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# **FAPRI-MU Stochastic U.S. Crop Model Documentation**

FAPRI-MU Report #09-11

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## Introduction

This report documents the stochastic U.S. crops model maintained by the Food and Agricultural Policy Research Institute at the University of Missouri (FAPRI-MU). The model is part of a larger system that includes models of the U.S. livestock, dairy and biofuel sectors, consumer food expenditures, federal budgetary outlays and farm income.

The stochastic U.S. crops model covers major grain, oilseed, sugar and cotton markets. It is used to develop estimates of annual crop production, domestic consumption, trade, stocks and market prices over a 10-year outlook horizon. The multi-market model reflects important linkages among agricultural sector markets, but it remains a partial equilibrium model that treats the rest of the economy exogenously.

FAPRI-MU maintains two separate but related U.S. crops models. The deterministic U.S. crops model is the more detailed of the two, providing state-level estimates of crop supply, while the stochastic model only generates national estimates of acreage and production. The two models share many demand equations, but the deterministic model covers more commodities and explicitly represents more use categories for some commodities. The deterministic model is used primarily in baseline development, where the additional detail allows a more careful accounting of land use in different regions of the country and more attention to minor commodities and use categories.

The stochastic model documented here is in some ways a simplified version of the deterministic model but with similar aggregate behavior. The stochastic model is calibrated to the deterministic baseline, so that the two generate similar results for the same exogenous assumptions. While the deterministic model is used to generate a single set of outcomes for a single set of assumptions, the stochastic model is used to generate 500 sets of endogenous variable outcomes for 500 sets of exogenous variables. The sets reflect different assumptions about the weather, energy markets and other factors that affect the supply and demand for agricultural commodities. Relative to the deterministic U.S. crops model, the slightly smaller and less complex stochastic model makes the system more manageable and facilitates the solution process.

The stochastic U.S. crops model contains 842 equations and 447 exogenous variables. Some of the variables exogenous to the U.S. crops model are endogenous in other models that are part of the FAPRI-MU modeling system. For example, an index of livestock production appears as an exogenous variable in the corn feed demand equation, but the index is created from variables that are endogenous in the FAPRI-MU livestock and dairy models. Likewise, ethanol demand for corn is exogenous to this model, but endogenous in the FAPRI-MU biofuel model.

Some model equations are estimated econometrically using historical time series data. In other cases, however, econometric estimation is impractical, and model parameters are based on literature review and analyst judgment. Some equations include both estimated and assumed parameters. For example, the corn feed use equation includes an estimated own-price elasticity, but assumed responses with respect to changes in livestock production and the use of distillers grains.

In all cases, equations are calibrated to current market conditions and to judgments about likely future market developments. This calibration process is conducted annually and leads to frequent updating of model parameters and model specifications.

This documentation, then, is a snapshot of the state of the stochastic U.S. crops model used to develop the 2011 FAPRI-MU baseline. While most model specifications and many model parameters are likely to remain unchanged, the models used to develop future FAPRI-MU baselines are likely to differ in important respects from the model documented here.

The following sections briefly describe major portions of the model but make no attempt to provide a full explanation for equation specifications or the determination of model parameters. This incomplete documentation may be unsatisfactory in a number of respects, but it was judged more valuable to make a less-than-ideal document available at this time rather than a better documentation at an uncertain future date.

### **Structure of this documentation**

Variable definitions begin on page 7. Most historical price and quantity data are obtained from various USDA publications and databases, but a variety of other sources are also utilized.

Crop demand equations are presented beginning on page 28. In addition to model coefficients, short-run (first-year) elasticities are provided for most behavioral equations. Where equations incorporate dynamic responses, long-term elasticities are also provided.

Supply equations begin on page 48. Calculations based on farm program provisions account for the majority of equations in this section, with the Average Crop Revenue Election (ACRE) program accounting for the largest share.

Planted area equations begin on page 154. Note that the reported area elasticities are evaluated over the projection period rather than over recent history. Changes in policies and market conditions make the projection period elasticities more useful in evaluating how the model behaves in conducting forward-looking scenario analysis.

## **Demand and price equations**

For most major crops, the model considers several categories of domestic use. The wheat sub-model, for example, includes three separate equations that determine feed use, food and industrial uses and seed use. Food and industrial uses are typically estimated on a per-capita basis, feed and residual uses are generally estimated on a per-animal-unit basis and seed uses are estimated on a per-acre basis.

For wheat, feed grains and soybeans, the model estimates both carryover stocks under the government loan program and “free” stocks. Stock levels depend on market prices, current supplies and, in some cases, the size of the next harvest. Firms may choose to hold more stocks, for example, if they anticipate that a reduced harvest will limit available supplies.

Trade for major crops is determined by reduced-form equations based on the behavior of larger international market models. Price term coefficients are obtained by shocking the larger trade models and observing the resulting changes in U.S. trade. Effects of exchange rates, weather, income growth, trade policies, and other determinants of U.S. crop trade are subsumed into the intercept terms of these reduced-form equations.

In contrast to most grains and oilseeds, international markets are represented in the rice and cotton submodels by equations that estimate international prices as a function of U.S. trade levels and the prices of other crops. Price linkage equations connect these international prices to U.S. domestic market prices.

To prepare baseline projections, these reduced-form equations are calibrated to reproduce the estimates of U.S. trade or world prices generated by the international market model. In conducting analysis of alternative U.S. policies, the reduced-form equations make it possible to operate the U.S. model in stand-alone mode but still generate results for U.S. trade that should approximate those that would be obtained using the international model.

For most crops, domestic market prices are determined by imposing the market-closing condition that the quantity supplied (production plus imports and beginning stocks) must equal the quantity demanded (domestic use plus exports and ending stocks). For cotton and rice, the model-closing identity determines exports.

## **Supply equations**

For most crops, the model estimates area planted, area harvested and yield per harvested acre. Crop supplies depend on expectations of market prices, variable production expenses, and a variety of government program provisions.



The model assumes producers recognize that price movements caused by abnormal yields are likely to moderate over time. To reflect this, expected market prices in the model are a function of lagged market prices and yields. Model parameters suggest, for example, that when yields in year  $t$  are below normal, producers will expect that prices in year  $t+1$  will be lower than prices in year  $t$ . Price expectations in the model, therefore, are not naïve, but neither are they fully rational, as they do not take into account all information that might be available to producers at the time production decisions are made.

Expected benefits from a variety of government programs also affect producer supply decisions. The model includes equations that estimate expected benefits provided by the marketing loan, countercyclical payment, Average Crop Revenue Election (ACRE) and crop insurance programs:

- 1) Expected marketing loan benefits depend on a comparison of expected market prices and commodity loan rates. The equations allow some loan program benefits to result even when season-average market prices slightly exceed loan rates. Consistent with observed experience, the prices used in calculating loan benefits are typically a little lower than observed market prices, and producers can also take advantage of seasonal movements in prices as they decide when to claim loan program benefits.
- 2) Expected countercyclical payments depend on a comparison of expected market prices and the price that triggers program benefits (the target price minus the direct payment rate).
- 3) Expected ACRE payments depend on a long series of equations tied to program provisions and expectations of market revenues. Because the program is tied to state-level yields per planted acre, the model includes yield equations for major states producing wheat, corn and soybeans, the three crops that account for most U.S. planted acreage and most of the land enrolled in the program. National average expected ACRE payment rates are a weighted average of expected payment rates for modeled states and the rest of the country.
- 4) Premium subsidies serve as a proxy for expected crop insurance benefits.

For each crop, supply-inducing expected net returns are assumed to equal a weighted sum of expected market sales and government program benefits, minus variable production expenses. The weights on various government program benefits reflect judgments about how coupled the programs are to production decisions. For example, one dollar of expected marketing loan benefits or ACRE program payments is assumed to have the same effect on production decisions as one dollar of market returns. At the other extreme, one dollar of expected countercyclical payments is expected to have the same effect on the decision to plant a

particular crop as \$0.25 of expected market revenue. Countercyclical payments are not tied to current acreage planted or yields, but they do provide benefits tied to market prices.

Acreage planted equations are a function of supply-inducing expected net returns, conservation reserve acreage and a measure of per-acre payments that are not closely tied to production. The less-coupled payment variable is a sum of direct payments and expected countercyclical payments. Model parameters imply that the effect of less-coupled payments on acreage is far less than the effect of market returns and more-coupled payments. The weights on current and lagged expected supply-inducing net returns imply that two-thirds of acreage response occurs in the first year, with the rest occurring in the subsequent year.

Coefficients in the acreage equations are based in part on estimation of state-level supply equations. For each major state, the total area devoted to modeled crops was estimated as a function of weighted expected net returns and conservation reserve acreage. The share of that total area devoted to the most important crop in each state was estimated as a function of relative expected net returns. This information was then used in constructing equations for particular crops that would be consistent with the estimated behavior for the major crops as a group and for the most important crop in each region. To fill out the matrix of coefficients, symmetry of acreage responses is imposed, and cross-return effects are set based on the importance of the various crops in a state and judgments concerning common rotations and other agronomic considerations.

The national acreage equations included in the stochastic model are intended to approximate the behavior of the sum of the state-level models included in the deterministic model. In aggregate, a one-percent increase in expected net returns for all crops would increase the total area planted by about 0.06 percent given the model parameters reported here. Changes in net returns for particular crops, therefore, primarily affect the mix of crops grown, but only have a modest effect on the total amount of land used for production of the major field crops.

Area harvested in the stochastic U.S. crops model is simply equal to the planted acreage multiplied by an exogenous share of planted acres that are harvested.

Yield equations generally are a function of the current and lagged ratios of expected supply-inducing gross returns to variable production expenses, trends to reflect technological change and the amount of land planted to major crops. As expected gross returns increase or the cost of inputs falls, yields would be expected to increase as producers farm more intensively. Over time, favorable returns can induce the development of new technologies, so long-run yield responses to price changes are much larger than short-run responses. An expansion of cropped area can result in more production on marginal lands, which may have a negative effect on average yields.

## **How this model fits in the overall modeling system**

The stochastic U.S. crops model is just one part of a broader modeling system that includes models for the livestock, dairy and biofuel sectors, as well as government farm program costs, consumer food expenditures, and farm income. Numerous linkages tie these models together. For example, a change in U.S. corn prices not only has direct effects on crop supply and use, but it also affects the costs of producing meat, poultry, milk and biofuels, outlays on government farm programs, net farm income and consumer food costs. Likewise, a change in petroleum prices affects crop production expenses but also affects biofuel prices and the profitability of ethanol production, with implications for corn demand.

Some of the equations included in this documentation do not directly affect U.S. crop supply and demand, but rather are calculated for reporting purposes or to support other models. For example, calculations of realized government payments do not directly affect crop supply decisions, as these are based on expected benefits rather than those actually obtained. However, estimates of marketing loan or ACRE benefits are of interest in their own right, and they contribute to estimates of aggregate government farm program expenditures and farm income.

One purpose of the stochastic modeling process is to generate a range of potential market outcomes to facilitate analysis of policies that have asymmetric effects or that are intended to affect market risks. The process requires a series of choices about what to hold constant and what to allow to vary. For example, equation coefficients are held constant and draws are made only on a subset of exogenous variables that may contribute to volatility in commodity markets. In the case of the U.S. crops models, draws are made on the error terms from yield and a number of demand equations, as well as on variable production expenses and the share of planted area which is harvested. The choices made result in distributions that are judged reasonable by the analysts who have developed and maintained the model, but different choices could also be justified and could yield very different distributions.

Variable	Description	Unit
<b>Endogenous</b>		
AQPFRM	Alfalfa hay price, cal. yr.	dollars per ton
BRACRAC	Barley ACRE payments per acre	dollars
BRBASE	Barley base acreage	million acres
BRCACRCY	Barley total ACRE payments	dollars
BRCCPAC	Barley CCPs	dollars per base acre
BRCRP	Barley CRP acreage	million acres
BRD9MO	Barley 9-month loan stocks	million bushels
BRDFED	Barley feed use	million bushels
BRDFOD	Barley food use	million bushels
BRDFRE	Barley free stocks	million bushels
BRDPAC	Barley DPs	dollars per base acre
BRDPCY	Barley direct payments	million dollars
BRDSED	Barley seed use	million bushels
BREACAC	Barley expected ACRE payment rate	dollars per acre
BRECCPA	Barley expected CCPs for nonparticipants in ACRE	dollars per base acre
BRELDPA	Barley expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
BRELDPR	Barley expected LDP rate	dollars per bushel
BREMGR	Barley expected market gross returns	dollars per acre
BRENRS	Barley supply-inducing net returns	dollars per acre
BREPFD	Exp. feed barley price	dollars per bushel
BREPFM	Exp. all barley price	dollars per bushel
BREREVP	Barley expected ACRE market revenue	dollars
BREYLDP	Expected barley ACRE yield	bushels per acre
BRGRMK	Barley market gross returns	dollars per acre
BRGRTAC	Barley total gross returns	dollars per base acre
BRLDPAC	Barley LDPs/MLGs	dollars per acre
BRLDPRT	Barley LDP rate	dollars per bushel
BRNRMK	Barley market net returns	dollars per acre
BRNRML	Barley market + LDP/MLG net returns	dollars per acre
BRNRRTAC	Barley total net returns	dollars per base acre
BRP2MA	Barley 2 year moving average price	dollars per bushel
BRPFED	Feed barley price	dollars per bushel
BRPFRM	All barley price, U.S.	dollars per bushel
BRRBENC	Barley ACRE benchmark	dollars
BRREVP	Barley ACRE market revenue	dollars
BRSHAR	Barley area harvested	million acres
BRSIMP	Barley imports	million bushels
BRSPLT	Barley area planted	million acres
BRSPRD	Barley production	million bushels
BRSYLD	Barley yield/harv. acre	bushels per acre
BRSYLDP	Barley ACRE yield	bushels per acre
BRSYOLY	Barley olympic average ACRE yield	bushels per acre
CIPNPRS	Peanut premium subsidies	million dollars
CISFPRS	Sunflower premium subsidies	million dollars
CISJPRS	Sugar cane premium subsidies	million dollars
CISKPRS	Sugar beet premium subsidies	million dollars
CRACRAC	Corn ACRE payments per acre	dollars
CRARBEN	Arkansas corn ACRE benchmark	dollars
CRAROLY	Arkansas corn olympic average ACRE yield	bushels per acre
CRBASE	Corn base acreage	million acres
CRCABEN	California corn ACRE benchmark	dollars
CRCACRAR	Arkansas corn ACRE payments	dollars
CRCACRCA	California corn ACRE payments	dollars
CRCACRCY	Total corn ACRE payments	dollars
CRCACRGA	Georgia corn ACRE payments	dollars
CRCACRIA	Iowa corn ACRE payments	dollars
CRCACRIL	Illinois corn ACRE payments	dollars
CRCACRIN	Indiana corn ACRE payments	dollars
CRCACRKS	Kansas corn ACRE payments	dollars
CRCACRMN	Minnesota corn ACRE payments	dollars

Variable	Description	Unit
CRCACRMO	Missouri corn ACRE payments	dollars
CRCACRMT	Montana corn ACRE payments	dollars
CRCACRND	North Dakota corn ACRE payments	dollars
CRCACRNE	Nebraska corn ACRE payments	dollars
CRCACROH	Ohio corn ACRE payments	dollars
CRCACRRC	Rest of Country corn ACRE payments	dollars
CRCACRSD	South Dakota corn ACRE payments	dollars
CRCACRTX	Texas corn ACRE payments	dollars
CRCAOLY	California corn olympic average ACRE yield	bushels per acre
CRCCPAC	Corn CCPs	dollars per base acre
CRCRCP	Corn CRP acreage	million acres
CRD9MO	Corn 9-month loan stocks	million bushels
CRDEXP	Corn exports	million bushels
CRDFED	Corn feed use	million bushels
CRDFRE	Corn free stocks	million bushels
CRDPAC	Corn DPs	dollars per base acre
CRDPCY	Corn direct payments	million dollars
CRDSED	Corn seed use per acre	million bushels
CREAAAR	AR corn expected ACRE payment rate	dollars per acre
CREAACA	CA corn expected ACRE payment rate	dollars per acre
CREAAGA	GA corn expected ACRE payment rate	dollars per acre
CREAAIA	IA corn expected ACRE payment rate	dollars per acre
CREAAIL	IL corn expected ACRE payment rate	dollars per acre
CREAAIN	IN corn expected ACRE payment rate	dollars per acre
CREAAKS	KS corn expected ACRE payment rate	dollars per acre
CREAAMN	MN corn expected ACRE payment rate	dollars per acre
CREAAMO	MO corn expected ACRE payment rate	dollars per acre
CREAAMT	MT corn expected ACRE payment rate	dollars per acre
CREAAND	ND corn expected ACRE payment rate	dollars per acre
CREAANE	NE corn expected ACRE payment rate	dollars per acre
CREAAOH	OH corn expected ACRE payment rate	dollars per acre
CREAARC	RC corn expected ACRE payment rate	dollars per acre
CREAASD	SD corn expected ACRE payment rate	dollars per acre
CREAATX	TX corn expected ACRE payment rate	dollars per acre
CREACAC	Corn expected ACRE payment rate	dollars per acre
CRECCPA	Corn expected CCPs for nonparticipants in ACRE	dollars per base acre
CRELDPA	Corn expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
CRELDPR	Corn expected LDP rate	dollars per bushel
CREMGR	Corn expected market gross returns	dollars per acre
CRENRS	Corn supply-inducing exp. net returns	dollars per acre
CREPFM	Exp. corn farm price	dollars per bushel
CRERPAR	Arkansas corn expected ACRE market revenue	dollars
CRERPCA	California corn expected ACRE market revenue	dollars
CRERPGA	Georgia corn expected ACRE market revenue	dollars
CRERPPIA	Iowa corn expected ACRE market revenue	dollars
CRERPIL	Illinois corn expected ACRE market revenue	dollars
CRERPIN	Indiana corn expected ACRE market revenue	dollars
CRERPKS	Kansas corn expected ACRE market revenue	dollars
CRERPMMN	Minnesota corn expected ACRE market revenue	dollars
CRERPMO	Missouri corn expected ACRE market revenue	dollars
CRERPMT	Montana corn expected ACRE market revenue	dollars
CRERPND	North Dakota corn expected ACRE market revenue	dollars
CRERPNE	Nebraska corn expected ACRE market revenue	dollars
CRERPOH	Ohio corn expected ACRE market revenue	dollars
CRERPRC	Rest of Country corn expected ACRE market revenue	dollars
CRERPSD	South Dakota corn expected ACRE market revenue	dollars
CRERP TX	Texas corn expected ACRE market revenue	dollars
CREYARP	Expected Arkansas corn ACRE yield	bushels per acre
CREYCAP	Expected California corn ACRE yield	bushels per acre
CREYGAP	Expected Georgia corn ACRE yield	bushels per acre
CREYIAP	Expected Iowa corn ACRE yield	bushels per acre
CREYILP	Expected Illinois corn ACRE yield	bushels per acre

Variable	Description	Unit
CREYINP	Expected Indiana corn ACRE yield	bushels per acre
CREYKSP	Expected Kansas corn ACRE yield	bushels per acre
CREYMNP	Expected Minnesota corn ACRE yield	bushels per acre
CREYMOP	Expected Missouri corn ACRE yield	bushels per acre
CREYMTP	Expected Montana corn ACRE yield	bushels per acre
CREYNDP	Expected North Dakota corn ACRE yield	bushels per acre
CREYNEP	Expected Nebraska corn ACRE yield	bushels per acre
CREYOHP	Expected Ohio corn ACRE yield	bushels per acre
CREYRCP	Expected Rest of Country corn ACRE yield	bushels per acre
CREYSDP	Expected South Dakota corn ACRE yield	bushels per acre
CREYTXP	Expected Texas corn ACRE yield	bushels per acre
CRGABEN	Georgia corn ACRE benchmark	dollars
CRGAOLY	Georgia corn olympic average ACRE yield	bushels per acre
CRGRMK	Corn market gross returns	dollars per acre
CRGRTAC	Corn total gross returns	dollars per base acre
CRIABEN	Iowa corn ACRE benchmark	dollars
CRIAOLY	Iowa corn olympic average ACRE yield	bushels per acre
CRILBEN	Illinois corn ACRE benchmark	dollars
CRILOLY	Illinois corn olympic average ACRE yield	bushels per acre
CRINBEN	Indiana corn ACRE benchmark	dollars
CRINOLY	Indiana corn olympic average ACRE yield	bushels per acre
CRKSBEN	Kansas corn ACRE benchmark	dollars
CRKSOLY	Kansas corn olympic average ACRE yield	bushels per acre
CRLDPAC	Corn LDPs/MLGs	dollars per acre
CRLDPRT	Corn LDP rate	dollars per bushel
CRMBEN	Minnesota corn ACRE benchmark	dollars
CRMNOLY	Minnesota corn olympic average ACRE yield	bushels per acre
CRMOBEN	Missouri corn ACRE benchmark	dollars
CRMOOLY	Missouri corn olympic average ACRE yield	bushels per acre
CRMTBEN	Montana corn ACRE benchmark	dollars
CRMTOLY	Montana corn olympic average ACRE yield	bushels per acre
CRNDBEN	North Dakota corn ACRE benchmark	dollars
CRNDOLY	North Dakota corn olympic average ACRE yield	bushels per acre
CRNEBEN	Nebraska corn ACRE benchmark	dollars
CRNEOLY	Nebraska corn olympic average ACRE yield	bushels per acre
CRNRMK	Corn market net returns	dollars per acre
CRNRML	Corn market + LDP/MLG net returns	dollars per acre
CRNRTAC	Corn total net returns	dollars per base acre
CROHBEN	Ohio corn ACRE benchmark	dollars
CROHOLY	Ohio corn olympic average ACRE yield	bushels per acre
CRP	Conservation reserve program acreage	million acres
CRP2MA	Corn 2 year moving average price	dollars per bushel
CRPFRM	Corn farm price, U.S.	dollars per bushel
CRRCBEN	Rest of Country corn ACRE benchmark	dollars
CRRCOLY	Rest of Country corn olympic average ACRE yield	bushels per acre
CRREVPAR	Arkansas corn ACRE market revenue	dollars
CRREVPCA	California corn ACRE market revenue	dollars
CRREVPGA	Georgia corn ACRE market revenue	dollars
CRREVPIA	Iowa corn ACRE market revenue	dollars
CRREVPIL	Illinois corn ACRE market revenue	dollars
CRREVPIN	Indiana corn ACRE market revenue	dollars
CRREVPKS	Kansas corn ACRE market revenue	dollars
CRREVPMN	Minnesota corn ACRE market revenue	dollars
CRREVPMO	Missouri corn ACRE market revenue	dollars
CRREVPMT	Montana corn ACRE market revenue	dollars
CRREVPND	North Dakota corn ACRE market revenue	dollars
CRREVPNE	Nebraska corn ACRE market revenue	dollars
CRREVPOH	Ohio corn ACRE market revenue	dollars
CRREVPRC	Rest of Country corn ACRE market revenue	dollars
CRREVPSD	South Dakota corn ACRE market revenue	dollars
CRREVPTX	Texas corn ACRE market revenue	dollars
CRSDBEN	South Dakota corn ACRE benchmark	dollars

Variable	Description	Unit
CRSDOLY	South Dakota corn olympic average ACRE yield	bushels per acre
CRSHAR	Corn harvested area	million acres
CRSPLT	Corn area planted	million acres
CRSPRD	Corn production	million bushels
CRSYAR	Corn yield/harv. acre Arkansas	bushels per acre
CRSYARP	Arkansas corn ACRE yield	bushels per acre
CRSYCA	Corn yield/harv. acre California	bushels per acre
CRSYCAP	California corn ACRE yield	bushels per acre
CRSYGA	Corn yield/harv. acre Georgia	bushels per acre
CRSYGAP	Georgia corn ACRE yield	bushels per acre
CRSYIA	Corn yield/harv. acre Iowa	bushels per acre
CRSYIAP	Iowa corn ACRE yield	bushels per acre
CRSYIL	Corn yield/harv. acre Illinois	bushels per acre
CRSYILP	Illinois corn ACRE yield	bushels per acre
CRSYIN	Corn yield/harv. acre Indiana	bushels per acre
CRSYINP	Indiana corn ACRE yield	bushels per acre
CRSYKS	Corn yield/harv. acre Kansas	bushels per acre
CRSYKSP	Kansas corn ACRE yield	bushels per acre
CRSYLD	Corn yield/harv. acre US	bushels per acre
CRSYMN	Corn yield/harv. acre Minnesota	bushels per acre
CRSYMNP	Minnesota corn ACRE yield	bushels per acre
CRSYMO	Corn yield/harv. acre Missouri	bushels per acre
CRSYMOP	Missouri corn ACRE yield	bushels per acre
CRSYMT	Corn yield/harv. acre Montana	bushels per acre
CRSYMTP	Montana corn ACRE yield	bushels per acre
CRSYND	Corn yield/harv. acre North Dakota	bushels per acre
CRSYNDP	North Dakota corn ACRE yield	bushels per acre
CRSYNE	Corn yield/harv. acre Nebraska	bushels per acre
CRSYNEP	Nebraska corn ACRE yield	bushels per acre
CRSYOH	Corn yield/harv. acre Ohio	bushels per acre
CRSYOHP	Ohio corn ACRE yield	bushels per acre
CRSYRC	Corn yield/harv. acre Rest of Country	bushels per acre
CRSYRCP	Rest of Country corn ACRE yield	bushels per acre
CRSYSD	Corn yield/harv. acre South Dakota	bushels per acre
CRSYSDP	South Dakota corn ACRE yield	bushels per acre
CRSYTX	Corn yield/harv. acre Texas	bushels per acre
CRSYTXP	Texas corn ACRE yield	bushels per acre
CRTXBEN	Texas corn ACRE benchmark	dollars
CRTXOLY	Texas corn olympic average ACRE yield	bushels per acre
CSGRMK	Cottonseed market gross returns	dollars per acre
CSPFRM	Cottonseed price	dollars per ton
CSSPRD	Cottonseed production	thousand tons
CSSYLD	Cottonseed yield/harv. upland acre	pounds per acre
CTACRAC	Cotton ACRE payments per acre	dollars
CTBASE	Cotton base acreage	million acres
CTCACRCY	Cotton total ACRE payments	dollars
CTCCPAC	Cotton CCPs	dollars per base acre
CTCRP	Cotton CRP acreage	million acres
CTDEXP	Cotton exports	million bales
CTDMIL	Cotton mill use	million bales
CTDPAC	Cotton DPs	dollars per base acre
CTDPCY	Cotton direct payments	million dollars
CTDTES	Cotton total ending stocks	million bales
CTEACAC	Cotton expected ACRE payment rate	dollars per acre
CTEAWP	Exp. cotton AWP	dollars per pound
CTECCPA	Cotton expected CCPs for nonparticipants in ACRE	dollars per base acre
CTELDPA	Cotton expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
CTELDPR	Cotton expected LDP rate	dollars per pound
CTEMGR	Cotton expected market gross returns	dollars per acre
CTENRS	Cotton supply-inducing exp. net returns	dollars per acre
CTEPMF	Exp. cotton farm price	dollars per pound
CTEREVP	Cotton expected ACRE market revenue	dollars

Variable	Description	Unit
CTEYLDP	Expected cotton ACRE yield	pounds per acre
CTGRMK	Cotton market gross returns	dollars per acre
CTGRTAC	Cotton total gross returns	dollars per base acre
CTLDPAC	Cotton LDPs/MLGs	dollars per acre
CTLDPRT	Cotton LDP rate	dollars per pound
CTNRMK	Cotton market net returns	dollars per acre
CTNRML	Cotton market + LDP/MLG net returns	dollars per acre
CTNRTAC	Cotton total net returns	dollars per base acre
CTP2MA	Cotton 2 year moving average price	dollars per pound
CTPAIN	Far East price	dollars per pound
CTPAWP	Cotton AWP	dollars per pound
CTPFE	Cotton NE A-index price	dollars per pound
CTPFRM	Cotton farm price	dollars per pound
CTPMKT	Cotton market price	dollars per pound
CTPMPH	USNE Memphis territory price	dollars per pound
CTRBENC	Cotton ACRE benchmark	dollars
CTREVP	Cotton ACRE market revenue	dollars
CTSHAR	Upland cotton area harvested	million acres
CTSPLT	Upland cotton area planted	million acres
CTSPRD	Upland cotton production	million bales
CTSYLD	Cotton yield/harv. acre	pounds per acre
CTSYLDP	Cotton ACRE yield	pounds per acre
CTSYOLY	Cotton olympic average ACRE yield	pounds per acre
DPPERAC	Expected decoupled payments per acre	million dollars
DPPFRM	Dry pea price	dollars per cwt
HADDOM	Hay domestic use	million tons
HADTES	Hay total ending stocks	million tons
HAEMGR	Hay expected market gross returns	dollars per acre
HAENRS	Hay supply-inducing exp. net returns	dollars per acre
HAEPFM	Exp. hay farm price	dollars per ton
HAPFRM	All hay price, U.S.	dollars per ton
HASHAR	Hay area harvested	million acres
HASPRD	Hay production	million tons
OTACRAC	Oats ACRE payments per acre	dollars
OTBASE	Oats base acreage	million acres
OTCACRCY	Oats total ACRE payments	dollars
OTCCPAC	Oats CCPs	dollars per base acre
OTCRP	Oats CRP acreage	million acres
OTDFED	Oats feed use	million bushels
OTDFOD	Oats food use	million bushels
OTDFRE	Oats free stocks	million bushels
OTDPAC	Oats DPs	dollars per base acre
OTDPCY	Oats direct payments	million dollars
OTDSED	Oats seed use	million bushels
OTEACAC	Oats expected ACRE payment rate	dollars per acre
OTECCPA	Oats expected CCPs for nonparticipants in ACRE	dollars per base acre
OTELDPA	Oats expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
OTELDPR	Oats expected LDP rate	dollars per bushel
OTEMGR	Oats expected market gross returns	dollars per acre
OTENRS	Oats supply-inducing exp. net returns	dollars per acre
OTEPFM	Exp. oat farm price	dollars per bushel
OTEREVP	Oats expected ACRE market revenue	dollars
OTEYLDP	Expected oats ACRE yield	bushels per acre
OTGRMK	Oats market gross returns	dollars per acre
OTGRTAC	Oats total gross returns	dollars per base acre
OTLDPAC	Oats LDPs/MLGs	dollars per acre
OTLDPRT	Oats LDP rate	dollars per bushel
OTNRMK	Oats market net returns	dollars per acre
OTNRML	Oats market + LDP/MLG net returns	dollars per acre
OTNRTAC	Oats total net returns	dollars per base acre
OTP2MA	Oats 2 year moving average price	dollars per bushel
OTPFRM	Oats farm price, U.S.	dollars per bushel



Variable	Description	Unit
OTRBENC	Oats ACRE benchmark	dollars
OTREVP	Oats ACRE market revenue	dollars
OTSHAR	Oats area harvested	million acres
OTSIMP	Oats imports	million bushels
OTSPLT	Oats area planted	million acres
OTSPRD	Oats production	million bushels
OTSYLD	Oats yield/harv. acre	bushels per acre
OTSYLDP	Oats ACRE yield	bushels per acre
OTSYOLY	Oats olympic average ACRE yield	bushels per acre
PNACRAC	Peanut ACRE payments per acre	dollars
PNBASE	Peanut base acreage	million acres
PNCACRCY	Peanut total ACRE payments	dollars
PNCCPAC	Peanut CCPs	dollars per base acre
PNCRP	Peanut CRP acreage	million acres
PNDCRU	Peanut crush	million pounds
PNDEXP	Peanut exports	million pounds
PNDFOOD	Peanut food use	million pounds
PNDPAC	Peanut DPs	dollars per base acre
PNDPCY	Peanut direct payments	million dollars
PNDTES	Peanut ending stocks	million pounds
PNEACAC	Peanuts expected ACRE payment rate	dollars per acre
PNECCPA	Peanut expected CCPs for nonparticipants in ACRE	dollars per base acre
PNELDPA	Peanut expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
PNELDPR	Peanut exp. LDP rate, no min. imposed	cents per pound
PNEMGR	Peanut expected market gross returns	dollars per acre
PNENRS	Peanut supply-inducing exp. net returns	dollars per acre
PNEPFM	Exp. peanut farm price	dollars per pound
PNEREVP	Peanuts expected ACRE market revenue	dollars
PNEYLDP	Expected peanut ACRE yield	pounds per acre
PNGRMK	Peanut market gross returns	dollars per acre
PNGRTAC	Peanut total gross returns	dollars per base acre
PNLDPAC	Peanut LDPs/MLGs	dollars per acre
PNLDPRT	Peanut LDP rate, no min. imposed	cents per pound
PNNRMK	Peanut market net returns	dollars per acre
PNNRML	Peanut market + LDP/MLG net returns	dollars per acre
PNNRTAC	Peanut total net returns	dollars per base acre
PNP2MA	Peanut 2 year moving average price	dollars per pound
PNPFRM	Peanut farm price	cents per pound
PNRBENC	Peanut ACRE benchmark	dollars
PNREVP	Peanut ACRE market revenue	dollars
PNSHAR	Peanut area harvested	thousand acres
PNSPLT	Peanut area planted	thousand acres
PNSPRD	Peanut production	million pounds
PNSYLD	Peanut yield/harv. acre	pounds per acre
PNSYLDP	Peanut ACRE yield	pounds per acre
PNSYOLY	Peanut olympic average ACRE yield	pounds per acre
RCACRAC	Rice ACRE payments per acre	dollars
RCBASE	Rice base acreage	million acres
RCCACRCY	Rice total ACRE payments	dollars
RCCCPAC	Rice CCPs	dollars per base acre
RCCRP	Rice CRP acreage	million acres
RCDDOM	Rice domestic use	million cwt
RCDEXP	Rice exports	million cwt
RCDPAC	Rice DPs	dollars per base acre
RCDPCY	Rice direct payments	million dollars
RCDTES	Rice total ending stocks	million cwt
RCEACAC	Rice expected ACRE payment rate	dollars per acre
RCEAWP	Exp. rice AWP	dollars per cwt
RCECCPA	Rice expected CCPs for nonparticipants in ACRE	dollars per base acre
RCELDPA	Rice expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
RCELDPR	Rice expected LDP rate	dollars per cwt
RCEMGR	Rice expected market gross returns	dollars per acre

