Testimony of
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Subcommittee for General Farm Commodities and Risk Management
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U.S. AGRICULTURAL POLICY AT A CROSSROADS

Mr. Chairman, members of the Subcommittee, thank you for the invitation and opportunity to present to you my views on the future of federal farm policy.

Overview

U.S. farm policy is at a crossroads. Changes in the structure of the U.S. farm sector have undermined the historic federal policy objectives of managing prices in an attempt to provide farmers with reliable income levels and consumers with reliable supplies of farm products. The farm sector is approaching economic equilibrium with the rest of the U.S. economy as evidenced by the dramatic slowing since 1990 of the rate at which labor is existing farming. Furthermore, since 1996, average farm household income consistently has exceeded the average of non-farm households. The justification for transferring taxpayers' funds to farmers to raise their income is questionable. Therefore, what is the appropriate role for government in assisting U.S. farmers?

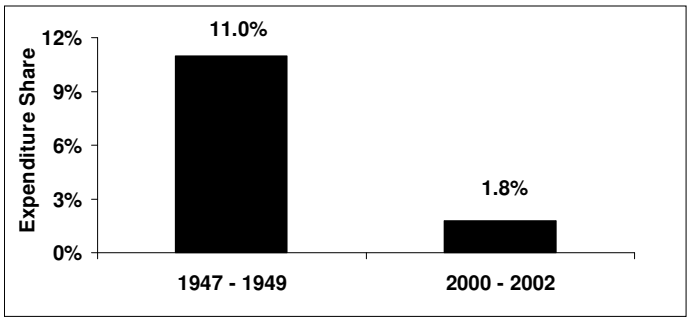
Farming is an inherently risky endeavor. Variations in prices and yields can cause shifts in revenue that are beyond a producer's control. As such, the government has a role in helping farmers manage their risk. Over the past 15 years, spending on farm risk insurance has grown substantially and now averages around $2 billion annually. At the same time, the almost annual *ad hoc* disaster assistance payments have grown just as fast. This continual use of disaster assistance suggests that there are substantial holes in the current set of price support programs and insurance programs when it comes to helping farmers manage the actual risks that they face. Thus, farm policy should be redesigned to help farmers better manage their risk. The integrated farm revenue program, which integrates a national revenue deficiency payment with individual revenue insurance, is designed to accomplish this policy objective.

Historical Background

Current U.S. farm programs grew out of the Great Depression of the 1930s. Objective of the original compromise that underpinned farm policy was to manage the price of farm commodities for the benefit of both farmers and consumers. Key policy instruments were minimum support prices, annual acreage set asides, and public stocks. When prices were low, government set land aside and acquired crops for public stocks through a minimum price non-recourse loan program. These policy actions raised prices, thus benefiting farmers. On the other hand, when prices were high, government brought land back into production and sold public stocks, thus reducing prices and helping consumers. However, changes in the economic situation of U.S. consumers and producers have undermined the original farm policy compromise.

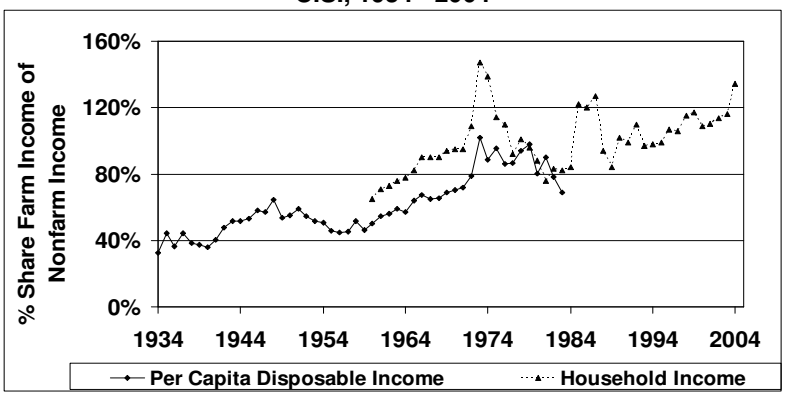
One key change is the substantial decline in the importance of the price of farm products to U.S. consumers. As Figure 1 illustrates, the share of expenditures by U.S. consumers on U.S. farm products contained in food (e.g., the corn in corn flakes, the cow's milk in cottage cheese, etc.) is now under 2%. By comparison, the share was 11% in 1947-1949, the first years data are available for this calculation. *Conclusion: U.S. consumers are much less concerned about farm prices today, diminishing support for the original farm policy compromise.*

Figure 1. Expenditures on U.S. Farm Products used for Food, U.S., 1947 -2002



Source: original calculations using data from U.S. Department of Agriculture and U.S. Department of Commerce.

