Where to with Farm Policy?
Lessons from the Past and Options for a Bio-Fueled Future

Prepared for the Bi-Partisan Research Center

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Introduction

U.S farm programs have been with us since the Agricultural Adjustment Act of 1933. Congress passed and Franklin Roosevelt signed this legislation to counteract the devastating impact of low farm-gate prices on the purchasing power of farm families. This legislation was a national priority because, as shown in Figure 1, approximately 25% of the U.S. population lived on farms in 1930 and approximately 10% of U.S. GDP was accounted for by the value of farm production.

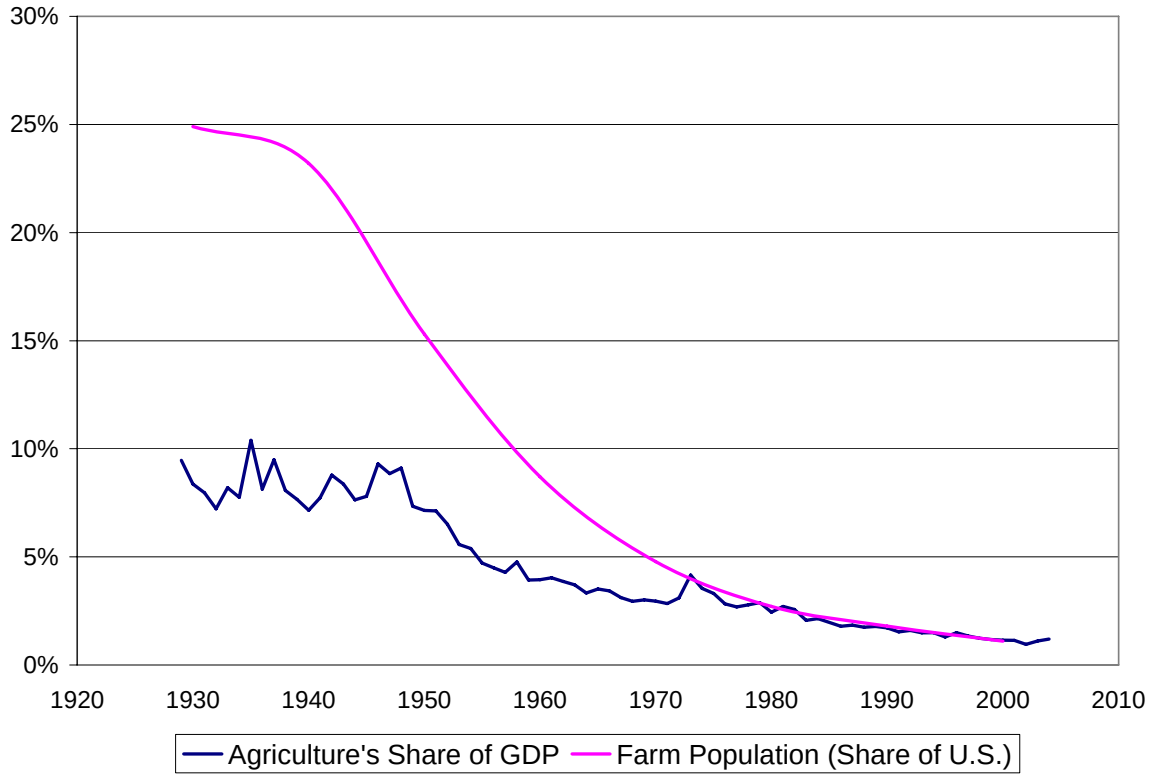

Figure 1. Trends in the national importance of agriculture since 1930

Though the Figure 1 trends show that agriculture now accounts for a much smaller share of the U.S. economy and that farm families are vanishing as a share of the U.S. population, we still have farm programs. Furthermore, farm programs today address

the same problem that farm programs addressed in the 1930s: inadequate prices. To some this longevity of farm programs represents a policy failure. After more than 70 years of farm programs, why hasn't the "farm problem" been solved? To others the resiliency of farm programs represents the reality of today's political system in that the benefits of programs to the reelection prospects of members of Congress are greater than the costs, so the programs persist.

The purpose of this paper is to explore farm policy with an eye towards adopting policies that can lead to a departure of 70 plus years of needing to compensate farmers for low prices. The first step is to review where we have been with farm policy and where we are now. What factors have driven change in the way that farm programs operate? What have we learned from past policy experiments that can guide us in pursuit of a new direction for farm policy? Is it even realistic to think of an agriculture future free of price subsidies? We begin by reviewing where we have been with farm programs and where we currently are now.

A Brief History of Prices and Support

Figures 2, 3 and 4 show the relationship since 1949 between prices received by producers of corn, wheat and cotton and the level of price that Congress, through numerous pieces of farm legislation, has desired to support.[1] The three figures are remarkably similar. Until the commodities boom in the early 1970s, support prices were generally above or about equal to market prices, with the exception that strong demand for cotton during the Korean War drove cotton prices above support levels. The 1970s commodity boom drove

[1] Support prices were obtained from " History of Agricultural Price Support and Adjustment Programs, 1933-84: Background for 1985 Farm Legislation." Agriculture Information Bulletin Number 485. Economic Research Service, U.S. Department of Agriculture, December 1984; and fact sheets for upland cotton, wheat, and feed grains published by Farm Service Agency, U.S. Department of Agriculture, January 2003. Market prices were obtained from NASS.

market prices well above historical support levels until the early 1980s. Support levels increased substantially during this time, reflecting Congress' desire to adjust protection levels for increased costs of production. With very few exceptions (corn in 1983; all three crops in the mid-1990s; and wheat currently) support has remained well above market prices for the last 25 years.

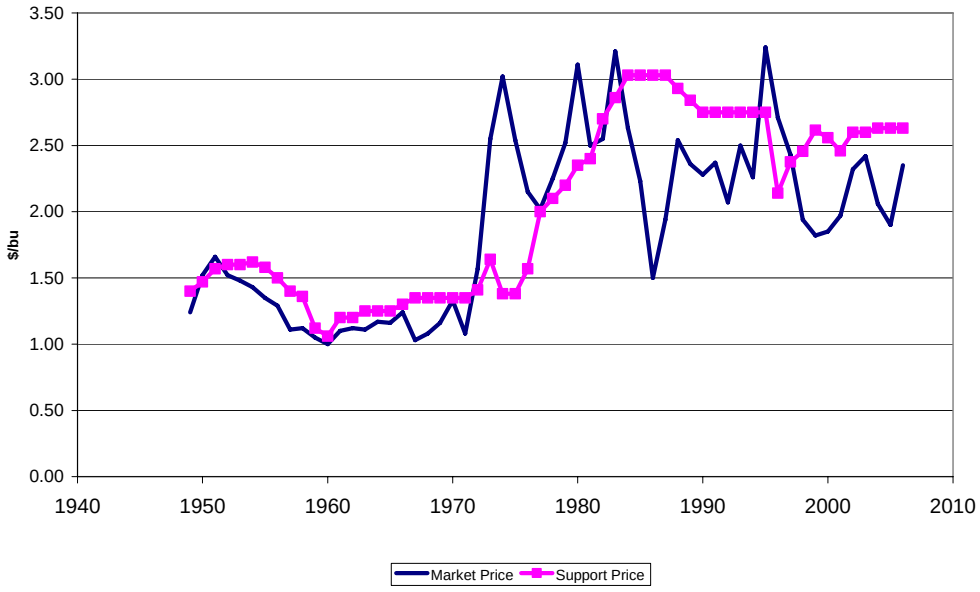

Figure 2. History of market prices and support prices for corn

The history of these three commodity's are so similar because support prices for all three commodities are determined together in common legislation and some of the same basic market forces drive all three market prices. The commodity boom of the 1970s and the commodity bust of the late 1990s were felt by all three. The ramp up in support prices in the late 1970s and early 1980s were also common to all three commodities