Variable	Description	Unit
RCENRS	Rice supply-inducing exp. net returns	dollars per acre
RCEPFM	Exp. rice farm price	dollars per cwt
RCEREVP	Rice expected ACRE market revenue	dollars
RCEYLDP	Expected rice ACRE yield	pounds per acre
RCGRMK	Rice market gross returns	dollars per acre
RCGRTAC	Rice total gross returns	dollars per base acre
RCLDPAC	Rice LDPs/MLGs	dollars per acre
RCLDPRT	Rice LDP rate	dollars per cwt
RCNRMK	Rice market net returns	dollars per acre
RCNRML	Rice market + LDP/MLG net returns	dollars per acre
RCNRTAC	Rice total net returns	dollars per base acre
RCP2MA	Rice 2 year moving average price	dollars per cwt
RCPAWP	Rice Adjusted World Price	dollars per cwt
RCPEXTH	Thai rice export price	dollars per cwt
RCPFRM	Rice farm price	dollars per cwt
RCPMIL	Southern milled rice price	dollars per cwt
RCRBENC	Rice ACRE benchmark	dollars
RCREVP	Rice ACRE market revenue	dollars
RCSHAR	Rice area harvested	million acres
RCSIMP	Rice imports	million cwt
RCSPLT	Rice area planted	million acres
RCSPRD	Rice production	million cwt
RCSYLD	Rice yield/harv. acre	pounds per acre
RCSYLDP	Rice ACRE yield	pounds per acre
RCSYOLY	Rice olympic average ACRE yield	pounds per acre
S2ENRS	Double crop soybean supply-inducing exp. net returns	dollars per acre
S2SPLT	Double-crop soybean area planted	million acres
SBACRAC	Soybean ACRE payments per acre	dollars
SBARBEN	Arkansas soybean ACRE benchmark	dollars
SBAREA	Single-crop soybean area planted	million acres
SBAROLY	Arkansas soybean olympic average ACRE yield	bushels per acre
SBBASE	Soybean base acreage	million acres
SBCACRAR	Arkansas soybean ACRE payments	dollars
SBCACRCY	Total soybean ACRE payments	dollars
SBCACRGA	Georgia soybean ACRE payments	dollars
SBCACRIA	Iowa soybean ACRE payments	dollars
SBCACRIL	Illinois soybean ACRE payments	dollars
SBCACRIN	Indiana soybean ACRE payments	dollars
SBCACRKS	Kansas soybean ACRE payments	dollars
SBCACRMN	Minnesota soybean ACRE payments	dollars
SBCACRMO	Missouri soybean ACRE payments	dollars
SBCACRND	North Dakota soybean ACRE payments	dollars
SBCACRNE	Nebraska soybean ACRE payments	dollars
SBCACROH	Ohio soybean ACRE payments	dollars
SBCACRRC	Rest of Country soybean ACRE payments	dollars
SBCACRSD	South Dakota soybean ACRE payments	dollars
SBCACRTX	Texas soybean ACRE payments	dollars
SBCCPAC	Soybean CCPs	dollars per base acre
SBCRP	Soybean CRP acreage	million acres
SBD9MO	Soybean 9-month loan stocks	million bushels
SBDCRU	Soybean crush	million bushels
SBDEXP	Soybean exports	million bushels
SBDFRE	Soybean free stocks	million bushels
SBDPAC	Soybean DPs	dollars per base acre
SBDPCY	Soybean direct payments	million dollars
SBDSED	Soybean seed and residual use	million bushels
SBEAAAR	AR soybean expected ACRE payment rate	dollars per acre
SBEAAGA	GA soybean expected ACRE payment rate	dollars per acre
SBEAAIA	IA soybean expected ACRE payment rate	dollars per acre
SBEAAIL	IL soybean expected ACRE payment rate	dollars per acre
SBEAAIN	IN soybean expected ACRE payment rate	dollars per acre
SBEAAKS	KS soybean expected ACRE payment rate	dollars per acre

Variable	Description	Unit
SBEAAMN	MN soybean expected ACRE payment rate	dollars per acre
SBEAAMO	MO soybean expected ACRE payment rate	dollars per acre
SBEAAND	ND soybean expected ACRE payment rate	dollars per acre
SBEAANE	NE soybean expected ACRE payment rate	dollars per acre
SBEAAOH	OH soybean expected ACRE payment rate	dollars per acre
SBEAARC	RC soybean expected ACRE payment rate	dollars per acre
SBEAASD	SD soybean expected ACRE payment rate	dollars per acre
SBEAATX	TX soybean expected ACRE payment rate	dollars per acre
SBEACAC	Soybean expected ACRE payment rate	dollars per acre
SBECCPA	Soybean expected CCPs for nonparticipants in ACRE	dollars per base acre
SBELDPA	Soybean expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
SBELDPR	Soybean expected LDP rate	dollars per bushel
SBEMGR	Soybean expected market gross returns	dollars per acre
SBENRS	Soybean supply-inducing exp. net returns	dollars per acre
SBEPFM	Exp. soybean farm price	dollars per bushel
SBERPAR	Arkansas soybean expected ACRE market revenue	dollars
SBERPGA	Georgia soybean expected ACRE market revenue	dollars
SBERPIA	Iowa soybean expected ACRE market revenue	dollars
SBERPIL	Illinois soybean expected ACRE market revenue	dollars
SBERPIN	Indiana soybean expected ACRE market revenue	dollars
SBERPKS	Kansas soybean expected ACRE market revenue	dollars
SBERPMN	Minnesota soybean expected ACRE market revenue	dollars
SBERPMO	Missouri soybean expected ACRE market revenue	dollars
SBERPND	North Dakota soybean expected ACRE market revenue	dollars
SBERPNE	Nebraska soybean expected ACRE market revenue	dollars
SBERPOH	Ohio soybean expected ACRE market revenue	dollars
SBERPRC	Rest of Country soybean expected ACRE market revenue	dollars
SBERPSD	South Dakota soybean expected ACRE market revenue	dollars
SBERTX	Texas soybean expected ACRE market revenue	dollars
SBEYARP	Expected Arkansas soybean ACRE yield	bushels per acre
SBEYGAP	Expected Georgia soybean ACRE yield	bushels per acre
SBEYIAP	Expected Iowa soybean ACRE yield	bushels per acre
SBEYILP	Expected Illinois soybean ACRE yield	bushels per acre
SBEYINP	Expected Indiana soybean ACRE yield	bushels per acre
SBEYKSP	Expected Kansas soybean ACRE yield	bushels per acre
SBEYMNP	Expected Minnesota soybean ACRE yield	bushels per acre
SBEYMOP	Expected Missouri soybean ACRE yield	bushels per acre
SBEYNDP	Expected North Dakota soybean ACRE yield	bushels per acre
SBEYNRP	Expected Nebraska soybean ACRE yield	bushels per acre
SBEYOHP	Expected Ohio soybean ACRE yield	bushels per acre
SBEYRCP	Expected Rest of Country soybean ACRE yield	bushels per acre
SBEYSDP	Expected South Dakota soybean ACRE yield	bushels per acre
SBEYTXP	Expected Texas soybean ACRE yield	bushels per acre
SBGABEN	Georgia soybean ACRE benchmark	dollars
SBGAOLY	Georgia soybean olympic average ACRE yield	bushels per acre
SBGRMK	Soybean market gross returns	dollars per acre
SBGRTAC	Soybean total gross returns	dollars per base acre
SBIABEN	Iowa soybean ACRE benchmark	dollars
SBIAOLY	Iowa soybean olympic average ACRE yield	bushels per acre
SBILBEN	Illinois soybean ACRE benchmark	dollars
SBILOLY	Illinois soybean olympic average ACRE yield	bushels per acre
SBINBEN	Indiana soybean ACRE benchmark	dollars
SBINOLY	Indiana soybean olympic average ACRE yield	bushels per acre
SBKSBEN	Kansas soybean ACRE benchmark	dollars
SBKSOLY	Kansas soybean olympic average ACRE yield	bushels per acre
SBLDPAC	Soybean LDPs/MLGs	dollars per acre
SBLDPRT	Soybean LDP rate	dollars per bushel
SBMNBEN	Minnesota soybean ACRE benchmark	dollars
SBMNOLY	Minnesota soybean olympic average ACRE yield	bushels per acre
SBMOBEN	Missouri soybean ACRE benchmark	dollars
SBMOOLY	Missouri soybean olympic average ACRE yield	bushels per acre
SBNDBEN	North Dakota soybean ACRE benchmark	dollars

Variable	Description	Unit
SBNDOLY	North Dakota soybean olympic average ACRE yield	bushels per acre
SBNEBEN	Nebraska soybean ACRE benchmark	dollars
SBNEOLY	Nebraska soybean olympic average ACRE yield	bushels per acre
SBNRMK	Soybean market net returns	dollars per acre
SBNRML	Soybean market + LDP/MLG net returns	dollars per acre
SBNRTAC	Soybean total net returns	dollars per base acre
SBOHBEN	Ohio soybean ACRE benchmark	dollars
SBOHOLY	Ohio soybean olympic average ACRE yield	bushels per acre
SBP2MA	Soybean 2 year moving average price	dollars per bushel
SBPFRM	Soybean farm price, U.S.	dollars per bushel
SBPMKT	Soybean market price, IL processor	dollars per bushel
SBRCBEN	Rest of Country soybean ACRE benchmark	dollars
SBRCOLY	Rest of Country soybean olympic average ACRE yield	bushels per acre
SBREVPAR	Arkansas soybean ACRE market revenue	dollars
SBREVPGA	Georgia soybean ACRE market revenue	dollars
SBREVPIA	Iowa soybean ACRE market revenue	dollars
SBREVPIL	Illinois soybean ACRE market revenue	dollars
SBREVPIN	Indiana soybean ACRE market revenue	dollars
SBREVPKS	Kansas soybean ACRE market revenue	dollars
SBREVPMN	Minnesota soybean ACRE market revenue	dollars
SBREVPMO	Missouri soybean ACRE market revenue	dollars
SBREVPND	North Dakota soybean ACRE market revenue	dollars
SBREVPNE	Nebraska soybean ACRE market revenue	dollars
SBREVPOH	Ohio soybean ACRE market revenue	dollars
SBREVPRC	Rest of Country soybean ACRE market revenue	dollars
SBREVPSD	South Dakota soybean ACRE market revenue	dollars
SBREVPTX	Texas soybean ACRE market revenue	dollars
SBSDBEN	South Dakota soybean ACRE benchmark	dollars
SBSDOLY	South Dakota soybean olympic average ACRE yield	bushels per acre
SBSHAR	Soybean area harvested	million acres
SBSPLT	Soybean area planted	million acres
SBSPRD	Soybean production	million bushels
SBSYAR	Soybean yield/harv. acre Arkansas	bushels per acre
SBSYARP	Arkansas soybean ACRE yield	bushels per acre
SBSYGA	Soybean yield/harv. acre Georgia	bushels per acre
SBSYGAP	Georgia soybean ACRE yield	bushels per acre
SBSYIA	Soybean yield/harv. acre Iowa	bushels per acre
SBSYIAP	Iowa soybean ACRE yield	bushels per acre
SBSYIL	Soybean yield/harv. acre Illinois	bushels per acre
SBSYILP	Illinois soybean ACRE yield	bushels per acre
SBSYIN	Soybean yield/harv. acre Indiana	bushels per acre
SBSYINP	Indiana soybean ACRE yield	bushels per acre
SBSYKS	Soybean yield/harv. acre Kansas	bushels per acre
SBSYKSP	Kansas soybean ACRE yield	bushels per acre
SBSYLD	Soybean yield/harv. acre US	bushels per acre
SBSYMN	Soybean yield/harv. acre Minnesota	bushels per acre
SBSYMNP	Minnesota soybean ACRE yield	bushels per acre
SBSYMO	Soybean yield/harv. acre Missouri	bushels per acre
SBSYMOP	Missouri soybean ACRE yield	bushels per acre
SBSYND	Soybean yield/harv. acre North Dakota	bushels per acre
SBSYNDP	North Dakota soybean ACRE yield	bushels per acre
SBSYNE	Soybean yield/harv. acre Nebraska	bushels per acre
SBSYNEP	Nebraska soybean ACRE yield	bushels per acre
SBSYOH	Soybean yield/harv. acre Ohio	bushels per acre
SBSYOHP	Ohio soybean ACRE yield	bushels per acre
SBSYRC	Soybean yield/harv. acre Rest of Country	bushels per acre
SBSYRCP	Rest of Country soybean ACRE yield	bushels per acre
SBSYSD	Soybean yield/harv. acre South Dakota	bushels per acre
SBSYSDP	South Dakota soybean ACRE yield	bushels per acre
SBSYTX	Soybean yield/harv. acre Texas	bushels per acre
SBSYTXP	Texas soybean ACRE yield	bushels per acre
SBTXBEN	Texas soybean ACRE benchmark	dollars

Variable	Description	Unit
SBTXOLY	Texas soybean olympic average ACRE yield	pounds per acre
SFACRAC	Sunflower ACRE payments per acre	dollars
SFBASE	Sunflower base acreage	million acres
SFCACRCY	Sunflower total ACRE payments	dollars
SFCCPAC	Sunflower CCPs	dollars per base acre
SFCRP	Sunflower CRP acreage	million acres
SFDCRU	Sunflower crush	million pounds
SFDEXP	Sunflowerseed exports	million pounds
SFDFOD	Sunflowerseed food and residual use	million pounds
SFDPAC	Sunflower DPs	dollars per base acre
SFDPCY	Sunflower direct payments	million dollars
SFDTES	Sunflowerseed ending stocks	million pounds
SFEACAC	Sunflower expected ACRE payment rate	dollars per acre
SFECCPA	Sunflower expected CCPs for nonparticipants in ACRE	dollars per base acre
SFELDPA	Sunflower expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
SFELDPR	Sunflowerseed expected LDP rate	cents per pound
SFEMGR	Sunflower expected market gross returns	dollars per acre
SFENRS	Sunflower supply-inducing exp. net returns	dollars per acre
SFEPFM	Exp. sunflower price	dollars per cwt
SFEREVP	Sunflower expected ACRE market revenue	dollars
SFEYLDP	Expected sunflower ACRE yield	pounds per acre
SFGRMK	Sunflower market gross returns	dollars per acre
SFGRTAC	Sunflower total gross returns	dollars per base acre
SFLDPAC	Sunflower LDPs/MLGs	dollars per acre
SFLDPRT	Sunflowerseed LDP rate	cents per pound
SFNRMK	Sunflower market net returns	dollars per acre
SFNRML	Sunflower market + LDP/MLG net returns	dollars per acre
SFNRTAC	Sunflower total net returns	dollars per base acre
SFP2MA	Sunflower 2 year moving average price	dollars per cwt
SFPFRM	Sunflowerseed farm price	cents per pound
SFRBENC	Sunflower ACRE benchmark	dollars
SFREVP	Sunflower ACRE market revenue	dollars
SFSHAR	Sunflowerseed area harvested	million acres
SFSPLT	Sunflower area planted	million acres
SFSPRD	Sunflower Production	million pounds
SFSYLD	Sunflowerseed yield/harv. acre	pounds per acre
SFSYLDP	Sunflower ACRE yield	pounds per acre
SFSYOLY	Sunflower olympic average ACRE yield	bushels per acre
SGACRAC	Sorghum ACRE payments per acre	dollars
SGBASE	Sorghum base acreage	million acres
SGCACRCY	Sorghum total ACRE payments	dollars
SGCCPAC	Sorghum CCPs	dollars per base acre
SGCRP	Sorghum CRP acreage	million acres
SGD9MO	Sorghum 9-month loan stocks	million bushels
SGDEXP	Sorghum exports	million bushels
SGDFED	Sorghum feed use	million bushels
SGDFOD	Sorghum food/industrial use (includes ethanol)	million bushels
SGDFRE	Sorghum free stocks	million bushels
SGDPAC	Sorghum DPs	dollars per base acre
SGDPCY	Sorghum direct payments	million dollars
SGDSED	Sorghum seed use	million bushels
SGEACAC	Sorghum expected ACRE payment rate	dollars per acre
SGECCPA	Sorghum expected CCPs for nonparticipants in ACRE	dollars per base acre
SGELDPA	Sorghum expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
SGELDPR	Sorghum expected LDP rate	dollars per bushel
SGEMGR	Sorghum expected market gross returns	dollars per acre
SGENRS	Sorghum supply-inducing exp. net returns	dollars per acre
SGEPFM	Exp. sorghum farm price	dollars per bushel
SGEREVP	Sorghum expected ACRE market revenue	dollars
SGEYLDP	Expected sorghum ACRE yield	bushels per acre
SGGRMK	Sorghum market gross returns	dollars per acre
SGGRTAC	Sorghum total gross returns	dollars per base acre

Variable	Description	Unit
SGLDPAC	Sorghum LDPs/MLGs	dollars per acre
SGLDPRT	Sorghum LDP rate	dollars per bushel
SGNRMK	Sorghum market net returns	dollars per acre
SGNRML	Sorghum market + LDP/MLG net returns	dollars per acre
SGNRTAC	Sorghum total net returns	dollars per base acre
SGP2MA	Sorghum 2 year moving average price	dollars per bushel
SGPFRM	Sorghum farm price, U.S.	dollars per bushel
SGRBENC	Sorghum ACRE benchmark	dollars
SGREVP	Sorghum ACRE market revenue	dollars
SGSHAR	Sorghum area harvested	million acres
SGSPLT	Sorghum area planted	million acres
SGSPRD	Sorghum production	million bushels
SGSYLD	Sorghum yield/harv. acre	bushels per acre
SGSYLDP	Sorghum ACRE yield	bushels per acre
SGSYOLY	Sorghum olympic average ACRE yield	bushels per acre
SJENRS	Sugar cane supply-ind. exp. net return	dollars per acre
SJSHAR	Sugar cane area harvested	thousand acres
SKENRS	Sugar beet supply-ind. exp. net return	dollars per acre
SKSHAR	Sugar beet area harvested	thousand acres
SKSPLT	Sugar beet area planted	thousand acres
SMDDOM	Soybean meal domestic demand, HPAU t+1	thousand tons
SMDEXP	Soybean meal exports	thousand tons
SMDTES	Soybean meal total ending stocks	thousand tons
SMP44D	Soymeal price, 44% protein, Decatur	dollars per ton
SMP48D	Soybean meal 48% Price, Decatur	dollars per ton
SMSPRD	Soybean meal production	thousand tons
SODDOM	Baseline SODFOD	million pounds
SODEXP	Soybean oil exports	million pounds
SODFOD	Soybean oil non-biodiesel consumption	million pounds
SODTES	Soybean oil total ending stocks	million pounds
SOPMKT	Soybean oil price, Decatur	cents per pound
SOSPRD	Soybean oil production	million pounds
SUDEL	Sugar deliveries	thousand tons
SUETH	Sugar use for ethanol	thousand tons
SUDFRE	Sugar non-CCC stocks	thousand tons
SUEPRAW	Exp. raw sugar price	cents per pound
SUEPREF	Exp. refined beet sugar price	cents per pound
SUPRAW	Sugar NY raw price	cents per pound
SUPREF	Refined beet sugar price	cents per pound
SUSIMP	Sugar imports	thousand tons
SUSPRDSJ	Cane sugar production	thousand tons
SUSPRDSK	Beet sugar production	thousand tons
UMPMKT	Sunflower meal market price	dollars per ton
UOPMKT	Sunflower oil market price	cents per pound
USDPCY	Total direct payments	million dollars
USPLT	US major crop planted area	million acres
WHACRAC	Wheat ACRE payments per acre	dollars
WHARBEN	Arkansas wheat ACRE benchmark	dollars
WHAROLY	Arkansas wheat olympic average ACRE yield	bushels per acre
WHBASE	Wheat base acreage	million acres
WHCABEN	California wheat ACRE benchmark	dollars
WHCACRAR	Arkansas wheat ACRE payments	dollars
WHCACRCA	California wheat ACRE payments	dollars
WHCACRCY	Total wheat ACRE payments	dollars
WHCACRGA	Georgia wheat ACRE payments	dollars
WHCACRIA	Iowa wheat ACRE payments	dollars
WHCACRIL	Illinois wheat ACRE payments	dollars
WHCACRIN	Indiana wheat ACRE payments	dollars
WHCACRKS	Kansas wheat ACRE payments	dollars
WHCACRMN	Minnesota wheat ACRE payments	dollars
WHCACRMO	Missouri wheat ACRE payments	dollars
WHCACRMT	Montana wheat ACRE payments	dollars

Variable	Description	Unit
WHCACRND	North Dakota wheat ACRE payments	dollars
WHCACRNE	Nebraska wheat ACRE payments	dollars
WHCACROH	Ohio wheat ACRE payments	dollars
WHCACRRC	Rest of Country wheat ACRE payments	dollars
WHCACRSD	South Dakota wheat ACRE payments	dollars
WHCACRTX	Texas wheat ACRE payments	dollars
WHCAOLY	California wheat olympic average ACRE yield	bushels per acre
WHCCPAC	Wheat CCPs	dollars per base acre
WHCRP	Wheat CRP acreage	million acres
WHD9MO	Wheat 9-month loan stocks	million bushels
WHDEXP	Wheat exports	million bushels
WHDFED	Wheat feed use	million bushels
WHDFOD	Wheat food use per capita	million bushels
WHDFRE	Wheat free stocks	million bushels
WHDPAC	Wheat DPs	dollars per base acre
WHDPCY	Wheat direct payments	million dollars
WHDSED	Wheat seed use per acre	million bushels
WHEAAAR	AR wheat expected ACRE payment rate	dollars per acre
WHEAACA	CA wheat expected ACRE payment rate	dollars per acre
WHEAAGA	GA wheat expected ACRE payment rate	dollars per acre
WHEAAIA	IA wheat expected ACRE payment rate	dollars per acre
WHEAAIL	IL wheat expected ACRE payment rate	dollars per acre
WHEAAIN	IN wheat expected ACRE payment rate	dollars per acre
WHEAAKS	KS wheat expected ACRE payment rate	dollars per acre
WHEAAMN	MN wheat expected ACRE payment rate	dollars per acre
WHEAAMO	MO wheat expected ACRE payment rate	dollars per acre
WHEAAMT	MT wheat expected ACRE payment rate	dollars per acre
WHEAAND	ND wheat expected ACRE payment rate	dollars per acre
WHEAANE	NE wheat expected ACRE payment rate	dollars per acre
WHEAAOH	OH wheat expected ACRE payment rate	dollars per acre
WHEAARC	RC wheat expected ACRE payment rate	dollars per acre
WHEAASD	SD wheat expected ACRE payment rate	dollars per acre
WHEAATX	TX wheat expected ACRE payment rate	dollars per acre
WHEACAC	Wheat expected ACRE payment rate	dollars per acre
WHECCPA	Wheat expected CCPs for nonparticipants in ACRE	dollars per base acre
WHELDPA	Wheat expected LDPs/MLGs for nonparticipants in ACRE	dollars per acre
WHELDPR	Wheat expected LDP rate	dollars per bushel
WHEMGR	Wheat expected market gross returns	dollars per acre
WHENRS	Wheat supply-inducing exp. net returns	dollars per acre
WHEPFM	Exp. wheat farm price	dollars per bushel
WHERPAR	Arkansas wheat expected ACRE market revenue	dollars
WHERPCA	California wheat expected ACRE market revenue	dollars
WHERPGA	Georgia wheat expected ACRE market revenue	dollars
WHERPIA	Iowa wheat expected ACRE market revenue	dollars
WHERPIL	Illinois wheat expected ACRE market revenue	dollars
WHERPIN	Indiana wheat expected ACRE market revenue	dollars
WHERPKS	Kansas wheat expected ACRE market revenue	dollars
WHERPMN	Minnesota wheat expected ACRE market revenue	dollars
WHERPMO	Missouri wheat expected ACRE market revenue	dollars
WHERPMT	Montana wheat expected ACRE market revenue	dollars
WHERPND	North Dakota wheat expected ACRE market revenue	dollars
WHERPNE	Nebraska wheat expected ACRE market revenue	dollars
WHERPOH	Ohio wheat expected ACRE market revenue	dollars
WHERPRC	Rest of Country wheat expected ACRE market revenue	dollars
WHERPSD	South Dakota wheat expected ACRE market revenue	dollars
WHERPTX	Texas wheat expected ACRE market revenue	dollars
WHEYARP	Expected Arkansas wheat ACRE yield	bushels per acre
WHEYCAP	Expected California wheat ACRE yield	bushels per acre
WHEYGAP	Expected Georgia wheat ACRE yield	bushels per acre
WHEYIAP	Expected Iowa wheat ACRE yield	bushels per acre
WHEYILP	Expected Illinois wheat ACRE yield	bushels per acre
WHEYINP	Expected Indiana wheat ACRE yield	bushels per acre

Variable	Description	Unit
WHEYKSP	Expected Kansas wheat ACRE yield	bushels per acre
WHEYMNP	Expected Minnesota wheat ACRE yield	bushels per acre
WHEYMOP	Expected Missouri wheat ACRE yield	bushels per acre
WHEYMTP	Expected Montana wheat ACRE yield	bushels per acre
WHEYNDP	Expected North Dakota wheat ACRE yield	bushels per acre
WHEYNEP	Expected Nebraska wheat ACRE yield	bushels per acre
WHEYOHP	Expected Ohio wheat ACRE yield	bushels per acre
WHEYRCP	Expected Rest of Country wheat ACRE yield	bushels per acre
WHEYSDP	Expected South Dakota wheat ACRE yield	bushels per acre
WHEYTXP	Expected Texas wheat ACRE yield	bushels per acre
WHGABEN	Georgia wheat ACRE benchmark	dollars
WHGAOLY	Georgia wheat olympic average ACRE yield	bushels per acre
WHGRMK	Wheat market gross returns	dollars per acre
WHGRTAC	Wheat total gross returns	dollars per base acre
WHIABEN	Iowa wheat ACRE benchmark	dollars
WHIAOLY	Iowa wheat olympic average ACRE yield	bushels per acre
WHILBEN	Illinois wheat ACRE benchmark	dollars
WHILOLY	Illinois wheat olympic average ACRE yield	bushels per acre
WHINBEN	Indiana wheat ACRE benchmark	dollars
WHINOLY	Indiana wheat olympic average ACRE yield	bushels per acre
WHKSBEN	Kansas wheat ACRE benchmark	dollars
WHKSOLY	Kansas wheat olympic average ACRE yield	bushels per acre
WHLDPAC	Wheat LDPs/MLGs	dollars per acre
WHLDPRT	Wheat LDP rate	dollars per bushel
WHMNBEN	Minnesota wheat ACRE benchmark	dollars
WHMNOLY	Minnesota wheat olympic average ACRE yield	bushels per acre
WHMOBEN	Missouri wheat ACRE benchmark	dollars
WHMOOLY	Missouri wheat olympic average ACRE yield	bushels per acre
WHMTBEN	Montana wheat ACRE benchmark	dollars
WHMTOLY	Montana wheat olympic average ACRE yield	bushels per acre
WHNDBEN	North Dakota wheat ACRE benchmark	dollars
WHNDOLY	North Dakota wheat olympic average ACRE yield	bushels per acre
WHNEBEN	Arkansas wheat ACRE benchmark	dollars
WHNEOLY	Nebraska wheat olympic average ACRE yield	bushels per acre
WHNRMK	Wheat market net returns	dollars per acre
WHNRML	Weat market + LDP/MLG net returns	dollars per acre
WHNRTAC	Wheat total net returns	dollars per base acre
WHOHBEN	Ohio wheat ACRE benchmark	dollars
WHOHOLY	Ohio wheat olympic average ACRE yield	bushels per acre
WHP2MA	Wheat 2 year moving average price	dollars per bushel
WHPFRM	Wheat farm price, U.S.	dollars per bushel
WHRCBEN	Rest of Country wheat ACRE benchmark	dollars
WHRCOLY	Rest of Country wheat olympic average ACRE yield	bushels per acre
WHREVPAR	Arkansas wheat ACRE market revenue	dollars
WHREVPCA	California wheat ACRE market revenue	dollars
WHREVPGA	Georgia wheat ACRE market revenue	dollars
WHREVPIA	Iowa wheat ACRE market revenue	dollars
WHREVPII	Illinois wheat ACRE market revenue	dollars
WHREVPIN	Indiana wheat ACRE market revenue	dollars
WHREVPKS	Kansas wheat ACRE market revenue	dollars
WHREVPMN	Minnesota wheat ACRE market revenue	dollars
WHREVPMO	Missouri wheat ACRE market revenue	dollars
WHREVPMT	Montana wheat ACRE market revenue	dollars
WHREVPND	North Dakota wheat ACRE market revenue	dollars
WHREVPNE	Nebraska wheat ACRE market revenue	dollars
WHREVPOH	Ohio wheat ACRE market revenue	dollars
WHREVPRC	Rest of Country wheat ACRE market revenue	dollars
WHREVPSD	South Dakota wheat ACRE market revenue	dollars
WHREVPTX	Texas wheat ACRE market revenue	dollars
WHSDBEN	South Dakota wheat ACRE benchmark	dollars
WHSDOLY	South Dakota wheat olympic average ACRE yield	bushels per acre
WHSHAR	Wheat area harvested	million acres



Variable	Description	Unit
WHSIMP	Wheat imports	million bushels
WHSPLT	Wheat area planted	million acres
WHSPRD	Wheat production	million bushels
WHSYAR	Wheat yield/harv. acre Arkansas	bushels per acre
WHSYARP	Arkansas wheat ACRE yield	bushels per acre
WHSYCA	Wheat yield/harv. acre California	bushels per acre
WHSYCAP	California wheat ACRE yield	bushels per acre
WHSYGA	Wheat yield/harv. acre Georgia	bushels per acre
WHSYGAP	Georgia wheat ACRE yield	bushels per acre
WHSYIA	Wheat yield/harv. acre Iowa	bushels per acre
WHSYIAP	Iowa wheat ACRE yield	bushels per acre
WHSYIL	Wheat yield/harv. acre Illinois	bushels per acre
WHSYILP	Illinois wheat ACRE yield	bushels per acre
WHSYIN	Wheat yield/harv. acre Indiana	bushels per acre
WHSYINP	Indiana wheat ACRE yield	bushels per acre
WHSYKS	Wheat yield/harv. acre Kansas	bushels per acre
WHSYKSP	Kansas wheat ACRE yield	bushels per acre
WHSYLD	Wheat yield/harv. acre US	bushels per acre
WHSYMN	Wheat yield/harv. acre Minnesota	bushels per acre
WHSYMNP	Minnesota wheat ACRE yield	bushels per acre
WHSYMO	Wheat yield/harv. acre Missouri	bushels per acre
WHSYMOP	Missouri wheat ACRE yield	bushels per acre
WHSYMT	Wheat yield/harv. acre Montana	bushels per acre
WHSYMTP	Montana wheat ACRE yield	bushels per acre
WHSYND	Wheat yield/harv. acre North Dakota	bushels per acre
WHSYNDP	North Dakota wheat ACRE yield	bushels per acre
WHSYNE	Wheat yield/harv. acre Nebraska	bushels per acre
WHSYNEP	Nebraska wheat ACRE yield	bushels per acre
WHSYOH	Wheat yield/harv. acre Ohio	bushels per acre
WHSYOHP	Ohio wheat ACRE yield	bushels per acre
WHSYRC	Wheat yield/harv. acre Rest of Country	bushels per acre
WHSYRCP	Rest of Country wheat ACRE yield	bushels per acre
WHSYSD	Wheat yield/harv. acre South Dakota	bushels per acre
WHSYSDP	South Dakota wheat ACRE yield	bushels per acre
WHSYTX	Wheat yield/harv. acre Texas	bushels per acre
WHSYTXP	Texas wheat ACRE yield	bushels per acre
WHTXBEN	Texas wheat ACRE benchmark	dollars
WHTXOLY	Texas wheat olympic average ACRE yield	bushels per acre

### Exogenous

ACREFLA	Farms in ACRE eligible for ACRE payments	percent
ACREPAY	Base area eligible for ACRE payments	percent
ATBC	CCP switch variable (1 by default)	
ATBD	Direct payment switch variable (1 by default)	
ATBL	LDP/MLB switch variable (1 by default)	
BFCT911L	Fed steer price, t	dollars per cwt
BFCT911P	Fed steer price, t+1	dollars per cwt
BFPROD	Beef production, led	million pounds
BRACRINT	Barley ACRE intercept	
BRACRMUL	Barley ACRE multiplier	
BRACRPAR	U.S. barley standard deviation of revenue	dollars per acre
BRACRPR	U.S. barley ACRE participation rate	percent
BRBASEX	Deterministic barley base area	million acres
BRCCYD	Barley counter-cyclical payment yields	bushels per acre
BRDCCC	Barley CCC stocks	million bushels
BRDEXP	Barley exports	million bushels
BRDFOR	Barley FOR stocks	million bushels
BREYLD	Expected U.S. barley yield	bushels per acre
BRHPRAT	Barley harvested/planted ratio	
BRPFIX	Barley direct payment rate	dollars per bushel
BRPLNR	Barley loan rate	dollars per bushel

Variable	Description	Unit
BRPTAR	Barley target price	dollars per bushel
BRPYLD	Barley direct payment program yields	bushels per acre
BRVARC	Barley variable costs of production	dollars per acre
CIBRPRS	Barley crop insurance premium subsidies	million dollars
CICRPRS	Corn crop insurance premium subsidies	million dollars
CICTPRS	Cotton crop insurance premium subsidies	million dollars
CIOTPRS	Oats crop insurance premium subsidies	million dollars
CIPNPT	Peanut % of crop insurance prem. subsidised	
CIPNPRM	Peanut crop insurance premiums	million dollars
CIRCPRS	Rice crop insurance premium subsidy	million dollars
CISBPRS	Soybean crop insurance premium subsidy	million dollars
CISFPCT	Sunflower % of crop insurance prem. subsidised	
CISFPRM	Sunflower crop insurance premiums	million dollars
CISGPRS	Sorghum crop insurance premium subsidy	million dollars
CISJPCT	Sugarcane % of crop insurance prem. subsidised	
CISJPRM	Sugarcane crop insurance premium	million dollars
CISKPCT	Sugar beet % of crop insurance prem. subsidised	
CISKPRM	Sugar beet crop insurance premium	million dollars
CIWHPRS	Wheat crop insurance premium subsidy	million dollars
CKYPROD	Broiler production, led	million pounds
CRACPAR	Arkansas corn ACRE participation rate	percent
CRACPCA	California corn ACRE participation rate	percent
CRACPGA	Georgia corn ACRE participation rate	percent
CRACPIA	Iowa corn ACRE participation rate	percent
CRACPIL	Illinois corn ACRE participation rate	percent
CRACPIN	Indiana corn ACRE participation rate	percent
CRACPKS	Kansas corn ACRE participation rate	percent
CRACPMN	Minnesota corn ACRE participation rate	percent
CRACPMO	Missouri corn ACRE participation rate	percent
CRACPMT	Montana corn ACRE participation rate	percent
CRACPND	North Dakota corn ACRE participation rate	percent
CRACPNE	Nebraska corn ACRE participation rate	percent
CRACPOH	Ohio corn ACRE participation rate	percent
CRACPRC	Rest of Country corn ACRE participation rate	percent
CRACPSD	South Dakota corn ACRE participation rate	percent
CRACPTX	Texas corn ACRE participation rate	percent
CRACRPAR	U.S. corn standard deviation of revenue	dollars per acre
CRACRPR	U.S. corn ACRE participation rate	percent
CRALW	Deterministic corn planted area - 10	million acres
CRAUP	Deterministic corn planted area + 10	million acres
CRBASEX	Deterministic corn base area	million acres
CRCCYD	Corn counter-cyclical payment yields	bushels per acre
CRDBEV	Corn beverage alcohol use	million bushels
CRDCCC	Corn CCC stocks	million bushels
CRDCER	Corn cereal use	million bushels
CRDFOD	Corn food use (other than ethanol, HFCS)	million bushels
CRDFOR	Corn FOR stocks	million bushels
CRDGAS	Corn ethanol and byproduct use	million bushels
CRDGLD	Corn glucose and dextrose use	million bushels
CRDHFC	Corn HFCS use	million bushels
CRDSTR	Corn starch use	million bushels
CREYLD	Expected U.S. corn yield	bushels per acre
CRHPRAT	Corn harvested/planted ratio	
CRPEXPIR	CRP acres expiring	million acres
CRPFIX	Corn direct payment rate	dollars per bushel
CRPLNR	Corn loan rate	dollars per bushel
CRPMAX	Maximum CRP enrollment	million acres
CRPTAR	Corn target price	dollars per bushel
CRPYLD	Corn direct payment program yields	bushels per acre
CRSDRAR	Missouri corn standard deviation of revenue	dollars per acre
CRSDRCA	Montana corn standard deviation of revenue	dollars per acre
CRSDRGA	Nebraska corn standard deviation of revenue	dollars per acre

