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The 2002 U.S. Farm Act: Implications of Base Updating

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Abstract: The 2002 Farm Act allowed farm owners to update base acres for direct payments (DPs) and counter-cyclical payments (CCPs) and to update yields for counter-cyclical payments. A minority, about 40 percent, of the 1.9 million enrolled farms choose to update their base acres using 1998-2001 plantings; of these updating farms about three-fourths updated their payment yield for CCPs. Producers with rice and cotton base had a strong economic incentive to maximize base acres for those crops, either by retaining previous base acres if they had shifted to production of alternative crops or by increasing base if they had expanded rice or cotton plantings. Research findings support the hypothesis that base designation reflects payment maximization criteria.

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On May 13, 2002, the Farm Security and Rural Investment Act of 2002 was signed into law. The 2002 Farm Act provides income support through various programs for the six years, 2002-2007; it includes counter-cyclical payments and direct payments (Young, 2002). The new counter-cyclical payments (CCP) were designed to replace the market loss assistance payments provided by Congress on an ad hoc basis during 1998 to 2001. The 2002 Act also provides direct payments (DPs), which replace Production Flexibility Contract (PFC) payments of the 1996 Act. Both direct and counter-cyclical payments depend upon historical base acres and program yields.

International stakeholders are concerned that the opportunity to update base acres and yields provided by the 2002 Farm Act may have created economic incentives that distort U.S. agricultural production and trade. At issue is whether base updating results in direct and counter-cyclical payments being coupled. Some analyses argue that base updating may provide incentives to keep land in production during periods of low prices, rather than taking advantage of the planting flexibility, allowed by farm legislation since 1996 to plant nonprogram crops or fallow the land, and planting crops that promise higher market revenues (OECD). In addition, it is argued that since payments are related to historic production of specific commodities, producers may view payments as commodity-specific and not decoupled. There is also the argument that farmers may alter planting decisions in anticipation of future opportunities to update base acres. These arguments rest on assertions about farmers' subjective perceptions of program payments and their expectations about possible future farm legislation. Such internal beliefs are not easily observed, and these arguments are not addressed in this paper. The paper

analyzes something observable -- the acreage and yield update decisions made by program participants under the 2002 Farm Act.

Objectives

This analysis provides preliminary insights into the decisions regarding base and yield designation required from farmland owners and farm operators by the 2002 Farm Act.[1] It further analyzes the base designation decision as a payment maximization problem for direct and counter-cyclical payments.

The Farm Service Agency (FSA) of USDA is responsible for operating the farm commodity programs relating to DPs and CCPs, including the base acres and yield designations. FSA county-level enrollment data includes the base acreage and yield designations by farmers and landowners under the 2002 Farm Act. This data is cross tabulated with contract acreage and yields under the 1996 Farm Act and with NASS's 2002 acres planted.[2] The analysis provides insights into whether farmers' base designations are consistent with the hypothesis that base designation is determined by participants' maximization of expected program payments.

The base-designation decision

The 2002 Farm Act replaced the production flexibility contracts of the 1996 Farm Act, which provided for decoupled payments in 1996-2002. The 2002 Act required eligible landowners and farm operators to enroll or re-enroll for new direct and counter-cyclical payments. Part of this enrollment obligated eligible farm owners to designate the "base acres"

[1] Farm Service Agency correspondence was directed to the landowner. In many instances the owner made the decision in consultation with the operator or asked the operator to actually decide on base selection.

[2] At the time this analysis was conducted, 2003 NASS county-level planting data and 2002 agricultural Census data were not yet available.

that, along with program yields, are used to determine direct and counter-cyclical payments. Owners that updated base also had the option to update "payment yields" for CCPs but not for direct payments. Payments for DPs and CCPs are the product of their respective national payment rates, the farm's payment acres (85 percent of base acres), and each farm's program payment yields. Young (2002) provides a description of the program provisions.

The 2002 farm legislation offered five options for designating base acres, which applied to all commodities covered under the 1996 Act, plus soybeans and the other oilseeds added under the 2002 Farm Act. These five options are explained below. To illustrate these options, we look at an example of a farm with 70 acres of corn PFC acres and 10 acres of wheat PFC acres enrolled under the 1996 program (table 1). This farm was planted with an average of 60 acres of corn, 10 acres of wheat, and 30 acres of soybeans in 1998-2001. The sum of acres planted to these program crops is 100 acres: this is the maximum number of acres this farm can designate to base. This farm also planted 50 acres to alfalfa during 1998-2001; since alfalfa is not a program crop these acres do not count toward the farm's maximum program base acreage.