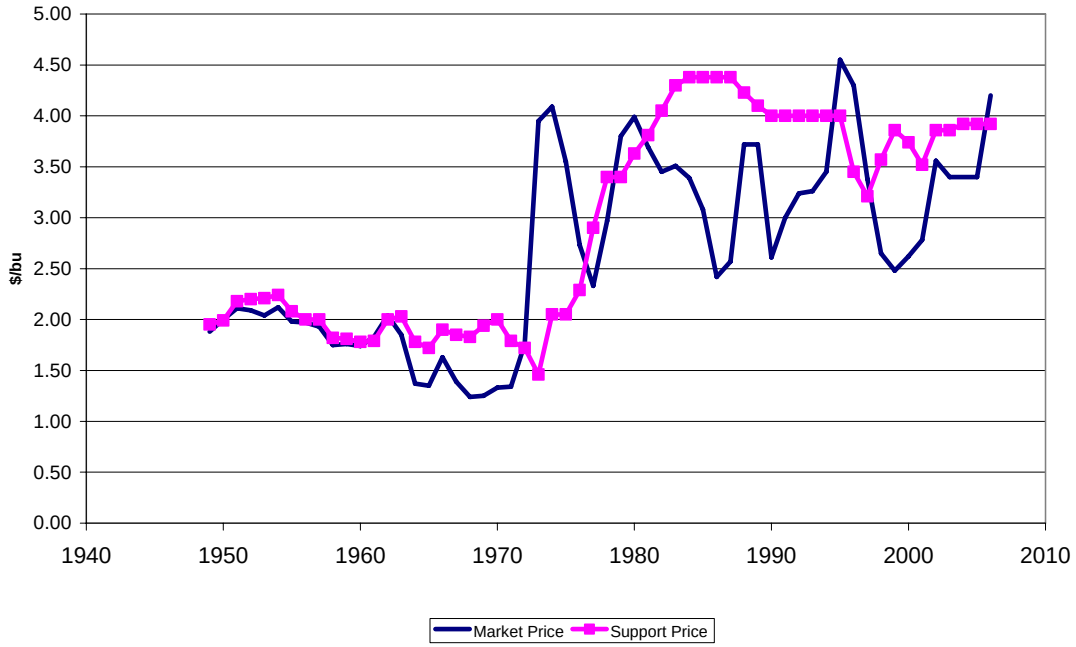

Figure 3. History of market prices and support prices for wheat

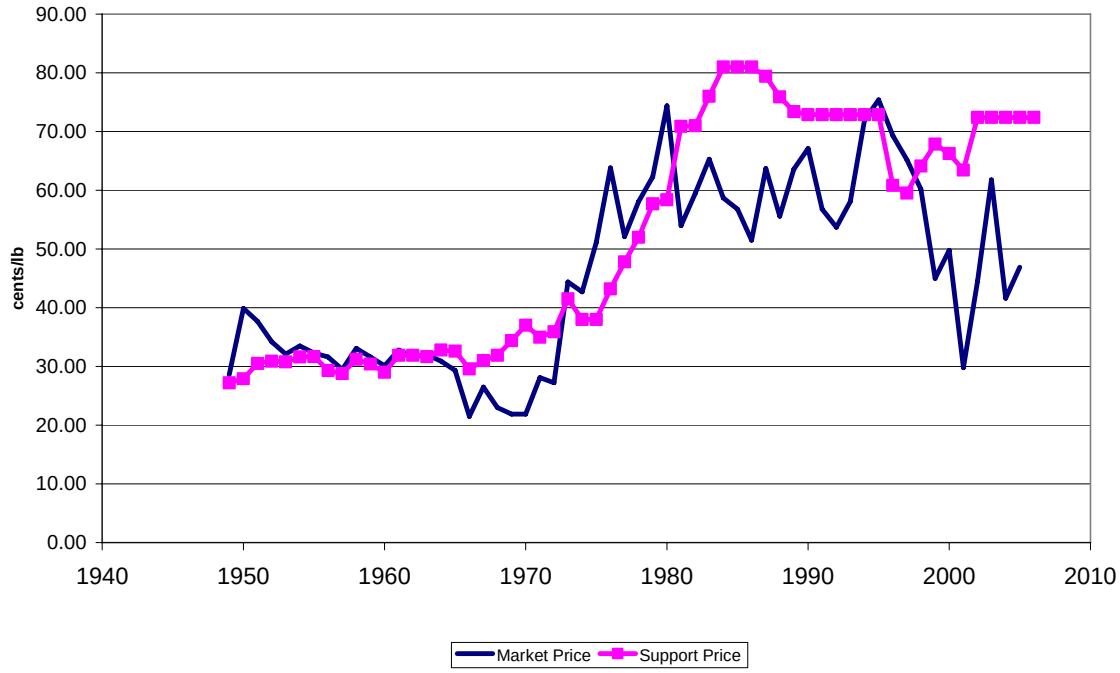

Figure 4. History of market prices and support prices for cotton

because it reflected Congress' desire to protect farmers from cost inflation. And the fact that support levels have been substantially above market prices for most of the last 25 years reflects a fundamental change in the way that farm programs have delivered support to farmers.

Sources of Price Changes

There is strong appeal to the notion that farmers should receive a fair price for their farm output. But history is replete with times when farmers do not receive a price that can cover even their variable costs of production, let alone their variable plus their fixed production costs. The political appeal of giving farmers an adequate price combined with periodic episodes of low prices partly explains why farm programs have been so resilient. Understanding why agricultural prices can drop below the cost of production is fundamental to understanding the feasibility of moving to a new approach to farm policy.

Market economies decide what and how much should be produced by profit and loss incentives. Market discipline dictates that firms with costs that cannot be covered by revenue will eventually leave the market, thus reducing total supply. Similarly, when revenue more than covers cost, new investment will occur to take advantage of the profit opportunity, and supply increases. By contraction and expansion of supply in response to profit incentives, markets self-correct to work towards a level of output whereby the resulting price level leaves no incentive for entry or exit.

The unique nature of agricultural markets, however, creates a situation whereby current selling prices are never at the point where there is no incentive to enter or exit.

The reasons are many, but three are the most relevant for policy. These three are variability in production, technological change, and large unexpected changes in demand.

Price Changes Caused by Production Variability

Consider variability in production first. At planting time, farmers and USDA have fairly good information about how many acres are going to be planted, which when multiplied by trend yield, results in a good estimate of expected production. But invariably, yield is either above or below trend because growing conditions vary from year to year. When yield is above trend, selling prices will tend to fall. When yield is below trend, prices will tend to rise.

Figure 5 presents one measurement of the variability in U.S. yield for corn, wheat, and cotton yields. The horizontal axis gives the percent deviation in yield per planted acre. The vertical axis shows the probability that actual yield deviation will be less than any indicated level. For example, for cotton, there is a 28% probability that yield per planted acre will be less than 90% of trend yields, and an 82% that yield will be below 110% of trend. Equivalently, there is a 72% chance that cotton yield be above 90% of trend and an 18% chance that yield will be above 110% of trend.

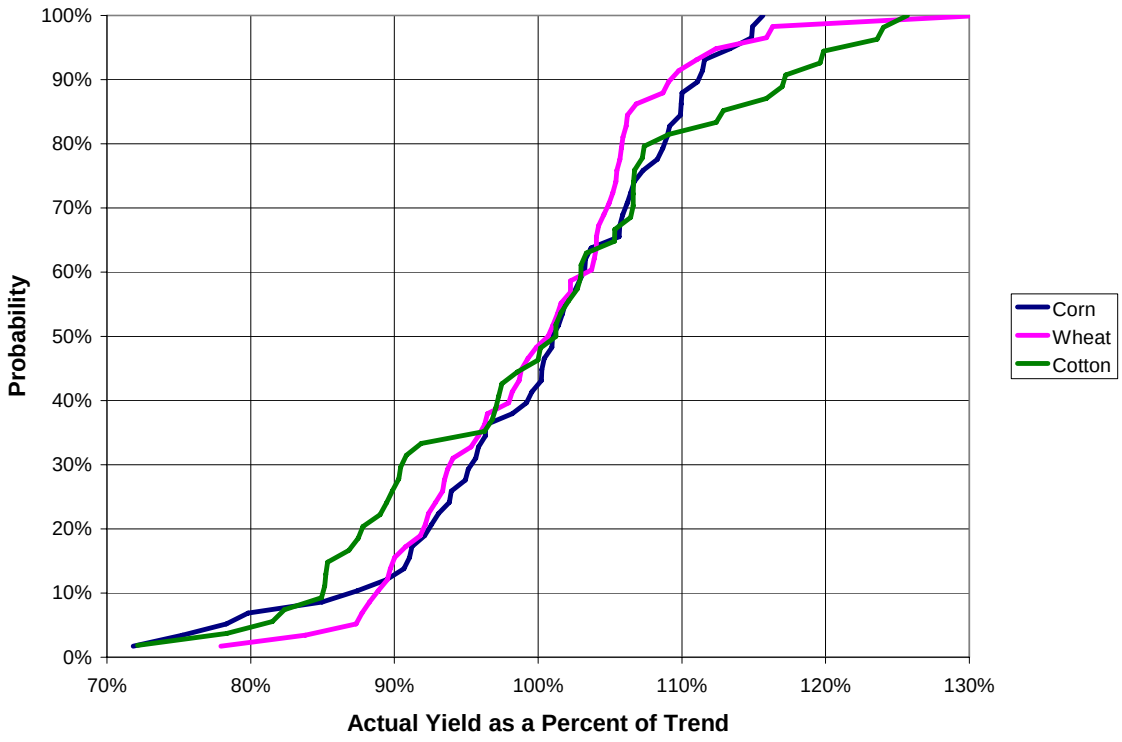

Figure 5. Cumulative Distribution of U.S. Yield per Planted Acre

Wheat and corn yields are less variable than cotton yields. For both crops, there is 13% chance that yield will be less than 90% of trend. Corn has a 12% chance of yield being at least 10% above trend, whereas wheat has an 8% chance of yield being more than 10% above trend.

The distributions in Figure 5 show that production surprises, hence price surprises, are to be expected. Consider the effects of good weather causing corn yields to jump by 10%. The short-run demand elasticities for most crops is inelastic, meaning that a 10% change in production will lead to more than a 10% change in price. For corn, the short-run elasticity (one year) is around -0.3. Thus a 10% increase in production would cause corn prices to fall by 30%. To put this size of price movement into perspective,

suppose that a farmer expected to receive $2.20 per bushel of corn. A 30% price drop would mean that the farmer would receive only $1.54 per bushel. Whereas most farmers could cover most, if not all of their non-land production costs at $2.20, few farmers could cover their costs of production at $1.54 per bushel.

Similarly, consider the current situation with wheat. Current estimates are that the 2006 national wheat yield is about 11% below trend yield. With a short-run (one year) demand elasticity of -0.3, this production surprise would be expected to drive wheat prices up by 33%. The season average price for the 2005 wheat crop was $3.40 per bushel. A 33% increase implies that the 2006 wheat crop should bring $4.52 per bushel.[2]

These examples illustrate that selling prices will normally not reflect average conditions because of significant production variability, as shown in Figure 5. This situation is in contrast to manufactured goods or other commodities, such as copper, lumber, and lean hogs where production variability is minimal. Because nobody can yet predict long-term growing conditions, this type of production, and hence price, variability is a feature of agricultural markets that will be with us for the foreseeable future. But, as can be seen by Figures 2, 3 and 4, price support levels since 1949 have typically been well above most price peaks caused by unexpected production shortfalls. Thus, justification and/or explanation for support prices above farmer selling prices must lie elsewhere.

[2]On October 12, USDA forecasted a season average wheat price of between $4.10 and $4.50 per bushel for 2006.

Impacts of Technological Change

By any measure, productivity gains in agriculture have been impressive. Figure 5 presents two measures for all of agriculture: labor productivity and total factor productivity. Labor productivity is defined as units of output per unit of labor. Total factor productivity is defined as any growth in output not accounted for by growth in input usage. As shown, labor productivity has grown much faster than total factor productivity, increasing by a factor of 9.2 from 1948 to 2002, whereas total factor productivity as increased by a factor of 2.6 over this period. This means that the United States got more than nine times as much output per unit of agricultural labor in 2002 as it did in 1948. The more rapid growth of labor productivity reflects the substitution of other inputs (seed, fertilizer, capital equipment) for labor.