Variable	Description	Unit
CRSDRIA	South Dakota corn standard deviation of revenue	dollars per acre
CRSDRIL	North Dakota corn standard deviation of revenue	dollars per acre
CRSDRIN	Ohio corn standard deviation of revenue	dollars per acre
CRSDRKS	Texas corn standard deviation of revenue	dollars per acre
CRSDRMN	Rest of Country corn standard deviation of revenue	dollars per acre
CRSDRMO	U.S. cotton standard deviation of revenue	dollars per acre
CRSDRMT	U.S. oats standard deviation of revenue	dollars per acre
CRSDRND	U.S. rice standard deviation of revenue	dollars per acre
CRSDRNE	U.S. peanut standard deviation of revenue	dollars per acre
CRSDROH	U.S. soybean standard deviation of revenue	dollars per acre
CRSDRRC	Illinois soybean standard deviation of revenue	dollars per acre
CRSDRSD	Arkansas soybean standard deviation of revenue	dollars per acre
CRSDRTX	Georgia soybean standard deviation of revenue	dollars per acre
CRSEYAR	Expected Arkansas corn yield	bushels per acre
CRSEYCA	Expected California corn yield	bushels per acre
CRSEYGA	Expected Georgia corn yield	bushels per acre
CRSEYIA	Expected Iowa corn yield	bushels per acre
CRSEYIL	Expected Illinois corn yield	bushels per acre
CRSEYIN	Expected Indiana corn yield	bushels per acre
CRSEYKS	Expected Kansas corn yield	bushels per acre
CRSEYMN	Expected Minnesota corn yield	bushels per acre
CRSEYMO	Expected Missouri corn yield	bushels per acre
CRSEYMT	Expected Montana corn yield	bushels per acre
CRSEYND	Expected North Dakota corn yield	bushels per acre
CRSEYNE	Expected Nebraska corn yield	bushels per acre
CRSEYOH	Expected Ohio corn yield	bushels per acre
CRSEYRC	Expected Rest of Country corn yield	bushels per acre
CRSEYSD	Expected South Dakota corn yield	bushels per acre
CRSEYTX	Expected Texas corn yield	bushels per acre
CRSIMP	Corn imports	million bushels
CRVARC	Corn variable costs of production	dollars per acre
CTACRINT	Cotton ACRE intercept	
CTACRMUL	Cotton ACRE multiplier	
CTACRPAR	Arkansas corn standard deviation of revenue	dollars per acre
CTACRPR	U.S. cotton ACRE participation rate	percent
CTBASEX	Deterministic cotton base area	million acres
CTCCYD	Upland cotton counter-cyclical payment yields	pounds per acre
CTDCCC	Cotton CCC stocks	million bales
CTDUNN	Cotton unaccounted use	million bales
CTEYLD	Expected U.S. cotton yield	pounds per acre
CTHPRAT	Upland cotton harvested/planted ratio	
CTPFIX	Upland cotton direct payment rate	dollars per pound
CTPLNR	Upland cotton loan rate	dollars per pound
CTPTAR	Upland cotton target price	dollars per pound
CTPYLD	Upland cotton direct payment program yields	pounds per acre
CTSIMP	Cotton imports	million bales
CTUSER	Cotton user payment	dollars per pound
CTVARC	Upland cotton variable costs of production	dollars per acre
D00	1 if year = 2000, otherwise 0	
D01	1 if year = 2001, otherwise 0	
D02	1 if year = 2002, otherwise 0	
D03	1 if year = 2003, otherwise 0	
D8081	1 if year = 1980, 1981, otherwise 0	
D81	1 if year = 1981, otherwise 0	
D8284	1 if year = 1982, 1984, otherwise 0	
D83	1 if year = 1983, otherwise 0	
D84	1 if year = 1984, otherwise 0	
D85	1 if year = 1985, otherwise 0	
D8687	1 if year = 1986, 1987, otherwise 0	
D8695	1 if year is between 1986 and 1995 otherwise 0	
D87	1 if year = 1987, otherwise 0	
D8889	1 if year = 1988, 1989, otherwise 0	

Variable	Description	Unit
D8990	1 if year = 1989, 1990, otherwise 0	
D90	1 if year = 1990, otherwise 0	
D9394	1 if year = 1993, 1994, otherwise 0	
D95	1 if year = 1995, otherwise 0	
DGCONBE	DDG consumed by beef	thousand tons
DGCONBR	DDG consumed by poultry	thousand tons
DGCONDY	DDG consumed by dairy	thousand tons
DGCONPK	DDG consumed by pork	thousand tons
DGDCOBE	Beef: corn avg. displacement	
DGDCOBR	Poultry: corn avg. displacement	
DGDCODY	Dairy: corn avg. displacement	
DGDCOPK	Pork: corn avg. displacement	
DGDDOM	DDG/Brewers dom. use	thousand tons
DGDSMBE	Beef: soymeal avg. displacement	
DGDSMBR	Poultry: soymeal avg. displ.	
DGDSMDY	Dairy: soymeal avg. displ.	
DGDSMPK	Pork: soymeal avg. displacement	
DGPMKT	DDG price, Lawrenceburg	dollars per ton
DPPAY	Base area eligible for direct payments	percent
ETPADSA	Ethanol, other advanced price	dollars per gallon
ETSPNCSA	Ethanol non-corn prod, Sep-Aug	million gallons
GBEEF	Grain-consuming beef animal units, t+1	units
GBROIL	GCAU for broilers, led	units
GCAU	Grain-consuming animal units, t+1	units
GDAIRY	Grain-consuming dairy animal units	units
GFDDOM	Gluten feed domestic use	thousand tons
GLAYER	GCAU for layers, led	units
GMDDOM	Gluten meal domestic use	thousand tons
GPORK	GCAU for swine, led	units
GTURKEY	GCAU for turkey, led	units
HAEYLD	Expected U.S. hay yield	tons per acre
HASYLD	Hay yield	tons per acre
HAVARC	Hay variable costs of production	dollars per acre
HBEEF	HPAU for beef cattle, led	units
HBROIL	HPAU for broilers, led	units
HDAIRY	HPAU for dairy, led	units
HFDDOMOS	HFCS dom. deliveries, Oct.-Sep.	thousand tons
HFDEXNOS	HFCS net exports, Oct.-Sep.	thousand tons
HLAYER	HPAU for layers, led	units
HPAU	High-protein animal units, t+1	units
HPORK	HPAU for swine, led	units
HTURKEY	HPAU for turkeys, led	units
LPIGCAU	GCAU price index, t+1	units
LPIHPAU	HPAU price index, t+1	units
OTACRINT	Oats ACRE intercept	
OTACRMUL	Oats ACRE multiplier	
OTACRPAR	California corn standard deviation of revenue	dollars per acre
OTACRPR	U.S. oats ACRE participation rate	percent
OTBASEX	Deterministic oats base area	million acres
OTCCYD	Oats counter-cyclical payment yields	bushels per acre
OTD9MO	Oat 9-month loan stocks	million bushels
OTDCCC	Oat CCC stocks	million bushels
OTDEXP	Oat exports	million bushels
OTDFOR	Oat FOR stocks	million bushels
OTEYLD	Expected U.S. oats yield	bushels per acre
OTHPRAT	Oats harvested/planted ratio	
OTPFIX	Oats direct payment rate	dollars per bushel
OTPLNR	Oats loan rate	dollars per bushel
OTPTAR	Oats target price	dollars per bushel
OTPYLD	Oats direct payment program yields	bushels per acre
OTVARC	Oats variable costs of production	dollars per acre
PCIUFAB	CPI for food and beverages	index

Variable	Description	Unit
PCIUW	CPI, total urban	index
PDCGNP	GDP deflator	index
PDCGNPX	GDP deflator	index
PDGNPW	GDP deflator, 1982=100	index
PKHGSLT	Hog slaughter	thousand head
PKSLTWT	Hog slaughter weight	pounds
PNACRINT	Peanut ACRE intercept	
PNACRMUL	Peanut ACRE multiplier	
PNACRPAR	Georgia corn standard deviation of revenue	dollars per acre
PNACRPR	U.S. peanut ACRE participation rate	percent
PNBASEX	Deterministic peanut base area	million acres
PNCCYD	Peanuts counter-cyclical payment yields	pounds per acre
PNDRES	Peanut use residual	million pounds
PNDSER	Peanut seed and residual use	million pounds
PNEYLD	Expected U.S. peanut yield	pounds per acre
PNHPRAT	Peanuts harvested/planted ratio	
PNPADD	Peanut additional price	cents per pound
PNPFIX	Peanuts direct payment rate	cents per pound
PNPLNR	Peanuts loan rate	cents per pound
PNPTAR	Peanuts target price	cents per pound
PNPYLD	Peanuts direct payment program yields	pounds per acre
PNSIMP	Peanut imports	million pounds
PNVARC	Peanuts variable costs of production	dollars per acre
POILRAP	Refiners' crude oil acquisition price	dollars per barrel
POILRASA	Refiners' oil acquisition price, Sep-Aug	dollars per barrel
POPTOTW	U.S. population	million people
PPI	Producer price index	index
PPI9NFZ	Nitrogen fertilizer prices paid ind.	index, 90-92=100
PPIINGAS	PPI for gas fuels, 1982=100	index
PPIRPP	Refined petroleum products price index	index
PPIRPPSA	Refined petroleum prod. PPI, Sep-Aug	index
RCACRINT	Rice ACRE intercept	
RCACRMUL	Rice ACRE multiplier	
RCACRPAR	Illinois corn standard deviation of revenue	dollars per acre
RCACRPR	U.S. rice ACRE participation rate	percent
RCBASEX	Deterministic rice base area	million acres
RCCCCYD	Rice counter-cyclical payment yields	cwt per acre
RCDCCC	Rice CCC stocks	million cwt
RCDRES	Rice residual use	million cwt
RCEYLD	Expected U.S. rice yield	pounds per acre
RCHPRAT	Rice harvested/planted ratio	
RCPFIX	Rice direct payment rate	dollars per cwt
RCPLNR	Rice loan rate	dollars per cwt
RCPTAR	Rice target price	dollars per cwt
RCPYLD	Rice direct payment program yields	cwt per acre
RCVARC	Rice variable costs of production	dollars per acre
SBACPAR	Arkansas soybean ACRE participation rate	percent
SBACPGA	Georgia soybean ACRE participation rate	percent
SBACPJA	Iowa soybean ACRE participation rate	percent
SBACPIL	Illinois soybean ACRE participation rate	percent
SBACPIN	Indiana soybean ACRE participation rate	percent
SBACPKS	Kansas soybean ACRE participation rate	percent
SBACPMN	Minnesota soybean ACRE participation rate	percent
SBACPMO	Missouri soybean ACRE participation rate	percent
SBACPND	North Dakota soybean ACRE participation rate	percent
SBACPNE	Nebraska soybean ACRE participation rate	percent
SBACPOH	Ohio soybean ACRE participation rate	percent
SBACPRC	Rest of Country soybean ACRE participation rate	percent
SBACPSD	South Dakota soybean ACRE participation rate	percent
SBACPTX	Texas soybean ACRE participation rate	percent
SBACRPAR	Indiana corn standard deviation of revenue	dollars per acre
SBACRPR	U.S. soybean ACRE participation rate	percent

Variable	Description	Unit
SBALW	Deterministic soybean planted area - 10	million acres
SBAUP	Deterministic soybean planted area + 10	million acres
SBBASEX	Deterministic soybean base area	million acres
SBCCYD	Soybeans counter-cyclical payment yields	bushels per acre
SBDOCC	Soybean CCC stocks	million bushels
SBEYLD	Expected U.S. soybean yield	bushels per acre
SBEYLDAR	Expected Arkansas soybean yield	bushels per acre
SBEYLDGA	Expected Georgia soybean yield	bushels per acre
SBEYLDIA	Expected Iowa soybean yield	bushels per acre
SBEYLDIL	Expected Illinois soybean yield	bushels per acre
SBEYLDIN	Expected Indiana soybean yield	bushels per acre
SBEYLDKS	Expected Kansas soybean yield	bushels per acre
SBEYLDMN	Expected Minnesota soybean yield	bushels per acre
SBEYLDMO	Expected Missouri soybean yield	bushels per acre
SBEYLDND	Expected North Dakota soybean yield	bushels per acre
SBEYLDNE	Expected Nebraska soybean yield	bushels per acre
SBEYLDNH	Expected Ohio soybean yield	bushels per acre
SBEYLDRC	Expected Rest of Country soybean yield	bushels per acre
SBEYLDSD	Expected South Dakota soybean yield	bushels per acre
SBEYLDTX	Expected Texas soybean yield	bushels per acre
SBHPRAR	Arkansas harvested/planted ratio	
SBHPRGA	Georgia harvested/planted ratio	
SBHPRIA	Iowa harvested/planted ratio	
SBHPRIL	Illinois harvested/planted ratio	
SBHPRIN	Indiana harvested/planted ratio	
SBHPRKS	Kansas harvested/planted ratio	
SBHPRMN	Minnesota harvested/planted ratio	
SBHPRMO	Missouri harvested/planted ratio	
SBHPRND	North Dakota harvested/planted ratio	
SBHPRNE	Nebraska harvested/planted ratio	
SBHPROH	Ohio harvested/planted ratio	
SBHPRRC	Rest of Country harvested/planted ratio	
SBHPRSD	South Dakota harvested/planted ratio	
SBHPRTX	Texas harvested/planted ratio	
SBPFIX	Soybeans direct payment rate	dollars per bushel
SBPLNR	Soybeans loan rate	dollars per bushel
SBPTAR	Soybeans target price	dollars per bushel
SBPYLD	Soybeans direct payment program yields	bushels per acre
SBSDRAR	Indiana soybean standard deviation of revenue	dollars per acre
SBSDRGA	Iowa soybean standard deviation of revenue	dollars per acre
SBSDRIA	Missouri soybean standard deviation of revenue	dollars per acre
SBSDRIL	Kansas soybean standard deviation of revenue	dollars per acre
SBSDRIN	Minnesota soybean standard deviation of revenue	dollars per acre
SBSDRKS	Nebraska soybean standard deviation of revenue	dollars per acre
SBSDRMN	North Dakota soybean standard deviation of revenue	dollars per acre
SBSDRMO	Ohio soybean standard deviation of revenue	dollars per acre
SBSDRND	Texas soybean standard deviation of revenue	dollars per acre
SBSDRNE	South Dakota soybean standard deviation of revenue	dollars per acre
SBSDROH	Rest of Country soybean standard deviation of revenue	dollars per acre
SBSDRRC	U.S. wheat standard deviation of revenue	dollars per acre
SBSDRSD	U.S. sunflower standard deviation of revenue	dollars per acre
SBSDRTX	U.S. sorghum standard deviation of revenue	dollars per acre
SBSIMP	Soybean imports	million bushels
SBVARC	Soybeans variable costs of production	dollars per acre
SFACRINT	Sunflower ACRE intercept	
SFACRMUL	Sunflower ACRE multiplier	
SFACRPAR	Iowa corn standard deviation of revenue	dollars per acre
SFACRPR	U.S. sunflower ACRE participation rate	percent
SFBASEX	Deterministic sunflower base area	million acres
SFCCYD	Sunflowerseed counter-cyclical payment yields	cwt per acre
SFEYLD	Expected U.S. sunflower yield	pounds per acre
SFHPRAT	Sunflowers harvested/planted ratio	

Variable	Description	Unit
SFFFIX	Sunflowerseed direct payment rate	cents per pound
SFPLNR	Sunflowerseed loan rate	cents per pound
SFPTAR	Sunflowerseed target price	cents per pound
SFPYLD	Sunflowerseed direct payment program yields	cwt per acre
SFSIMP	Sunflower imports	million pounds
SFVARC	Sunflowers variable costs of production	dollars per acre
SGACRINT	Sorghum ACRE intercept	
SGACRMUL	Sorghum ACRE multiplier	
SGACRPAR	Kansas corn standard deviation of revenue	dollars per acre
SGACRPR	U.S. sorghum ACRE participation rate	percent
SGBASEX	Deterministic sorghum base area	million acres
SGCCYD	Sorghum counter-cyclical payment yields	bushels per acre
SGDCCC	Sorghum CCC stocks	million bushels
SGDFOR	Sorghum FOR stocks	million bushels
SGEYLD	Expected U.S. sorghum yield	bushels per acre
SGHPRAT	Sorghum harvested/planted ratio	
SGPFIX	Sorghum direct payment rate	dollars per bushel
SGPLNR	Sorghum loan rate	dollars per bushel
SGPTAR	Sorghum target price	dollars per bushel
SGPYLD	Sorghum direct payment program yields	bushels per acre
SGSIMP	Sorghum imports	million bushels
SGVARC	Sorghum variable costs of production	dollars per acre
SHIFT04	1 if year > 2004, otherwise 0	
SHIFT84	1 if year > 1983, otherwise 0	
SHIFT86	1 if year > 1986, otherwise 0	
SHIFT89	1 if year > 1989, otherwise 0	
SHIFT90	1 if year > 1990, otherwise 0	
SHIFT93	1 if year > 1993, otherwise 0	
SHIFT97	1 if year > 1997, otherwise 0	
SHIFT98	1 if year > 1998, otherwise 0	
SJVARC	Sugar cane variable costs of production	dollars per acre
SKHPRAT	Sugar beets harvested/planted ratio	
SKVARC	Sugar beets variable costs of production	dollars per acre
SMCYLD	Soymeal (crush yield)	pounds per bushel
SMSIMP	Soymeal imports	thousand tons
SOCYLD	Soyoil (crush yield)	pounds per bushel
SODBIO	Soybean oil for biodiesel	million pounds
SOSIMP	Soybean oil imports	million pounds
SUDCCC	Sugar CCC stocks	thousand tons
SUDEXP	Sugar exports	thousand tons
SUDRES	Sugar use residual	thousand tons
SUEYDJ	Expected U.S. sugarcane yield	tons per acre
SUEYDK	Expected U.S. sugar beet yield	tons per acre
SUPLNJ	Sugarcane loan rate	cents per pound
SUPLNK	Sugar beets loan rate	cents per pound
SUPRCAR	World sugar price (FOB Caribbean)	cents per pound
SUSYDJ	Sugar yield (per acre of cane)	tons per acre
SUSYDK	Sugar yield (per acre of beets)	tons per acre
SWSPLT	Switchgrass planted area	million acres
TRND9602	year - 1995 if year > 1995, otherwise 0	
WHACPAR	Arkansas wheat ACRE participation rate	percent
WHACPCA	California wheat ACRE participation rate	percent
WHACPGA	Georgia wheat ACRE participation rate	percent
WHACPIA	Iowa wheat ACRE participation rate	percent
WHACPIL	Illinois wheat ACRE participation rate	percent
WHACPIN	Indiana wheat ACRE participation rate	percent
WHACPKS	Kansas wheat ACRE participation rate	percent
WHACPMN	Minnesota wheat ACRE participation rate	percent
WHACPMO	Missouri wheat ACRE participation rate	percent
WHACPMT	Montana wheat ACRE participation rate	percent
WHACPND	North Dakota wheat ACRE participation rate	percent
WHACPNE	Nebraska wheat ACRE participation rate	percent

Variable	Description	Unit
WHACPOH	Ohio wheat ACRE participation rate	percent
WHACPRC	Rest of Country wheat ACRE participation rate	percent
WHACPSD	South Dakota wheat ACRE participation rate	percent
WHACPTX	Texas wheat ACRE participation rate	percent
WHACRPAR	Minnesota corn standard deviation of revenue	dollars per acre
WHACRPR	U.S. wheat ACRE participation rate	percent
WHBASEX	Deterministic wheat base area	million acres
WHCCYD	Wheat counter-cyclical payment yields	bushels per acre
WHDCCC	Wheat CCC stocks	million bushels
WHDFOR	Wheat FOR stocks	million bushels
WHEYAR	Expected Arkansas wheat yield	bushels per acre
WHEYCA	Expected California wheat yield	bushels per acre
WHEYGA	Expected Georgia wheat yield	bushels per acre
WHEYIA	Expected Iowa wheat yield	bushels per acre
WHEYIL	Expected Illinois wheat yield	bushels per acre
WHEYIN	Expected Indiana wheat yield	bushels per acre
WHEYKS	Expected Kansas wheat yield	bushels per acre
WHEYLD	Expected U.S. wheat yield	bushels per acre
WHEYMN	Expected Minnesota wheat yield	bushels per acre
WHEYMO	Expected Missouri wheat yield	bushels per acre
WHEYMT	Expected Montana wheat yield	bushels per acre
WHEYND	Expected North Dakota wheat yield	bushels per acre
WHEYNE	Expected Nebraska wheat yield	bushels per acre
WHEYOH	Expected Ohio wheat yield	bushels per acre
WHEYRC	Expected Rest of Country wheat yield	bushels per acre
WHEYSD	Expected South Dakota wheat yield	bushels per acre
WHEYTX	Expected Texas wheat yield	bushels per acre
WHHPRAT	Wheat harvested/planted ratio	
WHPFIX	Wheat direct payment rate	dollars per bushel
WHPLNR	Wheat loan rate	dollars per bushel
WHPTAR	Wheat target price	dollars per bushel
WHPYLD	Wheat direct payment program yields	bushels per acre
WHSDRAR	Arkansas wheat standard deviation of revenue	dollars per acre
WHSDRCA	California wheat standard deviation of revenue	dollars per acre
WHSDRGA	Georgia wheat standard deviation of revenue	dollars per acre
WHSDRIA	Iowa wheat standard deviation of revenue	dollars per acre
WHSDRIL	Illinois wheat standard deviation of revenue	dollars per acre
WHSDRIN	Indiana wheat standard deviation of revenue	dollars per acre
WHSDRKS	Kansas wheat standard deviation of revenue	dollars per acre
WHSDRMN	Minnesota wheat standard deviation of revenue	dollars per acre
WHSDRMO	Missouri wheat standard deviation of revenue	dollars per acre
WHSDRMT	Montana wheat standard deviation of revenue	dollars per acre
WHSDRND	North Dakota wheat standard deviation of revenue	dollars per acre
WHSDRNE	Nebraska wheat standard deviation of revenue	dollars per acre
WHSDROH	Ohio wheat standard deviation of revenue	dollars per acre
WHSDRRC	Rest of Country wheat standard deviation of revenue	dollars per acre
WHSDRSD	South Dakota wheat standard deviation of revenue	dollars per acre
WHSDRTX	Texas wheat standard deviation of revenue	dollars per acre
WHVARC	Wheat variable costs of production	dollars per acre
WPI05	Coal prices paid index	index
ZCE92W	Real consumer expenditures	billion 1992 dollars
ZCEFABW	Food and beverage expenditures	billion dollars
ZCENFABW	Food and beverage expenditures	billion dollars
ZTIME	Year	



### WHEAT EQUATIONS

Wheat area harvested

$$\text{WHS HAR} = \text{W H H P R A T} + \text{W H S P L T}$$

Wheat production

$$\text{W H S P R D} = \text{W H S H A R} * \text{W H S Y L D}$$

Wheat feed use per GBEEF

$$\begin{aligned} \text{W H D F E D / G B E E F} = & +0.2 \\ & -9.4897 * \text{W H P F R M} / \text{P D C G N P} & -5.259 \\ & +9.9878 * (.25 * \text{lag}(\text{C R P F R M}) + .75 * \text{C R P F R M}) / \text{P D C G N P} & 3.529 \\ & +0.05 * \text{Lag}(\text{B F C T 9 1 1 P}) / \text{P D C G N P} & 0.478 \\ & -0.0111 * \text{T R N D 9 6 0 2} \end{aligned}$$

Wheat food use per capita

$$\begin{aligned} \text{W H D F O D / P O P T O T W} = & +0.9768 \\ & -0.0751 * \ln(\text{W H P F R M} / \text{P C I U W}) & -0.075 \\ & +0.05 * \ln(\text{Z C E N F A B W} / \text{P C I U W} / \text{P O P T O T W}) & 0.050 \\ & +0.1112 * \text{S H I F T 8 9} \end{aligned}$$

Wheat seed use per acre

$$\begin{aligned} \text{W H D S E D / W H S P L T} = & +0.5599 \\ & +0.226 * \ln(\text{Z T I M E} - 1959) \end{aligned}$$

Wheat 9-month loan stocks

$$\begin{aligned} \text{W H S P R D} * \ln(\text{W H D 9 M O} / (1 - \text{W H D 9 M O})) = & -1.558 \\ & -1.596 * (\text{W H P F R M} + \text{W H L D P R T}) / \text{W H P L N R} \\ & +1.245 * \text{D 9 0} \end{aligned}$$

Wheat free stocks

$$\begin{aligned} \text{W H D F R E} = & +0 \\ & +10.9959 * 1 / (\text{W H P F R M} / \text{P D C G N P}) & -0.563 \\ & +0.2 * \text{W H S T O T} & 1.003 \\ & -0.0609 * \text{W H S P R D}(t+1) & -0.239 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
-0.8000	* WHD9MO	-0.039	
-0.3177	* WHDFOR + WHDCCC	-0.010	
-11.3833	* (ZTIME-1980)		
-176.9400	* D8695		

Wheat market-clearing identity

WHSPRD + WHSIMP + (WHDFOR + WHDCCC + WHD9MO + WHDFRE)(t-1)

= WHDFED + WHDSED + WHDFOD + WHDEXP + WHDFRE + WHD9MO + WHDCCC + WHDFOR

## CORN EQUATIONS

Corn area harvested

CRSHAR =

CRHPRAT  
\* CRSPLT

Corn production

CRSPRD =

CRSHAR  
\* CRSYLD

Corn feed use per led GCAU

CRDFED/GCAU1 =

+0.785  
-0.0641500 \* CRPFRM / LPIGCAU1 -0.201  
-0.65858 \* (60/56\*WHDFED+SGDFED+48/56\*BRDFED  
\* +32/56\*OTDFED)/GCAU(t+1) -0.048  
-0.55000 \* GFDDOM\*2/56/GCAU(t+1) -0.023  
+0.00043 \* (SMP48D/LPIGCAU1) 0.109  
+0.16689 \* CRSPRD/GCAU(t+1) 0.357  
-0.01000 \* max(0,CRPFRM\*2000/56\*1.1-SMP48D)\*2/56\*HPAU/GCAU  
+0.05 \* D82 + D83 + D84  
-0.05855 \* D8889  
-1.00000 \* (DGCONBE\*DGDCOBE + DGCONPK\*DGDCOPK +  
DGCONBR\*DGDCOBR + DGCONDY\*DGDCODY)  
\* 2/56/GCAU(t+1) -0.099

Corn seed use per led acre

CRDSED/CRSPLT1 =

+0.239  
+0.0153 \* SHIFT84

Corn 9-month loan stocks

CRSPRD\*ln(CRD9MO/(1-CRD9MO)) =  
-0.6

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
-1.5955	* (CRPFRM+CRLDPRT)/CRPLNR		
-0.694	* SHIFT93		

Corn free stocks

CRDFRE =

+1500		
+34.6528	* 1/(CRPFRM/PDCGNP)	-0.992
+0.15	* (CRSPRD + CRSIMP + lag(CRDFRE + CRD9MO + CRDFOR + CRDCCC))	1.360
-0.8000	* CRD9MO	-0.075
-0.3859	* CRDFOR + CRDCCC	0.000
-0.1216	* CRSPRD(t+1)	-0.984
-62.3403	* (ZTIME-1980)	
+1241.4696	* D85	

Corn market-clearing identity

CRSPRD + CRSIMP + (CRDFOR + CRDCCC + CRD9MO + CRDFRE)(t-1)

= CRDFED + CRDSED + CRDFOD + CRDEXP + CRDFRE + CRD9MO + CRDCCC + CRDFOR

## SORGHUM EQUATIONS

Sorghum area harvested

SGSHAR =

SGHPRAT  
\* SGSPLT

Sorghum production

SGSPRD =

SGSHAR  
\* SGSYLD

Sorghum feed use per led GBEEF

SGDFED/GBEEF1 =

+0.2844		
-0.2415	* SGPFRM / CRPFRM	-2.974
+0.1926	* lag(SGSPRD1)/GBEEF1	0.492
-0.0200	* (DGDDOM+GFDDOM)/GBEEF1	-0.115
+1.6524	* 1/(ZTIME-1975)	
-0.0586	* SHIFT98	

Sorghum food/industrial use (includes ethanol)

SGDFOD =

+50		
-1000	* SGPFRM / PDCGNP1	-0.359
+100	* WHPFRM / PDCGNP1	0.059

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+0.25 * ETSPNCSA		0.667

Sorghum seed use  
SGDSED/SGSPLT1 =

+0.090721		
+0.116391 * SGSPLT t+1		0.911
+1.04376 * D81		
-0.625689 * D95		

Sorghum 9-month loan stocks  
SGSPRD\*ln(SGD9MO/(1-SGD9MO)) =

-1.5	
-3 * (SGPFRM+SGLDPRT)/SGPLNR	

Sorghum free stocks  
SGDFRE =

-50		
+1.066 * 1/(SGPFRM/PDCGNP1)		-1.038
-0.208 * SGDCCC + SGDFOR		0.000
-0.5 * SGD9MO		-0.006
+0.181 * SGSPRD + SGSIMP + (SGDFRE + SGD9MO + SGDCCC)		1.697
-0.041 * SGSPRD (t+1)		-0.332

Sorghum market clearing identity

$$\text{SGSPRD} + \text{SGSIMP} + (\text{SGDFRE} + \text{SGD9MO} + \text{SGDCCC} + \text{SGDFOR})(t-1) \\ = \text{SGDFED} + \text{SGDSED} + \text{SGDFOD} + \text{SGDEXP} + \text{SGDFRE} + \text{SGD9MO} + \text{SGDCCC} + \text{SGDFOR}$$

## BARLEY EQUATIONS

Barley area harvested  
BRSHAR =

$$\text{BRHPRAT} \\ * \text{BRSPLT}$$

Barley production  
BRSPRD =

$$\text{BRSHAR} \\ * \text{BRSYLD}$$

Barley feed use  
BRDFED/GBEEF =

+0.0764		
-0.1159 * BRPFED / CRPFRM		-4.445
+0.1907 * lag(BRSPRD1)/lag(GBEEF1)		0.846

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+0.6311	* 1/(ZTIME-1975)		
-0.0133	* SHIFT04		

Barley food use per capita

BRDFOD/POPTOTW =

+1.5803		
-3.3028	* (BRPFRM / PCIUW )	-0.117
-0.3155	* ln(ZCE92W/POPTOTW)	-0.599
-0.0026	* (ZTIME-1980)	
+0.0355	* D8889	

Barley seed use

BRDSED =

+0.347064		
+1.605542	* BRSPLT1	0.966

Barley 9-month loan stocks

BRSPRD\*ln(BRD9MO/(1-BRD9MO)) =

+1.25	
-3	* (BRPFRM+BRLDPRT) / BRPLNR

Barley free stocks

BRDFRE =

+0		
+0.75	* 1/(BRPFRM/PDCGNP1)	-0.333
-0.233	* BRDCCC + BRDFOR	0.000
-0.6	* BRD9MO	-0.018
+0.123	* (BRSPRD+lag(BRDCCC+BRD9MO+BRDFOR+BRDFRE	0.458
-0.015	* BRSPRD1	-0.036

Feed barley price

BRPFED =

-0.0302		
+0.427	* BRPFRM	0.544
+0.451	* CRPFRM	0.499

Barley market clearing identity

BRSPRD + BRSIMP + (BRDFRE + BRD9MO + BRDCCC + BRDFOR)(t-1)

=BRDFED + BRDSED + BRDFOD + BRDEXP + BRDFRE + BRD9MO + BRDCCC + BRDFOR

## OAT EQUATIONS

Oats area harvested

OTSHAR =

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

OTHPRAT  
\* OTSPLT

Oats production  
OTSPRD =

OTSHAR  
\* OTSYLD

Oats feed use  
OTDFED/GDAIRY =

+0.1604		
-0.1267 * OTPFRM / CRPFRM		-0.644
+0.3917 * lag(OTSPRD1) / lag(GDAIRY1)		0.312
+1.0714 * 1/(ZTIME-1980)		
+0.0473 * D8687		

Oats seed use  
OTDSED =

+0		
+2.5 * OTSPLT1		0.960
+0 * D8081		

Oats food use per capita  
OTDFOD/POPTOTW =

+0.2		
-1 * OTPFRM / PCIUFAB		-0.051
+1 * ZCENFAB/PCIUW/POPTOTW		0.097
+0.2 * WHPFRM / PCIUFAB		0.023

Oats free stocks  
OTDFRE =

-28		
+0.5 * 1/(OTPFRM/PDCGNP1)		-0.491
+0.277009 * (OTSPRD +OTSIMP +OTSTES t-1)		1.105
-0.05 * OTSPRD (t+1)		-0.067
-31.16529 * D8687		
+27.297014 * D8889		

Oats market clearing identity

OTSPRD + OTSIMP + (OTDFRE + OTD9MO + OTDCCC + OTDFOR)(t-1)  
=OTDFED +OTDSED +OTDFOD +OTDEXP +OTDFRE +OTD9MO +OTDCCC +OTDFOR

## HAY EQUATIONS

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Hay production  
HASPRD =

HASHAR  
\* HASYLD

Hay domestic use  
HADDOM =

+122		
-66.056 * HAPFRM / PDCGNP		-0.390
+500 * (1/3*CRPFRM(t-1)+2/3*CRPFRM(t)) / PDCGNP		0.080
+0.025 * lag(GBEEF1 + GDAIRY1)		0.501

Hay total ending stocks  
HADTES =

-21.244		
+14.263 * 1/(HAPFRM/(PDCNGP*2/3+PDCNGP1/3))		-0.830
+0.15 * (HASPRD +HASTES(t-1))		1.249
+7.072 * D8990		

Alfalfa hay price, cal. yr.  
AQPFRM =

-10.800627		
+0.727716 * HAPFRM		0.696
+0.485226 * HAPFRM(t-1)		0.449

Hay market clearing identity  
HASPRD + HADTES(t-1)  
=HADDOM + HADTES

## UPLAND COTTON EQUATIONS

Upland cotton area harvested  
CTSHAR =

CTHPRAT  
\* CTSPILT

Upland cotton production  
CTSPRD =

CTSHAR  
\* CTSYLD / 480

Cotton mill use  
CTDMIL =

-9.3

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+0.6 * lag(CTDMIL)		
	-200 * (CTPMKT - CTUSER)/PDCGNP1	-0.171	-0.428
	+1.5 * log(ZCE92W)	0.337	0.842
	-0.06 * (ZTIME-1980)		

Cotton total ending stocks

CTDTES =

+2.3823		
+0.0212 * 1/(CTPMMPH/PDCGNP1)		-0.645
+0.15 * (CTSPRD+CTSIMP +CTSTES t-1)		0.542
-0.15 * CTSPRD (t+1)		-0.357
+3.0929 * D85		
-2.3587 * SHIFT89		