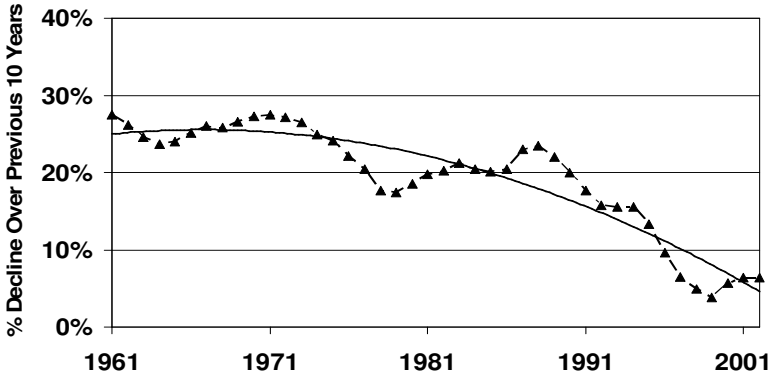
Figure 2. Farm Income Relative to Non-Farm Income, U.S., 1934 - 2004



Source: U.S. Department of Agriculture

A second key change is the increase in income of U.S. farmers relative to U.S. non-farmers. In 1934, per capita income of the U.S. farm population was only 34% of the per capita income of the U.S. non-farm population. The desire to raise the income of farmers was a key motivation behind the creation of U.S. farm programs. However, during recent years, the average income of farm households has exceeded the average income of non-farm households, reaching 135% of average non-farm income in 2004. Factors behind increasing income of farmers relative to non-farmers include the growth in off-farm income of farm households, the trend toward fewer, larger farms, and more efficient farm production. *Conclusion: It is understandable why questions are being asked about the appropriateness of transferring public funds to farmers to raise their income.*

Figure 3. Rate of Decline in Labor Used by Farms, U.S., 1952 - 2002



Source: original calculations using data from U.S. Department of Agriculture

A third key change is the sharp decline in the rate at which labor exits the U.S. farm sector. Labor leaves a sector when it can earn a higher return in another sector. Over the 10 year period between 1952 and 1961, the number of labor hours used on U.S. farms declined by 28%. The rate of decline remained near 20% through 1990. Since then, it has dropped rapidly, nearing 5% for recent 10 year periods. *Conclusion: The justification that farm income payments are needed to give farmers a competitive wage is disappearing.*

When combined Figures 1, 2, and 3 imply that the historic farm policy compromise has lost its attractiveness. Specifically, minimum price supports were eliminated with the adoption of marketing loans, a transition that began in the 1985 Farm Bill. Then, in the 1996 Farm Bill, annual acreage set asides and most public stock programs were eliminated. Lastly, the share of spending on farm price support programs has declined from 90% in the 1960s to around 40% at present (see Figure 4).

Figures 2 and 3 imply that the U.S. farm sector is approaching equilibrium. In equilibrium, inputs earn competitive returns. Thus, it is not surprising that many are asking whether transferring income to farmers for the purpose of increasing farm income is an appropriate use of public funds.

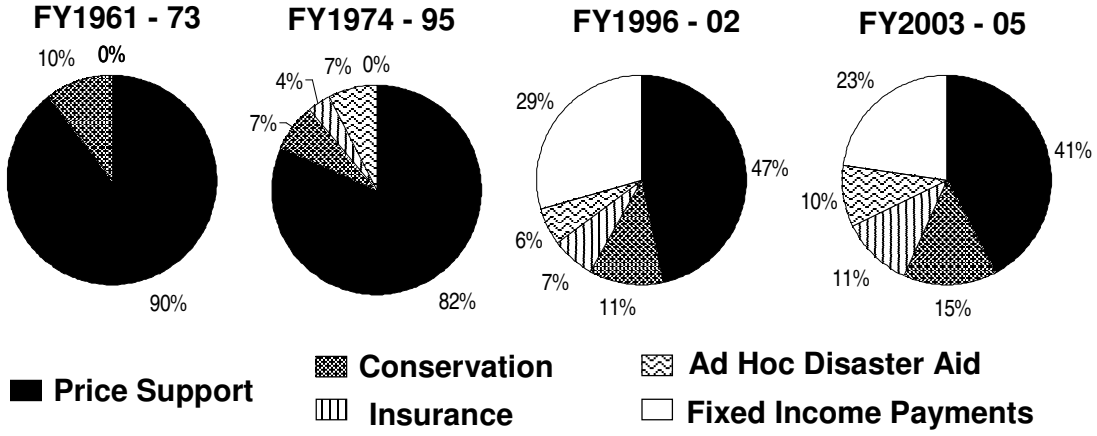
Moreover, spending on farm insurance programs has grown from almost nothing in the 1960s to about a 10% share of spending on farm programs in recent years (see Figure 4). This policy trend indicates that risk management is an area of concern for policy makers. However, spending on *ad hoc* disaster assistance provided on a year specific basis has gown as much as spending on insurance (see Figure 4). The close to annual enactment of *ad hoc* disaster assistance suggests that the current set of farm programs have substantial holes in them when it comes to managing the risk that farmers confront.

To summarize this review:

(1) The historic farm policy compromise no longer exists, negating the need to focus farm policy on farm prices.
(2) The farm sector is approaching equilibrium, making it difficult to justify income transfers for the purpose of enhancing farm income.
(3) However, much of current farm policy remains based on the presumption of lower-than-equilibrium prices due to perpetual farm commodity surpluses.
(4) And, the current set of farm programs does not appear to do an adequate job of helping farmers manage their actual risk.

Given this summary, In the current economic environment where the farm sector is approaching equilibrium, a case can be made that farm programs should be designed to help farmers better manage their risk rather than provide income transfers.