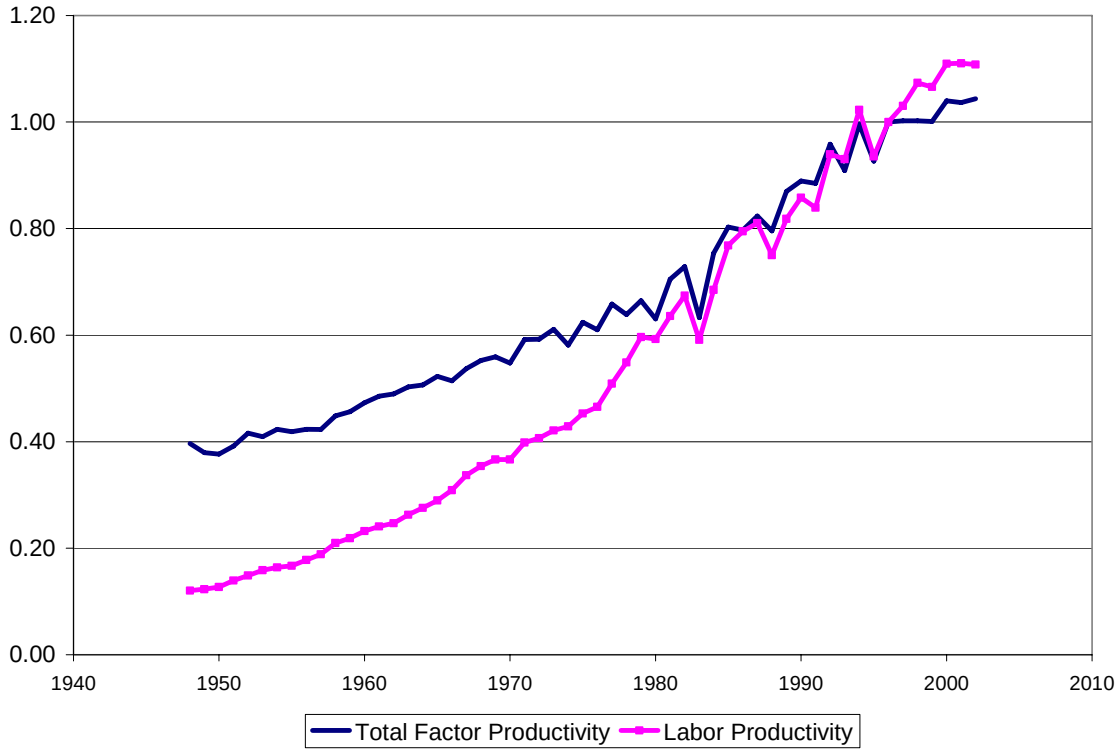

Figure 6. Agricultural Productivity Growth since 1949 (1996 = 1.00).

Source: USDA-ERS.

The increase in agricultural productivity has come about primarily from output-increasing technologies, such as improved varieties and corn hybrids, better pesticides, better livestock disease control, and improved overall crop and livestock management. As individual farmers move to adopt output-increasing technologies, aggregate production increases. Prices will fall if demand does not increase or if demand increases slower production increases.

The long, steady decline in agricultural prices that occurred from 1950 to 1972 was a direct result of increased production brought about by productivity gains. During this period average corn and wheat yields more than doubled, andd cotton yields increased by about 35%. As shown in Figures 2, 3, and 4, support levels for corn, wheat and cotton were all generally above market prices during this time. Generally, the justification given for relatively high support prices during this period was the need to buffer farm incomes from the effects of technological change on supply and, ultimately, prices.

Farmers who adopted the new technologies found that their anticipated profit gains were eroded by subsequent price declines. Many farmers who were slow to adopt found that they could not cover their production costs. Unlike temporary low prices caused by production shocks, technology-induced production yield increases are generally viewed as being permanent. There are only two ways for prices to reverse their downward trend in this situation. Farmers could to plant fewer acres or demand could unexpectedly grow faster than supply. The role of demand shocks is discussed next.

Price Changes Due to Demand Shocks

Demand for U.S. agricultural products is subject to infrequent but occasionally significant shocks. For example, from 1998 to 2001 prices were weak for almost all agricultural products. The reason why prices fell so dramatically was due to a confluence of demand factors. First, the value of the dollar rose dramatically throughout this period. This made U.S. products relatively expensive when expressed in foreign currencies, thereby decreasing their dollar value. Second, the Asian financial crises that began in Thailand in July, 1997, forced many food-importing countries to cut consumption. This reduced demand for food imports was felt by farmers around the world.

Another type of demand shock is caused by government action. President Carter's 1979 embargo on grain exports to the Soviet Union temporarily reduced the demand for U.S. grain, particularly wheat. The U.S. decision to ban imports of Canadian cattle in May 23 of 2003 because of BSE resulted in a large increase in U.S. cattle prices. High prices were tempered only by Japan's decision to ban imports of U.S. beef in December of the same year.

Demand shocks may be temporary or they may last several years. The Asian financial crises affected demand for more than three years as did the growth in demand for commodities that began in the early 1970s. But if supply is able to adjust, even long-lasting demand shocks will result in much shorter-lasting price shocks. Demand increases will eventually entice additional production, which will tend to reduce prices. Demand decreases will eventually cause a contraction in production, thereby decreasing draw in more long-lasting.

To summarize, we can expect agricultural prices to continue to be buffeted by unexpected changes in production and demand. Most production shocks cause temporary

changes in prices (although multiple year droughts can occur in the Great Plains) whereas demand shocks may move prices for multiple years. Technological innovation continues, which leads to long-run downward trending prices as supply outgrows demand. All three of these sources of price changes can result in farmers receiving prices that do not cover their production costs. When this happens, Congress has been quick to respond.

The current demand shock that may lead to a multiple-year price increase for agricultural products is the current boom in energy production from agriculture. But before we move to a discussion of how agricultural policy might best respond to this demand shock, it will be instructive to review what we have learned from previous policy interventions that have attempted to ensure that farmers receive an adequate price for their production.

Methods Used to Support Price

Although it seems reasonable to provide farmers with an adequate selling price for their production, how to do actually do it without significant unintended economic consequences has proven difficult. A review of the methods used in the past—and the lessons learned from these programs—will reveal why we have our current set of farm programs.

Voluntary Acreage Reduction Programs

It is best to start at the beginning with the Agricultural Adjustment Act of 1933. This Act was an attempt to increase the purchasing power of farm families by insuring that the prices they received for their production kept pace with the prices that they paid for goods and services used in production, including family living expenses. This approach had intuitive appeal because almost all farm families lived off what they could produce

on their farms. The approach used to raise prices was to cut supply enough to raise price to desired levels. But no government authority existed that could order a cut in supply. Furthermore, a straight trade of less production for a higher price would not have appealed to many farmers. Thus, the programs were made voluntary. Farmers were induced to join the programs though adjustment payments that they received in exchange for reducing their planted acreage.

A serious problem faced by USDA in implementing acreage reduction programs is that it cannot control or forecast what growing conditions are going to be. Hence, USDA cannot know with much certainty what price will actually be achieved for a given level of planted acreage. If yields are a bit short of anticipated levels, then price will rise a bit higher than expected. Given that the objective of acreage reduction is to increase price, a higher than expected price would not be cause for alarm. However, if yields are significantly down, and market prices rise significantly, then the acreage reduction programs of USDA may cause significant economic damage to the agricultural sector. For example, USDA programs reduced 1983 corn acreage by 26%. Dry weather reduced corn yields by 24% below trend levels. Thus USDA acreage controls were responsible for more than half the 50% drop in corn production in 1983, a year in which corn prices rose by 26%.[3]

USDA faces a problem in meeting its price objective in bumper crop years also. Unexpectedly high yields may more than offset reduced acreage, resulting in lower market prices than is targeted. USDA's solution to this problem is to guarantee farmers a minimum price for their production through nonrecourse loans. Under these programs,

[3] Large beginning year stocks kept U.S. corn prices from rising as much as would be expected from such a small corn crop.

the government makes a post-harvest loan to farmers. The loan amount equals the product of harvested production and the loan rate, which is the name given to the floor price. Collateral for the loan is the harvested production. The loans are called nonrecourse because the government has no recourse when farmers decide not to pay back the loan other than to take ownership of the farmer's crop. The program places a floor under market prices because when market prices fall below (and stay below) the loan rate, farmers will simply forfeit their crop to the government.

Nonrecourse loan programs that offer significant economic benefits to farmers are difficult to sustain over time. If the loan rate is above market-clearing price levels in most years, then farmers will benefit from the program, but stock levels will grow as government defends the loan rate by taking ownership of surplus production. Figure 7 shows that for wheat, there have been episodes since 1960 where stock levels (measured by the stocks to use ratio) have grown to truly staggering levels. For example, the early 1960s and again in the mid-1980s the United States held more than a nine-month reserve of wheat. There follow a number of possible consequences from such a buildup of stocks.

Limited upward price movement

Both the government and private traders know that these government stocks will eventually have to be sold. Private traders know that if government stocks are large, then any market rally will soon bring these stocks into the market. Thus large stock levels cap upward price movements, thereby prolonging periods of low prices.

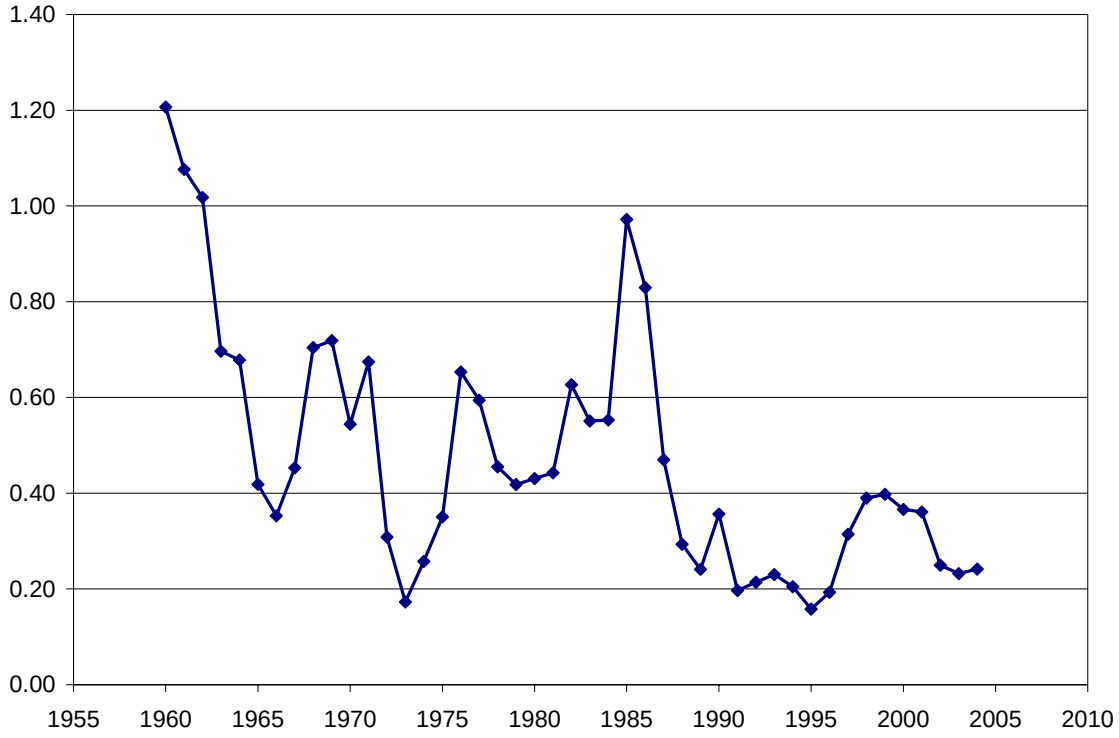

Figure 7. Stocks to Use Ratio for U.S. Wheat
(Source: Calculated from data reported in "Fact Sheet Wheat: Summary of 1999-2000Support Program and Related Information" FSA-USDA, February 2001.)