Table 1. Example of base-designation alternatives

	Corn	Wheat	Soybeans	Total Program Crops	Alfalfa
			(acres)		
1998-2001 plantings	60	10	30	100	50
PFC base	70	10	--	80	--
Base updating options					
Option 1	70	10	--	80	--
Option 2	70	10	20	100	--
Option 3	70	0	30	100	--
Option 4	60	10	30	100	--
Option 5	70	0-10	20-30	100	--

Status Quo, keeping PFC acres unchanged:

Option 1: Base acres equal the contract acreage that would have been used for 2002 production flexibility contract (PFC) payments.

Add Oilseeds (three variants):

Option 2: Base acres equal the contract acreage that would have been used for 2002 PFC payments [as in option 1], *plus* the average oilseed acreage planted in 1998-2001, up to the base acreage maximum (total area planted or prevented from planting to eligible crops in 1998-2001). This was the default option: a farm owner who did not make an election was considered by FSA to have elected option 2.

Option 3: Base acres equal PFC acres plus oilseeds [option 2], but with a PFC offset. This allowed a farm to add the full amount of oilseed plantings by reducing PFC base, if necessary. In our example, the farm is assumed to reduce wheat base, rather than corn base, as wheat generally has lower payments per acre.

Option 5: Base acres equal PFC acreage, and add oilseed base by reducing PFC acres. This option allowed farmers to add some, but not all oilseed plantings. This is a blend of option 2 and option 3.

Update to 1998-2001

Option 4 (updating): Base acres equal to the average acreage planted and prevented from planting in 1998-2001. Base designation under option 4 most closely reflects recent planting history.

Yield designation under option 4: Producers who updated base acres under Option 4 could also choose how to designate payment yields for CCPs. There were three alternative

Table 2. Yield designation methods.

Method	PFC yield weight	1998-2001 weight	Example (bu/ac)
A	1	0	70
B	0.3	0.7	91
C	0	0.935	93.5
Example:	70 bu/ac	100 bu/ac	

methods (table 2); whichever one was selected applied to all program commodities; that is, one could not use one method for corn and another method for wheat. Like the base acreage designation options, the yield designations are combinations of a farm's PFC yields and its 1998-2001 yields (per planted acres). Yield designation A set CCP yields equal to PFC yields. Designation B set CCP yields equal to the weighted average of the PFC yield and the 1998-2001 average yields. The weights were 30% of PFC and 70% of 1998-2001. Designation C set CCP yields equal to 1998-2001 yields times an adjustment factor of 93.5%.

Payment yields (program yields) for direct payments are unchanged from those used in the 1996 Act except for soybeans and other oilseeds, which were not part of the 1996 Act's production flexibility contract payments.[3] Yields for oilseeds payments were determined by the farm's 1998-2001 average yields multiplied by the adjustment factor, 0.7814. This value is the ratio of the national average yield for 1981-85 to the national average yield for 1998-2001. This adjustment makes oilseed program yields comparable to the program yields for corn, wheat, and other non-oilseed program crops.

[3] Soybeans and other oilseeds were eligible for marketing loans under the 1996 Farm Act.

The economics of base designation

This paper frames the base designation decision as a payment maximization problem. This is the simplest and most robust economic explanation. The choice parameters facing each decision maker were fixed: they were completely determined by a farm's program history and its planting and production histories. Base acreage designated under the 2002 Act is constrained from being planted to fruits and vegetables under certain conditions and farmers must adhere to some conservation standards; these restrictions were also part of the 1996 Act. Beyond these two restrictions, base designation places no restriction on how acreage is used or not used in crop production. There is almost complete planting flexibility. Moreover, current plantings have no influence on the flow of direct and counter-cyclical payments. The base designation decision of the 2002 Act and a farm operator's subsequent production decisions are independent decisions—this is the operational meaning of decoupled program payments. The objective of the base updating decision is to maximize the expected flow of direct and counter-cyclical payments. The objective of current planting decisions is to maximize farm enterprise income (including any expected marketing loan gains), however the operator chooses to define this.