Figure 4. Spending on Farm Programs by Category, U.S., 1961 - 2005



Source: original calculations using data from the budgets of the U.S. Government, Fiscal Years 1962-2007

Conceptual Framework for a New Farm Risk Management Policy

In assessing whether public policy is warranted to help private firms handle a risk, key questions are

(1) Can the firm manage the risk through its internal decision making?
(2) Does private insurance exist or could it be developed to help the firm manage the risk?

Inherent in answering the question of internal management of risk is the issue of cost effectiveness. The firm may be able to manage the risk internally but the cost to the firm may be prohibitive or judged to be unacceptably high by the public.

Even if a risk is not manageable at a reasonable cost by internal management, the firm may be able to purchase insurance to help it offset the financial impacts when the risk occurs. Private insurance is likely to develop if the risk is individual in nature (this is called idiosyncratic risk in the risk literature). Individual risk is risk unique to the individual. For example, the probability that a person's home catches fire is largely independent or uncorrelated with whether another person's home catches fire. Thus, the risk of a home fire is largely unique to the individual or is idiosyncratic to the person. As a result, insurance companies can use statistical properties, such as the law of large numbers, to estimate the cost of insuring someone against a fire in their home. The cost is reasonable because insurance indemnity payments can be spread over many policy holders and the likelihood of any one policy holder claiming an indemnity at a particular time is acceptably small.

On the other hand, a risk can occur at the market level. In the risk literature, this type of risk is called a systemic risk. It is highly unlikely that private insurance will be successful if it tries to cover a market risk. The reason is that market risk affects many people at the same time. In other words, the occurrence of the risk is correlated among individuals. Private insurance companies usually go bankrupt when a systemic risk occurs because many policy holders collect an indemnity at the same time. The recent withdrawal of private insurance companies from providing hurricane insurance illustrates the importance of market risk and the difficulty of providing private insurance for it. Hurricanes can cause large insurance payments at one point in time, potentially imperiling the survival of the insurance company. As a result of the withdrawal of private insurance companies, state governments are exploring the possibility of facilitating the provisions of insurance for hurricanes.

Conclusion: Public policy to help private firms manage their risk should be constrained to market level risks that are difficult for the individual firm to manage.

Assessing Farmer Risk

Farmers confront a number of risk factors. Some can be managed effectively while others can be managed only poorly. The following discussion will be presented in terms of crop farming, but an equivalent presentation can be made for livestock farming.

Before planting, farmers can manage their revenue risk by choosing to produce the crop(s) that offer(s) the highest expected revenue at the lowest risk, or by deciding to produce no crops at all. Farmers have been using this strategy extensively since the 1996 Farm Bill allowed them the freedom to decide which, if any, crops to produce and still receive direct farm income payments. Compared with 1996, acres planted in 2006 to soybean increased 17% while acres planted to sorghum, barley, and wheat declined 52%, 51%, and 23%, respectively.

After deciding what crop(s) to produce, a farmer confronts the risk that the revenue received at harvest is less than the revenue expected when the planting decision was made. There are two main sources of this risk. One is that price declines between planting and harvest. Price could

decline because foreign and/or domestic demand unexpectedly declines, or because supply in the rest of the world unexpectedly increases. The other main source of revenue risk is that a farmer's yield declines, usually as a result of poor growing conditions.

Changes in prices generally occur at the market level as a result of changes in market supply and demand. Thus, changes in price are a market risk; although there is some individual risk that prices decline more or less in a local area (this risk is called basis risk).

A farmer can manage the risk of a decline in price by selling futures, put options, or forward contracts. However, using these private market instruments can create risk. If a farmer contracts ahead more of the crop than is actually produced, the farmer has created the risk of a shortfall in contracted production, usually requiring a payment to the contracting party. If a short futures contract is sold, the risk is that prices increase, resulting in margin calls. The purchase of put options requires an upfront payment, which may necessitate the borrowing of money.

Farmers can mange yield risk by purchasing yield insurance. However, experiences from around the world reveal that, except for hail insurance, private companies have not provided insurance against yield losses unless public subsidies are provided. The reason is that yields for individual farmers are often correlated. For example, drought often happens over large areas. In other words, yield risk has a substantial market risk component to it. Because it is not unusual for many farmers to experience a yield loss at the same time, private insurance companies who have tried to offer yield insurance have gone bankrupt with the exception of companies who offer insurance for hail. Thus, in order for its farmers to have access to yield insurance, government has had to subsidize it.

As noted in the previous section, government policy to help private firms manage risk generally is only appropriate when the risk is market level risk and private firms do not have adequate private market tools to manage the risk. A decline in farm prices is largely a market risk while a decline in yield is often market risk. Because yield and price have market risk and these risks do not perfectly offset one another, their product, gross revenue, also has market risk. Price management tools are inadequate because they can create other risks. Private crop insurance, except for hail insurance, has not proven viable without public subsidies. Furthermore, changes in yield and price are often correlated, meaning that tools set up to manage each one individually have difficulty handling gross revenue risk.

Conclusion: It is appropriate to discuss public policy options to help farmers manage risk.

National Revenue Deficiency Program to Handle Market Farm Risk

To handle market gross revenue (yield times price) risk that occurs between planting and harvest, a national (i.e., market) revenue deficiency program is proposed. This program is similar to the target price program that existed between 1973 and 1995, except it targets gross revenue, not just price. Thus, the national revenue deficiency program can be thought of as a target price plus program.