Disposal of surplus production

Government is always tempted to dispose of surplus crops in overseas markets so that negative price impacts are not as prevalent as they would be if the stocks were sold in domestic markets. But experience has shown that overseas sales of product that is also exported through commercial channels from the United States will depress domestic prices. Furthermore, current WTO trade rules do not allow sales of surplus production at "dumped" prices. And lastly, giving the surplus production away to countries that would not otherwise be U.S. customers through direct food aid often is counterproductive in that it hampers development of domestic agricultural production.

Preventing further growth in stocks

When stocks are large, USDA is faced with a dilemma. On the one hand, large stock levels means that USDA would like to cut supply by decreasing acreage through increased acreage set-asides. But such a move increases the cost to producers of joining the voluntary program because it reduces their production levels. Producers are faced with a choice. If they join the program, their production will be reduced. If they decide to leave the program, then they do not have nonrecourse loans available to them. However, producers know that if USDA continues to defend the loan rate, then they will be able to sell all their production at a price at least equal to the loan rate. That is, non-participating producers will be able to free ride on the supply reduction efforts of participating producers.

Of course, all producers who go through this calculus come to same conclusion so that nobody would have an incentive to join the program. To solve this problem, USDA has never run a "pure" acreage reduction program combined with nonrecourse loan. Rather, program participants who agree to reduce their planted acreage also qualify for additional payments. When USDA wants to induce farmers to take more land out of production then they make available "diversion" payments. Figure 8 shows that USDA generally used diversion payments when stock levels grew to burdensome levels.

The other type of additional payment that participating farmers received were "deficiency" payments. The size of these payments was inversely related to market prices. That is, when market prices were less than a target price (which were set above loan rates) then the deficiency was made up with payments. Nonparticipating farmers did not qualify for either diversion payments or deficiency payments. Hence, USDA created

a strong incentive to join the program, thereby making their acreage reduction efforts much more effective.

Foreign free riding

A further dilemma that USDA faces is that if the loan rates that are being defended are greater than market clearing prices then U.S. supply management programs may increase the prices received by producers in other countries. This unintended impact will occur if the commodity being supported is traded internationally and United States is a "large" country, in that U.S. actions influence world prices. Clearly, these conditions hold for the wheat, feed grains, dairy, tobacco, sugar, and cotton.

Figures 9, 10, and 11 show the relationship between U.S. loan rates and market prices for corn, wheat, and cotton respectively. The pattern of support is similar for all three crops. During much of the 1960s, market prices were heavily influenced by U.S. loan rates. Clearly, U.S. farm programs affected the price received by producers in other countries during this period. The commodities boom of the early 1970s sent market prices well above loan rates. During this period, U.S. farm programs had little or no influence on the prices received in other countries. If loan rates had been left at their 1960s levels, then U.S. stockholding and supply management programs would never again have had an impact on world prices.

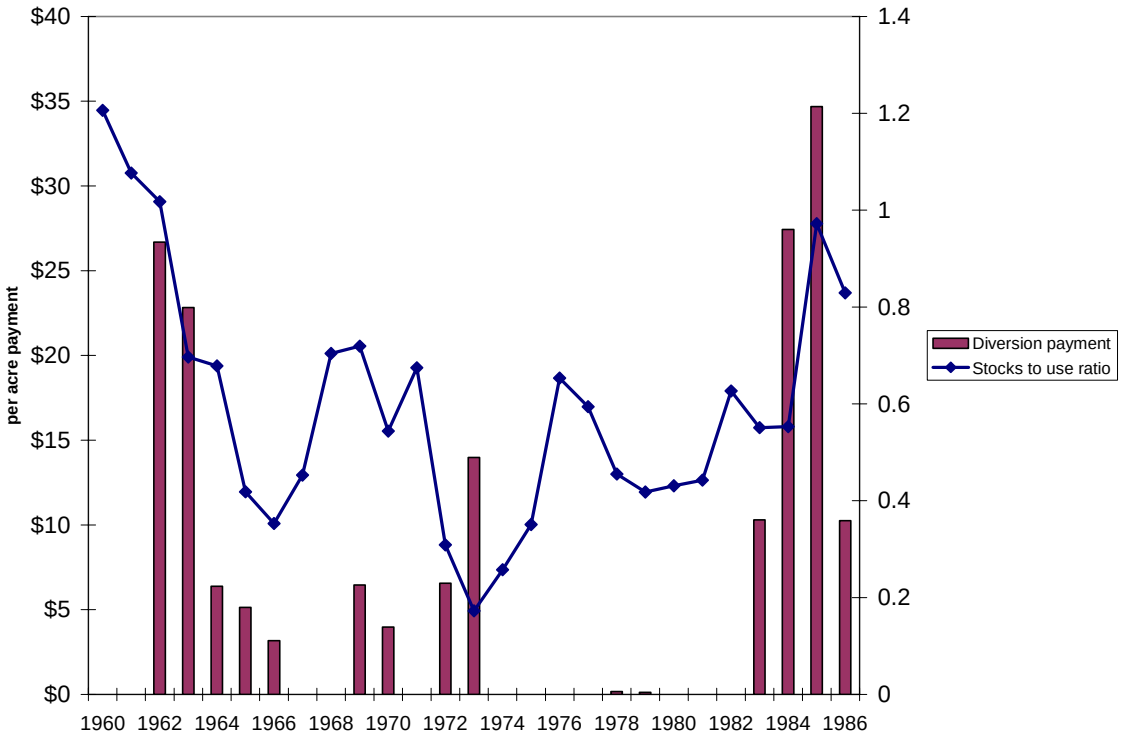

Figure 8. Relationship between wheat diversion payments and stockholdings
(Source: Calculated from data reported in "Fact Sheet Wheat: Summary of 1999-2000Support Program and Related Information" FSA-USDA, February 2001.)

But, instead, Congress dramatically increased loan rates beginning in 1974 continuing to the early 1980s. Mandated increases in loan rates for all three commodities finally caught up with market prices in 1980 and 1981. And once again, world prices were being supported by U.S. acreage reduction programs. As shown in the three figures, loan rates were dramatically reduced in 1986. These reductions were called for in the Food Security Act of 1985.