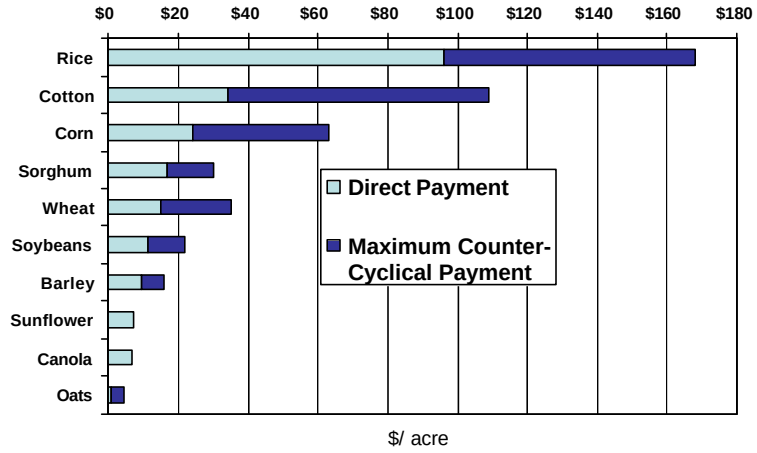
Although the base designation decision appears confusing and it exasperated many farmland owners and farm operators, once one decodes the technical jargon, the decision is rather simple. It is analogous to filing Internal Revenue Service forms: it is just basic arithmetic, what's confusing is the terminology. The decision whether to itemize deductions or to take the standard deduction depends on which alternative results in a lower tax liability. Similarly, the acreage and yield designation decisions depend on which alternative results in the greatest flow of program payments.

The payment-maximization framework leads to a few crisp decision rules. The optimum choice can be determined in three steps. First, determine which of options 1, 2, 3 and 5 results in the greatest payment flow. Second, using 1998-2001 acreage for option 4 base acres, determine which yield designation results in the greatest payment flow. These two maxima can be determined by a process of eliminating inferior options. Third, of these two maxima, chose the one that provides the greater payment flow.

Direct payments are fixed, but counter-cyclical payments are contingent on national marketing year average prices. The calculation of the expected future value of counter-cyclical payments seems daunting as it requires forecasting season average prices several years hence. However, such calculations are generally unnecessary. The comparison of expected payment flows associated with each base commodity is relatively simple. Figure 1 which graphs the per-acre value of direct and (maximum) counter-cyclical payments by program commodity, evaluated at national average payment yields, shows why.[4] With the exception of wheat and sorghum payments, the value rankings of direct payments and of direct plus maximum CCPs are identical. Rice base always pays more than cotton base; cotton base dominates corn base; corn dominates sorghum and wheat, and so forth as shown in figure 1. Direct payments are thus a sufficient statistic for the sum of direct and counter-cyclical payments. There exist some combinations of base endowments, yields, risk preferences and price expectations where DP fails to be a perfect proxy, but such combinations are rare. Consequently, if one maximizes direct payments, one has also maximized direct plus expected counter-cyclical payments.

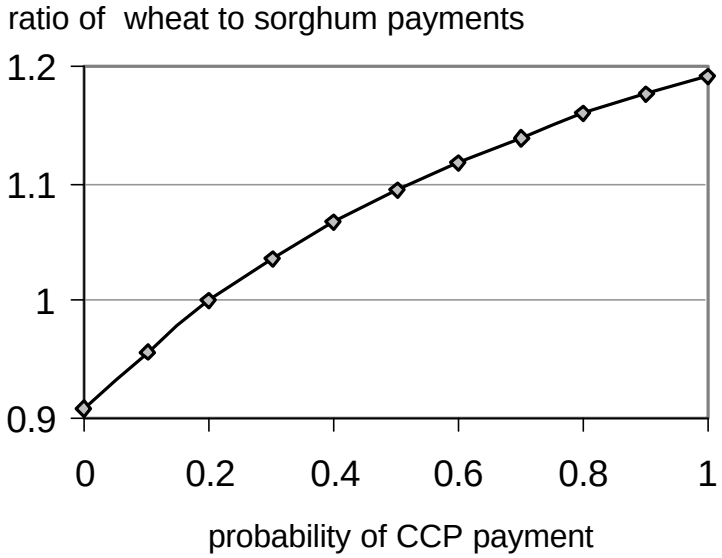
[4] Yields for individual farms could differ significantly among program commodities. Nevertheless, the basic decision rules would be similar to those discussed. The ranking amongst the options would reflect the alternative resource endowments.