Implementation of the national revenue deficiency program requires the calculation of a gross revenue target for the U.S. at planting, which in turn requires the identification of an expected U.S. price and yield for the forthcoming crop. Also, gross revenue realized at harvest must be determined, which in turn requires the identification of U.S. price and yield at harvest. If the realized gross revenue is less than the target gross revenue, then a national deficiency payment is made for each acre planted to the crop. This discussion is summarized in the box on the next page.

Many procedures exist for estimating target and realized U.S. gross revenue. A commonly used source for U.S. expected and realized yields are the U.S. Department of Agriculture's monthly *World*

Per Acre Calculation of the Average National Revenue Deficiency Payment

- U.S. Revenue Target: [U.S. expected price multiplied by U.S. expected average yield at planting]
- U.S. Realized Revenue: [U.S. average price multiplied by U.S. average yield at harvest]
- National Revenue Deficiency Payment = [U.S. revenue target minus U.S. realized revenue]

Agricultural Supply and Demand Estimates and *Crop Production* reports. The U.S. Department of Agriculture, Risk Management Agency has developed procedures for establishing prices for the current revenue and yield insurance contracts. The broader point is that methods already exist to make these calculations.

A numerical example is provided at right using data from 2004 for corn. Realized revenue at harvest was less than the revenue expected when planting decisions were being made. The reason was that a $0.79 per bushel decline in price more than offset a 13.4 bushel increase in yield (the Risk Management Agency uses the average price of the December corn futures contract during February and October). As a result, an average revenue deficiency payment of $85 per acre would have been made for each acre of corn planted in 2004.

Example of Average National Revenue Deficiency Payment: Corn 2004

USDA Expected U.S. Yield:	145.0 bu./acre
February Insurance Price:	$2.83/bu.
Expected U.S. Revenue:	$410/acre
Realized U.S. Yield (October):	158.4 bu./acre
October Insurance Price:	$2.05/bu.
Realized U.S. Revenue:	$325/acre

Revenue Deficiency Payment = $85/acre ($410 - $325)]

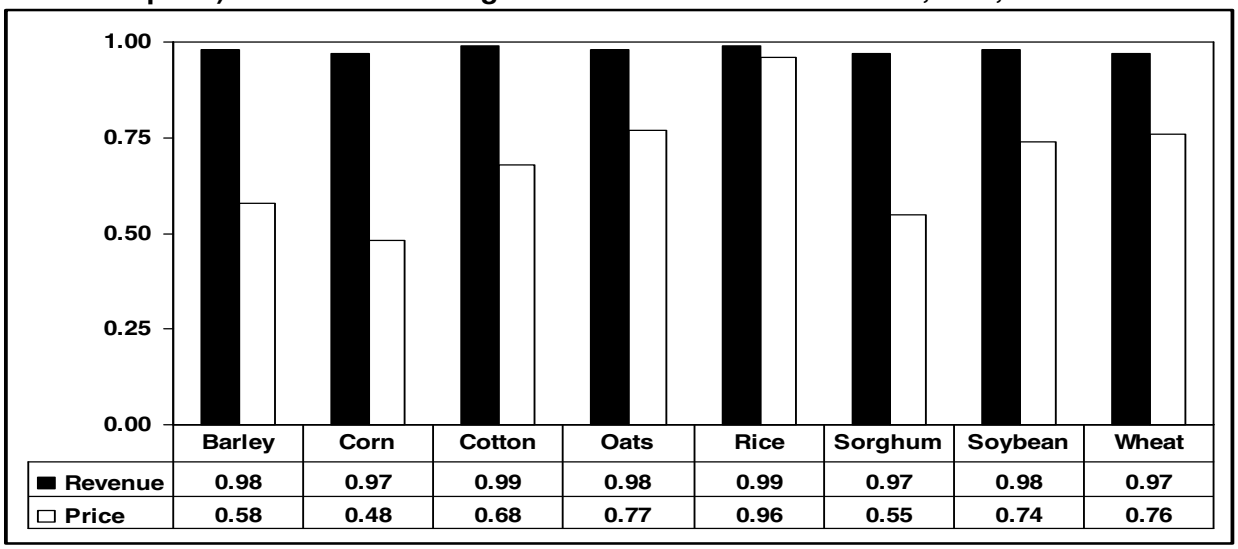
It is important to underscore that the U.S. revenue target changes every year. It is not fixed as are current price support levels. The revenue target will change as the market's expectation of the price for next year's crop changes and as yields trend upward.

An important choice regarding the national revenue deficiency program is whether gross income or net income should be used in determining the target. It turns out the question is usually moot. The reason is that changes in gross revenue from year to year are almost perfectly positively correlated with changes in net cash income from year to year (i.e., correlation is approaching +1.0) (see Figure 5). Furthermore, it is rare that costs of production change much between planting time and harvest time because a large share of production costs are incurred at or just after planting.

Figure 5 also illustrates the risk management advantages of using a revenue target as opposed to a price target. With the exception of rice, the correlations between changes in price and net cash income are substantially smaller than the correlations between changes in gross revenue and net cash income. The high correlation between changes in price and net cash income for rice reflect the use of irrigation to grow most rice in the U.S. Thus, yield variability is substantially lower for rice than for the other program crops, implying that the current price programs for rice in effect provide protection against gross revenue risk.