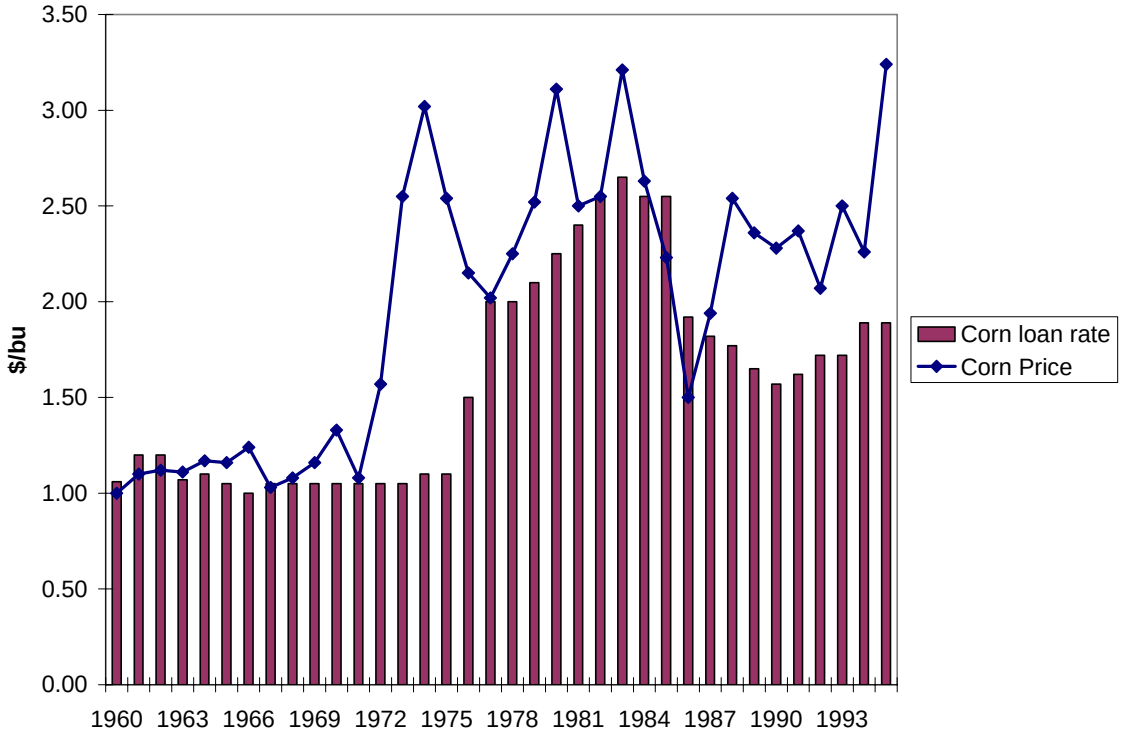

Figure 9. Wheat loan rates and market prices

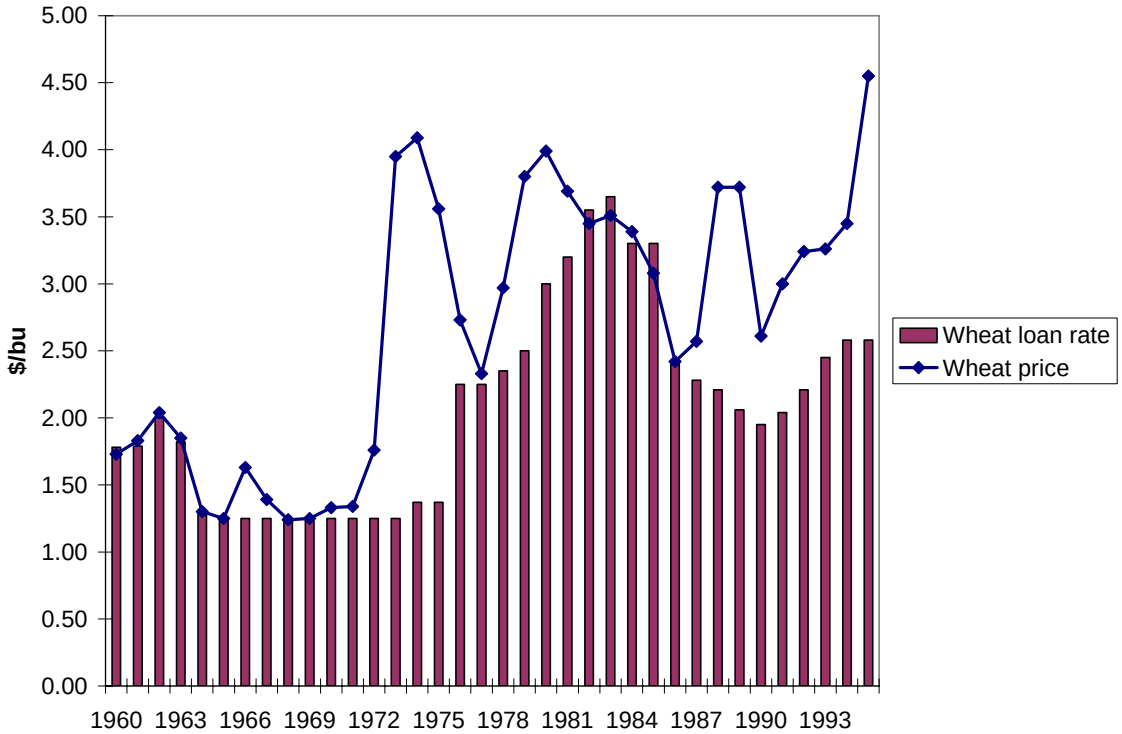

Figure 10. Wheat loan rates and market prices

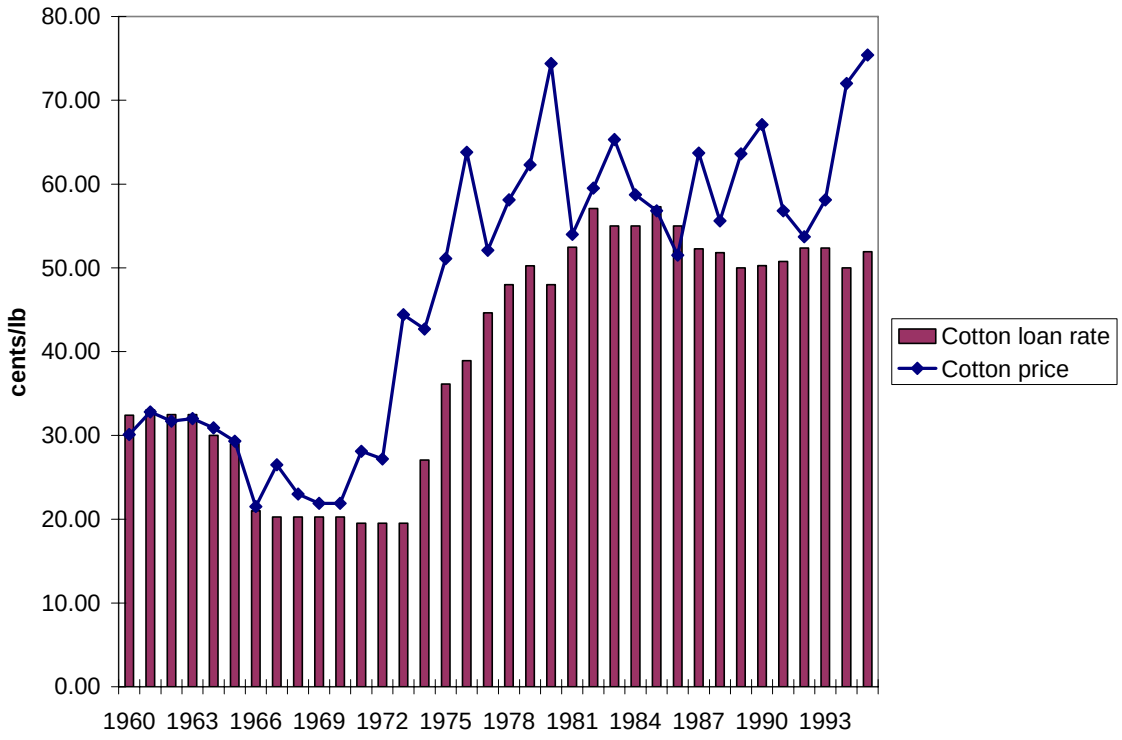

Figure 11. Cotton loan rates and market prices

When the United States is a net exporter of a supported commodity, then supply restrictions work to increase world prices because U.S. net exports will tend to fall.[4] If the U.S. is a net importer of a supported product, then attempts to support U.S. farm prices through supply control will increase world prices because U.S. net imports will increase. But increased U.S. imports of a supported commodity generally does not occur because Congress typically pairs supply control efforts with import restrictions, either tariffs of import quotas. Thus, when the U.S. is a net importer of a supported commodity, we tend to see import restrictions paired with supply control. When the U.S. is a net exporter, we tend to see exports being subsidized.

[4] Net exports might actually increase if domestic prices are held above world prices and surplus domestic production is exported with subsidies.

Mandatory Supply Control

An alternative to voluntary supply control programs is mandatory supply control. In the United States, marketing quotas for tobacco and peanuts have limited the amount of production that can be sold, thereby raising the market price directly. Unlike the voluntary acreage diversion programs, mandatory supply controls will not generally result in a buildup of unsustainable stocks of surplus products because demand at a desired price is balanced by supply that is directly controlled through marketing quotas. If a short crop in one year causes prices to be higher than desired, the following year's quota can be increased. In bumper crop years, production in excess of a quota can be stored until the following year, destroyed, or sold for a lower price in an alternative use. Again, for supply control efforts to work for imported commodities, imports must be restricted, otherwise other countries will benefit by exporting into the high price U.S. market, thereby undermining the supply control efforts.

It is difficult for supply control efforts to be successful in raising price for a long period of time because international competition will tend, over time, to increase the cost of the programs. Reductions in U.S. supply tend to drive up both domestic and world prices higher than they otherwise would be. This price increase encourages production to be higher than it otherwise would be, thereby eroding the competitiveness of the U.S. agricultural sector. Although there are still calls for Congress to give the Secretary of Agriculture the power to order cuts in production and therefore act like a CEO of agriculture,[5] most policy advocates seem to have concluded that the disadvantages of supply control outweigh the advantages.

[5] See for example, "Toward a Global Food and Agricultural Policy," written by Traci Bruckner, Michael Duffy, Neil E, Harl, Paul W. Johnson, Fred Kirschenmann, Daryll Ray, and Mark Ritchie, available at http://www.leopold.iastate.edu/pubs/staff/policy/globalag.pdf.

Marketing Loans and Deficiency Payments

An alternative approach to meeting the objective of giving farmers an adequate price without resorting to government purchases or supply control is the marketing loan. A marketing loan program differs from a nonrecourse loan program in how it meets the objective of guaranteeing price. With nonrecourse loans, producers have to put their harvested production under loan, that is, they must fill out a loan application and take a loan from the government. If market price does not rise above the loan rate during the loan period, then the producer does not pay back the loan. Rather the crop as collateral if forfeited to the government.

Marketing loans differ from standard nonrecourse loan programs in two ways. First, a producer still has the option of taking out a loan from the government at harvest, pledging harvested production as collateral. But under a marketing loan program, if market price does not rise above the loan rate during the loan period, the producer can choose to either forfeit the crop or repay the loan at the so-called loan repayment rate. The producer will choose to pay back the loan at the repayment rate if the market price is greater than the repayment rate because the producer can pocket the difference between the two. If the repayment rate is greater than the market price, then the producer will forfeit the crop. An example will illustrate.

Suppose a corn farmer took out a loan at harvest at the loan rate of $2.00 per bushel. It is now July, and the loan period is coming to an end and the market price has remained below $2.00 since harvest. The market price for corn at the farmer's local elevator is $1.50 per bushel. If the loan repayment rate is $1.60 per bushel, and the farmer chooses to forfeit the crop to the government, the farmer will receive $2.00 per bushel (ignoring interest and storage costs). If the farmer chooses to repay the loan at

$1.60 per bushel, the farmer receives a marketing loan gain of $0.40 per bushel (the difference between the loan rate and the repayment rate) and then the farmer markets the crop at $1.50 for a net price of $1.90. Clearly, the farmer has a $0.10 per bushel incentive to forfeit the crop.

Now suppose the loan repayment rate is $1.40 per bushel. The farmer could still choose to forfeit the crop, netting the $2.00 loan rate. But now, if the farmer chooses to repay the loan at $1.40, the producer will net $2.10 per bushel: a marketing loan gain of $0.60 and a selling price of $1.50. The producer now has a $0.10 per bushel incentive to repay the loan and market the crop. This example shows that marketing loans give USDA the choice of encouraging farmers to forfeit their crops to the government or to market their crops. But marketing loans give farmers the choice of not even taking out a loan.

At any time after harvest, if market price is below the loan rate, farmers can choose to either take out a loan from the government or simply take a payment equal to the product of harvested production and the difference between the loan rate and the loan repayment rate. That is, it is as if the farmer takes out a loan at the loan rate and then immediately pays back the loan at the loan repayment rate. This payment is called a loan deficiency payment (LDP). If the loan repayment rate (also called the posted county price) equals the local cash price, and the farmer chooses to market the crop when the LDP is received, then the farmer nets the loan rate as a market price at harvest.