Figure 1. Value per acre of direct and counter-cyclical payments 1/



1/ Assumes national average payment yields

Figure 2. Wheat-Sorghum payment rates



There are two exceptions to this rule. First, if the producer expects that CCPs will be paid most years for a particular commodity, its ranking could change. However, the commodities with the lowest expected prices were rice and cotton—the two commodities at the top of the list. Second, sorghum has a higher DP than wheat, but wheat has a higher CCP than sorghum. When the full CCP is paid, wheat dominates: \$38.73 > \$32.50. Where the two crops compete and yields are proportional to national yields, wheat dominates if low prices are assumed to occur in at least 1 in 5 marketing years (figure 2). The identical rankings mean that the value of direct payments far outweigh participants' expectations about counter-cyclical payments when making their updating decisions.

Finding the optimum among options 1, 2, 3, and 5.

One starts with the default designation, option 2. This is existing PFC (1996 Act) acreage plus new oilseed base, up to total eligible acreage. The choice among 1, 2, 3, and 5 is analogous to draw poker: to the extent possible, one discards low-payment base acreage and replaces it with higher-paying oilseed base acreage. Option 3 is the corner solution and option 5 is an interior solution to the oilseed base substitution problem. Returning to the example in table 1, if the farm has national average program yields, then its existing wheat base acres are worth more than potential soybean base acres: option 2 is worth more than options 3 and 5. It is possible, however, that an individual farm has program soybean yields sufficiently greater than its program wheat yields that options 3 or 5 dominate option 2.

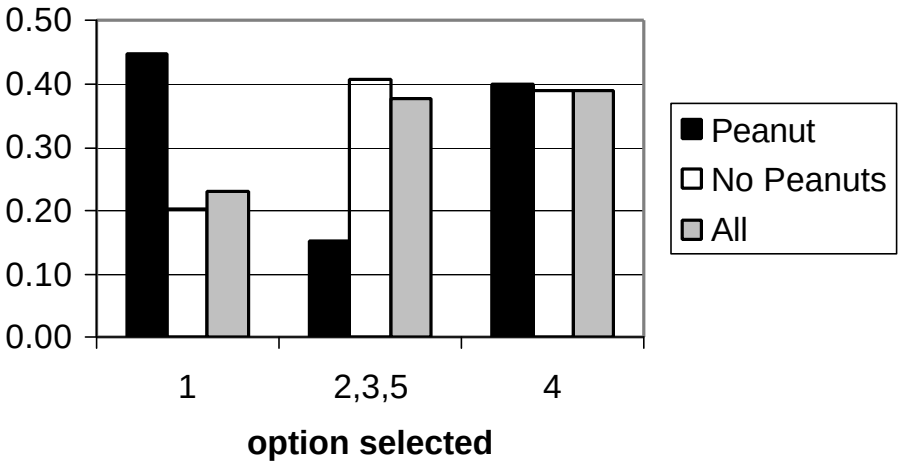
Peanuts—another consideration

At first glance it is difficult to see how option 1 could ever dominate option 2. If a farm had no oilseed planting history for 1998-2001, then option 1 and option 2 lead to identical base designations; if there is an oilseed planting history, then option 1 is clearly inferior to option 2.

Why would anyone elect option 1? One reason to select option 1 is peanuts. The 2002 Farm Act significantly changed the provisions of the peanut program. Peanuts now have marketing loan provisions, direct payments and counter-cyclical payments (Young, 2002). The rules for establishing peanut base were separate and independent of those for other commodities. Producers with a history of peanut production in 1998-2001 could establish peanut base subject to the constraint that total base acreage could not exceed eligible cropland acreage on the farm.

The per-acre value of peanut base is about $46 for direct payments and $132 for maximum CCP. Peanut base is very valuable, second only to rice for direct payments, a commodity with which it does not compete for land. Thus, a peanut planting history dominates all other alternatives, and farms so endowed selected the option that allowed them to maximize peanut base acres; that is, option 1, or, depending on relative yields, option 4. Figure 3 contrasts the designation choices in the 380 counties with peanut base with the 2,676 counties with no peanut base, as well as with the total of all 3,056 counties. 44.7 percent of the acreage in peanut counties was designated as option 1, more than twice the proportion in non-peanut-base counties, 20.3 percent. These proportions are reversed for options 2, 3, 5: 15.3 percent of acreage in peanut counties versus 40.8 percent in non-peanut-base counties.