USNE Memphis territory price

CTPMMPH\*PDCGNP(t+1) =

+0.000377		
+0.997877 * CTPFE/PDCGNP1		0.970
-0.00003675 * CTDEXP		-0.089
+1 * CTUSER/PDCGNP1		
+0.000855 * D85		

Cotton market price

CTPMKT\*PDCGNP(t+1) =

+0.001105		
+0.772348 * CTPMMPH/PDCGNP1		0.959
-0.000109 * CTDTES		-0.190
+0.001136 * D85		

Cotton farm price

CTPFRM =

+0.137662		
+0.735831 * CTPMKT		0.765
-0.054709 * D9394		

Cotton AWP

CTPAWP =

-0.17		
+1 * CTPFE		1.339

Far East price

CTPAIN =

CTPFE



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Upl. cotton market clearing identity  
 $CTSPRD + CTSIMP + \text{lag}(CTDFRE + CTDCCC)$   
 $= CTDMIL + CTDEXP + CTDFRE + CTDCCC - CTDUNN$

Cottonseed yield/harv. upland acre  
 $CSSYLD =$

+145		
+1.3 * CTSYLD		0.885

Cottonseed production  
 $CSSPRD =$

$CSSYLD$   
 $* CTSHAR / 2$

Cottonseed price  
 $CSPFRM =$

+65		
-0.010 * CSSPRD		-0.407
+0.3 * SMP48D		0.543
+0.1 * DGPMKT		0.078
+1.2 * SOPMKT		0.279

## RICE EQUATIONS

Rice area harvested  
 $RCSHAR =$

$RCHPRAT$   
 $* RCSPLT$

Rice production  
 $RCSPRD =$

$RCSHAR$   
 $* RCSYLD / 100$

Rice imports  
 $RCSIMP =$

-3.00		
+3 * RCPMIL/RCPEXTH		0.164
+0.14 * (RCDDOM)		0.868

Rice domestic use  
 $RCDDOM/POPTOTW(t+1) =$

+0.39		
-0.7 * RCPMIL / PCIUFAB1		-0.183

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+0.02 * ln(ZTIME-1959)		

Rice total ending stocks

RCDTES =

-10		
+2.5 * 1/(RCPEXTH / PDCGNP t+1)		-0.502
+0.256855 * (RCSPRD + RCSIMP + RCSTES t-1)		1.889
-0.03 * RCSPRD (t+1)		-0.177
-38.305785 * SHIFT86		

Rice farm price

RCPFRM =

-1.5213		
+0.4204 * RCPAWP		0.346
+0.3432 * RCPMIL		0.630
+0.0651 * (ZTIME-1980)		

Southern milled rice price

RCPMIL/PDCGNP(t+1) =

+0.07		
+0.91654 * RCPEXTH/PDGNP1		0.854
-0.0009535 * RCDEXP		-0.620

Rice Adjusted World Price

RCPAWP/PDCGNP(t+1) =

-0.014851		
+0.584074 * RCPEXTH/PDCGNP1		1.218

Rice market clearing identity

RCSPRD + RCSIMP + (RCDCCC + RCDFRE)(t-1)

= RCDDOM + RCDEXP + RCDFRE + RCDCCC + RCDRES

## SOYBEAN EQUATIONS

Soybean area harvested

SBSHAR =

SBHPRAT  
\* SBSPLT

Soybean production

SBSPRD =

SBSHAR  
\* SBSYLD

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Soybean crush			
SBDCRU =			
+341.8096			
+0.2695	* lag(SBDCRU)		
+15000	* (SMP48D*SMCYLD/2000+SOPMKT * SOCYLD/100-SBPMKT)/PDCGNP1	0.082	0.112
+0.1415	* lag(SBSPRD1+SBDFRE+SBD9MO+SBDCCC)	0.273	0.373
+151.5027	* SHIFT90		
+167.7724	* SHIFT97		
Soybean seed and residual use			
SBDSSED =			
+14.4071			
+1.6298	* SBSPLT1	0.910	
+0.0256	* SBSPRD	0.589	
-967.7882	* SBPFRM/PDCGNP1	-0.434	
Soybean 9-month loan stocks			
SBSPRD*ln(SBD9MO/(1-SBD9MO)) =			
-2.5			
+60	* SBPLNR/PDCGNP1		
-60	* (SBPFRM+SBLDPRT)/PDCGNP1		
-1.17934	* SHIFT86		
Soybean free stocks			
SBDFRE =			
+249.9354			
+13.2482	* 1/(SBPFRM/PDCGNP1)	-0.876	
+0.0218	* (SBSPRD+lag(SBDFRE+SBDCCC+SBD9MO)+SBSIMP)	0.276	
-0.5403	* SBDCCC	0.000	
-0.8000	* SBD9MO	-0.109	
-0.1233	* SBSPRD (t+1)	-1.433	
+135.0438	* D85		
-113.4040	* (D00+D01+D02+D03)		
Soybean market price, IL processor			
SBPMKT =			
+0.42086			
+0.9718	* SBPFRM	0.897	
+0.62493	* D87		
Soybean market-clearing identity			
SBSPRD + SBSIMP + (SBDCCC + SBDFRE + SBD9MO)(t-1)			
= SBDCRU + SBDSSED + SBDRES + SBDEXP + SBDFRE + SBDCC + SBD9MO			

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

### SOYBEAN MEAL EQUATIONS

Soybean meal production

SMSPRD =

$$\text{SBDCRU} \\ * \text{SMCYLD} / 2$$

Soybean meal 48% Price, Decatur

SMP48D =

$$+6.617782 \\ +1.03768 * \text{SMP44D} \quad 0.990$$

Soybean meal domestic demand, HPAU t+1

SMDDOM =

$$+1.12 \\ -0.0005 * \text{SMP48D} / \text{LPIHPAU t+1} \quad -0.128 \\ -0.0005 * \text{SMP48D} / \text{CRPFRM} \quad -0.049 \\ +0.01 * \max(0, \text{CRPFRM} * 2000 / 56 * 1.1 - \text{SMP48D}) \\ -1 * (.3 * \text{GFDDOM} + .7 * \text{GMDDOM}) / \text{HPAU t+1} \quad -0.088 \\ -0.6 * (66 * \text{CTSPRD} + 0.2 * \text{PNDCRU} + 0.24 * \text{SFDCRU}) / \text{HPAU t+1} \quad -0.030 \\ -1 * (\text{DGCONBE} * \text{DGDSMBE} + \text{DGCONPK} * \text{DGDSMPK} + \\ * \text{DGCONBR} * \text{DGDSMBR} + \text{DGCONDY} * \text{DGDSMDY}) / \text{HPAU} \quad -0.085$$

Soybean meal total ending stocks =

SMDTES

$$+400 \\ -66 * \text{SMP48D} / \text{PDCGNP1} \quad -0.429$$

Soymeal market clearing identity

SMSPRD + SMSIMP + (SMDTES)(t-1)

= SMDDOM + SMDEXP + SMDTES

### SOYBEAN OIL EQUATIONS

Soybean oil production

SOSPRD =

$$\text{SBDCRU} \\ * \text{SOCYLD}$$

Soybean oil non-biodiesel consumption

SODFOD/POPTOTW(t+1) =

$$+36 \\ -40 * \text{SOPMKT} / \text{PDCGNP}(t+1) \quad -0.20 \\ -0.5 * (40 * \text{lag}(\text{CTSPRD1}) * +0.35 * \text{PNDCRU} + 0.30 * \text{SFDCRU}) / \text{PO} \quad -0.04$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+9 * ln(ZCE92W/POPTOTW(t+1))		0.57
	+0.02 * (ZTIME-1980)		

Soybean oil total ending stocks

SODTES =

-1200		
+400 * 1/(SOPMKT/PDCGNP1)		-0.58
+0.0729 * (SOSPRD +SOSIMP +SOSTES t-1)		0.56

Soyoil market clearing identity

SOSPRD + SOSIMP + (SODTES)(t-1)

= SODDOM + SODEXP + SODTES

## SUNFLOWERSEED EQUATIONS

Sunflowerseed area harvested

SFSHAR =

SFHPRAT  
\* SFSPLT

Sunflower Production

SFSPRD =

SFSHAR  
\* SFSYLD

Sunflower meal market price

UMPMKT =

+30		
+0.45 * SMP48D		0.928
-0.01 * SFDCRU		-0.112

Sunflower oil market price

UOPMKT =

+17		
+1.2 * SOPMKT		0.715
-0.004 * SFDCRU		-0.101

Sunflowerseed farm price

SFPFRM =

-1.75000		
+0.0245 * UMPMKT		0.189
+0.2376 * UOPMKT		0.817

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Sunflowerseed food and residual use			
SFDFOD =			
	+1200		
	-2981.102664 * SFPFRM/PCIUFAB t+1		-0.180
	+0.1 * SFSPRD+lag(SFDTES)		0.263
Sunflowerseed ending stocks			
SFDTES =			
	+275		
	+0.25 * lag(SFDTES)		0.229
	+0.05 * SFSPRD		0.347
	-2000 * SFPFRM/PCIUFAB t+1		-0.360
Sunflowerseed exports			
SFDEXP =			
	+60		
	+0.15 * (SFSPRD+lag(SFDTES)-SFDFOD-SFDTES)		0.636
Sunflower crush (closing identity)			
SFDCRU =			
	SFSPRD		
	+ lag(SFDTES)		
	+ SFSIMP		
	- SFDFOD		
	- SFDEXP		
	- SFDTES		
<b>PEANUT EQUATIONS</b>			
Peanut area harvested			
PNSHAR =			
	PNHPRAT		
	* PNSPLT		
Peanut production			
PNSPRD =			
	PNSHAR		
	* PNSYLD		
Peanut food use per capita			
PNDFOD/POPTOTW =			
	+7.8		
	-10.00 * PNPFRM*100/PDCGNP1		-0.167
	+150 * (ZCENFABW/ PDCGNP1)/POPTOTW		0.543
	-0.10 * (ZTIME-1980)		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Peanut crush

PNDCRU =

+1200		
-440800 * PNPFRM/PDCGNP1		-1.299

Peanut ending stocks

PNDTES =

+1000		
+0.2 * lag(PNDTES)		
-500000 * PNPFRM/PDCGNP1		-0.413
+0.2 * lag(PNSPRD1)		0.481

Peanut exports

PNDEXP =

+1500		
-600000 * PNPFRM/PDCGNP1		-1.358

Peanut market clearing identity

PNSPRD + PNSIMP + (PNDTES)(t-1)

= PNDCRU+PNDFOD+PNDEXP+PNDTES+PNDRES

## SUGAR EQUATIONS

Sugar beet area harvested

SKSHAR =

SKHPRAT  
\* SKSPLT

Beet sugar production

SUSPRDSK =

SKSHAR  
\* SUSYDSK

Cane sugar production

SUSPRDSJ =

SKSHAR  
\* SUSYDSK

Sugar imports

SUSIMP =

+1500		
+3000 * SUPRAW/PDCGNP1		0.170

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+1500	* lag(SUPRAW/PDCGNP1)	0.087	
-500	* SUPRCAR/PDCGNP1	-0.014	
+0.5	* HFDEXNOS	0.029	
+25000	* max(0,SUPRAW*.6+SUPREF*.4 -max(SUPRCAR+10,40))/PDCGNP1	0.000	

#### Sugar deliveries

SUDEL/POPTOTW(t+1) =

-20			
-30	* (SUPRAW+SUPREF)/PCIUW1	-0.216	
-0.8	* HFDDOMOS/POPTOTW1	-0.702	
+34.334	* ln(ZCE92W1/POPTOTW1)	0.989	
-0.85	* (ZTIME-1980)		

#### Sugar non-CCC stocks

SUDFRE =

+2200			
-10000	* SUPRAW/PDCGNP1	-1.004	
+0.1	* (SUSPRDSJ+SUSPRDSK)	0.498	
-0.5	* SUDCCC	-0.002	

#### Sugar use for ethanol (replaces CCC stock eq.)

SUETH =

+0			
+300	* max(0,lag(SUPLNJ1) - .95*SUPRAW)		
+300	* max(0,lag(SUPLNK1) - SUPREF)		
+1000	* max(0,ETPADSA-SUPRAW/100*15)		

#### Refined beet sugar price

SUPREF =

-3.308			
+1.388	* SUPRAW	0.833	
-0.06	* (ZTIME-1980)		

#### Sugar market clearing identity

SUSPRDSJ + SUSPRDSK + SUSIMP + (SUDFRE+SUDCCC)(t-1)  
= SUDEL+SUDEXP+SUETH+SUDRES+SUDFRE+SUDCCC

### DRY PEA EQUATION

#### Dry pea price

DPPFRM =

+0	*		
+0.9	* WHPFRM	0.496	
+0.4	* SBPFRM	0.357	



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

### TRADE-RELATED EQUATIONS

Oat net imports

OTSIMP-OTDEXP =

+89.214

+3000 \* OTPFRM/PDGNPW

0.33

-0.153 \* OTSPRD

-0.14

Barley imports

BRSIMP =

-20

+50 \* BRPFRM/CRPFRM

Barley exports

BRDEXP =

+50

-40 \* BRPFRM/CRPFRM

Wheat imports

WHSIMP =

+10

+2000 \* WHPFRM/PDCNGP

0.67

-1000 \* CRPFRM/PDCNGP

-0.22

+1 \* (ZTIME-1980)

Wheat exports

WHDEXP =

+590

+0.5 \* lag(WHDEXP)

-241.00 \* WHPFRM

-1.23

-1.40

+109.5 \* lag(WHPFRM)

0.53

+51 \* CRPFRM

0.17

0.37

+5.5 \* lag(CRPFRM)

0.02

+5 \* SGPFRM

0.02

0.03

+0.5 \* lag(SGPFRM)

0.00

+0.1 \* SMP48D

0.03

0.03

-0.05 \* lag(SMP48D)

-0.01

+3 \* SBPMKT

0.03

0.13

+4.5 \* lag(SBPMKT)

0.04

+3 \* RCPEXTH

0.06

0.25

+3.5 \* lag(RCPEXTH)

0.06

+32 \* CTPFE

0.01

0.03

+44 \* lag(CTPFE)

0.01

+8.9 \* (ZTIME-1980)

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Corn exports			
CRDEXP =			
	+1167		
	+0.5 * lag(CRDEXP)		
	-354.00 * CRPFRM	-0.57	-0.94
	+66 * lag(CRPFRM)	0.10	
	+51 * WHPFRM	0.12	0.28
	+6.5 * lag(WHPFRM)	0.02	
	+29 * SGPFRM	0.04	0.06
	-10.50 * lag(SGPFRM)	-0.01	
	+0.4 * SMP48D	0.05	0.06
	-0.20 * lag(SMP48D)	-0.02	
	+9 * SBPMKT	0.04	0.16
	+10.5 * lag(SBPMKT)	0.04	
	+2 * RCPEXTH	0.02	0.09
	+3 * lag(RCPEXTH)	0.03	
	+23 * CTPFE	0.00	0.01
	+31.5 * lag(CTPFE)	0.00	
Sorghum exports			
SGDEXP =			
	+128		
	+0.6 * lag(SGDEXP)		
	-71.00 * SGPFRM	-1.19	-2.04
	+24.6 * lag(SGPFRM)	0.38	
	+30 * CRPFRM	0.54	0.78
	-14.00 * lag(CRPFRM)	-0.23	
	+5 * WHPFRM	0.14	0.35
	+0 * lag(WHPFRM)	0.00	
	+1 * SBPMKT	0.05	0.17
	+0.4 * lag(SBPMKT)	0.02	
Soybean exports			
SBDEXP =			
	+539		
	+0.25 * lag(SBDEXP)		
	-411.000 * SBPMKT	-3.10	-4.23
	-10.25 * lag(SBPMKT)	-0.07	
	+8.4 * SMP48D	1.90	2.62
	+0.3 * lag(SMP48D)	0.06	
	+40 * SOPMKT	1.16	1.62
	+2 * lag(SOPMKT)	0.05	
	+15 * CRPFRM	0.04	0.10
	+13.25 * lag(CRPFRM)	0.03	
	+4 * WHPFRM	0.02	0.05
	+5 * lag(WHPFRM)	0.02	
	+0.6 * SGPFRM	0.00	0.00
	+0.65 * lag(SGPFRM)	0.00	

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+0.2 * RCPEXTH	0.00	0.01
	+0.35 * lag(RCPEXTH)	0.01	
	+7 * CTPFE	0.00	0.00
	+12.25 * lag(CTPFE)	0.00	

Soybean meal exports

SMDEXP =

	+15109		
	+0.25 * lag(SMDEXP)		
	-216 * SMP48D	-6.41	-9.01
	-13 * lag(SMP48D)	-0.35	
	+8467 * SBPMKT	8.37	12.03
	+719.25 * lag(SBPMKT)	0.65	
	-919 * SOPMKT	-3.51	-5.03
	-75.25 * lag(SOPMKT)	-0.27	
	+224 * CRPFRM	0.08	0.08
	-56.00 * lag(CRPFRM)	-0.02	
	+31 * WHPFRM	0.02	0.02
	-7.75 * lag(WHPFRM)	0.00	
	+3 * SGPFRM	0.00	0.00
	-0.75 * lag(SGPFRM)	0.00	

Soybean oil exports

SODEXP =

	+6144		
	+0.25 * lag(SODEXP)		
	-543 * SOPMKT	-8.25	-11.23
	-12.25 * lag(SOPMKT)	-0.17	
	+3936 * SBPMKT	15.50	22.45
	+374 * lag(SBPMKT)	1.34	
	-89 * SMP48D	-10.52	-14.99
	-6.75 * lag(SMP48D)	-0.72	
	-64 * CRPFRM	-0.09	-0.10
	+16 * lag(CRPFRM)	0.02	
	-9 * WHPFRM	-0.02	-0.02
	+2.25 * lag(WHPFRM)	0.00	
	-1 * SGPFRM	0.00	0.00
	+0.25 * lag(SGPFRM)	0.00	

Cotton NE A-index price

CTPFE =

	+1.5		
	-0.045 * CTDEXP	-2.13	-2.57
	-0.009 * lag(CTDEXP)	-0.44	
	+0.002 * CRPFRM	0.02	0.06
	+0.003 * lag(CRPFRM)	0.03	
	+0.002 * WHPFRM	0.04	0.12
	+0.005 * lag(WHPFRM)	0.09	

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+0.001 *	SBPMKT	0.03	0.06
+0.001 *	lag(SBPMKT)	0.03	

Thai rice export price

RCPEXTH =

+23			
-0.025 *	(RCDEXP - RCSIMP)	-0.10	-0.06
+0.12 *	CRPFRM	0.02	
+0.14 *	lag(CRPFRM)	0.02	
+0.12 *	WHPFRM	0.03	0.09
+0.2 *	lag(WHPFRM)	0.05	
+0.01 *	SBPMKT	0.00	
+0.02 *	lag(SBPMKT)	0.01	

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

### Yields

Wheat yield/harv. acre Arkansas

WHSYAR =

+36.2			
+0.245 * (WHENRS+WHVARC)/WHVARC		0.010	0.072
+1.57 * 10-year avg. of (WHENRS+WHVARC)/WHVARC		0.062	
-0.005 * USPLT		-0.025	
+0.55915 * (ZTIME-1980)			

Wheat yield/harv. acre California

WHSYCA =

+68			
+0.389 * (WHENRS+WHVARC)/WHVARC		0.010	0.072
+2.5 * 10-year avg. of (WHENRS+WHVARC)/WHVARC		0.062	
-0.008 * USPLT		-0.025	
+0.31007 * (ZTIME-1980)			

Wheat yield/harv. acre Georgia

WHSYGA =

+30.5			
+0.24 * (WHENRS+WHVARC)/WHVARC		0.010	0.072
+1.47 * 10-year avg. of (WHENRS+WHVARC)/WHVARC		0.062	
-0.0047 * USPLT		-0.025	
+0.66674 * (ZTIME-1980)			

Wheat yield/harv. acre Illinois

WHSYIL =

+40.2			
+0.3 * (WHENRS+WHVARC)/WHVARC		0.010	0.072
+1.88 * 10-year avg. of (WHENRS+WHVARC)/WHVARC		0.063	
-0.006 * USPLT		-0.025	
+0.63653 * (ZTIME-1980)			

Wheat yield/harv. acre Indiana

WHSYIN =

+38.7			
+0.32 * (WHENRS+WHVARC)/WHVARC		0.010	0.073
+2.07 * 10-year avg. of (WHENRS+WHVARC)/WHVARC		0.063	
-0.0065 * USPLT		-0.025	
+0.8927 * (ZTIME-1980)			

Wheat yield/harv. acre Iowa

WHSYIA =

+25.9

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+0.24 *	(WHENRS+WHVARC)/WHVARC	0.009	0.072
+1.6 *	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
-0.005 *	USPLT	-0.025	
+0.95235 *	(ZTIME-1980)		

Wheat yield/harv. acre Kansas

WHSYKS =

+30.3			
+0.18 *	(WHENRS+WHVARC)/WHVARC	0.010	0.072
+1.15 *	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.062	
-0.0037 *	USPLT	-0.025	
+0.32856 *	(ZTIME-1980)		

Wheat yield/harv. acre Minnesota

WHSYMN =

+27.2			
+0.24 *	(WHENRS+WHVARC)/WHVARC	0.010	0.072
+1.52 *	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
-0.0048 *	USPLT	-0.025	
+0.75956 *	(ZTIME-1980)		

Wheat yield/harv. acre Missouri

WHSYMO =

+34.9			
+0.24	(WHENRS+WHVARC)/WHVARC	0.010	0.072
+1.52	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
-0.0048	USPLT	-0.025	
+0.53764 *	(ZTIME-1980)		

Wheat yield/harv. acre Montana

WHSYMT =

+28.3			
+0.15 *	(WHENRS+WHVARC)/WHVARC	0.009	0.072
+0.98 *	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.062	
-0.0031 *	USPLT	-0.025	
+0 *	(ZTIME-1980)		

Wheat yield/harv. acre Nebraska

WHSYNE =

+31.3			
+0.2 *	(WHENRS+WHVARC)/WHVARC	0.009	0.072
+1.3 *	10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
-0.0041 *	USPLT	-0.025	
+0.31086 *	(ZTIME-1980)		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Wheat yield/harv. acre North Dakota			
WHSYND =			
	+21.7		
	+0.18 * (WHENRS+WHVARC)/WHVARC	0.010	0.072
	+1.12 * 10-year avg. of (WHENRS+WHVARC)/WHVARC	0.062	
	-0.0036 * USPLT	-0.025	
	+0.46415 * (ZTIME-1980)		
Wheat yield/harv. acre Ohio			
WHSYOH =			
	+40.1		
	+0.32 * (WHENRS+WHVARC)/WHVARC	0.009	0.072
	+2.12 * 10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
	-0.0067 * USPLT	-0.025	
	+0.95506 * (ZTIME-1980)		
Wheat yield/harv. acre South Dakota			
WHSYSD =			
	+20		
	+0.21 * (WHENRS+WHVARC)/WHVARC	0.010	0.072
	+1.3 * 10-year avg. of (WHENRS+WHVARC)/WHVARC	0.062	
	-0.0042 * USPLT	-0.025	
	+0.79166 * (ZTIME-1980)		
Wheat yield/harv. acre Texas			
WHSYTX =			
	+27.7		
	+0.14 * (WHENRS+WHVARC)/WHVARC	0.009	0.072
	+0.92 * 10-year avg. of (WHENRS+WHVARC)/WHVARC	0.063	
	-0.0029 * USPLT	-0.025	
	+0.07241 * (ZTIME-1980)		
Wheat yield/harv. acre Rest of Country			
WHSYRC =			
	+36.3		
	+0.24 * (WHENRS+WHVARC)/WHVARC	0.010	0.072
	+1.48 * 10-year avg. of (WHENRS+WHVARC)/WHVARC	0.062	
	-0.0048 * USPLT	-0.025	
	+0.39605 * (ZTIME-1980)		
Wheat yield/harv. acre US			
WHSYLD =			
	+0.0065 * WHSYAR		
	+0.0104 * WHSYCA		
	+0.0042 * WHSYGA		
	+0.0125 * WHSYIL		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+0.0082	* WHSYIN		
+0.0003	* WHSYIA		
+0.1717	* WHSYKS		
+0.0329	* WHSYMN		
+0.0131	* WHSYMO		
+0.1034	* WHSYMT		
+0.0306	* WHSYNE		
+0.1641	* WHSYND		
+0.0172	* WHSYOH		
+0.0595	* WHSYSD		
+0.0623	* WHSYTX		
+0.303	* WHSYRC		

Corn yield/harv. acre Arkansas

CRSYAR =

+73			
+0.75	* (CRENRS+CRVARC)/CRVARC	0.010	0.078
+5.25	* 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
-0.015	* USPLT	-0.025	
-0.044	* CRSPLT	-0.025	
+2.55325	* (ZTIME-1980)		

Corn yield/harv. acre California

CRSYCA =

+136			
+0.92	* (CRENRS+CRVARC)/CRVARC	0.010	0.078
+6.3	* 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
-0.018	* USPLT	-0.025	
-0.052	* CRSPLT	-0.025	
+1.21365	* (ZTIME-1980)		

Corn yield/harv. acre Georgia

CRSYGA =

+52.5			
+0.65	* (CRENRS+CRVARC)/CRVARC	0.010	0.077
+4.5	* 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.067	
-0.013	* USPLT	-0.025	
-0.038	* CRSPLT	-0.025	
+2.71882	* (ZTIME-1980)		

Corn yield/harv. acre Illinois

CRSYIL =

+90			
+0.85	* (CRENRS+CRVARC)/CRVARC	0.010	0.078
+5.9	* 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
-0.0165	* USPLT	-0.025	
-0.048	* CRSPLT	-0.025	



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+2.64041 * (ZTIME-1980)		
Corn yield/harv. acre Indiana			
CRSYIN =			
	+93		
	+0.8 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+5.6 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.016 * USPLT	-0.025	
	-0.047 * CRSPLT	-0.025	
	+2.15084 * (ZTIME-1980)		
Corn yield/harv. acre Iowa			
CRSYIA =			
	+88.4		
	+0.9 * (CRENRS+CRVARC)/CRVARC	0.010	0.079
	+6.1 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.017 * USPLT	-0.025	
	-0.05 * CRSPLT	-0.025	
	+2.94904 * (ZTIME-1980)		
Corn yield/harv. acre Kansas			
CRSYKS =			
	+117		
	+0.65 * (CRENRS+CRVARC)/CRVARC	0.010	0.077
	+4.75 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.0135 * USPLT	-0.025	
	-0.04 * CRSPLT	-0.025	
	+0.55 * (ZTIME-1980)		
Corn yield/harv. acre Minnesota			
CRSYMN =			
	+84		
	+0.84 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+5.75 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.016 * USPLT	-0.025	
	-0.048 * CRSPLT	-0.025	
	+2.8017 * (ZTIME-1980)		
Corn yield/harv. acre Missouri			
CRSYMO =			
	+81		
	+0.7 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+4.8 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.067	
	-0.0135 * USPLT	-0.025	
	-0.04 * CRSPLT	-0.025	
	+1.92665 * (ZTIME-1980)		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Corn yield/harv. acre Montana CRSYMT =			
	+85		
	+0.75 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+5.1 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.014 * USPLT	-0.025	
	-0.042 * CRSPLT	-0.025	
	+2.14798 * (ZTIME-1980)		
Corn yield/harv. acre Nebraska CRSYNE =			
	+98		
	+0.84 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+5.7 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.016 * USPLT	-0.025	
	-0.047 * CRSPLT	-0.025	
	+2.0043 * (ZTIME-1980)		
Corn yield/harv. acre North Dakota CRSYND =			
	+53.5		
	+0.6 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+4.2 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.012 * USPLT	-0.025	
	-0.035 * CRSPLT	-0.025	
	+2.38333 * (ZTIME-1980)		
Corn yield/harv. acre Ohio CRSYOH =			
	+91.3		
	+0.77 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+5.35 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.015 * USPLT	-0.025	
	-0.045 * CRSPLT	-0.025	
	+1.96534 * (ZTIME-1980)		
Corn yield/harv. acre South Dakota CRSYSD =			
	+50.5		
	+0.6 * (CRENRS+CRVARC)/CRVARC	0.010	0.077
	+4.35 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.0125 * USPLT	-0.025	
	-0.037 * CRSPLT	-0.025	
	+2.77104 * (ZTIME-1980)		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Corn yield/harv. acre Texas

CRSYTX =			
	+90.7		
	+0.65 * (CRENRS+CRVARC)/CRVARC	0.010	0.078
	+4.5 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.068	
	-0.0125 * USPLT	-0.025	
	-0.038 * CRSPLT	-0.025	
	+1.24612 * (ZTIME-1980)		

Corn yield/harv. acre Rest of Country

CRSYRC =			
	+83.7		
	+0.7 * (CRENRS+CRVARC)/CRVARC	0.010	0.077
	+4.7 * 10-year avg. of (CRENRS+CRVARC)/CRVARC	0.067	
	-0.0135 * USPLT	-0.025	
	-0.04 * CRSPLT	-0.025	
	+1.77267 * (ZTIME-1980)		

Corn yield/harv. acre US

CRSYLD =			
	+0.0047 * CRSYAR		
	+0.0017 * CRSYCA		
	+0.0036 * CRSYGA		
	+0.1515 * CRSYIL		
	+0.0703 * CRSYIN		
	+0.1609 * CRSYIA		
	+0.0555 * CRSYKS		
	+0.0894 * CRSYMN		
	+0.038 * CRSYMO		
	+0.0004 * CRSYMT		
	+0.1077 * CRSYNE		
	+0.0269 * CRSYND		
	+0.0404 * CRSYOH		
	+0.0553 * CRSYSD		
	+0.0236 * CRSYTX		
	+0.17 * CRSYRC		

Sorghum yield/harv. acre

SGSYLD =			
	+54.4		
	+0.6 * (SGENRS+SGVARC)/SGVARC	0.013	0.070
	+2.5 * 10-year avg. of (SGENRS+SGVARC)/SGVARC	0.056	
	-0.0065 * USPLT	-0.025	
	+0.2197 * (ZTIME-1980)		

Barley yield/harv. acre

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
BRSYLD =			
	+44.2		
	+0.35 * (BRENRS+BRVARC)/BRVARC	0.010	0.070
	+2.1 * 10-year avg. of (BRENRS+BRVARC)/BRVARC	0.059	
	-0.006 * USPLT	-0.024	
	+0.61724 * (ZTIME-1980)		
Oats yield/harv. acre			
OTSYLD =			
	+43.7		
	+0.45 * (OTENRS+OTVARC)/OTVARC	0.011	0.074
	+2.5 * 10-year avg. of (OTENRS+OTVARC)/OTVARC	0.064	
	-0.006 * USPLT	-0.024	
	+0.546 * (ZTIME-1980)		
Cotton yield/harv. acre			
CTS YLD =			
	+513		
	+6.5 * (CTENRS+CTVARC)/CTVARC	0.011	0.085
	+38 * 10-year avg. of (CTENRS+CTVARC)/CTVARC	0.074	
	-0.08 * USPLT	-0.025	
	+8.697 * (ZTIME-1980)		
Rice yield/harv. acre			
RCSYLD =			
	+4600		
	+45 * (RCENRS+RCVARC)/RCVARC	0.011	0.080
	+290 * 10-year avg. of (RCENRS+RCVARC)/RCVARC	0.068	
	-0.280 * USPLT	-0.010	
	+67.309 * (ZTIME-1980)		
Soybean yield/harv. acre Arkansas			
SBSYAR =			
	+17		
	+0.12 * (SBENRS+SBVARC)/SBVARC	0.010	0.073
	+0.82 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0035 * USPLT	-0.025	
	+0.63747 * (ZTIME-1980)		
Soybean yield/harv. acre Georgia			
SBSYGA =			
	+16.9		
	+0.1 * (SBENRS+SBVARC)/SBVARC	0.010	0.073
	+0.67 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0029 * USPLT	-0.025	
	+0.41648 * (ZTIME-1980)		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Soybean yield/harv. acre Illinois			
SBSYIL =			
	+31.4		
	+0.16 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+1.05 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0045 * USPLT	-0.025	
	+0.46291 * (ZTIME-1980)		
Soybean yield/harv. acre Indiana			
SBSYIN =			
	+30.9		
	+0.17 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+1.08 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.063	
	-0.0048 * USPLT	-0.025	
	+0.53965 * (ZTIME-1980)		
Soybean yield/harv. acre Iowa			
SBSYIA =			
	+32.2		
	+0.18 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+1.15 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.005 * USPLT	-0.025	
	+0.5106 * (ZTIME-1980)		
Soybean yield/harv. acre Kansas			
SBSYKS =			
	+22		
	+0.13 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+0.83 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0036 * USPLT	-0.025	
	+0.37853 * (ZTIME-1980)		
Soybean yield/harv. acre Minnesota			
SBSYMN =			
	+30.4		
	+0.15 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+0.96 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0041 * USPLT	-0.025	
	+0.355 * (ZTIME-1980)		
Soybean yield/harv. acre Missouri			
SBSYMO =			
	+24.9		
	+0.13 * (SBENRS+SBVARC)/SBVARC	0.010	0.073

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+0.88 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0038 * USPLT	-0.025	
	+0.44159 * (ZTIME-1980)		
Soybean yield/harv. acre Nebraska			
SBSYNE =			
	+25.7		
	+0.18 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+1.15 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.005 * USPLT	-0.025	
	+0.77023 * (ZTIME-1980)		
Soybean yield/harv. acre North Dakota			
SBSYND =			
	+23.1		
	+0.11 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+0.74 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0032 * USPLT	-0.025	
	+0.27842 * (ZTIME-1980)		
Soybean yield/harv. acre Ohio			
SBSYOH =			
	+29		
	+0.15 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+1.02 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0044 * USPLT	-0.025	
	+0.46533 * (ZTIME-1980)		
Soybean yield/harv. acre South Dakota			
SBSYSD =			
	+23		
	+0.125 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+0.85 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0037 * USPLT	-0.025	
	+0.46606 * (ZTIME-1980)		
Soybean yield/harv. acre Texas			
SBSYTX =			
	+24.4		
	+0.093 * (SBENRS+SBVARC)/SBVARC	0.010	0.073
	+0.62 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0027 * USPLT	-0.025	
	+0.061 * (ZTIME-1980)		
Soybean yield/harv. acre Rest of Country			

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

SBSYRC =			
	+20.1		
	+0.12 * (SBENRS+SBVARC)/SBVARC	0.010	0.074
	+0.82 * 10-year avg. of (SBENRS+SBVARC)/SBVARC	0.064	
	-0.0036 * USPLT	-0.025	
	+0.51142 * (ZTIME-1980)		

SBSYLD Soybean yield/harv. acre US

+0.0422 \* SBSYAR  
+0.0036 \* SBSYGA  
+0.1157 \* SBSYIL  
+0.068 \* SBSYIN  
+0.1226 \* SBSYIA  
+0.0556 \* SBSYKS  
+0.0941 \* SBSYMN  
+0.0642 \* SBSYMO  
+0.0664 \* SBSYNE  
+0.057 \* SBSYND  
+0.0581 \* SBSYOH  
+0.0533 \* SBSYSD  
+0.0023 \* SBSYTX  
+0.1969 \* SBSYRC

Sunflowerseed yield/harv. acre

SFSYLD =			
	+1190		
	+6 * (SFENRS+SFVARC)/SFVARC	0.011	0.078
	+37 * 10-year avg. of (SFENRS+SFVARC)/SFVARC	0.067	
	-0.130 * USPLT	-0.023	
	+7.25 * (ZTIME-1980)		

Peanut yield/harv. acre

PNSYLD =			
	+1815		
	+21 * (PNENRS+PNVARC)/PNVARC	0.010	0.072
	+105 * 10-year avg. of (PNENRS+PNVARC)/PNVARC	0.062	
	-0.300 * USPLT	-0.024	
	+40.119 * (ZTIME-1980)		