One advantage of marketing loan programs is that it allows USDA to guarantee that farmers receive at least the loan rate for their crop without the need for government to actually take possession of crops. This means that market prices are free to adjust downward to clear domestic and international markets. Thus in bumper crop years,

market prices are free to fall to whatever level is needed to balance supply and demand. In short crop years, market prices will rise to higher levels because traders know that there are no government stocks that are waiting to be sold. Of course, one disadvantage of marketing loan programs is that Treasury outlays can be much greater than under nonrecourse loans. That is, under marketing loan programs, direct checks from the Federal government substitute for government purchases of crops. For example, for the 2005 crop year, corn farmers received almost $5 billion in loan deficiency payments and marketing loan gains. Corn farmers received almost $4 billion in 2004.

Payments that make up the difference between a desired price level and actual price levels have existed since the 1960s. Although LDPs have existed only since the 1990 Farm Bill, deficiency payments, which compensated farmers for drops in market prices below a target price, existed since the 1970s. They were first advocated by President Truman's Secretary of Agriculture Charles F. Brannan. Experience with excessive stock buildup in the 1960s caused by technological change and the production incentives caused by high support prices, Congress adopted deficiency payments as a way to protect target prices without government purchases. The use of deficiency payments gave Congress enough confidence to adopt the marketing loan programs as a means of protecting the loan rate without the need for government purchases.

Demand Enhancement

The last method that can be used to raise farm prices is to increase demand. Policy-induced demand enhancement for agricultural output is difficult because government has little control over industries that process raw agricultural products. The programs that the U.S. government has used in the past to increase demand are quite limited. Food demand

can be marginally increased by nutrition programs that increase the purchasing power of low income families. Direct export subsidies have been used periodically in the past to increase the demand for U.S. agricultural products, including wheat and dairy products. Cotton demand has been increased by paying domestic and foreign mills to buy U.S. cotton. Marketing and promotion programs have been used to enhance the image of U.S. products abroad. It is probably fair to say that with the possible exception of some isolated marketing campaigns, that none of these efforts have resulted in sustained increase in the price for any U.S. agricultural product.

However, one effort to increase demand has resulted in a significant increase in demand for corn. This is the partial fuel tax exemption that was first given to ethanol in 1978 with passage of the Energy Tax Act. Although there have been various changes to this tax exemption since then, this change in the tax code gave investors an incentive to build ethanol plants. By 1995 approximately 1.5 billion gallons of ethanol, using 500 million bushels of corn, were being produced. While this level of corn utilization did not have a large impact on corn prices, what it did do was allow potential corn refiners to learn how to efficiently convert corn to ethanol. When oil prices took off in 2003 and 2004, the profitability of ethanol production increased dramatically and the ethanol industry had the technical, management, and financial skills to immediately ramp up production. Approximately 4.5 billion gallons of ethanol will be produced in 2006. This represents 1.5 billion bushels of corn, or about 13.5% of the 2005 U.S. corn crop. Without this extra demand, U.S. corn prices would be significantly lower than they currently are. To the extent that corn production is also higher because of ethanol demand, crop acreage of other crops, notably soybeans and wheat, are lower than they

otherwise would be. Thus, current soybean and wheat prices are also being bolstered by the growth in demand for corn from ethanol.

Recent Agricultural Policy Choices

Today's agricultural commodity programs are a result of many factors. Perhaps the most important are Congress' experience with previous programs and opportunistic behavior by farmers and their Congressional supporters. As discussed earlier, Congress lost a chance to make price supports irrelevant when loan rates and target prices were dramatically increased from 1974 to 1983 (see figures 1, 2 and 3). The resulting unsustainable buildup in stock levels led to a dramatic change with the 1985 Farm Bill. As shown in Figures 9, 10, and 11, the first change was that loan rates were dramatically decreased. This decrease made U.S. farm programs much less important in determining world price levels, and combined with a large increase in acreage set-asides allowed U.S. stock levels to return to more sustainable levels. But just lowering the loan rate was not enough because high target prices would continue to encourage production. The other important policy change was to make deficiency payments much less coupled to current production levels by basing them on historical acreage and yield rather than current acreage and yield. This move to decoupling and lower loan rates increased the role that market prices played in determining farmers' acreage decisions.

The 1990 Farm Bill continued this move to decoupling by freezing farmers' base yield and acreage levels and by allowing farmers more flexibility in deciding what crops to grow without a fear of losing their base acreage. USDA continued to implement acreage reductions when it was felt that program costs or stock levels would be too high.[6]

[6] USDA reduced acreage in 1995, a move which exacerbated the price spike in 1996 caused by short crops and increased foreign demand for food wheat, corn and soybeans.

Opportunistic behavior brought a large change in farm programs with the 1996 Farm Bill. High commodity prices in late 1995 and 1996 meant that farmers were not going to receive government payments in 1996. The outlook for continued high prices through at least 1997 meant that continuation of current farm programs would mean very little support for farmers for perhaps the life of the farm bill unless a change was made.

Coincident with consideration of a new farm bill was the takeover of the House of Representatives by Newt Gingrich and the Republicans. They took over on a platform of decreasing government control of the economy. One of their most-used examples of government control was farm programs with their concepts of base acres and centrally-planned supply control efforts. Their rallying cry was to allow farmers to be free to farm how they wanted without interference from government.

An unbeatable coalition was created once farm groups became aware of the negative impact that strong prices would have on their ability to garner payments. Advocates of free markets combined with traditional farm supporters to pass the 1996 Farm Bill. Marketing loans were passed for all crops so that government would be out of the business of holding stocks. Authority for USDA to reduce acreage was rescinded. And farmers were assured of payments by replacing deficiency payments with fixed, decoupled payments, called Agricultural Marketing Transition Act (AMTA) payments, AMTA payments were touted by free-market advocates as weaning farmers away from government support, “transitioning” them to an era of free markets. Smart farm supporters saw them for what they were: a means of obtaining payments when none would have otherwise been forthcoming.

The dramatic decrease in crop prices in the late 1990s showed just how smart traditional agricultural groups actually were. Instead of allowing the pain of low prices to wean farmers from government subsidies, farm supporters obtained a 50% increase in AMTA payments in 1998 and a doubling of AMTA payments in 1999, 2000, and 2001 to compensate them for low prices.

Opportunistic behavior once again played a major role in the 2002 farm bill. Everybody knew that future budget surpluses, which looked so assured in 2000 and early 2001, had vanished in mid to late 2001 with the bursting of the tech bubble and the 9/11 attacks. But the House and Senate Agricultural Committees had garnered a large increase in baseline budget authority for the 2002 Farm Bill. The large increase in budget allowed Congress to implement a new program in 2002. The old deficiency payment program was brought back under a new name: countercyclical payments. These payments are made whenever market price falls below the effective target price, which is defined as the target price minus the direct payment rate. Direct payments replaced AMTA payments. Thus the 2002 Farm Bill is quite similar to the 1990 Farm Bill in terms of the total amount of support given to agriculture (see figures 1, 2 and 3). But, the two farm bills differ in three important ways. First direct payments replace a portion of deficiency payments. Second, USDA has no mechanism to control production.[7] And third, commodity loan programs have been converted to marketing loan programs with forfeitures kept to a minimum by concerted USDA efforts to keep loan repayment rates below local market prices.

[7] With the tobacco buyout program and the end of peanut marketing quotas, USDA now has no authority to control agricultural production.

There is another large difference in today's programs versus 1990 programs. Today, a greatly expanded crop insurance program joins direct payments, countercyclical payments, marketing loan programs to crate a much more effective safety net than farmers had in the early 1990s. Total liability in 1993 from crop insurance was about $11 billion. Today it is $50 billion. Total premium in 1993 was $755 million. Today it is $4.6 billion. 84 million acres were insured in 1993 versus 241 million today. So as Congress moves towards consideration of a new farm bill, some might say that the amount of support that farmers are receiving today through a combination of Title I of the farm bill program and through the crop insurance programs administered by USDA's Risk Management Agency is greater now than it has ever been. However, it may be that Congress and farm groups are facing a similar situation to that faced in late 1995: keeping current farm programs in place may result in no payments for corn, soybeans, and wheat other than direct payments. The reason is that prices are projected to the strong for all three commodities because of the current ethanol boom.

Biofuels Demand Shock

Crude oil prices of over $40 per barrel make corn ethanol production profitable. $70 crude oil prices make ethanol production hugely profitable. The ethanol industry has learned how to efficiently produce ethanol from corn when crude oil prices were in the $20 range. Thus it should have been no surprise how quickly the industry responded to high crude oil prices.

Professor Robert Wisner is among those who are tracking the number of ethanol plants which are online, under construction, or in the planning phase. Iowa is the center of current and new construction. Figure 12 shows Professor Wisner's map of the location

and corn area for current and planned ethanol plants in Iowa as of August 15, 2006. Figure 13 shows the same for the entire United States.

Acccording to Professor Wisner, if all plants that are in the planning stages and that are under construction are actually built, then the United States will have the capacity to produce at least 18 million gallons of ethanol, using six billion bushels of corn by 2012, a year that will be governed by the next farm bill.