To compare costs with current price support programs, a simulation was conducted by backcasting the cost of the national revenue deficiency program for the crop years 1996 through 2005. A backcast asks what would have occurred if a policy had existed over the time period. The backcast was conducted for corn, upland cotton, rice, sorghum, soybean, and wheat. Price support programs include marketing loan write offs, loan deficiency payments, market loss, certificates, and counter-cyclical payments.

Figure 5. Correlations between Annual Change in Price and Gross Revenue (yield times price) with Annual Change in Per Acre Net Cash Income, U.S., 1975 - 2004

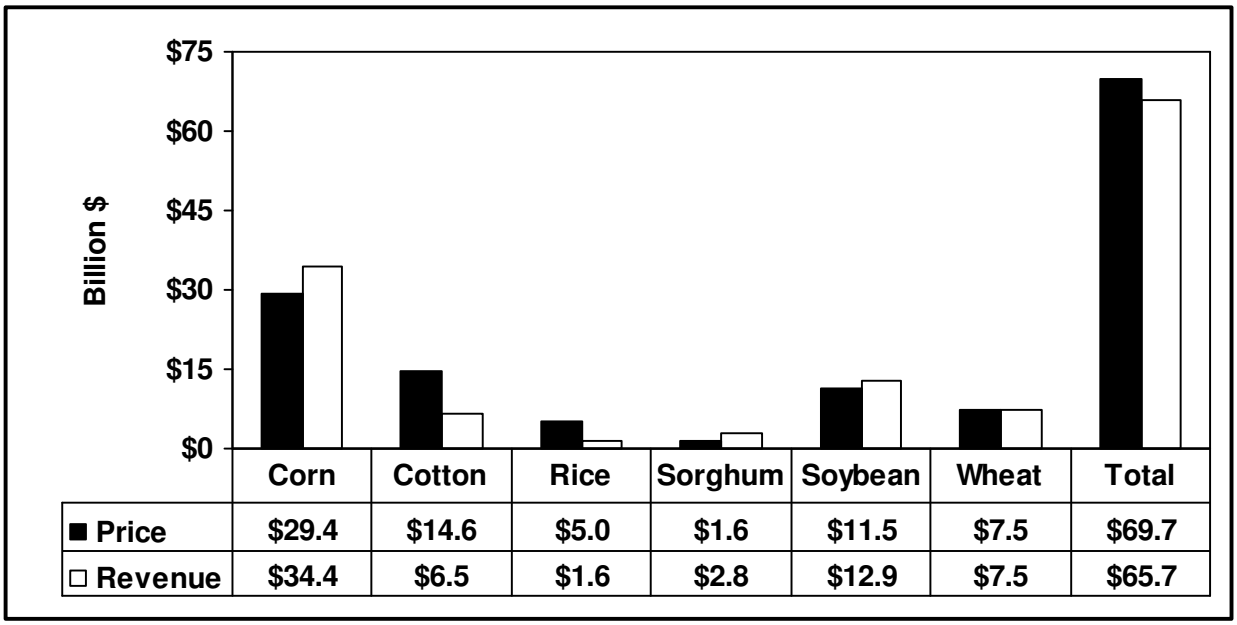


	Barley	Corn	Cotton	Oats	Rice	Sorghum	Soybean	Wheat
■ Revenue	0.98	0.97	0.99	0.98	0.99	0.97	0.98	0.97
□ Price	0.58	0.48	0.68	0.77	0.96	0.55	0.74	0.76

Source: calculated using data from U.S. Department of Agriculture, Economic Research Service Cost of Production surveys from 1975 through 2004

Compared with current price support programs, cost of the national revenue deficiency program was somewhat higher for the crops associated with the Midwest but substantially lower for cotton and rice (see Figure 6). In total, costs were lower for the national revenue deficiency program.

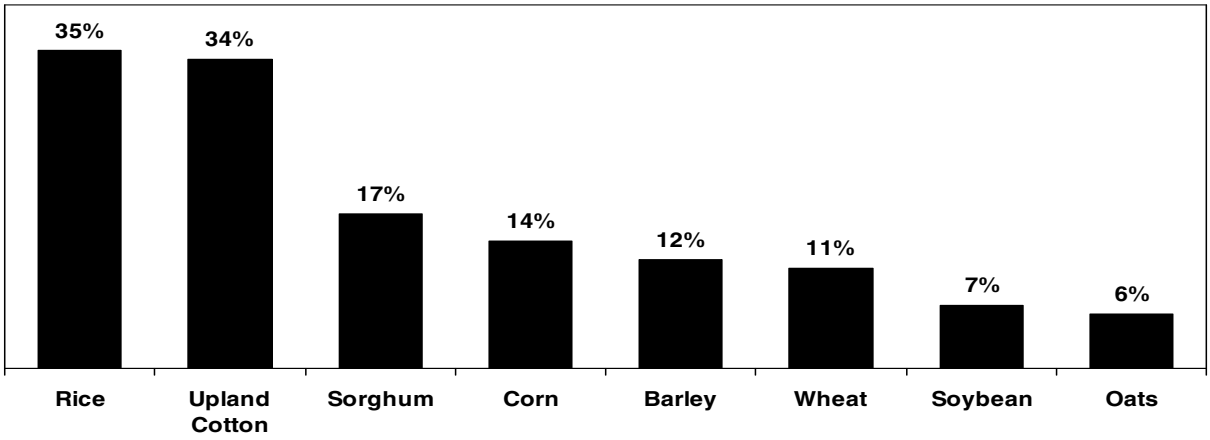
Figure 6. Actual Price Support Spending vs. Estimated Spending on National Revenue Deficiency Program, U.S., 1996 - 2005