### Exp. market prices

Exp. all barley price

BREPFM/lag(BRPFRM) =			
	-0.011		
	+0.67 * lag(BRSYLD)/BREYLD		
	+0.358 * lag(CRSYLD)/CREYLD		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Exp. feed barley price  
 $BREPFM/lag(BRPFED) =$   
+0.231  
+0.157 \* lag(BRSYLD)/BREYLD  
+0.632 \* lag(CRSYLD)/CREYLD

Exp. corn farm price  
 $CREPFM/lag(CRPFRM) =$   
+0.256  
+0.75 \* lag(CRSYLD)/CREYLD

Exp. cotton farm price  
 $CTEPFM/lag(CTPFRM) =$   
+0.518  
+0.472 \* lag(CTSYLD)/CTEYLD

Exp. cotton AWP  
 $CTEAWP/lag(CTPAWP) =$   
+0.513  
+0.48 \* lag(CTSYLD)/CTEYLD

Exp. hay farm price  
 $HAEPFM/lag(HAPFRM) =$   
+0.053  
+0.962 \* lag(HASYLD)/HAEYLD

Exp. oat farm price  
 $OTEPFM/lag(OTPFRM) =$   
-0.086  
+0.952 \* lag(OTSYLD)/OTEYLD  
+0.164 \* lag(CRSYLD)/CREYLD

Exp. peanut farm price  
 $PNEPFM/lag(PNPFRM) =$   
+0.623  
+0.377 \* lag(PNSYLD)/PNEYLD

Exp. rice farm price  
 $RCEPFM/lag(RCPFRM) =$   
-0.294  
+1.321 \* lag(RCSYLD)/RCEYLD



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Exp. rice AWP

$$\begin{aligned} \text{RCEAWP/lag(RCPAWP)} = \\ -0.336 \\ +1.346 * \text{lag(RCSYLD)/RCEYLD} \end{aligned}$$

Exp. soybean farm price

$$\begin{aligned} \text{SBEPFM/lag(SBPFRM)} = \\ -0.076 \\ +1.092 * \text{lag(SBSYLD)/SBEYLD} \end{aligned}$$

Exp. sunflower price

$$\begin{aligned} \text{SFEPFM/lag(SFPFRM)} = \\ -0.13 \\ +0.217 * \text{lag(SFSYLD)/SFEYLD} \\ +0.952 * \text{lag(SBSYLD)/SBEYLD} \end{aligned}$$

Exp. sorghum farm price

$$\begin{aligned} \text{SGEPFM/lag(SGPFRM)} = \\ -0.013 \\ +0.508 * \text{lag(SGSYLD)/SGEYLD} \\ +0.508 * \text{lag(CRSYLD)/CREYLD} \end{aligned}$$

Expected raw sugar price

$$\begin{aligned} \text{SUEPRAW/lag(SUPRAW)} = \\ +0.7 \\ +0.15 * \text{lag(SUSYLDJ)/SUEYDJ} \\ +0.15 * \text{lag(SUSYLDK)/SUEYDK} \end{aligned}$$

Expected refined beet sugar price

$$\begin{aligned} \text{SUEPREF/lag(SUPRAW)} = \\ +0.7 \\ +0.1 * \text{lag(SUSYLDJ)/SUEYDJ} \\ +0.2 * \text{lag(SUSYLDK)/SUEYDK} \end{aligned}$$

Exp. wheat farm price

$$\begin{aligned} \text{WHEPFM/lag(WHPFRM)} = \\ -0.176 \\ +1.189 * \text{lag(WHSYLD)/WHEYLD} \end{aligned}$$

### Expected market gross returns

Barley expected market gross returns

$$\begin{aligned} \text{BREMGR} = \\ \text{BREYLD} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* BREPFM		

Corn expected market gross returns  
CREMGR =

CREYLD  
\* CREPFM

Cotton expected market gross returns  
CTEMGR =

CTEYLD  
\* CTEPFM  
+ CSGRMK

Hay expected market gross returns  
HAEMGR =

HAEYLD  
\* HAEPFM

Oats expected market gross returns  
OTEMGR =

OTEYLD  
\* OTEPFM

Peanut expected market gross returns  
PNEMGR =

PNEYLD  
\* PNEPFM

Rice expected market gross returns  
RCEMGR =

RCEYLD  
\* RCEPFM / 100

Soybean expected market gross returns  
SBEMGR =

SBEYLD  
\* SBEPFM

Sunflower expected market gross returns  
SFEMGR =

SFEYLD  
\* SFEPFM / 100

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Sorghum expected market gross returns  
SGEMGR =

$$\text{SGEYLD} \\ * \text{SGEPFM}$$

Wheat expected market gross returns  
WHEMGR =

$$\text{WHEYLD} \\ * \text{WHEPFM}$$

### LDP/MLG rates, actual and expected

Barley LDP rate  
BRLDPRT =

$$+0.25 * \max(0, \text{lag}(\text{BRPLNR1}) + .38 - \text{BRPFED}) \\ +0.5 * \max(0, \text{lag}(\text{BRPLNR1}) + .19 - \text{BRPFED}) \\ +0.25 * \max(0, \text{lag}(\text{BRPLNR1}) - \text{BRPFED})$$

Barley expected LDP rate  
BRELDPR =

$$+0.25 * \max(\text{lag}(\text{BRPLNR1}) + .38 - \text{BREPFD}) \\ +0.5 * \max(0, \text{lag}(\text{BRPLNR1}) + .19 - \text{BREPFD}) \\ +0.25 * \max(0, \text{lag}(\text{BRPLNR1}) - \text{BREPFD})$$

Corn LDP rate  
CRLDPRT =

$$+0.25 * \max(0, \text{lag}(\text{CRPLNR1}) + .40 - \text{CRPFM}) \\ +0.5 * \max(0, \text{lag}(\text{CRPLNR1}) + .20 - \text{CRPFM}) \\ +0.25 * \max(0, \text{lag}(\text{CRPLNR1}) - \text{CRPFM})$$

Corn expected LDP rate  
CRELDPR =

$$+0.25 * \max(0, \text{lag}(\text{CRPLNR1}) + .40 - \text{CREPFM}) \\ +0.5 * \max(0, \text{lag}(\text{CRPLNR1}) + .20 - \text{CREPFM}) \\ +0.25 * \max(0, \text{lag}(\text{CRPLNR1}) - \text{CREPFM})$$

Cotton LDP rate  
CTLDPRT =

$$\max(0, \text{lag}(\text{CTPLNR1}) + .013 - \text{CTPAWP})$$

Cotton expected LDP rate  
CTELDPR =

$$\max(0, \text{lag}(\text{CTPLNR1}) + .013 - \text{CTEAWP})$$

## Oats LDP rate

OTLDPRT =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{OTPLNR1}) + .30 - \text{OTPFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{OTPLNR1}) + .15 - \text{OTPFM}) \\
 &+0.25 * \max(0, \text{lag}(\text{OTPLNR1}) - \text{OTPFM})
 \end{aligned}$$

## Oats expected LDP rate

OTELDAPR =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{OTPLNR1}) + .30 - \text{OTEPEFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{OTPLNR1}) + .15 - \text{OTEPEFM}) \\
 &+0.25 * \max(0, \text{lag}(\text{OTPLNR1}) - \text{OTEPEFM})
 \end{aligned}$$

## Peanut LDP rate, no min. imposed

PNLDPRT =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{PNPLNR1}) + .02 - \text{PNPFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{PNPLNR1}) + .01 - \text{PNPFM}) \\
 &+0.25 * \max(0, \text{lag}(\text{PNPLNR1}) - \text{PNPFM})
 \end{aligned}$$

## Peanut exp. LDP rate, no min. imposed

PNELDAPR =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{PNPLNR1}) + .02 - \text{PNEPEFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{PNPLNR1}) + .01 - \text{PNEPEFM}) \\
 &+0.25 * \max(0, \text{lag}(\text{PNPLNR1}) - \text{PNEPEFM})
 \end{aligned}$$

## Rice LDP rate

RCLDPRT =

$$\max(0, \text{lag}(\text{RCPLNR1}) + .008 - \text{RCPAWP})$$

## Rice expected LDP rate

RCELDAPR =

$$\max(0, \text{lag}(\text{RCPLNR1}) + .008 - \text{RCEAWP})$$

## Soybean LDP rate

SBLDPRT =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{SBPLNR1}) + .44 - \text{SBPFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{SBPLNR1}) + .22 - \text{SBPFM}) \\
 &+0.25 * \max(0, \text{lag}(\text{SBPLNR1}) - \text{SBPFM})
 \end{aligned}$$

## Soybean expected LDP rate

SBELDPR =

$$\begin{aligned}
 &+0.25 * \max(0, \text{lag}(\text{SBPLNR1}) + .44 - \text{SBEPFM}) \\
 &+0.5 * \max(0, \text{lag}(\text{SBPLNR1}) + .22 - \text{SBEPFM})
 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

$$+0.25 * \max(0, \text{lag}(\text{SBPLNR1}) - \text{SBEPFM})$$

Sunflowerseed LDP rate

$$\text{SFLDPRT} = \max(0, \text{lag}(\text{SFPLNR1}) + .015 - \text{SFPFRM})$$

Sunflowerseed expected LDP rate

$$\text{SFELDPR} = \max(0, \text{lag}(\text{SFPLNR1}) + .015 - \text{SFEPFM})$$

Sorghum LDP rate

$$\begin{aligned} \text{SGLDPRT} = & +0.25 * \max(0, \text{lag}(\text{SGPLNR1}) + .28 - \text{SGPFRM}) \\ & +0.5 * \max(0, \text{lag}(\text{SGPLNR1}) + .14 - \text{SGPFRM}) \\ & +0.25 * \max(0, \text{lag}(\text{SGPLNR1}) - \text{SGPFRM}) \end{aligned}$$

Sorghum expected LDP rate

$$\begin{aligned} \text{SGELDPR} = & +0.25 * \max(0, \text{lag}(\text{SGPLNR1}) + .28 - \text{SGEPFM}) \\ & +0.5 * \max(0, \text{lag}(\text{SGPLNR1}) + .14 - \text{SGEPFM}) \\ & +0.25 * \max(0, \text{lag}(\text{SGPLNR1}) - \text{SGEPFM}) \end{aligned}$$

Wheat LDP rate

$$\begin{aligned} \text{WHLDPRT} = & +0.25 * \max(0, \text{lag}(\text{WHPLNR1}) + .60 - \text{WHPFRM}) \\ & +0.5 * \max(0, \text{lag}(\text{WHPLNR1}) + .30 - \text{WHPFRM}) \\ & +0.25 * \max(0, \text{lag}(\text{WHPLNR1}) - \text{WHPFRM}) \end{aligned}$$

Wheat expected LDP rate

$$\begin{aligned} \text{WHELDPR} = & +0.25 * \max(0, \text{lag}(\text{WHPLNR1}) + .60 - \text{WHEPFM}) \\ & +0.5 * \max(0, \text{lag}(\text{WHPLNR1}) + .30 - \text{WHEPFM}) \\ & +0.25 * \max(0, \text{lag}(\text{WHPLNR1}) - \text{WHEPFM}) \end{aligned}$$

### Expected LDPs/MLGs for nonparticipants in ACRE

Barley expected LDPs/MLGs for nonparticipants in ACRE

$$\begin{aligned} \text{BRELDPA} = & \text{BRELDPR} \\ & * \text{BREYLD} \end{aligned}$$

Corn expected LDPs/MLGs for nonparticipants in ACRE

$$\text{CRELDPA} =$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

CRELDPR  
\* CREYLD

Cotton expected LDPs/MLGs for nonparticipants in ACRE

CTELDPA =

CTELDPR  
\* CTEYLD

Oats expected LDPs/MLGs for nonparticipants in ACRE

OTELDAPA =

OTELDAPR  
\* OTEYLD

Peanut expected LDPs/MLGs for nonparticipants in ACRE

PNELDPA =

PNELDPR  
\* PNEYLD

Rice expected LDPs/MLGs for nonparticipants in ACRE

RCELDAPA =

RCELDAPR  
\* RCEYLD / 100

Soybean expected LDPs/MLGs for nonparticipants in ACRE

SBELDPA =

SBELDPR  
\* SBEYLD

Sunflower expected LDPs/MLGs for nonparticipants in ACRE

SFELDPA =

SFELDPR  
\* SFEYLD / 100

Sorghum expected LDPs/MLGs for nonparticipants in ACRE

SGELDPA =

SGELDPR  
\* SGEYLD

Wheat expected LDPs/MLGs for nonparticipants in ACRE

WHELDAPA =

WHELDAPR  
\* WHEYLD

**Expected CCPs/base acre for nonparticipants in ACRE**

Barley expected CCPs/base acre for nonparticipants in ACRE  
BRECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{BRPTAR}-\text{BRPFIX}-\text{MAX}(\text{BREPFD},\text{BRPLNR}))) \\ & * \text{BRCCYD} \\ & * .85 \\ & * \text{ATBC} \end{aligned}$$

Corn expected CCPs/base acre for nonparticipants in ACRE  
CRECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{CRPTAR}-\text{CRPFIX}-\text{MAX}(\text{CREPFM},\text{CRPLNR}))) \\ & * \text{CRCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Cotton expected CCPs/base acre for nonparticipants in ACRE  
CTECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{CTPTAR}-\text{CTPFIX}-\text{MAX}(\text{CTEPFM},\text{CTPLNR}))) \\ & * \text{CTCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Oats expected CCPs/base acre for nonparticipants in ACRE  
OTECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{OTPTAR}-\text{OTPFIX}-\text{MAX}(\text{OTEPFM},\text{OTPLNR}))) \\ & * \text{OTCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Peanut expected CCPs/base acre for nonparticipants in ACRE  
PNECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{PNPTAR}-\text{PNPFIX}-\text{MAX}(\text{PNEPFM},\text{PNPLNR}))) \\ & * \text{PNCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Rice expected CCPs/base acre for nonparticipants in ACRE  
RCECCPA =

$$\begin{aligned} & \text{MAX}(0,(\text{RCPTAR}-\text{RCPFIX}-\text{MAX}(\text{RCPLNR},\text{RCEPFM}))) \\ & * \text{RCCCYD} / 100 \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Soybean expected CCPs/base acre for nonparticipants in ACRE  
 SBECPPA =

$$\begin{aligned} & \text{MAX}(0, (\text{SBPTAR} - \text{SBPFIX} - \text{MAX}(\text{SBEPFM}, \text{SBPLNR}))) \\ & * \text{SBCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Sunflower expected CCPs/base acre for nonparticipants in ACRE  
 SFECPPA =

$$\begin{aligned} & \text{MAX}(0, (\text{SFPTAR} - \text{SFPFIX} - \text{MAX}(\text{SFEPFM}, \text{SFPLNR}))) \\ & * \text{SFCCYD} / 100 \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Sorghum expected CCPs/base acre for nonparticipants in ACRE  
 SGECCPA =

$$\begin{aligned} & \text{MAX}(0, (\text{SGPTAR} - \text{SGPFIX} - \text{MAX}(\text{SGEPFM}, \text{SGPLNR}))) \\ & * \text{SGCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

Wheat expected CCPs/base acre for nonparticipants in ACRE  
 WHECCPA =

$$\begin{aligned} & \text{MAX}(0, (\text{WHPTAR} - \text{WHPFIX} - \text{MAX}(\text{WHEPFM}, \text{WHPLNR}))) \\ & * \text{WHCCYD} \\ & * 0.85 \\ & * \text{ATBC} \end{aligned}$$

### ACRE yields

Barley ACRE yield  
 BRSYLDP =

$$\begin{aligned} & \text{BRSYLD} \\ & * \text{BRHPRAT} \end{aligned}$$

Arkansas corn ACRE yield  
 CRSYARP =

$$\text{CRSYAR}$$

California corn ACRE yield  
 CRSYCAP =

$$\text{CRSYCA}$$

Georgia corn ACRE yield



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
CRSYGAP =	CRSYGA		
Illinois corn ACRE yield CRSYILP =	CRSYIL		
Indiana corn ACRE yield CRSYINP =	CRSYIN		
Iowa corn ACRE yield CRSYIAP =	CRSYIA		
Kansas corn ACRE yield CRSYKSP =	CRSYKS		
Minnesota corn ACRE yield CRSYMNP =	CRSYMN		
Missouri corn ACRE yield CRSYMOP =	CRSYMO		
Montana corn ACRE yield CRSYMTP =	CRSYMT		
Nebraska corn ACRE yield CRSYNEP =	CRSYNE		
North Dakota corn ACRE yield CRSYNDP =	CRSYND		
Ohio corn ACRE yield CRSYOHP =	CRSYOH		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

South Dakota corn ACRE yield  
CRSYSDP =  
CRSYSD

Texas corn ACRE yield  
CRSYTXP =  
CRSYTX

Rest of Country corn ACRE yield  
CRSYRCP =  
CRSYRC

Cotton ACRE yield  
CTSYLDP =  
CTSYLD  
\* CTHPRAT

Oats ACRE yield  
OTSYLDP =  
OTSYLD  
\* OTHPRAT

Peanut ACRE yield  
PNSYLDP =  
PNSYLD  
\* PNHPRAT

Rice ACRE yield  
RCSYLDP =  
RCSYLD  
\* RCHPRAT

Arkansas soybean ACRE yield  
SBSYARP =  
SBSYAR  
\* SBHPRAR

Georgia soybean ACRE yield  
SBSYGAP =  
SBSYGA  
\* SBHPRGA

Endogenous var./  
coefficient            Exogenous variable

---

2005-2009 elasticities  
Short run   Long run

Illinois soybean ACRE yield  
SBSYILP =

SBSYIL  
\* SBHPRIL

Indiana soybean ACRE yield  
SBSYINP =

SBSYIN  
\* SBHPRIN

Iowa soybean ACRE yield  
SBSYIAP =

SBSYIA  
\* SBHPRIA

Kansas soybean ACRE yield  
SBSYKSP =

SBSYKS  
\* SBHPRKS

Minnesota soybean ACRE yield  
SBSYMNP =

SBSYMN  
\* SBHPRMN

Missouri soybean ACRE yield  
SBSYMOP =

SBSYMO  
\* SBHPRMO

Nebraska soybean ACRE yield  
SBSYNEP =

SBSYNE  
\* SBHPRNE

North Dakota soybean ACRE yield  
SBSYNDP =

SBSYND  
\* SBHPRND

Ohio soybean ACRE yield

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
SBSYOHP =	SBSYOH * SBHPROH		
South Dakota soybean ACRE yield SBSYSDP =	SBSYSD * SBHPRSD		
Texas soybean ACRE yield SBSYTXP =	SBSYTX * SBHPRTX		
Rest of Country soybean ACRE yield SBSYRCP =	SBSYRC * SBHPRRC		
Sunflower ACRE yield SFSYLDP =	SFSYLD * SFHPRAT		
Sorghum ACRE yield SGSYLDP =	SGSYLD		
Arkansas wheat ACRE yield WHSYARP =	WHSYAR		
California wheat ACRE yield WHSYCAP =	WHSYCA		
Georgia wheat ACRE yield WHSYGAP =	WHSYGA		
Illinois wheat ACRE yield WHSYILP =			

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	WHSYIL		
Indiana wheat ACRE yield WHSYINP =	WHSYIN		
Iowa wheat ACRE yield WHSYIAP =	WHSYIA		
Kansas wheat ACRE yield WHSYKSP =	WHSYKS		
Minnesota wheat ACRE yield WHSYMNP =	WHSYMN		
Missouri wheat ACRE yield WHSYMOP =	WHSYMO		
Montana wheat ACRE yield WHSYMTP =	WHSYMT		
Nebraska wheat ACRE yield WHSYNEP =	WHSYNE		
North Dakota wheat ACRE yield WHSYNDP =	WHSYND		
Ohio wheat ACRE yield WHSYOHP =	WHSYOH		
South Dakota wheat ACRE yield WHSYSDP =	WHSYSD		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Texas wheat ACRE yield

WHSYTXP =

WHSYTX

Rest of Country wheat ACRE yield

WHSYRCP =

WHSYRC

**Expected yields per planted acre**

Expected barley ACRE yield

BREYLDP =

BREYLD  
\* BRHPRAT

Expected Arkansas corn ACRE yield

CREYARP =

CRSEYAR

Expected California corn ACRE yield

CREYCAP =

CRSEYCA

Expected Georgia corn ACRE yield

CREYGAP =

CRSEYGA

Expected Illinois corn ACRE yield

CREYILP =

CRSEYIL

Expected Indiana corn ACRE yield

CREYINP =

CRSEYIN

Expected Iowa corn ACRE yield

CREYIAP =

CRSEYIA

Expected Kansas corn ACRE yield

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
CREYKSP =	CRSEYKS		
Expected Minnesota corn ACRE yield CREYMNP =	CRSEYMN		
Expected Missouri corn ACRE yield CREYMOP =	CRSEYMO		
Expected Montana corn ACRE yield CREYMTP =	CRSEYMT		
Expected Nebraska corn ACRE yield CREYNEP =	CRSEYNE		
Expected North Dakota corn ACRE yield CREYNDP =	CRSEYND		
Expected Ohio corn ACRE yield CREYOHP =	CRSEYOH		
Expected South Dakota corn ACRE yield CREYSDP =	CRSEYSD		
Expected Texas corn ACRE yield CREYTXP =	CRSEYTX		
Expected Rest of Country corn ACRE yield CREYRCP =	CRSEYRC		
Expected cotton ACRE yield CTEYLDP =			

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	CTEYLD * CTHPRAT		
Expected oats ACRE yield OTEYLDP =	OTEYLD * OTHPRAT		
Expected peanut ACRE yield PNEYLDP =	PNEYLD * PNHPRAT		
Expected rice ACRE yield RCEYLDP =	RCEYLD * RCHPRAT		
Expected Arkansas soybean ACRE yield SBEYARP =	SBEYLDAR * SBHPRAR		
Expected Georgia soybean ACRE yield SBEYGAP =	SBEYLDGA * SBHPRGA		
Expected Illinois soybean ACRE yield SBEYILP =	SBEYLDIL * SBHPRIL		
Expected Indiana soybean ACRE yield SBEYINP =	SBEYLDIN * SBHPRIN		
Expected Iowa soybean ACRE yield SBEYIAP =	SBEYLDIA * SBHPRIA		



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Expected Kansas soybean ACRE yield  
SBEYKSP =

SBEYLDKS  
\* SBHPRKS

Expected Minnesota soybean ACRE yield  
SBEYMNP =

SBEYLDMN  
\* SBHPRMN

Expected Missouri soybean ACRE yield  
SBEYMOP =

SBEYLDMO  
\* SBHPRMO

Expected Nebraska soybean ACRE yield  
SBEYNEP =

SBEYLDNE  
\* SBHPRNE

Expected North Dakota soybean ACRE yield  
SBEYNDP =

SBEYLDND  
\* SBHPRND

Expected Ohio soybean ACRE yield  
SBEYOHP =

SBEYLDOH  
\* SBHPROH

Expected South Dakota soybean ACRE yield  
SBEYSDP =

SBEYLDSD  
\* SBHPRSD

Expected Texas soybean ACRE yield  
SBEYTXP =

SBEYLDTX  
\* SBHPRTX

Expected Rest of Country soybean ACRE yield  
SBEYRCP =

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

SBEYLDRC  
\* SBHPRRC

Expected sunflower ACRE yield  
SFEYLDP =

SFEYLD  
\* SFHPRAT

Expected sorghum ACRE yield  
SGEYLDP =

SGEYLD

Expected Arkansas wheat ACRE yield  
WHEYARP =

WHEYAR

Expected California wheat ACRE yield  
WHEYCAP =

WHEYCA

Expected Georgia wheat ACRE yield  
WHEYGAP =

WHEYGA

Expected Illinois wheat ACRE yield  
WHEYILP =

WHEYIL

Expected Illinois wheat ACRE yield  
WHEYINP =

WHEYIN

Expected Iowa wheat ACRE yield  
WHEYIAP =

WHEYIA

Expected Kansas wheat ACRE yield  
WHEYKSP =

WHEYKS

Expected Minnesota wheat ACRE yield

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

WHEYMNP =  
WHEYMN

Expected Missouri wheat ACRE yield  
WHEYMOP =  
WHEYMO

Expected Montana wheat ACRE yield  
WHEYMTP =  
WHEYMT

Expected Nebraska wheat ACRE yield  
WHEYNEP =  
WHEYNE

Expected North Dakota wheat ACRE yield  
WHEYNDP =  
WHEYND

Expected Ohio wheat ACRE yield  
WHEYOHP =  
WHEYOH

Expected South Dakota wheat ACRE yield  
WHEYSDP =  
WHEYSD

Expected Texas wheat ACRE yield  
WHEYTXP =  
WHEYTX

Expected Rest of Country wheat ACRE yield  
WHEYRCP =  
WHEYRC

### Olympic average ACRE yields

Barley olympic average ACRE yield  
BRSYOLY =  
(SUM(lag1(BRSYLDP):lag5(BRSYLDP))  
- MAX(LAG1(BRSYLDP):LAG5(BRSYLDP))  
- MIN(lag1(BRSYLDP):lag5(BRSYLDP)))/3

Endogenous var./  
coefficient            Exogenous variable

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2005-2009 elasticities  
Short run   Long run

Arkansas corn olympic average ACRE yield  
CRAROLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYARP}):\text{lag5}(\text{CRSYARP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYARP}):\text{lag5}(\text{CRSYARP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYARP}):\text{lag5}(\text{CRSYARP}))) / 3 \end{aligned}$$

California corn olympic average ACRE yield  
CRCAOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYCAP}):\text{lag5}(\text{CRSYCAP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYCAP}):\text{lag5}(\text{CRSYCAP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYCAP}):\text{lag5}(\text{CRSYCAP}))) / 3 \end{aligned}$$

Georgia corn olympic average ACRE yield  
CRGAOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYGAP}):\text{lag5}(\text{CRSYGAP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYGAP}):\text{lag5}(\text{CRSYGAP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYGAP}):\text{lag5}(\text{CRSYGAP}))) / 3 \end{aligned}$$

Illinois corn olympic average ACRE yield  
CRILOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYILP}):\text{lag5}(\text{CRSYILP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYILP}):\text{lag5}(\text{CRSYILP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYILP}):\text{lag5}(\text{CRSYILP}))) / 3 \end{aligned}$$

Indiana corn olympic average ACRE yield  
CRINOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYINP}):\text{lag5}(\text{CRSYINP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYINP}):\text{lag5}(\text{CRSYINP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYINP}):\text{lag5}(\text{CRSYINP}))) / 3 \end{aligned}$$

Iowa corn olympic average ACRE yield  
CRIAOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYIAP}):\text{lag5}(\text{CRSYIAP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYIAP}):\text{lag5}(\text{CRSYIAP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYIAP}):\text{lag5}(\text{CRSYIAP}))) / 3 \end{aligned}$$

Kansas corn olympic average ACRE yield  
CRKSOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYKSP}):\text{lag5}(\text{CRSYKSP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYKSP}):\text{lag5}(\text{CRSYKSP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYKSP}):\text{lag5}(\text{CRSYKSP}))) / 3 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Minnesota corn olympic average ACRE yield  
CRMNOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYMNP});\text{lag5}(\text{CRSYMNP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYMNP});\text{lag5}(\text{CRSYMNP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYMNP});\text{lag5}(\text{CRSYMNP}))) / 3 \end{aligned}$$

Missouri corn olympic average ACRE yield  
CRMOOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYMOP});\text{lag5}(\text{CRSYMOP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYMOP});\text{lag5}(\text{CRSYMOP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYMOP});\text{lag5}(\text{CRSYMOP}))) / 3 \end{aligned}$$

Montana corn olympic average ACRE yield  
CRMTOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYMTP});\text{lag5}(\text{CRSYMTP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYMTP});\text{lag5}(\text{CRSYMTP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYMTP});\text{lag5}(\text{CRSYMTP}))) / 3 \end{aligned}$$

Nebraska corn olympic average ACRE yield  
CRNEOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYNEP});\text{lag5}(\text{CRSYNEP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYNEP});\text{lag5}(\text{CRSYNEP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYNEP});\text{lag5}(\text{CRSYNEP}))) / 3 \end{aligned}$$

North Dakota corn olympic average ACRE yield  
CRNDOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYNDP});\text{lag5}(\text{CRSYNDP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYNDP});\text{lag5}(\text{CRSYNDP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYNDP});\text{lag5}(\text{CRSYNDP}))) / 3 \end{aligned}$$

Ohio corn olympic average ACRE yield  
CROHOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYOHP});\text{lag5}(\text{CRSYOHP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYOHP});\text{lag5}(\text{CRSYOHP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYOHP});\text{lag5}(\text{CRSYOHP}))) / 3 \end{aligned}$$

South Dakota corn olympic average ACRE yield  
CRSDOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{CRSYSDP});\text{lag5}(\text{CRSYSDP})) \\ & - \text{MAX}(\text{lag1}(\text{CRSYSDP});\text{lag5}(\text{CRSYSDP})) \\ & - \text{MIN}(\text{lag1}(\text{CRSYSDP});\text{lag5}(\text{CRSYSDP}))) / 3 \end{aligned}$$

Texas corn olympic average ACRE yield  
CRTXOLY =

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

(SUM(lag1(CRSYTXP):lag5(CRSYTXP))  
- MAX(lag1(CRSYTXP):lag5(CRSYTXP))  
- MIN(lag1(CRSYTXP):lag5(CRSYTXP)))/3

Rest of Country corn olympic average ACRE yield  
CRRCOLY =

(SUM(lag1(CRSYRCP):lag5(CRSYRCP))  
- MAX(lag1(CRSYRCP):lag5(CRSYRCP))  
- MIN(lag1(CRSYRCP):lag5(CRSYRCP)))/3

Cotton olympic average ACRE yield  
CTSYOLY =

(SUM(lag1(CTSYLDP):lag5(CTSYLDP))  
- MAX(lag1(CTSYLDP):lag5(CTSYLDP))  
- MIN(lag1(CTSYLDP):lag5(CTSYLDP)))/3

Oats olympic average ACRE yield  
OTSYOLY =

(SUM(lag1(OTSYLDP):lag5(OTSYLDP))  
- MAX(lag1(OTSYLDP):lag5(OTSYLDP))  
- MIN(lag1(OTSYLDP):lag5(OTSYLDP)))/3

Peanut olympic average ACRE yield  
PNSYOLY =

(SUM(lag1(PNSYLDP):lag5(PNSYLDP))  
- MAX(lag1(PNSYLDP):lag5(PNSYLDP))  
- MIN(lag1(PNSYLDP):lag5(PNSYLDP)))/3

Rice olympic average ACRE yield  
RCSYOLY =

(SUM(lag1(RCSYLDP):lag5(RCSYLDP))  
- MAX(lag1(RCSYLDP):lag5(RCSYLDP))  
- MIN(lag1(RCSYLDP):lag5(RCSYLDP)))/3

Arkansas soybean olympic average ACRE yield  
SBAROLY =

(SUM(lag1(SBSYARP):lag5(SBSYARP))  
- MAX(lag1(SBSYARP):lag5(SBSYARP))  
- MIN(lag1(SBSYARP):lag5(SBSYARP)))/3

Georgia soybean olympic average ACRE yield  
SBGAOLY =

(SUM(lag1(SBSYGAP):lag5(SBSYGAP))  
- MAX(lag1(SBSYGAP):lag5(SBSYGAP))

Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

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- MIN(lag1(SBSYGAP):lag5(SBSYGAP))/3

Illinois soybean olympic average ACRE yield

SBILOLY =

(SUM(lag1(SBSYILP):lag5(SBSYILP))  
- MAX(lag1(SBSYILP):lag5(SBSYILP))  
- MIN(lag1(SBSYILP):lag5(SBSYILP)))/3

Indiana soybean olympic average ACRE yield

SBINOLY =

(SUM(lag1(SBSYINP):lag5(SBSYINP))  
- MAX(lag1(SBSYINP):lag5(SBSYINP))  
- MIN(lag1(SBSYINP):lag5(SBSYINP)))/3

Iowa soybean olympic average ACRE yield

SBIAOLY =

(SUM(lag1(SBSYIAP):lag5(SBSYIAP))  
- MAX(lag1(SBSYIAP):lag5(SBSYIAP))  
- MIN(lag1(SBSYIAP):lag5(SBSYIAP)))/3

Kansas soybean olympic average ACRE yield

SBKSOLY =

(SUM(lag1(SBSYKSP):lag5(SBSYKSP))  
- MAX(lag1(SBSYKSP):lag5(SBSYKSP))  
- MIN(lag1(SBSYKSP):lag5(SBSYKSP)))/3

Minnesota soybean olympic average ACRE yield

SBMNOLY =

(SUM(lag1(SBSYMNP):lag5(SBSYMNP))  
- MAX(lag1(SBSYMNP):lag5(SBSYMNP))  
- MIN(lag1(SBSYMNP):lag5(SBSYMNP)))/3

Missouri soybean olympic average ACRE yield

SBMOOLY =

(SUM(lag1(SBSYMOP):lag5(SBSYMOP))  
- MAX(lag1(SBSYMOP):lag5(SBSYMOP))  
- MIN(lag1(SBSYMOP):lag5(SBSYMOP)))/3

Nebraska soybean olympic average ACRE yield

SBNEOLY =

(SUM(lag1(SBSYNEP):lag5(SBSYNEP))  
- MAX(lag1(SBSYNEP):lag5(SBSYNEP))  
- MIN(lag1(SBSYNEP):lag5(SBSYNEP)))/3

Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

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North Dakota soybean olympic average ACRE yield

SBNDOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SBSYNDP}):\text{lag5}(\text{SBSYNDP})) \\ & - \text{MAX}(\text{lag1}(\text{SBSYNDP}):\text{lag5}(\text{SBSYNDP})) \\ & - \text{MIN}(\text{lag1}(\text{SBSYNDP}):\text{lag5}(\text{SBSYNDP}))) / 3 \end{aligned}$$

Ohio soybean olympic average ACRE yield

SBOHOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SBSYOHP}):\text{lag5}(\text{SBSYOHP})) \\ & - \text{MAX}(\text{lag1}(\text{SBSYOHP}):\text{lag5}(\text{SBSYOHP})) \\ & - \text{MIN}(\text{lag1}(\text{SBSYOHP}):\text{lag5}(\text{SBSYOHP}))) / 3 \end{aligned}$$

South Dakota soybean olympic average ACRE yield

SBSDOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SBSYSDP}):\text{lag5}(\text{SBSYSDP})) \\ & - \text{MAX}(\text{lag1}(\text{SBSYSDP}):\text{lag5}(\text{SBSYSDP})) \\ & - \text{MIN}(\text{lag1}(\text{SBSYSDP}):\text{lag5}(\text{SBSYSDP}))) / 3 \end{aligned}$$

Texas soybean olympic average ACRE yield

SBTXOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SBSYTXP}):\text{lag5}(\text{SBSYTXP})) \\ & - \text{MAX}(\text{lag1}(\text{SBSYTXP}):\text{lag5}(\text{SBSYTXP})) \\ & - \text{MIN}(\text{lag1}(\text{SBSYTXP}):\text{lag5}(\text{SBSYTXP}))) / 3 \end{aligned}$$

Rest of Country soybean olympic average ACRE yield

SBRCOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SBSYRCP}):\text{lag5}(\text{SBSYRCP})) \\ & - \text{MAX}(\text{lag1}(\text{SBSYRCP}):\text{lag5}(\text{SBSYRCP})) \\ & - \text{MIN}(\text{lag1}(\text{SBSYRCP}):\text{lag5}(\text{SBSYRCP}))) / 3 \end{aligned}$$