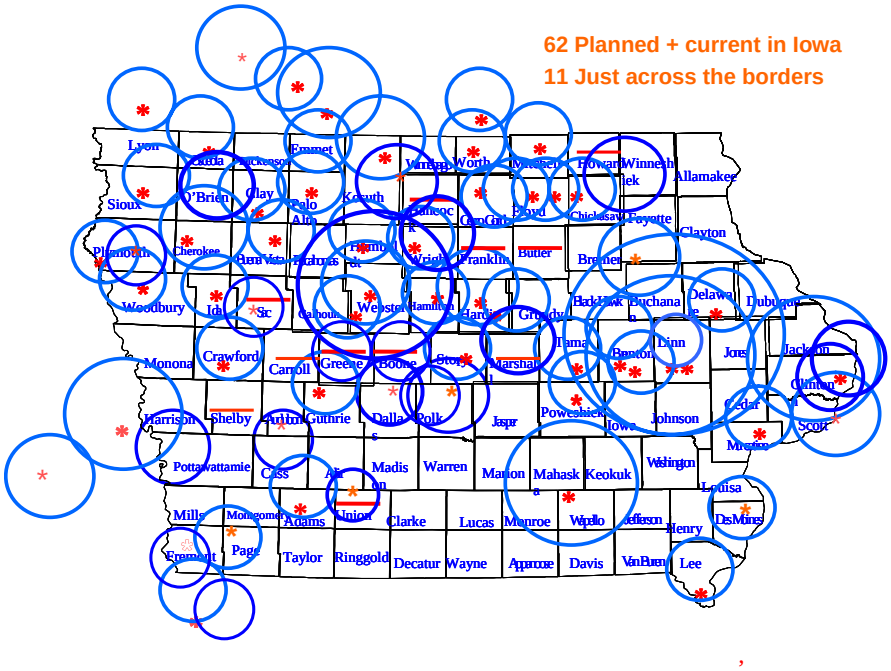

Figure 12. Planned and Current Iowa Ethanol Plants

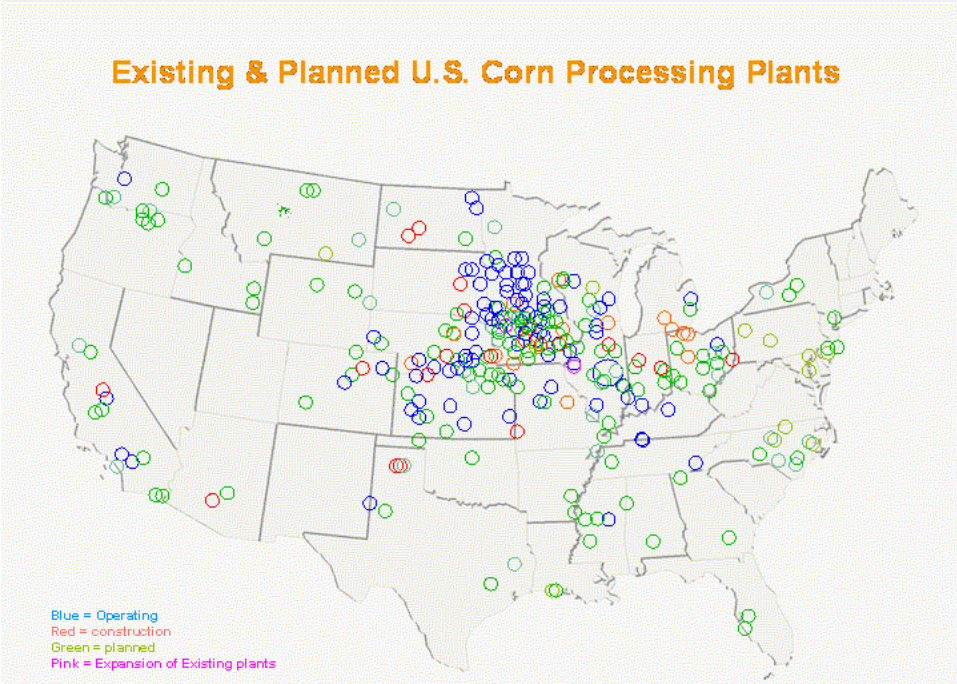

Figure 13. Planned and Current U.S. Ethanol Plants

Currently, if yield growth does not accelerate, and if acreage stays fixed at 2006 levels, then the United States is expected to produce 11.6 billion bushels of corn in 2012. If all other uses stay the same (feed, food, sweetener, seed, and exports), then the United States will fall 3.75 billion bushels short of corn in 2012. This means that if all other uses are to remain constant, then U.S. corn acreage must increase by approximately 26 million acres, or by 32.5% over 2006 acreage levels. If the supply elasticity of corn is 0.3, then this implies that price will have about double from current levels in order for corn acreage to increase by this much.

Of course, if corn prices were to rise by this amount, other uses, notably exports, would not remain constant. Given adjustments in these others uses, it is reasonable to

expect that corn acreage will increase by as much as 20 million acres by 2012.[8] These acres will have to come from a combination of other crop acreage, CRP acreage, and land that is otherwise not being tilled, in that order of importance. If more corn is to be planted, fewer acres of soybeans, wheat, and cotton will be planted. Lower production of these crops will increase their market prices above the levels they otherwise would be.

Futures markets are already reflecting the need for higher corn prices in the future. New crop futures contracts for 2007, 2008, and 2009, are currently trading at $3.28, $3.17, and $3.17 per bushel for corn. The only time that corn futures have traded at these levels is when we have been coming out of short crop years. But we have had three straight years (2004 – 2006) of bumper crops. New crop wheat futures are trading on the Chicago Broad of Trade at $4.66, $4.53, and $4.53 per bushel for the next three years. New crop soybean futures are at $6.58 and $6.59 per bushel for 2007 and 2008. Traders know that more corn will be needed to run the ethanol plants and that the additional corn acreage will reduce the supply of wheat and soybeans.

The implications of this run-up in commodity prices on the 2007 Farm Bill debate is obvious. If these futures prices give an accurate portrayal of what price levels will be through the next farm bill then current commodity programs (except for the direct payment program) will not result in any payments for farmers.[9]

[8] If crude oil prices drop below $50 per barrel, then the need for additional corn acres will fall.
[9] Policy analysts and observers are rapidly coming to the same conclusion. For example, the Food and Agricultural Policy Research Institute (FAPRI) recently released updated baseline projections in which they project no payments (other than direct payments) for corn, soybean, and wheat producers through 2011. See "FAPRI July 2006 Baseline Update for U.S. Agricultural Markets." FAPRI-UMC Report #12-06.

Implications for the 2007 Farm Bill

Although nobody can predict with certainty what price levels are likely to occur over the period covered by the 2007 Farm Bill, there is little doubt that prices will higher than that which occurred in the first four years of the 2002 Farm Bill. Table 1 shows the season average prices for major crops from 2002 to 2005. As shown, cotton prices have been quite weak, with the exception of 2003. Feed grain prices in 2002 and 2003 were above levels that would trigger significant program payments. They would have stayed at these levels were it not for the consecutive bumper corn crops in 2004 and 2005. Wheat and soybean prices have been above levels that would generate significant payments throughout the period, whereas rice prices have been low enough to generate significant payments. Payments generated by the marketing loan programs for these crops are reported in Table 2. Countercyclical payments are shown in Table 3 and direct payments are shown in Table 4.

Table 1. Season average prices for major crops.

	Corn	Wheat	Rice	Soybeans	Grain Sorghum	Barley	Cotton
Year	($/bu)	($/bu)	($/cwt)	($/bu)	($/bu)	($/bu)	($/lb)
2002	2.32	3.56	4.49	5.53	2.32	2.72	0.45
2003	2.42	3.40	8.08	7.34	2.39	2.83	0.62
2004	2.06	3.40	7.33	5.74	1.79	2.48	0.42
2005	2.00	3.42	7.62	5.66	1.69	2.45	0.48

Table 2. LDP/Marketing Loan Gains for Major Crops

	Corn	Wheat	Rice	Soybeans	Grain Sorghum	Barley	Cotton	Total
Year				$ Million				
2002	16	16	707	16	3	4	833	1595
2003	78	90	503	1	13	1	154	839
2004	2944	85	135	299	127	83	1740	5412
2005	4609	16	134	28	147	49	1206	6189
Average	1912	52	370	86	72	34	983	3509

Table 3. Countercyclical Payments for Major Crops

	Corn	Wheat	Rice	Soybeans	Grain Sorghum	Barley	Cotton	Total
Year				$ Million				
2002	0	0	322	0	0	0	1373	1695
2003	0	0	14	0	0	0	393	407
2004	2449	0	160	0	159	54	1373	4195
2005	2955	0	74	0	159	54	1373	4616
Average	1351	0	143	0	80	27	1128	2728

As shown, both marketing loan and countercyclical payments are inversely related to price. When price is low, payments are high. Prices have been too high for soybeans and wheat producers to obtain any countercyclical payments and quite modest marketing loan payments. The increase in cotton prices in 2003 reduced cotton payment substantially, but a return to low cotton prices in 2004 and 2005 increased payments again. Ironically, it was bumper corn crops that triggered significant corn payments in 2004 and 2005. Corn producers had many bushels to sale and they obtained large government payments as well. The lack of payments countercyclical payments to wheat

and soybean growers help explain why these groups are calling for higher wheat and soybean target prices.

Table 4 shows that elimination of direct payments, if accompanied by a drop in target prices, would generate more than $5 billion in annual savings. However, if direct payments were eliminated by reducing the direct payment rate to zero, then this would increase countercyclical payments because the effective target price would increase. Thus, to generate the $5 billion in savings would require a reduction in target prices equal to current direct payment rates.

Table 4. Annual Direct Payments under the 2002 Farm Bill

Corn	Wheat	Rice	Soybeans	Grain Sorghum	Barley	Cotton	Total
			$ Million				
2117	1152	434	608	202	86	646	5245

Source: Calculated from payment rates, payment yields, and base acres reported in "2006 Agricultural Outlook," Food and Agricultural Policy Research Institute. Available at http://www.fapri.iastate.edu/outlook2006/ .

If a new value-added incentive program that would provide farmers no-interest loans to invest in local value-added enterprises, then the savings would not total $5 billion. Presumably, there would be funds spent on defaulted loans and on the interest rate subsidy. But establishment of a revolving account whereby farmers (or even other rural residents) could take out no-interest loans to invest in rural communities would have a far larger impact on rural economic development than would the direct payment program. In essence, a revolving account would lend money for investment. As those investments paid off, the loan would be paid off. By acting as a value-added bank, money that used to go largely to absentee landlords would instead be targeted to development of rural businesses. The ultimate cost in terms of interest subsidy and

defaulted loans would likely be modest and would depend on the stringency with which loans were reviewed.

Payments across all crops have averaged about $11.5 billion per year, as shown in Table 5. About 70% of payments have gone to corn and cotton producers. Wheat producers received another 10.5%, rice producers 8%, and soybeans producers received 6%. If Congress were to eliminate direct payments by setting the direct payment rate to zero and then dropping the target price by the amount of the direct payment rate, then program expenditures for the period 2008 to 2013 would drop significantly below the levels reported in Table 5. How much they would drop depends on what commodity prices will do during this period.

Table 5. Total Farm Bill Payments 2002 to 2005

Year	Corn	Wheat	Rice	Soybeans	Grain Sorghum	Barley	Cotton	Total
				$ million				
2002	2133	1168	1463	624	205	90	2852	8535
2003	2195	1242	951	609	215	87	1193	6490
2004	7510	1237	729	907	489	223	3758	14852
2005	9682	1168	642	636	508	189	3225	16050
Average	5380	1204	946	694	354	147	2757	11482

Forces Working to Increase Farm Commodity Prices

With ethanol, investors have found an arbitrage opportunity. At current prices for gasoline, natural gas, corn, distillers grains, and with the 51-cent partial fuel tax exemption for ethanol, there is money to be made producing ethanol. Investment in ethanol capacity will continue until the arbitrage opportunity is eliminated, which will occur only when the price of corn is bid up to the point where investment in ethanol will

stop. The corn price at which this occurs depends on whether there are sufficient flex-fuel vehicles on the road and on the price of gasoline. With sufficient flex fuel cars, this price is about $4.00 per bushel of corn. At this price we are likely to be producing more than 30 billion gallons of ethanol from corn annually and we will be producing corn on more than 100 million acres.