	Corn	Cotton	Rice	Sorghum	Soybean	Wheat	Total
■ Price	$29.4	$14.6	$5.0	$1.6	$11.5	$7.5	$69.7
□ Revenue	$34.4	$6.5	$1.6	$2.8	$12.9	$7.5	$65.7

Source: Original calculations. Price support programs include marketing loan write offs, loan deficiency payments, market loss, certificates, and counter-cyclical payments.

Figure 7. Ratio of Spending on Price Support Programs Relative to the Market Value of Production, U.S., 1996 – 2005



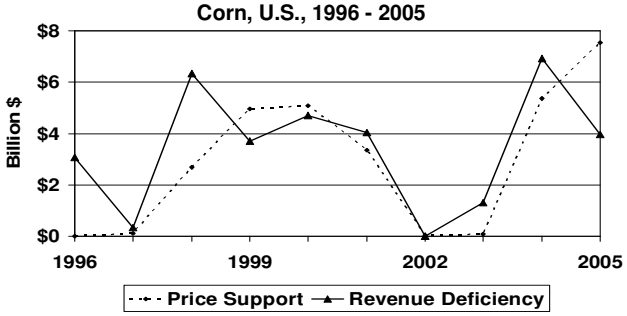
Source: Original calculations using data from the U.S. Department of Agriculture.

The different results by crops primarily reflect the much higher level of price supports relative to market prices for cotton and rice. A measure of this difference is the ratio of spending on price support programs for a crop to the value of production or market receipts for the crop. This ratio is two to three times higher for cotton and rice than for the other program crops (see Figure 7). While the integrated farm revenue proposal provides a better set of risk management tools, this change in spending among crops raises important issues. In particular, the question of what level support of support is appropriate for individual crops needs to be debated.

The higher level of support provided for sorghum by the national revenue deficiency program illustrates its value to smaller market crops for which price is largely set by factors other than U.S. supply and demand for the crop. Specifically, the price of sorghum largely is set by corn. Yields for the 2000 to 2003 crops of sorghum were reduced sharply by weather while corn yields were either normal or less affected by weather. As a result, the lower sorghum yields were not offset by higher prices, resulting in lower gross revenue for sorghum producers under current programs.

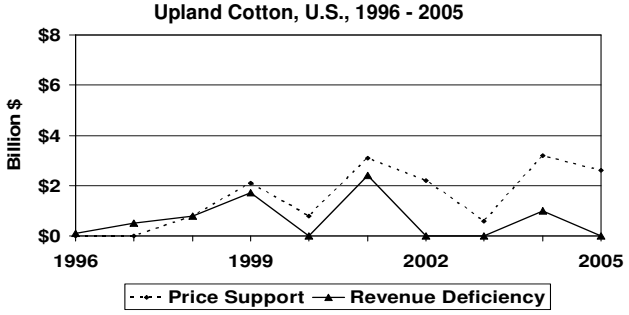
Figures 8 and 9 provide a year-by-year comparison of national revenue deficiency payments and spending for price support programs for corn and cotton. They are representative of the other crops. Although sizeable differences can occur for individual years, year-to-year changes in payments to farmers under both programs broadly track each other. Price support payments to cotton have been much larger than revenue deficiency payments in more recent years, but similar in earlier years.

Figure 8. Spending on Price Support Programs vs. Revenue Deficiency Program, Corn, U.S., 1996 - 2005



Source: Original calculations

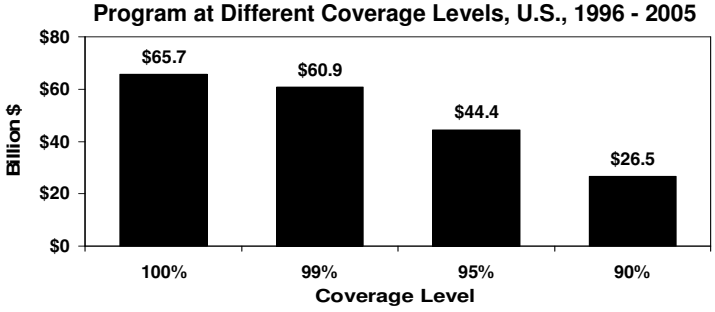
Figure 9. Spending on Price Support Programs vs. Revenue Deficiency Program, Upland Cotton, U.S., 1996 - 2005



Source: Original calculations

Economists often note that private firms should bear at least some cost of a risk so that they adjust resources appropriately. Thus, it can be argued that the coverage level for the national revenue deficiency program should be less than 100%. Figure 11 presents spending at different coverage ratios. For example, lowering the coverage level by 1 percentage point to 99% reduced cost by nearly $5 billion over the 10-year period.