Sunflower olympic average ACRE yield

SFSYOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SFSYLDP}):\text{lag5}(\text{SFSYLDP})) \\ & - \text{MAX}(\text{lag1}(\text{SFSYLDP}):\text{lag5}(\text{SFSYLDP})) \\ & - \text{MIN}(\text{lag1}(\text{SFSYLDP}):\text{lag5}(\text{SFSYLDP}))) / 3 \end{aligned}$$

Sorghum olympic average ACRE yield

SGSYOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{SGSYLDP}):\text{lag5}(\text{SGSYLDP})) \\ & - \text{MAX}(\text{lag1}(\text{SGSYLDP}):\text{lag5}(\text{SGSYLDP})) \\ & - \text{MIN}(\text{lag1}(\text{SGSYLDP}):\text{lag5}(\text{SGSYLDP}))) / 3 \end{aligned}$$

Arkansas wheat olympic average ACRE yield



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

WHAROLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYARP}):\text{lag5}(\text{WHSYARP})) - \text{MAX}(\text{lag1}(\text{WHSYARP}):\text{lag5}(\text{WHSYARP})) - \text{MIN}(\text{lag1}(\text{WHSYARP}):\text{lag5}(\text{WHSYARP}))) / 3$

California wheat olympic average ACRE yield  
WHCAOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYCAP}):\text{lag5}(\text{WHSYCAP})) - \text{MAX}(\text{lag1}(\text{WHSYCAP}):\text{lag5}(\text{WHSYCAP})) - \text{MIN}(\text{lag1}(\text{WHSYCAP}):\text{lag5}(\text{WHSYCAP}))) / 3$

Georgia wheat olympic average ACRE yield  
WHGAOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYGAP}):\text{lag5}(\text{WHSYGAP})) - \text{MAX}(\text{lag1}(\text{WHSYGAP}):\text{lag5}(\text{WHSYGAP})) - \text{MIN}(\text{lag1}(\text{WHSYGAP}):\text{lag5}(\text{WHSYGAP}))) / 3$

Illinois wheat olympic average ACRE yield  
WHIOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYILP}):\text{lag5}(\text{WHSYILP})) - \text{MAX}(\text{lag1}(\text{WHSYILP}):\text{lag5}(\text{WHSYILP})) - \text{MIN}(\text{lag1}(\text{WHSYILP}):\text{lag5}(\text{WHSYILP}))) / 3$

Indiana wheat olympic average ACRE yield  
WHINOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYINP}):\text{lag5}(\text{WHSYINP})) - \text{MAX}(\text{lag1}(\text{WHSYINP}):\text{lag5}(\text{WHSYINP})) - \text{MIN}(\text{lag1}(\text{WHSYINP}):\text{lag5}(\text{WHSYINP}))) / 3$

Iowa wheat olympic average ACRE yield  
WHIAOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYIAP}):\text{lag5}(\text{WHSYIAP})) - \text{MAX}(\text{lag1}(\text{WHSYIAP}):\text{lag5}(\text{WHSYIAP})) - \text{MIN}(\text{lag1}(\text{WHSYIAP}):\text{lag5}(\text{WHSYIAP}))) / 3$

Kansas wheat olympic average ACRE yield  
WHKSOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYKSP}):\text{lag5}(\text{WHSYKSP})) - \text{MAX}(\text{lag1}(\text{WHSYKSP}):\text{lag5}(\text{WHSYKSP})) - \text{MIN}(\text{lag1}(\text{WHSYKSP}):\text{lag5}(\text{WHSYKSP}))) / 3$

Minnesota wheat olympic average ACRE yield  
WHMNOLY =  
 $(\text{SUM}(\text{lag1}(\text{WHSYMNP}):\text{lag5}(\text{WHSYMNP}))$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

	- MAX(lag1(WHSYMNP):lag5(WHSYMNP))		
	- MIN(lag1(WHSYMNP):lag5(WHSYMNP)))/3		

Missouri wheat olympic average ACRE yield

WHMOOLY =

	(SUM(lag1(WHSYMOP):lag5(WHSYMOP))		
	- MAX(lag1(WHSYMOP):lag5(WHSYMOP))		
	- MIN(lag1(WHSYMOP):lag5(WHSYMOP)))/3		

Montana wheat olympic average ACRE yield

WHMTOLY =

	(SUM(lag1(WHSYMTP):lag5(WHSYMTP))		
	- MAX(lag1(WHSYMTP):lag5(WHSYMTP))		
	- MIN(lag1(WHSYMTP):lag5(WHSYMTP)))/3		

Nebraska wheat olympic average ACRE yield

WHNEOLY =

	(SUM(lag1(WHSYNEP):lag5(WHSYNEP))		
	- MAX(lag1(WHSYNEP):lag5(WHSYNEP))		
	- MIN(lag1(WHSYNEP):lag5(WHSYNEP)))/3		

North Dakota wheat olympic average ACRE yield

WHNDOLY =

	(SUM(lag1(WHSYNDP):lag5(WHSYNDP))		
	- MAX(lag1(WHSYNDP):lag5(WHSYNDP))		
	- MIN(lag1(WHSYNDP):lag5(WHSYNDP)))/3		

Ohio wheat olympic average ACRE yield

WHOHOLY =

	(SUM(lag1(WHSYOHP):lag5(WHSYOHP))		
	- MAX(lag1(WHSYOHP):lag5(WHSYOHP))		
	- MIN(lag1(WHSYOHP):lag5(WHSYOHP)))/3		

South Dakota wheat olympic average ACRE yield

WHSDOLY =

	(SUM(lag1(WHSYSDP):lag5(WHSYSDP))		
	- MAX(lag1(WHSYSDP):lag5(WHSYSDP))		
	- MIN(lag1(WHSYSDP):lag5(WHSYSDP)))/3		

Texas wheat olympic average ACRE yield

WHTXOLY =

	(SUM(lag1(WHSYTXP):lag5(WHSYTXP))		
	- MAX(lag1(WHSYTXP):lag5(WHSYTXP))		
	- MIN(lag1(WHSYTXP):lag5(WHSYTXP)))/3		

Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

---

Rest of Country wheat olympic average ACRE yield  
WHRCOLY =

$$\begin{aligned} & (\text{SUM}(\text{lag1}(\text{WHSYRCP}):\text{lag5}(\text{WHSYRCP})) \\ & - \text{MAX}(\text{lag1}(\text{WHSYRCP}):\text{lag5}(\text{WHSYRCP})) \\ & - \text{MIN}(\text{lag1}(\text{WHSYRCP}):\text{lag5}(\text{WHSYRCP}))) / 3 \end{aligned}$$

### 2 year moving average farm price

Barley 2 year moving average price  
BRP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{BRPFRM}):\text{lag2}(\text{BRPFRM}))$$

Corn 2 year moving average price  
CRP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{CRPFRM}):\text{lag2}(\text{CRPFRM}))$$

Cotton 2 year moving average price  
CTP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{CTPFRM}):\text{lag2}(\text{CTPFRM}))$$

Oats 2 year moving average price  
OTP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{OTPFRM}):\text{lag2}(\text{OTPFRM}))$$

Peanut 2 year moving average price  
PNP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{PNPFRM}):\text{lag2}(\text{PNPFRM}))$$

Rice 2 year moving average price  
RCP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{RCPFRM}):\text{lag2}(\text{RCPFRM}))$$

Soybean 2 year moving average price  
SBP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{SBPFRM}):\text{lag2}(\text{SBPFRM}))$$

Sunflower 2 year moving average price  
SFP2MA =

$$\text{AVERAGE}(\text{lag1}(\text{SFPFRM}):\text{lag2}(\text{SFPFRM}))$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Sorghum 2 year moving average price  
SGP2MA =  
AVERAGE(lag1(SGPFRM):lag2(SGPFRM))

Wheat 2 year moving average price  
WHP2MA =  
AVERAGE(lag1(WHPFRM):lag2(WHPFRM))

**ACRE benchmarks (for 2010 and beyond)**

Barley ACRE benchmark  
BRRBENC =  
Median(0.9\*lag1(BRRBENC),BRSYOLY\*BRP2MA\*0.9,lag1(BRRBENC)\*1.1)

Arkansas corn ACRE benchmark  
CRARBEN =  
Median(0.9\*lag1(CRARBEN),CRAROLY\*CRP2MA\*0.9,lag1(CRARBEN)\*1.1)

California corn ACRE benchmark  
CRCABEN =  
Median(0.9\*lag1(CRARBEN),CRCAOLY\*CRP2MA\*0.9,lag1(CRARBEN)\*1.1)

Georgia corn ACRE benchmark  
CRGABEN =  
Median(0.9\*lag1(CRGABEN),CRGAOLY\*CRP2MA\*0.9,lag1(CRGABEN)\*1.1)

Illinois corn ACRE benchmark  
CRILBEN =  
Median(0.9\*lag1(CRILBEN),CRILOLY\*CRP2MA\*0.9,lag1(CRILBEN)\*1.1)

Indiana corn ACRE benchmark  
CRINBEN =  
Median(0.9\*lag1(CRINBEN),CRINOLY\*CRP2MA\*0.9,lag1(CRINBEN)\*1.1)

Iowa corn ACRE benchmark  
CRIABEN =  
Median(0.9\*lag1(CRIABEN),CRIAOLY\*CRP2MA\*0.9,lag1(CRIABEN)\*1.1)

Kansas corn ACRE benchmark  
CRKSBEN =  
Median(0.9\*lag1(CRKSBEN),CRKSOLY\*CRP2MA\*0.9,lag1(CRKSBEN)\*1.1)

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Minnesota corn ACRE benchmark

$$\text{CRMNBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRMNBEN}), \text{CRMNOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRMNBEN}) \cdot 1.1)$$

Missouri corn ACRE benchmark

$$\text{CRMOBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRMOBEN}), \text{CRMOOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRMOBEN}) \cdot 1.1)$$

Montana corn ACRE benchmark

$$\text{CRMTBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRMTBEN}), \text{CRMTOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRMTBEN}) \cdot 1.1)$$

Nebraska corn ACRE benchmark

$$\text{CRNEBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRNEBEN}), \text{CRNEOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRNEBEN}) \cdot 1.1)$$

North Dakota corn ACRE benchmark

$$\text{CRNDBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRNDBEN}), \text{CRNDOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRNDBEN}) \cdot 1.1)$$

Ohio corn ACRE benchmark

$$\text{CROHBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CROHBEN}), \text{CROHOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CROHBEN}) \cdot 1.1)$$

South Dakota corn ACRE benchmark

$$\text{CRSDBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRSDBEN}), \text{CRSDOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRSDBEN}) \cdot 1.1)$$

Texas corn ACRE benchmark

$$\text{CRTXBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRTXBEN}), \text{CRTXOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRTXBEN}) \cdot 1.1)$$

Rest of Country corn ACRE benchmark

$$\text{CRRCBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{CRRCBEN}), \text{CRRCOLY} \cdot \text{CRP2MA} \cdot 0.9, \text{lag1}(\text{CRRCBEN}) \cdot 1.1)$$

Cotton ACRE benchmark

$$\text{CTRBENC} = \text{Median}(0.9 \cdot \text{lag1}(\text{CTRBENC}), \text{lag1}(\text{CTRBENC}) \cdot 1.1, \text{CTSYOLY} \cdot \text{CTP2MA} \cdot 0.9)$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Oats ACRE benchmark

$$\text{OTRBENC} = \text{Median}(0.9*\text{lag1}(\text{OTRBENC}), \text{lag1}(\text{OTRBENC})*1.1, \text{OTSYOLY}*\text{OTP2MA}*0.9)$$

Peanut ACRE benchmark

$$\text{PNRBENC} = \text{Median}(0.9*\text{lag1}(\text{PNRBENC}), \text{lag1}(\text{PNRBENC})*1.1, \text{PNSYOLY}*\text{PNP2MA}*0.9)$$

Rice ACRE benchmark

$$\text{RCRBENC} = \text{Median}(0.9*\text{lag1}(\text{RCRBENC}), \text{lag1}(\text{RCRBENC})*1.1, \text{RCSYOLY}*\text{RCP2MA}*0.9/100)$$

Arkansas soybean ACRE benchmark

$$\text{SBARBEN} = \text{Median}(0.9*\text{lag1}(\text{SBARBEN}), \text{lag1}(\text{SBARBEN})*1.1, \text{SBARYOLY}*\text{SBP2MA}*0.9)$$

Georgia soybean ACRE benchmark

$$\text{SBGABEN} = \text{Median}(0.9*\text{lag1}(\text{SBGABEN}), \text{lag1}(\text{SBGABEN})*1.1, \text{SBGAYOLY}*\text{SBP2MA}*0.9)$$

Illinois soybean ACRE benchmark

$$\text{SBILBEN} = \text{Median}(0.9*\text{lag1}(\text{SBILBEN}), \text{lag1}(\text{SBILBEN})*1.1, \text{SBILYOLY}*\text{SBP2MA}*0.9)$$

Indiana soybean ACRE benchmark

$$\text{SBINBEN} = \text{Median}(0.9*\text{lag1}(\text{SBINBEN}), \text{lag1}(\text{SBINBEN})*1.1, \text{SBINYOLY}*\text{SBP2MA}*0.9)$$

Iowa soybean ACRE benchmark

$$\text{SBIABEN} = \text{Median}(0.9*\text{lag1}(\text{SBIABEN}), \text{lag1}(\text{SBIABEN})*1.1, \text{SBIAYOLY}*\text{SBP2MA}*0.9)$$

Kansas soybean ACRE benchmark

$$\text{SBKSBEN} = \text{Median}(0.9*\text{lag1}(\text{SBKSBEN}), \text{lag1}(\text{SBKSBEN})*1.1, \text{SBKSYOLY}*\text{SBP2MA}*0.9)$$

Minnesota soybean ACRE benchmark

$$\text{SBMNBEN} = \text{Median}(0.9*\text{lag1}(\text{SBMNBEN}), \text{lag1}(\text{SBMNBEN})*1.1, \text{SBMNYOLY}*\text{SBP2MA}*0.9)$$

Missouri soybean ACRE benchmark

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
SBMOBEN =	Median(0.9*lag1(SBMOBEN),lag1(SBMOBEN)*1.1,SBMOYOLY*SBP2MA*0.9)		
Nebraska soybean ACRE benchmark SBNEBEN =	Median(0.9*lag1(SBNEBEN),lag1(SBNEBEN)*1.1,SBNEYOLY*SBP2MA*0.9)		
North Dakota soybean ACRE benchmark SBNDBEN =	Median(0.9*lag1(SBNDBEN),lag1(SBNDBEN)*1.1,SBNDYOLY*SBP2MA*0.9)		
Ohio soybean ACRE benchmark SBOHBEN =	Median(0.9*lag1(SBOHBEN),lag1(SBOHBEN)*1.1,SBOHYOLY*SBP2MA*0.9)		
South Dakota soybean ACRE benchmark SBSDBEN =	Median(0.9*lag1(SBSDBEN),lag1(SBSDBEN)*1.1,SBSDYOLY*SBP2MA*0.9)		
Texas soybean ACRE benchmark SBTXBEN =	Median(0.9*lag1(SBTXBEN),lag1(SBTXBEN)*1.1,SBTXYOLY*SBP2MA*0.9)		
Rest of Country soybean ACRE benchmark SBRCBEN =	Median(0.9*lag1(SBRCBEN),lag1(SBRCBEN)*1.1,SBRCYOLY*SBP2MA*0.9)		
Sunflower ACRE benchmark SFRBENC =	Median(0.9*lag1(SFRBENC),lag1(SFRBENC)*1.1,SFSYOLY*SFP2MA*0.9/100)		
Sorghum ACRE benchmark SGRBENC =	Median(0.9*lag1(SGRBENC),lag1(SGRBENC)*1.1,SGSYOLY*SGP2MA*0.9)		
Arkansas wheat ACRE benchmark WHARBEN =	Median(0.9*lag1(WHARBEN),lag1(WHARBEN)*1.1,WHAROLY*WHP2MA*0.9)		
California wheat ACRE benchmark WHCABEN =			

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	Median(0.9*lag1(WHCABEN),lag1(WHCABEN)*1.1,WHCAOLY*WHP2MA*0.9)		

Georgia wheat ACRE benchmark

WHGABEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHGABEN}),\text{lag1}(\text{WHGABEN})*1.1,\text{WHGAOLY}*\text{WHP2MA}*0.9)$$

Illinois wheat ACRE benchmark

WHILBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHILBEN}),\text{lag1}(\text{WHILBEN})*1.1,\text{WHILOLY}*\text{WHP2MA}*0.9)$$

Indiana wheat ACRE benchmark

WHINBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHINBEN}),\text{lag1}(\text{WHINBEN})*1.1,\text{WHINOLY}*\text{WHP2MA}*0.9)$$

Iowa wheat ACRE benchmark

WHIABEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHIABEN}),\text{lag1}(\text{WHIABEN})*1.1,\text{WHIAOLY}*\text{WHP2MA}*0.9)$$

Kansas wheat ACRE benchmark

WHKSBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHKSBEN}),\text{lag1}(\text{WHKSBEN})*1.1,\text{WHKSOLY}*\text{WHP2MA}*0.9)$$

Minnesota wheat ACRE benchmark

WHMNBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHMNBEN}),\text{lag1}(\text{WHMNBEN})*1.1,\text{WHMNOLY}*\text{WHP2MA}*0.9)$$

Missouri wheat ACRE benchmark

WHMOBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHMOBEN}),\text{lag1}(\text{WHMOBEN})*1.1,\text{WHMOOLY}*\text{WHP2MA}*0.9)$$

Montana wheat ACRE benchmark

WHMTBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHMTBEN}),\text{lag1}(\text{WHMTBEN})*1.1,\text{WHMTOLY}*\text{WHP2MA}*0.9)$$

Arkansas wheat ACRE benchmark

WHNEBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHNEBEN}),\text{lag1}(\text{WHNEBEN})*1.1,\text{WHNEOLY}*\text{WHP2MA}*0.9)$$

North Dakota wheat ACRE benchmark

WHNDBEN =

$$\text{Median}(0.9*\text{lag1}(\text{WHNDBEN}),\text{lag1}(\text{WHNDBEN})*1.1,\text{WHNDOLY}*\text{WHP2MA}*0.9)$$



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Ohio wheat ACRE benchmark

$$\text{WHOHBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{WHOHBEN}), \text{lag1}(\text{WHOHBEN}) \cdot 1.1, \text{WHOHOLY} \cdot \text{WHP2MA} \cdot 0.9)$$

South Dakota wheat ACRE benchmark

$$\text{WHSDBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{WHSDBEN}), \text{lag1}(\text{WHSDBEN}) \cdot 1.1, \text{WHSDOLY} \cdot \text{WHP2MA} \cdot 0.9)$$

Texas wheat ACRE benchmark

$$\text{WHTXBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{WHTXBEN}), \text{lag1}(\text{WHTXBEN}) \cdot 1.1, \text{WHTXOLY} \cdot \text{WHP2MA} \cdot 0.9)$$

Rest of Country wheat ACRE benchmark

$$\text{WHRCBEN} = \text{Median}(0.9 \cdot \text{lag1}(\text{WHRCBEN}), \text{lag1}(\text{WHRCBEN}) \cdot 1.1, \text{WHRCOLY} \cdot \text{WHP2MA} \cdot 0.9)$$

### Actual ACRE market revenue per acre

Barley ACRE market revenue

$$\text{BRREVP} = \text{BRSYLDP} \cdot \text{BRPFRM}$$

Arkansas corn ACRE market revenue

$$\text{CRREVPAR} = \text{CRSYARP} \cdot \text{CRPFRM}$$

California corn ACRE market revenue

$$\text{CRREVPCA} = \text{CRSYCAP} \cdot \text{CRPFRM}$$

Georgia corn ACRE market revenue

$$\text{CRREVPGA} = \text{CRSYGAP} \cdot \text{CRPFRM}$$

Illinois corn ACRE market revenue

$$\text{CRREVPIL} = \text{CRSYILP}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

\* CRPFRM

Indiana corn ACRE market revenue  
CRREVPIN =

CRSYINP  
\* CRPFRM

Iowa corn ACRE market revenue  
CRREVPIA =

CRSYIAP  
\* CRPFRM

Kansas corn ACRE market revenue  
CRREVPKS =

CRSYKSP  
\* CRPFRM

Minnesota corn ACRE market revenue  
CRREVPMN =

CRSYMNP  
\* CRPFRM

Missouri corn ACRE market revenue  
CRREVPMO =

CRSYMOP  
\* CRPFRM

Montana corn ACRE market revenue  
CRREVPMT =

CRSYMTP  
\* CRPFRM

Nebraska corn ACRE market revenue  
CRREVPNE =

CRSYNEP  
\* CRPFRM

North Dakota corn ACRE market revenue  
CRREVPND =

CRSYNDP  
\* CRPFRM

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Ohio corn ACRE market revenue CRREVPOH =	CRSYOHP * CRPFRM		
South Dakota corn ACRE market revenue CRREVPSD =	CRSYSDP * CRPFRM		
Texas corn ACRE market revenue CRREVPTX =	CRSYTXP * CRPFRM		
Rest of Country corn ACRE market revenue CRREVPRC =	CRSYRCP * CRPFRM		
Cotton ACRE market revenue CTREVP =	CTSYLDP * CTPFRM		
Oats ACRE market revenue OTREVP =	OTSYLDP * OTPFRM		
Peanut ACRE market revenue PNREVP =	PNSYLDP * PNPFRM		
Rice ACRE market revenue RCREVP =	RCSYLDP * RCPFRM / 100		
Arkansas soybean ACRE market revenue SBREVPAR =	SBSYARP		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

\* SBPFRM

Georgia soybean ACRE market revenue  
SBREVPGA =

SBSYGAP  
\* SBPFRM

Illinois soybean ACRE market revenue  
SBREVPIL =

SBSYILP  
\* SBPFRM

Indiana soybean ACRE market revenue  
SBREVPIN =

SBSYINP  
\* SBPFRM

Iowa soybean ACRE market revenue  
SBREVPIA =

SBSYIAP  
\* SBPFRM

Kansas soybean ACRE market revenue  
SBREVPKS =

SBSYKSP  
\* SBPFRM

Minnesota soybean ACRE market revenue  
SBREVPMN =

SBSYMNP  
\* SBPFRM

Missouri soybean ACRE market revenue  
SBREVPMO =

SBSYMOP  
\* SBPFRM

Nebraska soybean ACRE market revenue  
SBREVPNE =

SBSYNEP  
\* SBPFRM

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
North Dakota soybean ACRE market revenue SBREVPND =	SBSYNDP * SBPFRM		
Ohio soybean ACRE market revenue SBREVPOH =	SBSYOHP * SBPFRM		
South Dakota soybean ACRE market revenue SBREVPSD =	SBSYSDP * SBPFRM		
Texas soybean ACRE market revenue SBREVPTX =	SBSYTXP * SBPFRM		
Rest of Country soybean ACRE market revenue SBREVPRC =	SBSYRCP * SBPFRM		
Sunflower ACRE market revenue SFREVP =	SFSYLDP * SFPFRM / 100		
Sorghum ACRE market revenue SGREVP =	SGSYLDP * SGPFRM		
Arkansas wheat ACRE market revenue WHREVPAR =	WHSYARP * WHPFRM		
California wheat ACRE market revenue WHREVPAC =	WHSYCAP		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

\* WHPFRM

Georgia wheat ACRE market revenue  
WHREVPGA =

WHSYGAP  
\* WHPFRM

Illinois wheat ACRE market revenue  
WHREVPIL =

WHSYILP  
\* WHPFRM

Indiana wheat ACRE market revenue  
WHREVPIN =

WHSYINP  
\* WHPFRM

Iowa wheat ACRE market revenue  
WHREVPIA =

WHSYIAP  
\* WHPFRM

Kansas wheat ACRE market revenue  
WHREVPKS =

WHSYKSP  
\* WHPFRM

Minnesota wheat ACRE market revenue  
WHREVPMN =

WHSYMNP  
\* WHPFRM

Missouri wheat ACRE market revenue  
WHREVPMO =

WHSYMOP  
\* WHPFRM

Montana wheat ACRE market revenue  
WHREVPMT =

WHSYMTP  
\* WHPFRM

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Nebraska wheat ACRE market revenue  
WHREVPNE =

WHSYNEP  
\* WHPFRM

North Dakota wheat ACRE market revenue  
WHREVPND =

WHSYNDP  
\* WHPFRM

Ohio wheat ACRE market revenue  
WHREVPOH =

WHSYOHP  
\* WHPFRM

South Dakota wheat ACRE market revenue  
WHREVPSD =

WHSYSDP  
\* WHPFRM

Texas wheat ACRE market revenue  
WHREVPTX =

WHSYTXP  
\* WHPFRM

Rest of Country wheat ACRE market revenue  
WHREVPRC =

WHSYRCP  
\* WHPFRM

### **Expected ACRE market revenue per acre**

Barley expected ACRE market revenue  
BRREVP =

BREYLDP  
\* BREPFM

Arkansas corn expected ACRE market revenue  
CRERPAR =

CREYARP  
\* CREPFM

California corn expected ACRE market revenue

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
CRERPCA =	CREYCAP * CREPFM		
Georgia corn expected ACRE market revenue CRERPGA =	CREYGAP * CREPFM		
Illinois corn expected ACRE market revenue CRERPIL =	CREYILP * CREPFM		
Indiana corn expected ACRE market revenue CRERPIN =	CREYINP * CREPFM		
Iowa corn expected ACRE market revenue CRERPIA =	CREYIAP * CREPFM		
Kansas corn expected ACRE market revenue CRERPKS =	CREYKSP * CREPFM		
Minnesota corn expected ACRE market revenue CRERPMN =	CREYMNP * CREPFM		
Missouri corn expected ACRE market revenue CRERPMO =	CREYMOP * CREPFM		
Montana corn expected ACRE market revenue CRERPMT =	CREYMTP * CREPFM		



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Nebraska corn expected ACRE market revenue  
CRERPNE =

$$\begin{aligned} & \text{CREYNEP} \\ & * \text{CREPFM} \end{aligned}$$

North Dakota corn expected ACRE market revenue  
CRERPND =

$$\begin{aligned} & \text{CREYNDP} \\ & * \text{CREPFM} \end{aligned}$$

Ohio corn expected ACRE market revenue  
CRERPOH =

$$\begin{aligned} & \text{CREYOHP} \\ & * \text{CREPFM} \end{aligned}$$

South Dakota corn expected ACRE market revenue  
CRERPSD =

$$\begin{aligned} & \text{CREYSDP} \\ & * \text{CREPFM} \end{aligned}$$

Texas corn expected ACRE market revenue  
CRERPTX =

$$\begin{aligned} & \text{CREYTXP} \\ & * \text{CREPFM} \end{aligned}$$

Rest of Country corn expected ACRE market revenue  
CRERPRC =

$$\begin{aligned} & \text{CREYRCP} \\ & * \text{CREPFM} \end{aligned}$$

Cotton expected ACRE market revenue  
CTEREVP =

$$\begin{aligned} & \text{CTEYLDP} \\ & * \text{CTEPMF} \end{aligned}$$

Oats expected ACRE market revenue  
OTEREVP =

$$\begin{aligned} & \text{OTEYLDP} \\ & * \text{OTEPMF} \end{aligned}$$

Peanuts expected ACRE market revenue

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
PNEREVP =	PNEYLDP * PNEPFM		
Rice expected ACRE market revenue RCEREVP =	RCEYLDP * RCEPFM / 100		
Arkansas soybean expected ACRE market revenue SBERPAR =	SBEYARP * SBEPFM		
Georgia soybean expected ACRE market revenue SBERPGA =	SBEYGAP * SBEPFM		
Illinois soybean expected ACRE market revenue SBERPIL =	SBEYILP * SBEPFM		
Indiana soybean expected ACRE market revenue SBERPIN =	SBEYINP * SBEPFM		
Iowa soybean expected ACRE market revenue SBERPIA =	SBEYIAP * SBEPFM		
Kansas soybean expected ACRE market revenue SBERPKS =	SBEYKSP * SBEPFM		
Minnesota soybean expected ACRE market revenue SBERPMN =	SBEYMNP * SBEPFM		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Missouri soybean expected ACRE market revenue  
SBERPMO =

SBEYMOP  
\* SBEPFM

Nebraska soybean expected ACRE market revenue  
SBERPNE =

SBEYNEP  
\* SBEPFM

North Dakota soybean expected ACRE market revenue  
SBERPND =

SBEYNDP  
\* SBEPFM

Ohio soybean expected ACRE market revenue  
SBERPOH =

SBEYOHP  
\* SBEPFM

South Dakota soybean expected ACRE market revenue  
SBERPSD =

SBEYSDP  
\* SBEPFM

Texas soybean expected ACRE market revenue  
SBERPTX =

SBEYTXP  
\* SBEPFM

Rest of Country soybean expected ACRE market revenue  
SBERPRC =

SBEYRCP  
\* SBEPFM

Sunflower expected ACRE market revenue  
SFEREVP =

SFEYLDP  
\* SFEPFM / 100

Sorghum expected ACRE market revenue

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
SGEREVP =	SGEYLDP * SGEPFM		
Arkansas wheat expected ACRE market revenue WHERPAR =	WHEYARP * WHEPFM		
California wheat expected ACRE market revenue WHERPCA =	WHEYCAP * WHEPFM		
Georgia wheat expected ACRE market revenue WHERPGA =	WHEYGAP * WHEPFM		
Illinois wheat expected ACRE market revenue WHERPIL =	WHEYILP * WHEPFM		
Indiana wheat expected ACRE market revenue WHERPIN =	WHEYINP * WHEPFM		
Iowa wheat expected ACRE market revenue WHERPIA =	WHEYIAP * WHEPFM		
Kansas wheat expected ACRE market revenue WHERPKS =	WHEYKSP * WHEPFM		
Minnesota wheat expected ACRE market revenue WHERPMN =	WHEYMNP * WHEPFM		

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Missouri wheat expected ACRE market revenue  
WHERPMO =

WHEYMOP  
\* WHEPFM

Montana wheat expected ACRE market revenue  
WHERPMT =

WHEYMTP  
\* WHEPFM

Nebraska wheat expected ACRE market revenue  
WHERPNE =

WHEYNEP  
\* WHEPFM

North Dakota wheat expected ACRE market revenue  
WHERPND =

WHEYNDP  
\* WHEPFM

Ohio wheat expected ACRE market revenue  
WHERPOH =

WHEYOHP  
\* WHEPFM

South Dakota wheat expected ACRE market revenue  
WHERPSD =

WHEYSDP  
\* WHEPFM

Texas wheat expected ACRE market revenue  
WHERPTX =

WHEYTXP  
\* WHEPFM

Rest of Country wheat expected ACRE market revenue  
WHERPRC =

WHEYRCP  
\* WHEPFM

**Exp. ACRE payments/acre**

Endogenous var./  
coefficient                      Exogenous variable

2005-2009 elasticities  
Short run    Long run

Barley expected ACRE payment rate/a.  
BREACAC =

$$\begin{aligned} & \text{Median}(0, \\ & +1.06 * \text{BRRBENC} \\ & -1 * \text{BREREVP}, \\ & +0.25 * \text{BRRBENC}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Corn expected ACRE payment rate/a.  
CREACAC =

$$\begin{aligned} & +0.0047 * \text{CREAAAR} \\ & +0.0017 * \text{CREAACA} \\ & +0.0036 * \text{CREAAGA} \\ & +0.1515 * \text{CREAAIL} \\ & +0.0703 * \text{CREAAIN} \\ & +0.1609 * \text{CREAAIA} \\ & +0.0555 * \text{CREAAKS} \\ & +0.0894 * \text{CREAAMN} \\ & +0.038 * \text{CREAAMO} \\ & +0.0004 * \text{CREAAMT} \\ & +0.1077 * \text{CREAANE} \\ & +0.0269 * \text{CREAAND} \\ & +0.0404 * \text{CREAAOH} \\ & +0.0553 * \text{CREAASD} \\ & +0.0236 * \text{CREAATX} \\ & +0.17 * \text{CREAARC} \end{aligned}$$

AR corn expected ACRE payment rate/a.  
CREAAAR =

$$\begin{aligned} & ( \\ & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$$\begin{aligned} \mu &= \text{CRERPAR} \\ \sigma &= \text{CRSDRPAR} \\ \text{BM} &= \text{CRARBEN} \end{aligned}$$

CA corn expected ACRE payment rate/a.  
CREAACA =

$$\begin{aligned} & ( \\ & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

\* ACREPAY  
\* ACREFLA

$\mu$ =CRERPCA  
 $\sigma$ =CRSDRPCA  
BM=CRARBEN

GA corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAAGA} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & \mu = \text{CRERPGA} \\ & \sigma = \text{CRSDRPGA} \\ & \text{BM} = \text{CRARBEN} \end{aligned}$$

IL corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAAIL} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & \mu = \text{CRERPIL} \\ & \sigma = \text{CRSDRPIL} \\ & \text{BM} = \text{CRARBEN} \end{aligned}$$

IN corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAAIN} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & \mu = \text{CRERPIN} \\ & \sigma = \text{CRSDRPIN} \\ & \text{BM} = \text{CRARBEN} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

IA corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAAIA} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{CRERPPIA} \\
 & \sigma = \text{CRSDRPIA} \\
 & \text{BM} = \text{CRARBEN}
 \end{aligned}$$

KS corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAAKS} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{CRERPKS} \\
 & \sigma = \text{CRSDRPKS} \\
 & \text{BM} = \text{CRARBEN}
 \end{aligned}$$

MN corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAAMN} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{CRERPMMN} \\
 & \sigma = \text{CRSDRPMN} \\
 & \text{BM} = \text{CRARBEN}
 \end{aligned}$$

MO corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAAMO} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA}
 \end{aligned}$$



Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

$\mu$ =CRERPMO  
 $\sigma$ =CRSDRPMO  
BM=CRARBEN

MT corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAAMT} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =CRERPMT  
 $\sigma$ =CRSDRPMT  
BM=CRARBEN

NE corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAANE} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =CRERPNE  
 $\sigma$ =CRSDRPNE  
BM=CRARBEN

ND corn expected ACRE payment rate/a.

$$\begin{aligned} \text{CREAAND} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =CRERPND  
 $\sigma$ =CRSDRPND  
BM=CRARBEN

OH corn expected ACRE payment rate/a.

$$\text{CREAAOH} = ($$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

$$\begin{aligned}
 & - \sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = CRERPOH \\
 & \sigma = CRSDRPOH \\
 & BM = CRARBEN
 \end{aligned}$$

SD corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAASD} = & ( \\
 & - \sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = CRERPSD \\
 & \sigma = CRSDRPSD \\
 & BM = CRARBEN
 \end{aligned}$$

TX corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAATX} = & ( \\
 & - \sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = CRERPTX \\
 & \sigma = CRSDRPTX \\
 & BM = CRARBEN
 \end{aligned}$$

RC corn expected ACRE payment rate/a.

$$\begin{aligned}
 \text{CREAARC} = & ( \\
 & - \sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = CRERPRC
 \end{aligned}$$

Endogenous var./  
coefficient

Exogenous variable  
 $\sigma = \text{CRSDRPRC}$   
 $\text{BM} = \text{CRARBEN} * 1.04$

2005-2009 elasticities  
Short run Long run

Cotton expected ACRE payment rate/a.  
CTEACAC =

$$\begin{aligned} & \text{Median}(0, \\ & +1.01 * \text{CTRBENC} \\ & -1 * \text{CTEREVP}, \\ & +0.25 * \text{CTRBENC}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Oats expected ACRE payment rate/a.  
OTEACAC =

$$\begin{aligned} & \text{Median}(0, \\ & +1.07 * \text{OTRBENC} \\ & -1 * \text{OTEREVP}, \\ & +0.25 * \text{OTRBENC}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Peanuts expected ACRE payment rate/a.  
PNEACAC =

$$\begin{aligned} & \text{Median}(0, \\ & +1.12 * \text{PNRBENC} \\ & -1 * \text{PNEREVP}, \\ & +0.25 * \text{PNRBENC}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Rice expected ACRE payment rate/a.  
RCEACAC =

$$\begin{aligned} & \text{Median}(0, \\ & +1.09 * \text{RCRBENC} \\ & -1 * \text{RCEREVP}, \\ & +0.25 * \text{RCRBENC}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Soybean expected ACRE payment rate/a.  
SBEACAC =

$$\begin{aligned} & +0.0422 * \text{SBEAAAR} \\ & +0.0036 * \text{SBEAAGA} \\ & +0.1157 * \text{SBEAAIL} \\ & +0.068 * \text{SBEAAIN} \\ & +0.1226 * \text{SBEAIIA} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
+0.0556	* SBEEAKS		
+0.0941	* SBEEAMN		
+0.0642	* SBEEAMO		
+0.0664	* SBEEANE		
+0.057	* SBEEAND		
+0.0581	* SBEEAOH		
+0.0533	* SBEEASD		
+0.0023	* SBEEATX		
+0.1969	* SBEEARC		

AR soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEEAAR} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPAR} \\
 & \sigma = \text{SBSDRPAR} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

GA soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEEAGA} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPGA} \\
 & \sigma = \text{SBSDRPGA} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

IL soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEEAIL} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPIL} \\
 & \sigma = \text{SBSDRPIL} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

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IN soybean expected ACRE payment rate/a.

$$\begin{aligned} \text{SBEEAIN} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ \\ & \mu = \text{SBERPIN} \\ & \sigma = \text{SBSDRPIN} \\ & \text{BM} = \text{SBARBEN} \end{aligned}$$

IA soybean expected ACRE payment rate/a.

$$\begin{aligned} \text{SBEEAIA} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ \\ & \mu = \text{SBERPIA} \\ & \sigma = \text{SBSDRPIA} \\ & \text{BM} = \text{SBARBEN} \end{aligned}$$

KS soybean expected ACRE payment rate/a.

$$\begin{aligned} \text{SBEEAKS} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ \\ & \mu = \text{SBERPKS} \\ & \sigma = \text{SBSDRPKS} \\ & \text{BM} = \text{SBARBEN} \end{aligned}$$

MN soybean expected ACRE payment rate/a.

$$\begin{aligned} \text{SBEEAMN} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

\* ACREPAY  
\* ACREFLA

$\mu$ =SBERPMN  
 $\sigma$ =SBSDRPMN  
BM=SBARBEN

MO soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEAAMO} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPMO} \\
 & \sigma = \text{SBSDRPMO} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

NE soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEAANE} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPNE} \\
 & \sigma = \text{SBSDRPNE} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

ND soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEAAND} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 & \mu = \text{SBERPND} \\
 & \sigma = \text{SBSDRPND} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

OH soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEA OH} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{SBERPOH} \\
 & \sigma = \text{SBSDRPOH} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

SD soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEA SD} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{SBERPSD} \\
 & \sigma = \text{SBSDRPSD} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

TX soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEA TX} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{SBERPTX} \\
 & \sigma = \text{SBSDRPTX} \\
 & \text{BM} = \text{SBARBEN}
 \end{aligned}$$

RC soybean expected ACRE payment rate/a.

$$\begin{aligned}
 \text{SBEA RC} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA}
 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

$\mu$ =SBERPRC  
 $\sigma$ =SBSDRPRC  
 BM=SBARBEN\*1.05

Sunflower expected ACRE payment rate/a.  
SFEACAC =

Median(0,  
 +1.09 \* SFRBENC  
 -1 \* SFEREVP,  
 +0.25 \* SFRBENC)  
 \* ACREPAY  
 \* ACREFLA

Sorghum expected ACRE payment rate/a.  
SGEACAC =

Median(0,  
 +1.02 \* SGRBENC  
 -1 \* SGEREVP,  
 +0.25 \* SGRBENC)  
 \* ACREPAY  
 \* ACREFLA

Wheat expected ACRE payment rate/a.  
WHEACAC =

+0.0065 WHEAAAR  
 +0.0104 WHEAACA  
 +0.0042 WHEAAGA  
 +0.0125 WHEAAIL  
 +0.0082 WHEAAIN  
 +0.0003 WHEAAIA  
 +0.1717 WHEAAKS  
 +0.0329 WHEAAMN  
 +0.0131 WHEAAMO  
 +0.1034 WHEAAMT  
 +0.0306 WHEAANE  
 +0.1641 WHEAAND  
 +0.0172 WHEAAOH  
 +0.0595 WHEAASD  
 +0.0623 WHEAATX  
 +0.303 WHEAARC

AR wheat expected ACRE payment rate/a.