At $4.00 corn, agriculture will look significantly different that what it looks like today. Other feed grain prices that are used as a substitute for corn in feed rations will also increase significantly as livestock feeders bid their prices up in response to higher corn prices. Wheat prices too should be boosted by high corn prices. High corn prices will put a higher floor under wheat prices in years of bumper wheat crops as wheat will be competitive as feed wheat at a higher price. The ethanol boom will have less impact on rice and cotton because these two crops do not directly compete with corn for either acreage or market share. Thus there is no reason to believe that high corn prices will really impact rice and cotton prices much at all.

What will happen to soybean prices is more difficult to determine. Most of the increased corn acreage will come within the Corn Belt as farmers switch from a corn soybean rotation to a corn-corn-soybean rotation. The decrease in soybean acreage should tend to increase soybean prices. But the large increase in distillers grains as a byproduct of ethanol production will act as a substitute for protein meal, a market that is dominated by soybean meal. This will tend to reduce the demand for soybean meal, hence soybean prices. On the other hand, the demand of vegetable oils will increase as U.S. biodiesel production ramps up. It seems that over the next five years, the United State will have relatively abundant sources of a vegetable protein but relatively short

supplies of carbohydrates and oils. Thus it is not readily apparent what will happen to soybean prices, particularly with the uncertainties about future production increases in South America.

What will happen to land in the Conservation Reserve Program, the Grassland Reserve Program, and the Wetlands Reserve Program is an open question. Higher commodity prices increase the likelihood that landowners will not renew contracts when they expire. Increased funding for these programs will be needed to allow government to compete for these lands. A ready source of increased funding could come from the expected savings from commodity title programs. That is, the high prices that are a source of threat to land conservation programs could be the source of funds needed to insure that sensitive lands are no returned to production. Justification for a transfer of funds from commodities to conservation is that the main driver of higher prices is the ethanol boom that is being fueled by a government tax exemption. That is, if government policy is the source of higher commodity prices, it would seem to make sense to counteract its possible negative environmental impacts with increased funding for conservation.

To summarize, over the period 2008 to 2013, the large increase in ethanol capacity will put upward pressure on corn prices, other feed grain prices, and to a lesser extent, on wheat prices. Soybean prices are less certain.

Impact on Program Payments

The most likely price scenario is such that if the current target programs are extended with current target prices and direct payments then the only producers who will receive countercyclical and marketing loan payments will be cotton and rice producers. If we set

cotton and rice payments at their average amount from 2002 to 2005, then the sum of countercyclical and marketing loan payments would decline by 58% over the average level paid out over 2002 to 2005. If direct payment are also eliminated, but cotton and rice marketing loan and countercyclical payments are maintained, then program payments would be reduced by 73%.

Although current futures prices suggest that high corn, soybean, and wheat prices are expected to be with us through the 2008 crop year, there is no assurance that these high prices will materialize. A more conservative price projection was made by the Food and Agricultural Policy Research Institute in July of 2006[10]. Estimates of average LDP and CCP payments using this price projection for the first three crop years to be covered by the 2007 Farm Bill are reported in Table 6. These estimates are made using stochastic methods, which means that the average price across many simulated prices will be equal to the baseline prices reported in Table 6. When price is much below the baseline price, then payments will be made. When prices are much higher then the baseline price, then no payments will be made. The payment levels reported in Table 6 are the average across all simulated prices.

An alternative measure of the savings that will accrue from higher prices can be made based on this more conservative price path. The average of the annual payments in Table 6 equals $4.2 billion. This is 30% below the average annual level of marketing loan and countercyclical payments for these five crops from 2002 to 2005. If we also eliminate direct payments, then program costs would be reduce by 62%.

[10] FAPRI July 2006 Baseline Update for U.S. Agricultural Markets
FAPRI-UMC Report #12-06

Table 6. Estimated Program Payments Using Updated FAPRI Baseline Projections from July 2006 (all payments are in millions of dollars)

		Crop Year		
		2008	2009	2010
Corn	Price ($/bu)	2.58	2.61	2.64
	LDP	400	360	330
	CCP	570	520	480
	Sum	970	880	810
Wheat	Price ($/bu)	3.7	3.74	3.76
	LDP	114	102	97
	CCP	232	212	202
	Sum	346	314	299
Cotton	Price ($/lb)	0.55	0.56	0.56
	LDP	688	648	657
	CCP	921	884	884
	Sum	1609	1532	1540
Soybeans	Price ($/bu)	5.72	5.8	5.88
	LDP	847	770	698
	CCP	167	152	138
	Sum	1014	922	836
Rice	Price ($/cwt)	7.24	7.52	7.77
	LDP	372	332	299
	CCP	182	163	148
	Sum	553	495	447

Of course, commodity prices cannot be forecasted accurately. Cotton and rice prices could be much higher than past levels from 2002 to 2005, which would mean an even larger reduction in payments. Congress could change the law granting the fuel tax exemption to ethanol, which would dramatically reduce the prices of corn, soybeans, other feed grains, and wheat. Or a breakthrough in cellulosic ethanol technology could mean that corn would not longer be the low-cost feedstock for ethanol plants could similarly reduce prices. But, if current ethanol policies stay in place and if there are no

sudden technological breakthroughs, then program payments are likely to fall dramatically.

Choices for a New Farm Bill

Extend the 2002 Farm Bill

For all the domestic and international criticism aimed at the 2002 farm bill, extension of its commodity provisions would represent a move to a free-market program regime for corn, other feed grains, soybeans, and wheat. Maintenance of current effective target prices and loan rates would also give Congress and farmers assurance that a repeat of the late 1990s could not occur. Elimination of the deficiency payment program in 1996 left only the nonrecourse loan program and AMTA (Agricultural Market Transition Act) payments to cushion the blow of low prices. Congress felt that this was an inadequate cushion and passed emergency payments beginning in 1998 and made permanent this level of support with the countercyclical payment program in 2002. Maintenance of current programs at current target prices would mean that if prices were to return to the low levels of the late 1990s, then farmers would be assured of large payments.

Depending on the intricacies of budget scoring, holding the line on target prices could free up funds for use in other areas of the farm bill, such as conservation, research, energy, nutrition, and rural development, where a good case can be made for spending scarce public funds on programs that serve broad public interests. Currently the most vocal advocate for extension of current provisions of the farm bill is the American Farm Bureau Federation.

Raise Target Prices

An alternative to simply extending current provisions is to keep current programs but to "rebalance" target prices. Soybean and wheat growers have received almost no support from countercyclical payments since this program's inception, and corn farmers should not expect to see any support for the next few years. But rice and cotton producers likely will continue to receive both marketing loans and countercyclical payments.

Already, the National Association of Wheat Growers is advocating a 24 percent increase in the wheat target price. The two justifications they give for this proposed increase are that the current target price is too low given current market prices and that wheat farmers have simply not received their fair share of payments. The American Soybean Association in an October 12 press release asks "Congress to correct inequities under the current Farm Bill where target prices for oilseed crops are disproportionately low compared to other program crops."

An increase in target prices would reduce available funding for conservation and rural development. A fundamental question that should be addressed before target prices are raised is whether such an increase would increase the incentive for landowners to take their land out of land conservation programs. If so, then supporters of conservation programs will undoubtedly argue that there is no justification for increasing target prices solely because market prices are too high for some crops particularly when the source of the market-price increase is a government program originally designed to raise market prices, i.e. the fuel tax exemption for ethanol. That is, farmers would be essentially "double-dipping" because they would be receiving the financial benefits of higher prices while also receiving government payments made possible by increased target prices that are justified because market prices are too high.

Improve the Farm Safety Net

The biggest source of financial stress corn, wheat and soybean producers since passage of the 2002 farm bill has been low yields caused by multi-year drought, not low prices. The National Wheat Growers Association has justified its call for higher direct payments and target prices in part because of losses from drought. Furthermore, legislators from wheat country have been the strongest advocates of a new disaster assistance program. The growing support for yet another disaster assistance program is evidence that Congress has been unsuccessful in its attempt to subsidized crop insurance the centerpiece of a farm safety net. Despite billions of dollars in premium subsidies, billions of dollars subsidizing agent commissions, and billions of dollars subsidizing the risk-taking of crop insurance companies, Congress seems poised to spend billions more on some sort of disaster package.

The third alternative approach that Congress could take with the 2007 farm bill is to change farm programs to eliminate any holes in the farm safety net. There are three such holes that could be filled: uninsured acreage, the large deductible, and the impacts of multi-year losses on crop insurance guarantees.

Uninsured acreage could be remedied by simply extending insurance protection to all who desire it by making it part of the farm bill. High deductibles are necessary in a crop insurance program because they discourage cheating. However, the most popular crop insurance program among Illinois corn producers in 2006, Group Risk Income Protection (GRIP) has low deductibles because it insures county revenue rather than farm revenue. Also, because GRIP bases its guarantee levels on long-term trend yields, two or

three consecutive years of low yields in a county have no impact on a farmer's guarantees.

A farm policy that simply gave a GRIP-style policy to producers would thus provide the basis for a sound safety net that would eliminate any economic justification for disaster assistance programs. The cost of giving GRIP to producers would be relatively modest compared to running GRIP through the crop insurance program. On a per-acre basis, taxpayers currently support GRIP in the crop insurance program with subsidies to premiums, delivery costs, and reinsurance costs at such a level that farmers could be given a GRIP-based policy at the 94 percent coverage level in the farm bill at an equivalent cost. If this were done, then the one remaining safety net hole would be variations in farm yield not reflected in county yields, also called yield basis risk. This remaining risk could be largely covered by new crop insurance products offered by crop insurance companies.

A growing number of groups, including the American Farmland Trust and the Chicago Council on Global Affairs, advocate reform of farm policy around some sort of revenue insurance program. Somewhat surprisingly, the National Corn Growers Association is also considering supporting this kind of reform. The corn growers' proposal in addition to a GRIP-style program also includes a program that is designed to cover yield basis risk. The program would provide net revenue coverage on a crop specific basis that would be designed to be reported to the World Trade Organization as green box support, i.e. support that does not distort trade.