Figure 10. Spending on National Revenue Deficiency Program at Different Coverage Levels, U.S., 1996 - 2005



Source: Original calculations

To summarize, the national revenue deficiency program would have cost less than the existing price support programs if it had existed between 1996 and 2005. The cost savings come primarily from cotton and rice because their current price supports are further above market prices. Although some differences occur, the pattern of payments over time is roughly comparable. Besides the cost savings, the national revenue deficiency program better matches payments with a loss in revenue, notably for smaller market crops.

Individual Farmer Revenue Insurance to Handle Individual Farm Risk

The program proposed to handle gross revenue risk between planting and harvest for the individual farmer is similar to the current revenue insurance product with a couple of exceptions. Like the current revenue insurance product, a gross revenue target is calculated for the farm before planting, a coverage level is selected by the farmer, and realized gross revenue is calculated for the farm at harvest. However, this revenue insurance product would use a moving average of yields over the last five years and the insurance would be set at the farm level. The reason for these choices is to provide the insurance firms with tools for minimizing moral hazard and adverse selection, which in turn improves the actuarial soundness of the insurance product.

Gross revenue is targeted instead of net revenue because it is desirable to integrate the national revenue deficiency payment with the individual insurance product. Benefit of this integration is to reduce the cost of individual insurance at a given coverage level. Costs are reduced because the market risk is covered by the national deficiency payment, not by the revenue insurance product as occurs in the current revenue insurance product.

The operation of the individual farmer gross revenue insurance program is illustrated below:

Per Acre Calculation of Individual Farm Gross Revenue Insurance Payment

- Farmer Revenue Target: [U.S. expected price multiplied by farmer's expected yield at planting]
- Farmer Realized Revenue: [U.S. average price multiplied by farmer's yield at harvest]
- Farmer Insurance Payment = [(farmer revenue target multiplied by coverage level) minus farmer realized revenue **minus farmer's national revenue deficiency payment**

Example of Individual Farm Revenue Insurance Payment: Corn 2004

Farmer Expected Yield: 145.0 bu./acre
February Insurance Price: $2.83/bu.
Farmer Expected Revenue: $410/acre
Farmer Coverage Level 75%
Farmer's National Revenue Deficiency Payment: $85/acre

	Situation 1	Situation 2
Farmer's Realized Yield:	120 bushels.	100 bushels
October Insurance Price:	$2.05/bushel	$2.05/bushel
Farmer's Realized Revenue:	$246/acre	$205/acre
Farmer's Insurance Payment:	*$0/acre*	*$17.50/acre*

Calculation for Situation 1: ($410 * 0.75) - $246 - $85 = -$23.5 (means no payment received)
Calculation for Situation 2: ($410 * 0.75) - $205 - $85 = $17.50

The national revenue deficiency payment compensates a farmer for the market risk between planting and harvest. Thus, subtracting the farmer's deficiency payment from the farmer's individual revenue insurance payment avoids double payment for the market risk. In situation 1 in the above example, the farmer's individual loss was less than the national revenue deficiency payment. Thus, the farmer received no payment from his or her individual revenue insurance. In contrast, the farmer facing situation 2 had a loss in excess of the national revenue deficiency payment. This farmer receives a payment from the individual insurance program so that the sum of the farmer's national deficiency payment plus the farmer's individual insurance payment equals the farmer's individual revenue loss. In other words, the national revenue deficiency program working together with the individual farmer revenue insurance makes the farmer whole in terms of his or her revenue loss.

As the example illustrates, because the cost of market risk is now handled by the national revenue deficiency program, the cost of individual revenue insurance at a given coverage level should be lower. This expected result has been confirmed by preliminary analysis involving soybeans (see technical appendix for additional discussion).

The savings generated by integrating the national revenue deficiency program and the individual farm level revenue insurance would allow the coverage level to be higher under the integrated farm revenue program at no increase in cost to the public treasury. Alternatively, the cost savings could be used for other programs. A third possibility is to choose a combination of these two options.

In summary, integrating the national revenue deficiency program with individual gross revenue insurance makes individual gross revenue insurance more actuarially sound. Individual revenue insurance is now allowed to cover the revenue risk faced by the individual farmer instead of trying to cover both the individual farmer risk and the broader market risk. The consequence is lower cost and/or higher coverage insurance that better matches the revenue risk of the individual farmer.

Summary

U.S. farm policy is at a crossroads. The historic farm policy objective of managing prices for the benefit of consumers and producers has been undermined by changes in the structure of the U.S. farm sector. Furthermore, the U.S. farm sector is approaching economic equilibrium with the rest of the U.S. economy. No longer are perpetual farm surpluses resulting in depressed farm prices. Average farm household income has consistently exceeded average non-farm household income

since 1996, and the rate at which labor is exiting the U.S. farm sector has slowed dramatically since 1990. It is not surprising that discussion is occurring about the appropriateness of transferring public funds to farmers to raise their income.

Concurrent with these changes, spending on farm insurance programs has grown substantively over the last 15 years. However, spending on *ad hoc* disaster assistance has grown as fast. The close-to-annual passage of *ad hoc* disaster assistance suggests that the current set of farm programs has substantial holes when it comes to helping farmers manage the actual risks that they face.