WHEAAAR = (
   
 $-\sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$ 
  
 $+ BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$ 
  
 $+ .25BM * N(.75BM, \mu, \sigma)$



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

)  
\* ACREPAY  
\* ACREFLA  
  
 $\mu$ =WHERPAR  
 $\sigma$ =WHS DRPAR  
BM=WHARBEN

CA wheat expected ACRE payment rate/a.

WHEAACA = (   
-  $\sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $.25BM * N(.75BM, \mu, \sigma)$   
)   
\* ACREPAY  
\* ACREFLA  
  
 $\mu$ =WHERPCA  
 $\sigma$ =WHS DRPCA  
BM=WHARBEN

GA wheat expected ACRE payment rate/a.

WHEAAGA = (   
-  $\sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $.25BM * N(.75BM, \mu, \sigma)$   
)   
\* ACREPAY  
\* ACREFLA  
  
 $\mu$ =WHERPGA  
 $\sigma$ =WHS DRPGA  
BM=WHARBEN

IL wheat expected ACRE payment rate/a.

WHEAAIL = (   
-  $\sigma^2[n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $BM[N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)]$   
+  $.25BM * N(.75BM, \mu, \sigma)$   
)   
\* ACREPAY  
\* ACREFLA  
  
 $\mu$ =WHERPIL  
 $\sigma$ =WHS DRPIL  
BM=WHARBEN

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

IN wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAAIN} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{WHERPIN} \\
 & \sigma = \text{WHSDRPIN} \\
 & \text{BM} = \text{WHARBEN}
 \end{aligned}$$

IA wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAIA} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{WHERPIA} \\
 & \sigma = \text{WHSDRPIA} \\
 & \text{BM} = \text{WHARBEN}
 \end{aligned}$$

KS wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAKS} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA} \\
 \\
 & \mu = \text{WHERPKS} \\
 & \sigma = \text{WHSDRPKS} \\
 & \text{BM} = \text{WHARBEN}
 \end{aligned}$$

MN wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAMN} = & \left( \right. \\
 & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\
 & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\
 & \left. \right) \\
 & * \text{ACREPAY} \\
 & * \text{ACREFLA}
 \end{aligned}$$

Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

---

$\mu$ =WHERPMN  
 $\sigma$ =WHS DRPMN  
BM=WHARBEN

MO wheat expected ACRE payment rate/a.

$$\begin{aligned} \text{WHEAAMO} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =WHERPMO  
 $\sigma$ =WHS DRPMO  
BM=WHARBEN

MT wheat expected ACRE payment rate/a.

$$\begin{aligned} \text{WHEAAMT} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =WHERPMT  
 $\sigma$ =WHS DRPMT  
BM=WHARBEN

NE wheat expected ACRE payment rate/a.

$$\begin{aligned} \text{WHEAANE} = & ( \\ & - \sigma^2[n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM}[N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

$\mu$ =WHERPNE  
 $\sigma$ =WHS DRPNE  
BM=WHARBEN

ND wheat expected ACRE payment rate/a.

$$\text{WHEAAND} = ($$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

$$\begin{aligned}
 & - \sigma^2 [n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = \text{WHERPND} \\
 & \sigma = \text{WHSDRPND} \\
 & BM = \text{WHARBEN}
 \end{aligned}$$

OH wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAAOH} = & ( \\
 & - \sigma^2 [n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = \text{WHERPOH} \\
 & \sigma = \text{WHSDRPOH} \\
 & BM = \text{WHARBEN}
 \end{aligned}$$

SD wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAASD} = & ( \\
 & - \sigma^2 [n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = \text{WHERPSD} \\
 & \sigma = \text{WHSDRPSD} \\
 & BM = \text{WHARBEN}
 \end{aligned}$$

TX wheat expected ACRE payment rate/a.

$$\begin{aligned}
 \text{WHEAATX} = & ( \\
 & - \sigma^2 [n(.75BM, \mu, \sigma) - n(BM, \mu, \sigma)] + \mu [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + BM [N(BM, \mu, \sigma) - N(.75BM, \mu, \sigma)] \\
 & + .25BM * N(.75BM, \mu, \sigma) \\
 & ) \\
 & * ACREPAY \\
 & * ACREFLA \\
 \\
 & \mu = \text{WHERPTX}
 \end{aligned}$$

Endogenous var./  
coefficient

Exogenous variable  
 $\sigma$ =WHS DRPTX  
BM=WHARBEN

2005-2009 elasticities  
Short run Long run

RC wheat expected ACRE payment rate/a.

$$\begin{aligned} \text{WHEAARC} = & ( \\ & - \sigma^2 [n(.75\text{BM}, \mu, \sigma) - n(\text{BM}, \mu, \sigma)] + \mu [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + \text{BM} [N(\text{BM}, \mu, \sigma) - N(.75\text{BM}, \mu, \sigma)] \\ & + .25\text{BM} * N(.75\text{BM}, \mu, \sigma) \\ & ) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ \\ & \mu = \text{WHERPRC} \\ & \sigma = \text{WHS DRPRC} \\ & \text{BM} = \text{WHARBEN} * 1.2 \end{aligned}$$

### Supply-inducing exp. net returns

Barley supply-inducing net returns

$$\begin{aligned} \text{BRENRS} = & +1 * \text{BREMGR} \\ & +1 * (1 - \text{BRACRPAR}) * \text{BRELDPA} \\ & +0.25 * (1 - \text{BRACRPAR}) * \text{BRECCPA} \\ & +0.75 * \text{CIBRPRS} / \text{BRSPLT} \\ & +1 * \text{BRACRPAR} * \text{BREACAC} \\ & -1 * \text{BRVARC} \end{aligned}$$

Corn supply-inducing exp. net returns

$$\begin{aligned} \text{CRENRS} = & +1 * \text{CREMGR} \\ & +1 * (1 - \text{CRACRPAR}) * \text{CRELDPA} \\ & +0.25 * (1 - \text{CRACRPAR}) * \text{CRECCPA} \\ & +0.75 * \text{CICRPRS} / \text{CRSPLT} \\ & +1 * \text{CRACRPAR} * \text{CREACAC} \\ & -1 * \text{CRVARC} \end{aligned}$$

Cotton supply-inducing exp. net returns

$$\begin{aligned} \text{CTENRS} = & +1 * \text{CTEMGR} \\ & +1 * (1 - \text{CTACRPAR}) * \text{CTELDPA} \\ & +0.25 * (1 - \text{CTACRPAR}) * \text{CTECCPA} \\ & +0.75 * \text{CICTPRS} / \text{CTSPLT} \\ & +1 * \text{CTACRPAR} * \text{CTEACAC} \\ & -1 * \text{CTVARC} \end{aligned}$$

Hay supply-inducing exp. net returns

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

HAENRS =

+1 \* HAEMGR  
-1 \* HAVARC

Oats supply-inducing exp. net returns  
OTENRS =

+1 \* OTEMGR  
+1 \* (1-OTACRPAR)\*OTEKDPA  
+0.25 \* (1-OTACRPAR)\*OTECCPA  
+0.75 \* CIOTPRS/OTSPLT  
+1 \* OTACRPAR\*OTEACAC  
-1 \* OTVARC

Peanut supply-inducing exp. net returns  
PNENRS =

+1 \* PNEMGR  
+1 \* (1-PNACRPAR)\*PNEKDPA  
+0.25 \* (1-PNACRPAR)\*PNECCPA  
+0.75 \* CIPNPRS/PNSPLT\*1000  
+1 \* PNACRPAR\*PNEACAC  
-1 \* PNVARC

Rice supply-inducing exp. net returns  
RCENRS =

+1 \* RCEMGR  
+1 \* (1-RCACRPAR)\*RCEKDPA  
+0.25 \* (1-RCACRPAR)\*RCECCPA  
+0.75 \* CIRCPRS/RCSPLT  
+1 \* RCACRPAR\*RCEACAC  
-1 \* RCVARC

Soybean supply-inducing exp. net returns  
SBENRS =

+1 \* SBEMGR  
+1 \* (1-SBACRPAR)\*SBEKDPA  
+0.25 \* (1-SBACRPAR)\*SBECCPA  
+0.75 \* CISBPRS/SBSPLT  
+1 \* SBACRPAR\*SBEACAC  
-1 \* SBVARC

Sunflower supply-inducing exp. net returns  
SFENRS =

+1 \* SFEMGR  
+1 \* (1-SFACRPAR)\*SFEKDPA  
+0.25 \* (1-SFACRPAR)\*SFECCPA  
+0.75 \* CISFPRS/SFSPLT

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+1 * SFACRPAR*SFEACAC		
	-1 * SFVARC		

Sorghum supply-inducing exp. net returns

SGENRS =

$$\begin{aligned}
 &+1 * SGEMGR \\
 &+1 * (1-SGACRPAR)*SGELDPA \\
 &+0.25 * (1-SGACRPAR)*SGECCPA \\
 &+0.75 * CISGPRS/SGSPLT \\
 &+1 * SGACRPAR*SFEACAC \\
 &-1 * SGVARC
 \end{aligned}$$

Sugar cane supply-ind. exp. net return

SJENRS =

$$\begin{aligned}
 &+0.55 * SUEPRAW*SUEYDJ*20 \\
 &+0.75 * CISJPRS/SJSHAR*1000 \\
 &-1 * SJVARC
 \end{aligned}$$

Sugar beet supply-ind. exp. net return

SKENRS =

$$\begin{aligned}
 &+0.45 * SUEPREF*SUEYDK*20 \\
 &+0.75 * CISKPRS/SKSPILT*1000 \\
 &-1 * SKVARC
 \end{aligned}$$

Wheat supply-inducing exp. net returns

WHENRS =

$$\begin{aligned}
 &+1 * WHEMGR \\
 &+1 * (1-WHACRPAR)*WHELDPA \\
 &+0.25 * (1-WHACRPAR)*WHECCPA \\
 &+0.75 * CIWHPRS/WHSPLT \\
 &+1 * WHACRPAR*WHEACAC \\
 &-1 * WHVARC
 \end{aligned}$$

### Base acreage

Barley base acreage

BRBASE =

$$\begin{aligned}
 &\text{IF ZTIME} > 2005 \text{ THEN LAG(BRBASE) - (BRCRP - LAG(BRCRP)) * .2} \\
 &\text{ELSE BRBASEX}
 \end{aligned}$$

Corn base acreage

CRBASE =

$$\begin{aligned}
 &\text{IF ZTIME} > 2005 \text{ THEN LAG(CRBASE) - (CRCRP - LAG(CRCRP)) * .2} \\
 &\text{ELSE CRBASEX}
 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Cotton base acreage

CTBASE =

IF ZTIME > 2005 THEN LAG(CTBASE) - (CTCRP - LAG(CTCRP)) \* .2  
ELSE CTBASEX

Oats base acreage

OTBASE =

IF ZTIME > 2005 THEN LAG(OTBASE) - (OTCRP - LAG(OTCRP)) \* .2  
ELSE OTBASEX

Peanut base acreage

PNBASE =

IF ZTIME > 2005 THEN LAG(PNBASE) - (PNCRP - LAG(PNCRP)) \* .2  
ELSE PNBASEX

Rice base acreage

RCBASE =

IF ZTIME > 2005 THEN LAG(RCBASE) - (RCCRP - LAG(RCCRP)) \* .2  
ELSE RCBASEX

Soybean base acreage

SBBASE =

IF ZTIME > 2005 THEN LAG(SBBASE) - (SBCRP - LAG(SBCRP)) \* .2  
ELSE SBBASEX

Sunflower base acreage

SFBASE =

IF ZTIME > 2005 THEN LAG(SFBASE) - (SFCRP - LAG(SFCRP)) \* .2  
ELSE SFBASEX

Sorghum base acreage

SGBASE =

IF ZTIME > 2005 THEN LAG(SGBASE) - (SGCRP - LAG(SGCRP)) \* .2  
ELSE SGBASEX

Wheat base acreage

WHBASE =

IF ZTIME > 2005 THEN LAG(WTBASE) - (WTCRP - LAG(WTCRP)) \* .2  
ELSE WTBASEX

**Direct payments (includes ACRE effects)**



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Total ACRE payments  
USDPCY =

BRDPCY  
+ CRDPCY  
+ CTDPCY  
+ OTDPCY  
+ PNDPCY  
+ RCDPCY  
+ SBDPCY  
+ SFDPCY  
+ SGDPCY  
+ WHDPCY

Barley ACRE payments  
BRDPCY =

BRBASE  
\* BRPFIX  
\* BRPYLD  
\* DPPAY  
\* ATBD  
\* (1-BRACRPR\*0.2)

Corn ACRE payments  
CRDPCY =

CRBASE  
\* CRPFIX  
\* CRPYLD  
\* DPPAY  
\* ATBD  
\* (1-CRACRPR\*0.2)

Cotton ACRE payments  
CTDPCY =

CTBASE  
\* CTPFIX  
\* CTPYLD  
\* DPPAY  
\* ATBD  
\* (1-CTACRPR\*0.2)

Oats ACRE payments  
OTDPCY =

OTBASE  
\* OTPFIX  
\* OTPYLD  
\* DPPAY  
\* ATBD

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* (1-OTACRPR*0.2)		

Peanut ACRE payments

PNDPCY =

PNBASE  
 \* PNPFIX  
 \* PNPYLD  
 \* DPPAY  
 \* ATBD  
 \* (1-PNACRPR\*0.2)

Rice ACRE payments

RCDPCY =

RCBASE  
 \* RCPFIX  
 \* RCPYLD / 100  
 \* DPPAY  
 \* ATBD  
 \* (1-RCACRPR\*0.2)

Soybean ACRE payments

SBDPCY =

SBBASE  
 \* SBPFIX  
 \* SBPYLD  
 \* DPPAY  
 \* ATBD  
 \* (1-SBACRPR\*0.2)

Sunflower ACRE payments

SFDPCY =

SFBASE  
 \* SFPFIX  
 \* SFPYLD / 100  
 \* DPPAY  
 \* ATBD  
 \* (1-SFACRPR\*0.2)

Sorghum ACRE payments

SGDPCY =

SGBASE  
 \* SGPFIX  
 \* SGPYLD  
 \* DPPAY  
 \* ATBD  
 \* (1-SGACRPR\*0.2)

Endogenous var./  
coefficient                      Exogenous variable

2005-2009 elasticities  
Short run    Long run

Wheat ACRE payments  
WHDPCY =

WHBASE  
\* WHPFIX  
\* WHPYLD  
\* DPPAY  
\* ATBD  
\* (1-WHACRPR\*0.2)

Expected decoupled payments per acre  
DPPERAC =

(BRECCPA\*BRBASE\*(1-BRACRPR)  
+ CRECCPA\*CRBASE\*(1-CRACRPR)  
+ CTECCPA\*CTBASE\*(1-CTACRPR)  
+ OTECCPA\*OTBASE\*(1-OTACRPR)  
+ PNECCPA\*PNBASE\*(1-PNACRPR)  
+ RCECCPA\*RCBASE\*(1-RCACRPR)  
+ SBECCPA\*SBBASE\*(1-SBACRPR)  
+ SGECCPA\*SGBASE\*(1-SFACRPR)  
+ SFECCPA\*SFBASE\*(1-SGACRPR)  
+ WHECCPA\*WHBASE\*(1-WHACRPR)  
+ USDPCY)  
/ 247.548

**Actual CCPs (includes ACRE effects)**

Total CCPs  
USCCPCY =

BRCCPCY  
+ CRCCPCY  
+ CTCCPCY  
+ OTCCPCY  
+ PNCCPCY  
+ RCCPCY  
+ SBCCPCY  
+ SFCCPCY  
+ SGCCPCY  
+ WHCCPCY

Barley CCPs  
BRCCPCY =

MAX(0,(BRPTAR-BRPFIX-MAX(BRPLNR,BRPFED)))  
\* BRCCYD\*BRBASE\*0.85  
\* ATBC  
\* (1-BRACRPR)

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Corn CCPs  
CRCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{CRPTAR} - \text{CRPFIX} - \text{MAX}(\text{CRPLNR}, \text{CRPFRM}))) \\ & * \text{CRCCYD} * \text{CRBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{CRACRPR}) \end{aligned}$$

Cotton CCPs  
CTCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{CTPTAR} - \text{CTPFIX} - \text{MAX}(\text{CTPLNR}, \text{CTPFRM}))) \\ & * \text{CTCCYD} * \text{CTBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{CTACRPR}) \end{aligned}$$

Oats CCPs  
OTCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{OTPTAR} - \text{OTPFIX} - \text{MAX}(\text{OTPLNR}, \text{OTPFRM}))) \\ & * \text{OTCCYD} * \text{OTBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{OTACRPR}) \end{aligned}$$

Peanut CCPs  
PNCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{PNPTAR} - \text{PNPFIX} - \text{MAX}(\text{PNPLNR}, \text{PNPFRM}))) \\ & * \text{PNCCYD} * \text{PNBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{PNACRPR}) \end{aligned}$$

Rice CCPs  
RCCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{RCPTAR} - \text{RCPFIX} - \text{MAX}(\text{RCPLNR}, \text{RCPFRM}))) \\ & * \text{RCCCYD} * \text{RCBASE} * 0.85 / 100 \\ & * \text{ATBC} \\ & * (1 - \text{RCACRPR}) \end{aligned}$$

Soybean CCPs  
SBCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{SBPTAR} - \text{SBPFIX} - \text{MAX}(\text{SBPLNR}, \text{SBPFRM}))) \\ & * \text{SBCCYD} * \text{SBBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{SBACRPR}) \end{aligned}$$

Sunflower CCPs  
SFCCPCY =

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

$$\begin{aligned} & \text{MAX}(0, (\text{SFPTAR} - \text{SFPFIX} - \text{MAX}(\text{SFPLNR}, \text{SFPFRM}))) \\ & * \text{SFCCYD} * \text{SFBASE} * 0.85 / 100 \\ & * \text{ATBC} \\ & * (1 - \text{SFACRPR}) \end{aligned}$$

Sorghum CCPs  
SGCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{SGPTAR} - \text{SGPFIX} - \text{MAX}(\text{SGPLNR}, \text{SGPFRM}))) \\ & * \text{SGCCYD} * \text{SGBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{SGACRPR}) \end{aligned}$$

Wheat CCPs  
WHCCPCY =

$$\begin{aligned} & \text{MAX}(0, (\text{WHPTAR} - \text{WHPFIX} - \text{MAX}(\text{WHPLNR}, \text{WHPFRM}))) \\ & * \text{WHCCYD} * \text{WHBASE} * 0.85 \\ & * \text{ATBC} \\ & * (1 - \text{WHACRPR}) \end{aligned}$$

### Market gross returns per acre

Barley market gross returns per acre  
BRGRMK =

$$\begin{aligned} & \text{BRPFRM} \\ & * \text{BRSYLD} \end{aligned}$$

Corn market gross returns per acre  
CRGRMK =

$$\begin{aligned} & \text{CRPFRM} \\ & * \text{CRSYLD} \end{aligned}$$

Cotton market gross returns per acre  
CTGRMK =

$$\begin{aligned} & \text{CTPFRM} \\ & * \text{CTSYLD} \\ & + \text{CSGRMK} \end{aligned}$$

Oats market gross returns per acre  
OTGRMK =

$$\begin{aligned} & \text{OTPFRM} \\ & * \text{OTSYLD} \end{aligned}$$

Peanut market gross returns per acre  
PNGRMK =

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

PNPFRM  
\* PNSYLD

Rice market gross returns per acre  
RCGRMK =

RCPFRM  
\* RCSYLD / 100

Soybean market gross returns per acre  
SBGRMK =

SBPFRM  
\* SBSYLD

Sunflower market gross returns per acre  
SFGRMK =

SFPFRM  
\* SFSYLD / 100

Sorghum market gross returns per acre  
SGGRMK =

SGPFRM  
\* SGSYLD

Wheat market gross returns per acre  
WHGRMK =

WHPFRM  
\* WHSYLD

Cottonseed market gross returns per acre  
CSGRMK =

CSSYLD  
\* CSPFRM / 2000

**Market net returns per acre**

Barley market net returns per acre  
BRNRMK =

BRGRMK  
- BRVARC

Corn market net returns per acre  
CRNRMK =

CRGRMK

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

- CRVARC

Cotton market net returns per acre  
CTNRMK =

CTGRMK  
- CTVARC

Oats market net returns per acre  
OTNRMK =

OTGRMK  
- OTVARC

Peanut market net returns per acre  
PNNRMK =

PNGRMK  
- PNVARC

Rice market net returns per acre  
RCNRMK =

RCGRMK  
- RCVARC

Soybean market net returns per acre  
SBNRMK =

SBGRMK  
- SBVARC

Sunflower market net returns per acre  
SFNRMK =

SFGRMK  
- SFVARC

Sorghum market net returns per acre  
SGNRMK =

SGGRMK  
- SGVARC

Wheat market net returns per acre  
WHNRMK =

WHGRMK  
- WHVARC

Endogenous var./  
coefficient                      Exogenous variable  
**LDPs/MLGs per acre (includes ACRE effects)**

2005-2009 elasticities  
Short run    Long run

Barley LDPs/MLGs per acre  
BRLDPAC =

BRLDPRT  
\* BRSYLD  
\* ATBL  
\* (1-BRACRPR)

Corn LDPs/MLGs per acre  
CRLDPAC =

CRLDPRT  
\* CRSYLD  
\* ATBL  
\* (1-CRACRPR)

Cotton LDPs/MLGs per acre  
CTLDPAC =

CTLDPRT  
\* CTSYLD  
\* ATBL  
\* (1-CTACRPR)

Oats LDPs/MLGs per acre  
OTLDPAC =

OTLDPRT  
\* OTSYLD  
\* ATBL  
\* (1-OTACRPR)

Peanut LDPs/MLGs per acre  
PNLDPAC =

PNLDPRT  
\* PNSYLD  
\* ATBL  
\* (1-PNACRPR)

Rice LDPs/MLGs per acre  
RCLDPAC =

RCLDPRT  
\* RCSYLD / 100  
\* ATBL  
\* (1-RCACRPR)

Soybean LDPs/MLGs per acre



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

SBLDPAC =

- SBLDPRT
- \* SBSYLD
- \* ATBL
- \* (1-SBACRPR)

Sunflower LDPs/MLGs per acre  
SFLDPAC =

- SFLDPRT
- \* SFSYLD / 100
- \* ATBL
- \* (1-SFACRPR)

Sorghum LDPs/MLGs per acre  
SGLDPAC =

- SGLDPRT
- \* SGSYLD
- \* ATBL
- \* (1-SGACRPR)

Wheat LDPs/MLGs per acre  
WHLDPAC =

- WHLDPRT
- \* WHSYLD
- \* ATBL
- \* (1-WHACRPR)

**Market + LDP/MLG net returns per acre**

Barley market + LDP/MLG net returns per acre  
BRNRML =

- BRNRMK
- + BRLDPAC

Corn market + LDP/MLG net returns per acre  
CRNRML =

- CRNRMK
- + CRLDPAC

Cotton market + LDP/MLG net returns per acre  
CTNRML =

- CTNRMK
- + CTLDPAC

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Oats market + LDP/MLG net returns per acre  
OTNRML =

OTNRMK  
+ OTLDPAC

Peanut market + LDP/MLG net returns per acre  
PNNRML =

PNNRMK  
+ PNLDPAC

Rice market + LDP/MLG net returns per acre  
RCNRML =

RCNRMK  
+ RCLDPAC

Soybean market + LDP/MLG net returns per acre  
SBNRML =

SBNRMK  
+ SBLDPAC

Sunflower market + LDP/MLG net returns per acre  
SFNRML =

SFNRMK  
+ SFLDPAC

Sorghum market + LDP/MLG net returns per acre  
SGNRML =

SGNRMK  
+ SGLDPAC

Weat market + LDP/MLG net returns per acre  
WHNRML =

WHNRMK  
+ WHLDPAC

### Crop insurance premium subsidies

Peanut premium subsidies

CIPNPRS = (

+1.78316

+0.05115 \* lag(PNPFRM)\*(lag1(PNSYLD)+lag2(PNSYLD)

+ lag3(PNSYLD)+lag4(PNSYLD)+lag5(PNSYLD))/5

)

\*PNSPLT/1000

Endogenous var./

coefficient

Exogenous variable

2005-2009 elasticities

Short run Long run

\*CIPNPCT

Sunflower premium subsidies

$$\begin{aligned}
\text{CISFPRS} = & ( \\
& -10.9843 \\
& +0.18351 * \text{lag1}(\text{SFPFRM})/100 * (\text{lag1}(\text{SFSYLD}) + \text{lag2}(\text{SFSYLD}) \\
& \quad + \text{lag3}(\text{SFSYLD}) + \text{lag4}(\text{SFSYLD}) + \text{lag5}(\text{SFSYLD}))/5 \\
& ) \\
& * \text{SFSPLT} \\
& * \text{CISFPCT}
\end{aligned}$$

Sugar cane premium subsidies

$$\begin{aligned}
\text{CISJPRS} = & ( \\
& +0.2 \\
& +0.004 * \text{lag}(\text{SUPRAW}) * 20 * (\text{lag1}(\text{SUSYDJ}) + \text{lag2}(\text{SUSYDJ}) \\
& \quad + \text{lag3}(\text{SUSYDJ}) + \text{lag4}(\text{SUSYDJ}) + \text{lag5}(\text{SUSYDJ}))/5 \\
& ) \\
& * \text{SJSHAR}/1000 \\
& * \text{CISJPCT}
\end{aligned}$$

Sugar beet premium subsidies

$$\begin{aligned}
\text{CISKPRS} = & ( \\
& +5 \\
& +0.012 * \text{lag}(\text{SUPREF}) * 20 * (\text{lag1}(\text{SUSYDK}) + \text{lag2}(\text{SUSYDK}) \\
& \quad + \text{lag3}(\text{SUSYDK}) + \text{lag4}(\text{SUSYDK}) + \text{lag5}(\text{SUSYDK}))/5 \\
& ) \\
& * \text{SKSPLT}/1000 \\
& * \text{CISKPCT}
\end{aligned}$$

### Total ACRE payments

Barley total ACRE payments

$$\begin{aligned}
\text{BRCACRCY} = & ( \\
& \text{Median}(0, 1.05 * \text{BRRBENC} - \text{BRREVP}, .25 * \text{BRRBENC}) \\
& * \text{BRSPLT} \\
& * \text{ACREPAY} \\
& * \text{ACREFLA} \\
& * \text{BRACRMUL} \\
& + \text{BRACRINT} \\
& ) \\
& * \text{BRACRPAR}
\end{aligned}$$

Total corn ACRE payments

$$\begin{aligned}
\text{CRCACRCY} = & \\
& \text{CRCACRAR} \\
& + \text{CRCACRCA}
\end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+ CRCACRGA		
	+ CRCACRIL		
	+ CRCACRIN		
	+ CRCACRIA		
	+ CRCACRKS		
	+ CRCACRMN		
	+ CRCACRMO		
	+ CRCACRMT		
	+ CRCACRNE		
	+ CRCACRND		
	+ CRCACROH		
	+ CRCACRSD		
	+ CRCACRTX		
	+ CRCACRRC		

Arkansas corn ACRE payments

CRCACRAR =

$$\begin{aligned} & \text{Median}(0, \text{CRARBEN} - \text{CRREVPAR}, \text{CRARBEN} * 0.25) \\ & * \text{CRSPLT} \\ & * 0.0047 \\ & * \text{CRACPAR} \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

California corn ACRE payments

CRCACRCA =

$$\begin{aligned} & \text{Median}(0, \text{CRCABEN} - \text{CRREVPCA}, \text{CRCABEN} * 0.25) \\ & * \text{CRSPLT} \\ & * 0.0017 \\ & * \text{CRACPCA} \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Georgia corn ACRE payments

CRCACRGA =

$$\begin{aligned} & \text{Median}(0, \text{CRGABEN} - \text{CRREVPGA}, \text{CRGABEN} * 0.25) \\ & * \text{CRSPLT} \\ & * 0.0036 \\ & * \text{CRACPGA} \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \end{aligned}$$

Illinois corn ACRE payments

CRCACRIL =

$$\begin{aligned} & \text{Median}(0, \text{CRILBEN} - \text{CRREVPIL}, \text{CRILBEN} * 0.25) \\ & * \text{CRSPLT} \\ & * 0.1515 \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

- \* CRACPIL
- \* ACREPAY
- \* ACREFLA

Indiana corn ACRE payments  
CRCACRIN =

- Median(0,CRINBEN-CRREVPIN,CRINBEN\*0.25)
- \* CRSPLT
- \* 0.0703
- \* CRACPIN
- \* ACREPAY
- \* ACREFLA

Iowa corn ACRE payments  
CRCACRIA =

- Median(0,CRIABEN-CRREVPIA,CRIABEN\*0.25)
- \* CRSPLT
- \* 0.1609
- \* CRACPIA
- \* ACREPAY
- \* ACREFLA

Kansas corn ACRE payments  
CRCACRKS =

- Median(0,CRKSBEN-CRREVPKS,CRKSBEN\*0.25)
- \* CRSPLT
- \* 0.0555
- \* CRACPKS
- \* ACREPAY
- \* ACREFLA

Minnesota corn ACRE payments  
CRCACRMN =

- Median(0,CRMNBEN-CRREVPMN,CRMNBEN\*0.25)
- \* CRSPLT
- \* 0.0894
- \* CRACPMN
- \* ACREPAY
- \* ACREFLA

Missouri corn ACRE payments  
CRCACRMO =

- Median(0,CRMOBEN-CRREVPMO,CRMOBEN\*0.25)
- \* CRSPLT
- \* 0.038
- \* CRACPMO

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* ACREPAY		
	* ACREFLA		

Montana corn ACRE payments

CRCACRMT =

Median(0,CRMTBEN-CRREVPMT,CRMTBEN\*0.25)  
 \* CRSPLT  
 \* 0.0004  
 \* CRACPMT  
 \* ACREPAY  
 \* ACREFLA

Nebraska corn ACRE payments

CRCACRNE =

Median(0,CRNEBEN-CRREVPNE,CRNEBEN\*0.25)  
 \* CRSPLT  
 \* 0.1077  
 \* CRACPNE  
 \* ACREPAY  
 \* ACREFLA

North Dakota corn ACRE payments

CRCACRND =

Median(0,CRNDBEN-CRREVPND,CRNDBEN\*0.25)  
 \* CRSPLT  
 \* 0.0269  
 \* CRACPND  
 \* ACREPAY  
 \* ACREFLA

Ohio corn ACRE payments

CRCACROH =

Median(0,CROHBEN-CRREVPOH,CROHBEN\*0.25)  
 \* CRSPLT  
 \* 0.0404  
 \* CRACPOH  
 \* ACREPAY  
 \* ACREFLA

South Dakota corn ACRE payments

CRCACRSD =

Median(0,CRSDBEN-CRREVPSD,CRSDBEN\*0.25)  
 \* CRSPLT  
 \* 0.0553  
 \* CRACPSD  
 \* ACREPAY

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* ACREFLA		

Texas corn ACRE payments

$$\text{CRCACRTX} = \text{Median}(0, \text{CRTXBEN} - \text{CRREVPTX}, \text{CRTXBEN} * 0.25) \\
* \text{CRSPLT} \\
* 0.0236 \\
* \text{CRACPTX} \\
* \text{ACREPAY} \\
* \text{ACREFLA}$$

