens (100 lbs)	4.84	7.59	4.40	4.59
Dairy (100 lbs of milk)	2.33	2.16	2.26	2.04

e=estimated f=forecast

1/ Crops--return over variable costs for program participants and soybean producers for crop years; cow/calf, dairy and hogs (farrow-to-finish)--returns over cash costs with dairy on marketing years; chickens--returns over total costs.

TABLE 3. INTRA-YEAR PRICE VOLATILITY (COEFFICIENT OF VARIATION) 1/

COMMODITY	1951-60	1961-70	1971-80	1981-90	1991-95
WHEAT	.035	.061	.130	.077	.089
RICE	.063	.033	.124	.120	.119
SOYBEANS	.064	.054	.123	.089	.058
CORN	.061	.045	.110	.103	.081
COTTON	.050	.067	.102	.071	.043
CATTLE	.050	.051	.066	.034	.055
HOGS	.094	.093	.118	.092	.099
MILK	.073	.056	.056	.043	.045

1/ Coefficient of variation of monthly farm prices (calendar year) averaged across multi-year periods

TABLE 4. YEAR-TO-YEAR PRICE VOLATILITY (COEFFICIENT OF VARIATION) 1/

COMMODITY	1951-60	1961-70	1971-80	1981-90	1991-95
WHEAT	.073	.178	.308	.150	.155
RICE	.078	.017	.278	.193	.147
SOYBEANS	.127	.067	.222	.150	.088
CORN	.163	.070	.258	.180	.180
COTTON	.067	.165	.270	.080	.180
CATTLE	.219	.124	.297	.114	.069
HOGS	.154	.161	.238	.083	.080
MILK	.060	.126	.248	.042	.023

1/ Coefficient of variation of annual average (calendar year) prices over multi-year periods.

Figure 1

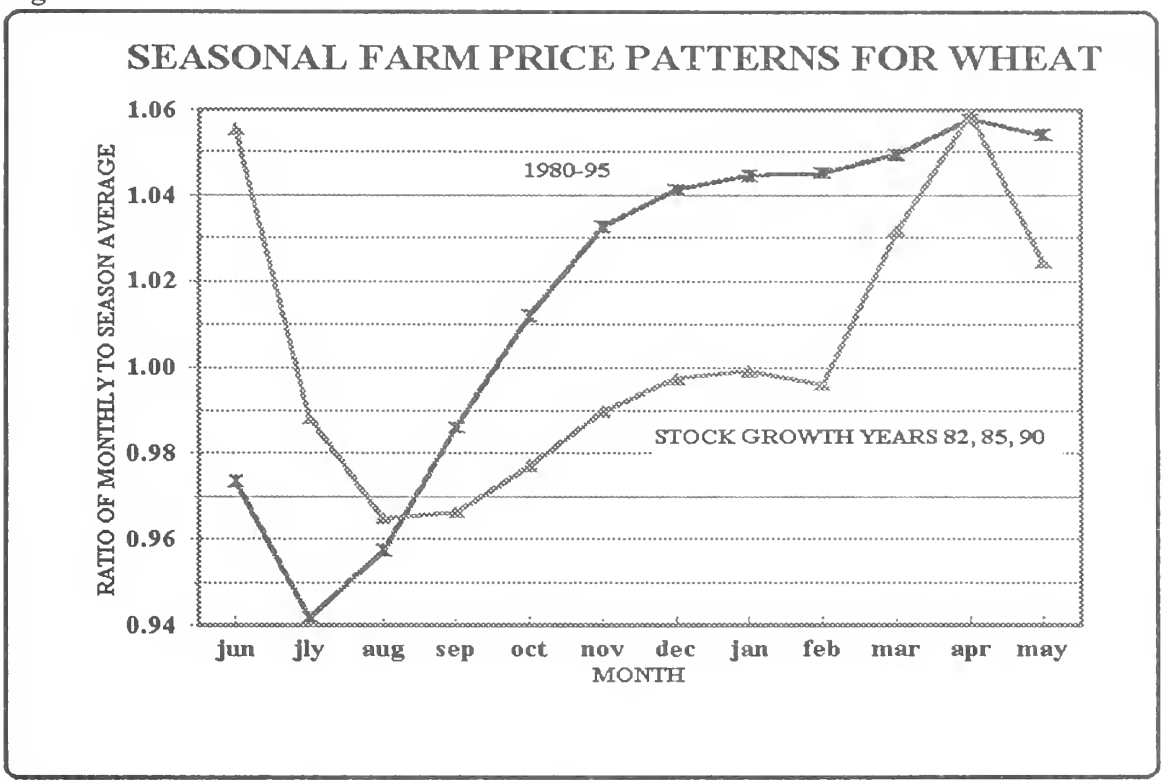

Figure 2