Thus, in the current economic and policy environment, a case can be made that farm programs should be designed to help farmers better manage their risk rather to than provide income transfers. The integrated farm revenue program is proposed to accomplish this policy change.

A better set of risk management programs can be designed for farmers by recognizing that farmers face two kinds of revenue risk. One occurs at the market level. The other occurs at the individual farmer level. These two risks need different programs, but, for maximum benefit in helping farmers manage risk, the two programs also need to be integrated. Currently, no integration exists between price support programs that try to help farmers manage their price risk and the insurance programs that try to help farmers manage their yield and revenue risk.

A national revenue deficiency program is needed to address the risk that farm revenue can decline for all farms due to lower prices and/or widespread weather-related reductions in yields. The national revenue deficiency program is similar to the target price program, but it would cover gross revenue, yield times price, not just price. Even though this program covers yield and price, it would have been less costly than current price support programs for the 1996 through 2005 crops.

A gross revenue insurance program is needed at the individual farm level to address the need that farm revenue can decline more on an individual farm than for the market as a whole. This insurance program would look similar to the current revenue insurance program, but it would be integrated with the national revenue deficiency program. With the government covering the risk of widespread national losses, individual revenue insurance becomes more effective at covering individual losses. Insurance companies can offer higher levels of coverage at a lower cost to farmers. Furthermore, because the integration of a national revenue deficiency payment program with individual revenue insurance provides a better, more effective risk management program for producers, it lessens the economic rationale for *ad hoc* disaster assistance.

The integrated farm revenue program is more market oriented and thus less trade distorting than current price based commodity programs. National revenue targets change each year with market conditions, thus minimizing the impact of the government program on the planting decision of farmers. In contrast, current price support programs establish prices that can dictate farmers' production decision. It is clear that the program is less distorting and would help satisfy worldwide desire for greater market orientation in U.S. farm programs. It also less costly than the current price support programs, thus helping the U.S. stay within its WTO spending limits. However, it is questionable that this program would be classified as green box under current WTO rules.

The integrated farm revenue program is also flexible. It can address the revenue risk of small market crops and be easily adopted to meet the risk management needs of non-program crops as well as livestock.

In closing, the integrated farm revenue program greatly increases the efficiency and effectiveness of our farm programs because it combines government payments and individual insurance into a single safety net program. It makes risk management less costly for government, less trade distorting for our international partners, and, most importantly, more effective for our nation's farmers.

APPENDIX FOR TECHNICAL ISSUES

Turning the average national revenue deficiency payment into a revenue deficiency payment for the individual farmer: Once the national average revenue deficiency payment is determined, it is transformed into a payment for each individual farmer as follows:

[(Expected Per Acre U.S. Revenue – Realized Per Acre U.S. Revenue) / Expected Per Acre U.S. Revenue] x Individual Farmer's Expected Per Acre Revenue

This calculation involves calculating the percent shortfall in realized per acre U.S. revenue relative to expected per acre U.S. revenue, then multiplying this ratio by the farmer's expected per acre revenue. If the same per acre payment is made to all producers, then the revenue deficiency payment to a producer is a higher percent of his/her expected revenue if the producer has a lower expected per acre revenue than if the producer has a higher expected per acre revenue. A percentage ratio calculation ends up being necessary to treats all farmers fairly according to their expected gross revenue per acre, which is the risk that the proposed program is seeking to address.

Selection of Time Period Used to Analyze Cost of Revenue Deficiency Program Presented in Figure 6: A key analysis question is the selection of the analysis time period. From a policy perspective, the 2002 Farm Bill period makes sense because it is the set of policies that currently exist. However, this period covers only four crop years. From a statistical perspective, this is a very limited period. Extending the analysis back to 1996 incorporates more risk events and supply-demand situations. Furthermore, the countercyclical program, which was the major farm price support policy innovation in the 2002 Farm Bill, was designed to make the market loss program enacted for the 1998 – 2001 crops permanent. Thus, a fair amount of compatibility exists between the set of price support policies that were utilized during the 1996 Farm Bill period and enacted in the 2002 Farm Bill. Hence, I chose to conduct the backcasting analysis for the 1996 through 2005 crops.

Analysis of Cost of Wheat National Revenue Deficiency Program: Prices used for current wheat insurance product are futures prices at the Chicago Board of Trade, Kansas City Board of Trade, and Minneapolis Exchange. For the sake of time, a national analysis was conducted rather than doing it state by state. Sensitivity analysis was conducted using each insurance price. Compared with using Chicago futures, Kansas City futures resulted in a slightly higher cost while the Minneapolis futures resulted in a lower cost. The results for Chicago futures were selected for presentation because it is in the middle.

Comparison of Integrated Individual Farmer Revenue Insurance Program with Current Revenue Insurance Program: At present, this analysis for the 1996 through 2005 crop years has only been conducted for soybean. The analysis involves an insurance product modeled after the current county revenue insurance program and the same county revenue insurance product that is integrated with the national revenue deficiency program For the U.S., the average per acre payment received was close to $7 per acre for both the traditional county revenue program at a coverage level of 90% and the integrated country revenue program at a coverage level of 100%. Additional analysis is needed to confirm that this expected result holds empirically for the other program crops over the 1996 through 2005 period.