Rest of Country corn ACRE payments

$$\text{CRCACRRC} = \text{Median}(0, \text{CRRCBEN} * 1.04 - \text{CRREVPRC}, \text{CRRCBEN} * 1.04 * 0.25) \\
* \text{CRSPLT} \\
* 0.17 \\
* \text{CRACPRC} \\
* \text{ACREPAY} \\
* \text{ACREFLA}$$

Cotton total ACRE payments

$$\text{CTCACRCY} = ( \\
\text{Median}(0, \text{CTRBENC} - \text{CTREVP}, .25 * \text{CTRBENC}) \\
* \text{CTSPLT} \\
* \text{ACREPAY} \\
* \text{ACREFLA} \\
* \text{CTACRMUL} \\
+ \text{CTACRINT} \\
) \\
* \text{CTACRPAR}$$

Oats total ACRE payments

$$\text{OTCACRCY} = ( \\
\text{Median}(0, 1.06 * \text{OTRBENC} - \text{OTREVP}, .25 * \text{OTRBENC}) \\
* \text{OTSPLT} \\
* \text{ACREPAY} \\
* \text{ACREFLA} \\
* \text{OTACRMUL} \\
+ \text{OTACRINT} \\
) \\
* \text{OTACRPAR}$$

Peanut total ACRE payments

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

PNCACRCY = (

- Median(0,PNRBENC-PNREVP,.25\*PNRBENC)
- \* PNSPLT/1000
- \* ACREPAY
- \* ACREFLA
- \* PNACRMUL
- + PNACRINT

)

- \* PNACRPAR

Rice total ACRE payments

RCCACRCY = (

- Median(0,RCRBENC-RCREVP,.25\*RCRBENC)
- \* RCSPLT
- \* ACREPAY
- \* ACREFLA
- \* RCACRMUL
- + RCACRINT

)

- \* RCACRPAR

Total soybean ACRE payments

SBCACRCY =

- SBCACRAR
- + SBCACRGA
- + SBCACRIL
- + SBCACRIN
- + SBCACRIA
- + SBCACRKS
- + SBCACRMN
- + SBCACRMO
- + SBCACRNE
- + SBCACRND
- + SBCACROH
- + SBCACRSD
- + SBCACRTX
- + SBCACRRC

Arkansas soybean ACRE payments

SBCACRAR =

- Median(0,SBARBEN-SBREVPAR,SBARBEN\*.25)
- \* (SBSPLT+S2SPLT)
- \* ACREFLA
- \* ACREPAY
- \* 0.0422
- \* SBACPAR



Endogenous var./  
coefficient

Exogenous variable

2005-2009 elasticities  
Short run Long run

---

Georgia soybean ACRE payments

SBCACRGA =

Median(0,SBGABEN-SBREVPGA,SBGABEN\*0.25)  
\* (SBSPLT+S2SPLT)  
\* ACREFLA  
\* ACREPAY  
\* 0.0036  
\* SBACPGA

Illinois soybean ACRE payments

SBCACRIL =

Median(0,SBILBEN-SBREVPIIL,SBILBEN\*0.25)  
\* (SBSPLT+S2SPLT)  
\* ACREFLA  
\* ACREPAY  
\* 0.1157  
\* SBACPIL

Indiana soybean ACRE payments

SBCACRIN =

Median(0,SBINBEN-SBREVPIIN,SBINBEN\*0.25)  
\* (SBSPLT+S2SPLT)  
\* ACREFLA  
\* ACREPAY  
\* 0.068  
\* SBACPIN

Iowa soybean ACRE payments

SBCACRIA =

Median(0,SBIABEN-SBREVPIA,SBIABEN\*0.25)  
\* (SBSPLT+S2SPLT)  
\* ACREFLA  
\* ACREPAY  
\* 0.1226  
\* SBACPIA

Kansas soybean ACRE payments

SBCACRKS =

Median(0,SBKSBEN-SBREVPKS,SBKSBEN\*0.25)  
\* (SBSPLT+S2SPLT)  
\* ACREFLA  
\* ACREPAY  
\* 0.0556  
\* SBACPKS

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Minnesota soybean ACRE payments

SBCACRMN =

$$\begin{aligned} & \text{Median}(0, \text{SBMNBEN} - \text{SBREVPMN}, \text{SBMNBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0941 \\ & * \text{SBACPMN} \end{aligned}$$

Missouri soybean ACRE payments

SBCACRMO =

$$\begin{aligned} & \text{Median}(0, \text{SBMOBEN} - \text{SBREVPMO}, \text{SBMOBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0642 \\ & * \text{SBACPMO} \end{aligned}$$

Nebraska soybean ACRE payments

SBCACRNE =

$$\begin{aligned} & \text{Median}(0, \text{SBNEBEN} - \text{SBREVPNE}, \text{SBNEBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0664 \\ & * \text{SBACPNE} \end{aligned}$$

North Dakota soybean ACRE payments

SBCACRND =

$$\begin{aligned} & \text{Median}(0, \text{SBNDBEN} - \text{SBREVPND}, \text{SBNDBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.057 \\ & * \text{SBACPND} \end{aligned}$$

Ohio soybean ACRE payments

SBCACROH =

$$\begin{aligned} & \text{Median}(0, \text{SBOHBEN} - \text{SBREVPOH}, \text{SBOHBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0581 \\ & * \text{SBACPOH} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

South Dakota soybean ACRE payments  
SBCACRSD =

$$\begin{aligned} & \text{Median}(0, \text{SBSDBEN} - \text{SBREVPSD}, \text{SBSDBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0533 \\ & * \text{SBACPSD} \end{aligned}$$

Texas soybean ACRE payments  
SBCACRTX =

$$\begin{aligned} & \text{Median}(0, \text{SBTXBEN} - \text{SBREVPTX}, \text{SBTXBEN} * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.0023 \\ & * \text{SBACPTX} \end{aligned}$$

Rest of Country soybean ACRE payments  
SBCACRRC =

$$\begin{aligned} & \text{Median}(0, \text{SBRCBEN} * 1.15 - \text{SBREVPRC}, \text{SBRCBEN} * 1.15 * 0.25) \\ & * (\text{SBSPLT} + \text{S2SPLT}) \\ & * \text{ACREFLA} \\ & * \text{ACREPAY} \\ & * 0.1969 \\ & * \text{SBACPRC} \end{aligned}$$

Sunflower total ACRE payments  
SFCACRCY =

$$\begin{aligned} & ( \\ & \text{Median}(0, 1.05 * \text{SFRBENC} - \text{SFREVP}, .25 * \text{SFRBENC}) \\ & * \text{SFSPLT} \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & * \text{SFACRMUL} \\ & + \text{SFACRINT} \\ & ) \\ & * \text{SFACRPAR} \end{aligned}$$

Sorghum total ACRE payments  
SGCACRCY =

$$\begin{aligned} & ( \\ & \text{Median}(0, \text{SGRBENC} - \text{SGREVP}, .25 * \text{SGRBENC}) \\ & * \text{SGSPLT} \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & * \text{SGACRMUL} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	+ SGACRINT ) * SGACRPAR		

Total wheat ACRE payments  
WHCACRCY =

WHCACRAR  
+ WHCAWHCA  
+ WHCACRGA  
+ WHCACRIL  
+ WHCACRIN  
+ WHCACRIA  
+ WHCACRKS  
+ WHCACRMN  
+ WHCACRMO  
+ WHCACRMT  
+ WHCACRNE  
+ WHCACRND  
+ WHCACROH  
+ WHCACRSD  
+ WHCACRTX  
+ WHCACRRC

Arkansas wheat ACRE payments  
WHCACRAR =

Median(0,WHARBEN-WHREVPAR,0.25\*WHARBEN)  
\* (WHSPLT+S2SPLT)  
\* ACREPAY  
\* ACREFLA  
\* 0.0065  
\* WHACPAR

California wheat ACRE payments  
WHCACRCA =

Median(0,WHCABEN-WHREVPCA,0.25\*WHCABEN)  
\* (WHSPLT+S2SPLT)  
\* ACREPAY  
\* ACREFLA  
\* 0.0104  
\* WHACPCA

Georgia wheat ACRE payments  
WHCACRGA =

Median(0,WHGABEN-WHREVPGA,0.25\*WHGABEN)  
\* (WHSPLT+S2SPLT)  
\* ACREPAY  
\* ACREFLA

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* 0.0042		
	* WHACPGA		

Illinois wheat ACRE payments

WHCACRIL =

Median(0,WHILBEN-WHREVPIL,0.25\*WHILBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0125  
 \* WHACPIL

Indiana wheat ACRE payments

WHCACRIN =

Median(0,WHINBEN-WHREVPIN,0.25\*WHINBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0082  
 \* WHACPIN

Iowa wheat ACRE payments

WHCACRIA =

Median(0,WHIABEN-WHREVPIA,0.25\*WHIABEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0003  
 \* WHACPIA

Kansas wheat ACRE payments

WHCACRKS =

Median(0,WHKSBEN-WHREVPKS,0.25\*WHKSBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.1717  
 \* WHACPKS

Minnesota wheat ACRE payments

WHCACRMN =

Median(0,WHMNBEN-WHREVPMN,0.25\*WHMNBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0329

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
	* WHACPMN		

Missouri wheat ACRE payments

WHCACRMO =

Median(0,WHMOBEN-WHREVPMO,0.25\*WHMOBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0131  
 \* WHACPMO

Montana wheat ACRE payments

WHCACRMT =

Median(0,WHMTBEN-WHREVPMT,0.25\*WHMTBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.1034  
 \* WHACPMT

Nebraska wheat ACRE payments

WHCACRNE =

Median(0,WHNEBEN-WHREVPNE,0.25\*WHNEBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0306  
 \* WHACPNE

North Dakota wheat ACRE payments

WHCACRND =

Median(0,WHNDBEN-WHREVPND,0.25\*WHNDBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.1641  
 \* WHACPND

Ohio wheat ACRE payments

WHCACROH =

Median(0,WHOHBEN-WHREVPOH,0.25\*WHOHBEN)  
 \* (WHSPLT+S2SPLT)  
 \* ACREPAY  
 \* ACREFLA  
 \* 0.0172  
 \* WHACPOH

Endogenous var./  
coefficient            Exogenous variable

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2005-2009 elasticities  
Short run    Long run

South Dakota wheat ACRE payments

WHCACRSD =

$$\begin{aligned} & \text{Median}(0, \text{WHSDBEN} - \text{WHREVPSD}, 0.25 * \text{WHSDBEN}) \\ & * (\text{WHSPLT} + \text{S2SPLT}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & * 0.0595 \\ & * \text{WHACPSD} \end{aligned}$$

Texas wheat ACRE payments

WHCACRTX =

$$\begin{aligned} & \text{Median}(0, \text{WHTXBEN} - \text{WHREVPTX}, 0.25 * \text{WHTXBEN}) \\ & * (\text{WHSPLT} + \text{S2SPLT}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & * 0.0623 \\ & * \text{WHACPTX} \end{aligned}$$

Rest of Country wheat ACRE payments

WHCACRRC =

$$\begin{aligned} & \text{Median}(0, \text{WHRCBEN} - \text{WHREVPRC}, 0.25 * \text{WHRCBEN}) \\ & * (\text{WHSPLT} + \text{S2SPLT}) \\ & * \text{ACREPAY} \\ & * \text{ACREFLA} \\ & * 0.303 \\ & * \text{WHACPRC} \end{aligned}$$

**ACRE payments per acre (weighted for participation)**

Barley ACRE payments per acre

BRACRAC =

$$\begin{aligned} & \text{BRCACRCY} \\ & / \text{BRSPLT} \end{aligned}$$

Corn ACRE payments per acre

CRACRAC =

$$\begin{aligned} & \text{CRCACRCY} \\ & / \text{CRSPLT} \end{aligned}$$

Cotton ACRE payments per acre

CTACRAC =

$$\begin{aligned} & \text{CTCACRCY} \\ & / \text{CTSPLT} \end{aligned}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

Oats ACRE payments per acre  
OTACRAC =

$$\frac{OTCACRCY}{OTSPLT}$$

Peanut ACRE payments per acre  
PNACRAC =

$$\frac{PNCACRCY}{(PNSPLT/1000)}$$

Rice ACRE payments per acre  
RCACRAC =

$$\frac{RCCACRCY}{RCSPLT}$$

Soybean ACRE payments per acre  
SBACRAC =

$$\frac{SBCACRCY}{(SBSPLT+S2SPLT)}$$

Sunflower ACRE payments per acre  
SFACRAC =

$$\frac{SFCACRCY}{SFSPLT}$$

Sorghum ACRE payments per acre  
SGACRAC =

$$\frac{SGCACRCY}{SGSPLT}$$

Wheat ACRE payments per acre  
WHACRAC =

$$\frac{WHCACRCY}{(WHSPLT+S2SPLT)}$$

**CCPs per base acre (includes ACRE effects)**

Barley CCPs per base acre  
BRCCPAC =

$$\frac{BRCCPCY}{BRBASE}$$



Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run
Corn CCPs per base acre CRCCPAC =	CRCCPCY / CRBASE		
Cotton CCPs per base acre CTCCPAC =	CTCCPCY / CTBASE		
Oats CCPs per base acre OTCCPAC =	OTCCPCY / OTBASE		
Peanut CCPs per base acre PNCCPAC =	PNCCPCY / PNBASE		
Rice CCPs per base acre RCCCPAC =	RCCPCY / RCBASE		
Soybean CCPs per base acre SBCCPAC =	SBCCPCY / SBBASE		
Sunflower CCPs per base acre SFCCPAC =	SFCCPCY / SFBASE		
Sorghum CCPs per base acre SGCCPAC =	SGCCPCY / SGBASE		
Wheat CCPs per base acre WHCCPAC =	WHCCPCY		

Endogenous var./  
coefficient      Exogenous variable  
/ WHBASE

2005-2009 elasticities  
Short run   Long run

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**Direct Payments per base acre (includes ACRE effects)**

Barley DPs per base acre  
BRDPAC =

BRDPCY  
/ BRBASE

Corn DPs per base acre  
CRDPAC =

CRDPCY  
/ CRBASE

Cotton DPs per base acre  
CTDPAC =

CTDPCY  
/ CTBASE

Oats DPs per base acre  
OTDPAC =

OTDPCY  
/ OTBASE

Peanut DPs per base acre  
PNDPAC =

PNDPCY  
/ PNBASE

Rice DPs per base acre  
RCDPAC =

RCDPCY  
/ RCBASE

Soybean DPs per base acre  
SBDPAC =

SBDPCY  
/ SBBASE

Sunflower DPs per base acre  
SFDPAC =

SFDPCY  
/ SFBASE

Endogenous var./  
coefficient            Exogenous variable

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2005-2009 elasticities  
Short run   Long run

Sorghum DPs per base acre

$$\text{SGDPAC} = \frac{\text{SGDPCY}}{\text{SGBASE}}$$

Wheat DPs per base acre

$$\text{WHDPAC} = \frac{\text{WHDPCY}}{\text{WHBASE}}$$

**Total net returns per base acre planted to crop**

Barley total net returns per base acre

$$\text{BRNRTAC} = \begin{aligned} &\text{BRNRML} \\ &+ \text{BRCCPAC} \\ &+ \text{BRDPAC} \\ &+ \text{BRACRAC} \end{aligned}$$

Corn total net returns per base acre

$$\text{CRNRTAC} = \begin{aligned} &\text{CRNRML} \\ &+ \text{CRCCPAC} \\ &+ \text{CRDPAC} \\ &+ \text{CRACRAC} \end{aligned}$$

Cotton total net returns per base acre

$$\text{CTNRTAC} = \begin{aligned} &\text{CTNRML} \\ &+ \text{CTCCPAC} \\ &+ \text{CTDPAC} \\ &+ \text{CTACRAC} \end{aligned}$$

Oats total net returns per base acre

$$\text{OTNRTAC} = \begin{aligned} &\text{OTNRML} \\ &+ \text{OTCCPAC} \\ &+ \text{OTDPAC} \\ &+ \text{OTACRAC} \end{aligned}$$

Peanut total net returns per base acre

$$\text{PNNRTAC} = \text{PNNRML}$$

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

+ PNCCPAC  
+ PNDPAC  
+ PNACRAC

Rice total net returns per base acre  
RCNRTAC =

RCNRML  
+ RCCCPAC  
+ RCDPAC  
+ RCACRAC

Soybean total net returns per base acre  
SBNRTAC =

SBNRML  
+ SBCCPAC  
+ SBDPAC  
+ SBACRAC

Sunflower total net returns per base acre  
SFNRTAC =

SFNRML  
+ SFCCPAC  
+ SFDPAC  
+ SFACRAC

Sorghum total net returns per base acre  
SGNRTAC =

SGNRML  
+ SGCCPAC  
+ SGDPAC  
+ SGACRAC

Wheat total net returns per base acre  
WHNRTAC =

WHNRML  
+ WHCCPAC  
+ WHDPAC  
+ WHACRAC

**Total gross returns per base acre planted to crop**

Barley total gross returns per base acre  
BRGRTAC =

BRGRMK  
+ BRLDPAC

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

+ BRCCPAC  
+ BRDPAC  
+ BRACRAC

Corn total gross returns per base acre  
CRGRTAC =

CRGRMK  
+ CRLDPAC  
+ CRCCPAC  
+ CRDPAC  
+ CRACRAC

Cotton total gross returns per base acre  
CTGRTAC =

CTGRMK  
+ CTLDPAC  
+ CTCCPAC  
+ CTDPAC  
+ CTACRAC

Oats total gross returns per base acre  
OTGRTAC =

OTGRMK  
+ OTLDPAC  
+ OTCCPAC  
+ OTDPAC  
+ OTACRAC

Peanut total gross returns per base acre  
PNGRTAC =

PNGRMK  
+ PNLDPAC  
+ PNCCPAC  
+ PNDPAC  
+ PNACRAC

Rice total gross returns per base acre  
RCGRTAC =

RCGRMK  
+ RCLDPAC  
+ RCCCPAC  
+ RCDPAC  
+ RCACRAC

Soybean total gross returns per base acre

Endogenous var./ coefficient	Exogenous variable	2005-2009 elasticities	
		Short run	Long run

SBGRTAC =

- SBGRMK
- + SBLDPAC
- + SBCCPAC
- + SBDPAC
- + SBACRAC

Sunflower total gross returns per base acre  
SFGRTAC =

- SFGRMK
- + SFLDPAC
- + SFCCPAC
- + SFDPAAC
- + SFACRAC

Sorghum total gross returns per base acre  
SGGRTAC =

- SGGRMK
- + SGLDPAC
- + SGCCPAC
- + SGDPAC
- + SGACRAC

Wheat total gross returns per base acre  
WHGRTAC =

- WHGRMK
- + WHLDPAC
- + WHCCPAC
- + WHDPAC
- + WHACRAC

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return

**Planted area**

Barley area planted

BRSPLT =

+3.0000000			
+1.5000000	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	0.4746	0.9907
-0.0922655	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1040	-0.2056
+0.0000000	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	0.0000	0.0000
-0.0225207	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0085	-0.0129
-0.1889318	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0232	-0.0693
+0.0000000	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	0.0000	0.0000
-0.0145637	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0129	-0.0292
-0.1017568	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0862	-0.1306
+0.0000000	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	0.0000	0.0000
-0.0996944	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0382	-0.0601
-0.0097390	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0030	-0.0092
-0.0000388	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0001	-0.0002
-0.0009625	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0025	-0.0076
-0.4808825	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.1438	-0.2825
+0.1221611	* DPPERAC/PDCGNP	0.0053	
-0.0100000	* SWSPLT	0.0000	
-0.6000000	* BRCRP		
	Sum	0.0523	0.1835

Corn area planted (unrestrained)

CRSAREA =

+70.0000000			
-0.0922655	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0010	-0.0020
+11.6000000	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	0.4288	0.8481
-0.4537058	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0088	-0.0327
-0.3115917	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0039	-0.0058
-0.0982305	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0004	-0.0012
-0.0533149	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0012	-0.0036
-0.0709877	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0021	-0.0047
-5.7844977	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1608	-0.2435
-0.2981759	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0090	-0.0149
-0.0728912	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0009	-0.0014
-0.2394709	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0024	-0.0074
-0.0002638	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	0.0000
-0.0144375	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0012	-0.0037
-2.5013950	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0245	-0.0482
+0.4021929	* DPPERAC/PDCGNP	0.0006	
-0.0300000	* SWSPLT	0.0000	
+0.0250000	* max(0,average(CRENRS,lag(CRENRS),lag2(CRENRS)) - AVERAGE(SBENRS,lag(SBENRS),LAG2(SBENRS)-135)		
-0.5000000	* CRCRP		
	Sum	0.2126	0.4789

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
<b>Corn area planted</b>			
CRSPLT =	Median(CRALW,CRAREA,CRALW) + MAX(0,CRAREA-CRAUP) / 2 - MAX(0,CRALW-CRAREA) / 2		
<b>Upland cotton area planted</b>			
CTSPLT			
+10.0000000			
+0.0000000	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	0.0000	0.0000
-0.4537058	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1378	-0.2725
+3.2000000	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	0.5115	1.8927
-0.0845953	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0086	-0.0130
+0.0000000	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	0.0000	0.0000
-0.0699210	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0131	-0.0392
-0.0502731	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0120	-0.0271
-0.4447804	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1015	-0.1538
-0.0075417	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0019	-0.0031
-0.0458855	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0047	-0.0075
-0.3957148	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0328	-0.1006
-0.0001293	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0001	-0.0002
-0.0000292	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	0.0000	-0.0001
-1.0476881	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0844	-0.1658
+0.1499339	* DPPERAC/PDCGNP	0.0018	
-0.0100000	* SWSPLT	0.0000	
-0.5000000	* CTCRP		
	Sum	0.1146	1.1098
<b>Hay area harvested</b>			
HASHAR			
+60.3000000			
-0.0225207	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0004	-0.0007
-0.3115917	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.0174	-0.0344
-0.0845953	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0025	-0.0092
+2.2000000	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	0.0413	0.0623
-0.0183155	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0001	-0.0003
-0.0086153	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0003	-0.0009
-0.0222364	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0010	-0.0022
-0.2492734	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0105	-0.0159
-0.0285923	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0013	-0.0022
-0.0086982	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0002	-0.0003
-0.0464363	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0007	-0.0022
-0.0068276	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0005	-0.0015
-0.0131833	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0017	-0.0052
-0.2798372	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0041	-0.0082
+0.0000000	* DPPERAC/PDCGNP	0.0000	
-0.1400000	* SWSPLT		
-0.0500000	* CRP		
	Sum	0.0006	-0.0208



Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
OTSPLT	Oats area planted		
+3.8000000			
-0.1889318	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0569	-0.1188
-0.0982305	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1054	-0.2085
+0.0000000	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	0.0000	0.0000
-0.0183155	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0066	-0.0100
+2.4000000	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	0.2803	0.8382
-0.0123099	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0081	-0.0244
+0.0000000	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	0.0000	0.0000
-0.1444472	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1165	-0.1765
-0.0340206	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0297	-0.0494
-0.0807832	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0295	-0.0464
-0.0534630	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0157	-0.0480
-0.0001707	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0002	-0.0007
-0.0020417	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0050	-0.0154
-0.3519806	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.1002	-0.1969
+0.3538263	* DPPERAC/PDCGNP	0.0147	
-0.0050000	* SWSPLT	0.0000	
-0.5000000	* OTCRP		
	Sum	-0.1935	-0.0567
Peanut area planted			
PNSPLT =			
+1.1000000			
+0.0000000	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	0.0000	0.0000
-0.0533149	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1338	-0.2647
-0.0699210	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0924	-0.3419
-0.0086153	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0073	-0.0110
-0.0123099	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0034	-0.0101
+0.3000000	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	0.4645	1.3902
-0.0010173	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0020	-0.0045
-0.0489995	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0925	-0.1401
-0.0054615	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0112	-0.0186
+0.0000000	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	0.0000	0.0000
-0.0171954	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0118	-0.0361
-0.0000052	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	-0.0001
-0.0002042	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0012	-0.0036
-0.0407549	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0271	-0.0533
+0.0105502	* DPPERAC1/PDCGNP1	0.0010	
-0.0020000	* SWSPLT	0.0000	
-0.5000000	* PNCRP1		
	Sum	0.0819	0.5062
Rice area planted			
RCSPLT =			
+2.5000000			
-0.0145637	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0042	-0.0088
-0.0709877	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.0733	-0.1450

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
-0.0502731	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0273	-0.1011
-0.0222364	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0077	-0.0116
+0.0000000	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	0.0000	0.0000
-0.0010173	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0006	-0.0019
+0.4600000	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	0.3733	0.8446
-0.1096062	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0851	-0.1289
-0.0130894	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0110	-0.0183
+0.0000000	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	0.0000	0.0000
-0.0412115	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0116	-0.0356
-0.0000310	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	-0.0001
-0.0000292	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0001	-0.0002
-0.1017455	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0279	-0.0548
+0.0088023	* DPPERAC/PDCGNP	0.0004	
-0.0030000	* SWSPLT	0.0000	
-0.5000000	* RCCRP		
	Sum	0.1244	0.3383

Single-crop soybean area planted  
SBAREA =

+68.5000000			
-0.1017568	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0013	-0.0027
-5.7844977	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.2578	-0.5099
-0.4447804	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0104	-0.0386
-0.2492734	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0037	-0.0056
-0.1444472	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0007	-0.0021
-0.0489995	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0013	-0.0040
-0.1096062	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0038	-0.0087
+12.8000000	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	0.4289	0.6496
-0.3288489	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0119	-0.0198
-0.1393416	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0021	-0.0033
-0.1760700	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0021	-0.0066
-0.0004397	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	-0.0001
-0.0122500	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0012	-0.0038
-3.3104521	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0391	-0.0769
+0.4873092	* DPPERAC/PDCGNP	0.0008	
-0.0400000	* SWSPLT	0.0000	
-0.0250000	* max(0,average(CRENRS,lag(CRENRS),lag2(CRENRS)) - average(SBENRS,lag(SBENRS),lag2(SBENRS))-135)		
-0.4500000	* SBCRP		
	Sum	0.0932	-0.0326

Double-crop soybean area planted  
S2SPLT =

+3.5000000			
+0.0000000	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	0.0000	0.0000
-0.2981759	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.2237	-0.4425
-0.0075417	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0030	-0.0110
-0.0285923	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0072	-0.0109

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
-0.0340206	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0028	-0.0083
-0.0054615	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0025	-0.0076
-0.0130894	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0077	-0.0175
-0.3288489	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1855	-0.2810
+1.2000000	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	0.7327	1.2194
-0.0089603	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0023	-0.0036
-0.0386394	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0079	-0.0243
-0.0000259	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	-0.0001
-0.0002917	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0005	-0.0015
-0.2594751	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0517	-0.1015
+0.0442194	* DPPERAC/PDCGNP	0.0013	
-0.0050000	* SWSPLT	0.0000	
-0.0500000	* SBCRP		
	Sum	0.2378	0.3097

Soybean area planted

SBSPLT =

$$\begin{aligned} & \text{Median}(\text{SBALW}, \text{SBAREA} + \text{S2SPLT}, \text{SBAUP}) \\ & + \text{MAX}(0, \text{SBAREA} + \text{S2SPLT}) / 2 \\ & - \text{MAX}(0, \text{SBALW} - (\text{SBAREA} + \text{S2SPLT})) \end{aligned}$$

Sunflower area planted

SFSPLT =

+2.0000000			
-0.0996944	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0482	-0.1007
-0.0728912	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1251	-0.2475
-0.0458855	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0418	-0.1548
-0.0086982	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0050	-0.0076
-0.0807832	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0152	-0.0454
+0.0000000	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	0.0000	0.0000
+0.0000000	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	0.0000	0.0000
-0.1393416	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1797	-0.2722
-0.0089603	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0125	-0.0208
+1.0000000	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	0.5904	0.9283
-0.0564221	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0268	-0.0821
-0.0001552	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0003	-0.0011
-0.0005833	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0023	-0.0071
-0.2646668	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.1208	-0.2374
+0.0554796	* DPPERAC/PDCGNP	0.0037	
-0.0050000	* SWSPLT	0.0000	
-0.5000000	* SFCRP		
	Sum	0.0125	-0.2483

Sorghum area planted

SGSPLT =

+5.5500000			
-0.0097390	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0017	-0.0035

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
-0.2394709	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1458	-0.2885
-0.3957148	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.1279	-0.4734
-0.0464363	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0095	-0.0143
-0.0534630	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0036	-0.0106
-0.0171954	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0065	-0.0193
-0.0412115	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0195	-0.0441
-0.1760700	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0806	-0.1220
-0.0386394	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0192	-0.0319
-0.0564221	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0118	-0.0186
+3.1760000	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	0.5350	1.6401
-0.0001034	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	-0.0001	-0.0003
-0.0000583	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0001	-0.0003
-0.4850980	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0786	-0.1543
+0.4040944	* DPPERAC/PDCGNP	0.0096	
-0.0100000	* SWSPLT	0.0000	
-0.5000000	* SGCRP		
	Sum	0.0302	0.4589

Single-crop wheat area planted

WHSPLT-S2SPLT =

+57.0000000

-0.4808825	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0088	-0.0183
-2.5013950	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.1615	-0.3195
-1.0476881	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0359	-0.1329
-0.2798372	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0061	-0.0092
-0.3519806	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0025	-0.0074
-0.0407549	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0016	-0.0049
-0.1017455	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0051	-0.0116
-3.3104521	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.1606	-0.2433
-0.2594751	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0136	-0.0227
-0.2646668	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0059	-0.0092
-0.4850980	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0087	-0.0266
-0.0000259	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	0.0000
-0.0156333	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	-0.0023	-0.0071
+19.2360000	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	0.3303	0.6491
+2.5240913	* DPPERAC/PDCGNP	0.0063	
-0.1400000	* SWSPLT	0.0000	
-0.5000000	* WHCRP		
	Sum	-0.0823	-0.1636

Sugar cane area harvested

SJSHAR =

+250.0000000

+0.5000000 lag(SJSHAR)

-0.0387931	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	0.0000	-0.0002
-0.2637931	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.0011	-0.0056
-0.1293103	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	-0.0003	-0.0015
-6.8275862	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0093	-0.0490

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
-0.1706897	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0001	-0.0004
-0.0051724	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	0.0000	-0.0001
-0.0310345	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0001	-0.0005
-0.4396552	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0013	-0.0071
-0.0258621	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0001	-0.0004
-0.1551724	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0002	-0.0011
-0.1034483	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	-0.0001	-0.0006
+30.0000000	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.1601	0.8419
+0.0000000	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	0.0000	0.0000
-0.0258621	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	0.0000	-0.0001
	Sum	0.1474	0.7752

Sugar beet area planted

SKSPLT =

+600.0000000

-0.9625000	* (BRENRS/PDCGNP*2/3+lag(BRENRS/PDCGNP)/3)	-0.0007	-0.0016
-14.4375000	* (CRENRS/PDCGNP*2/3+lag(CRENRS/PDCGNP)/3)	-0.0393	-0.0867
-0.0291667	* (CTENRS/PDCGNP*2/3+lag(CTENRS/PDCGNP)/3)	0.0000	-0.0001
-13.1833333	* (HAENRS/PDCGNP*2/3+lag(HAENRS/PDCGNP)/3)	-0.0120	-0.0266
-2.0416667	* (OTENRS/PDCGNP*2/3+lag(OTENRS/PDCGNP)/3)	-0.0006	-0.0013
-0.2041667	* (PNENRS/PDCGNP*2/3+lag(PNENRS/PDCGNP)/3)	-0.0003	-0.0008
-0.0291667	* (RCENRS/PDCGNP*2/3+lag(RCENRS/PDCGNP)/3)	-0.0001	-0.0001
-12.2500000	* (SBENRS/PDCGNP*2/3+lag(SBENRS/PDCGNP)/3)	-0.0250	-0.0553
-0.2916667	* (S2ENRS/PDCGNP*2/3+lag(S2ENRS/PDCGNP)/3)	-0.0006	-0.0014
-0.5833333	* (SFENRS/PDCGNP*2/3+lag(SFENRS/PDCGNP)/3)	-0.0005	-0.0012
-0.0583333	* (SGENRS/PDCGNP*2/3+lag(SGENRS/PDCGNP)/3)	0.0000	-0.0001
+0.0000000	* (SJENRS/PDCGNP*2/3+lag(SJENRS/PDCGNP)/3)	0.0000	0.0000
+70.0000000	* (SKENRS/PDCGNP*2/3+lag(SKENRS/PDCGNP)/3)	0.4380	0.9671
-15.6333333	* (WHENRS/PDCGNP*2/3+lag(WHENRS/PDCGNP)/3)	-0.0113	-0.0250
	Sum	0.3473	0.7669

US major crop planted area

USPLT =

BRSPLT  
 + CRSPLT  
 + CTSPLT  
 + OTSPLT  
 + RCSPLT  
 + SBSPLT  
 + SGSPLT  
 + WHSPLT  
 + SFSPLT  
 + PNSPLT / 1000  
 + SJSHAR / 1000  
 + SKSPLT / 1000

Conservation reserve program acreage

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return
CRP =			
	+3		
	+1 * lag(CRP)		
	-1 * lag(CRPEXPIR)		
	-0.1 * BRENRS/PDCGNP	-0.0029	
	-0.25 * CRENRS/PDCGNP	-0.0267	
	-0.1 * CTENRS/PDCGNP	-0.0056	
	-0.05 * OTENRS/PDCGNP	-0.0006	
	-0.01 * PNENRS/PDCGNP	-0.0007	
	-0.001 * RCENRS/PDCGNP	-0.0001	
	-0.25 * SBENRS/PDCGNP	-0.0199	
	-0.02 * SFENRS/PDCGNP	-0.0007	
	-0.1 * SGENRS/PDCGNP	-0.0029	
	-0.75 * WHENRS/PDCGNP	-0.0210	

Barley CRP acreage

BRCRP =

$$+0.0235900 * CRP$$

Corn CRP acreage

CRCRP =

$$+0.1459200 * CRP$$

Cotton CRP acreage

CTCRP =

$$+0.0414200 * CRP$$

Oats CRP acreage

OTCRP =

$$+0.0118000 * CRP$$

Peanut CRP acreage

PNCRP =

$$+0.0038200 * CRP$$

Rice CRP acreage

RCCRP =

$$+0.0000295 * CRP$$

Soybean CRP acreage

SBCRP =

$$+0.1415000 * CRP$$

Endogenous var./ coefficient	Exogenous variable	2011-2020 elasticities	
		Net return	Gr. return

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Sunflower CRP acreage  
SFCRP =  
+0.0089500 \* CRP

Sorghum CRP acreage  
SGCRP =  
+0.0294800 \* CRP

Wheat CRP acreage  
WHCRP =  
+0.2152000 \* CRP