Figure 3. Peanuts and base designation



Peanuts are an unusual case, but some of the logic for peanuts holds for the other high-payment commodities—rice, cotton, and corn. Rice, cotton, and corn base are almost always worth more per acre than soybean base; the rare exceptions arise when program yields for these three crops are very low relative to soybean program yields. Thus, when rice, cotton, or corn comprise a large proportion of a farm's PFC base, option 2 dominates options 3 and 5. Indeed, we observe that rice and cotton base acres exceeded 2002 planted acres in several states and regions by a considerable margin. Conversely, producers who took advantage of the planting flexibility provided by the 1996 Farm Act and expanded or started to produce cotton, for example, were likely to have selected option 4 to increase cotton base.

A corollary of the high-payment rule is that it is almost always advantageous to trade low-payment commodity base acres—oats and barley—for higher paying soybean base acres to the extent the farm's 1998-2001 soybean plantings would allow. Thus, when oats or barley comprise a large proportion of a farm's PFC base, options 3 and 5 dominate option 2.

Finding the best yield designation under option 4

If a farm selects option 4, its new base acreage endowment is set equal to its 1998-2001 average plantings of eligible crops. DP rates per bushel are fixed in the 2002 Act. While the CCP rates are determined by market conditions, their maximum unit values are also fixed by the 2002 Act. Thus, only decision variable facing the farmland owner or operator is the program yield designation for counter-cyclical payments, given the alternative discussed earlier and shown in table 2.

Once the best yield designation under option 4 is determined, its value is compared to the value of the optimal designation under options 1, 2, 3 and 5. The greater of these two local maxima is the global maximum of payment maximization choice problem.

Sign-up Results

Table 3 reports the national distributions of base designation choices reported by base acreage, enrolled farms (as defined by FSA), and producers. By all three measures, the majority elected *not* to update program base to 1998-2001 plantings. They determined that it was more lucrative to keep their PFC acreage as base acreage, and add oilseed acreage when advantageous.

Table 3. Signup results

	Base acres	Farms as defined by FSA	Producers
		Percent	
Option 1	23.1	24.1	35.1
Options 2, 3, & 5	37.8	35.2	45.2
Option 4	39.1	40.7	19.7
	Enrolled acres	Enrolled Farms	Enrolled Producers
Total (million)	267.91	1.89	1.33

One reason that the majority of farmers chose not to update to 1998-2001 plantings is that during the 1996-2002 period farmers took advantage of planting flexibility provisions of the 1996 Farm Act and switched to other crops or elected to not plant their entire PFC acres. Nationally, planted acreage of wheat, corn, grain sorghum, barley, oats, upland cotton, and rice averaged only 82 percent of PFC acres in 2001 (table 4). Those who "underplanted their base" in 1998-2001 would have given up the direct and counter-cyclical payments associated with acreage that was not planted to program crops if they had elected option 4.

For the seven PFC crops, base acreage is virtually unchanged from contract (base) acres under the 1996 Farm Act at 211.5 million acres (table 5). The composition of base acreage changed somewhat as wheat, sorghum, barley, and oats base declined while the more valuable rice, cotton and corn base increased. In addition, about 56 million acres of oilseed base were enrolled.

Table 4. Share of production flexibility contract acres planted in 2001

	PFC acres	Acres planted to PFC crops	Percent of acres planted to PFC crops
Wheat	78.2	59.6	76.2
Rice	4.1	3.3	80.5
Upland cotton	16.2	15.5	95.7
Corn	81.5	75.8	93
Sorghum	13.5	10.3	76.4
Barley	11	5	45.5
Oats	6.5	4.4	68
Total	211	173.9	82.4

Table 5. Base acres and actual plantings

		Base acres		
	PFC	Not updated (Options 1,2,3 & 5) 1/	Updated Option 4	Total
Wheat	78.44	55.09	21.11	76.20
Rice	4.14	2.99	1.52	4.51
Cotton	16.22	10.15	8.71	18.86
Corn	81.63	51.47	36.39	87.86
Sorghum	13.55	9.37	2.71	12.08
Barley	11.05	7.35	1.44	8.79
Oats	6.49	2.04	1.11	3.15
Subtotal	211.53	138.45	72.99	211.44
Soybeans	0.00	23.32	30.23	53.55
Peanuts	0.00	1.47	0.00	1.47
Sunflower	0.00	0.91	0.95	1.85
Canola	0.00	0.42	0.31	0.73
Other oilseeds	0.00	0.16	0.18	0.34
Total	211.53	163.25	104.66	267.91

1/ Options 2, 3, and 5 allow for adding oilseed base.

A test of this admittedly simple "farmers maximized payments-per-acre" base-designation hypothesis is illustrated by equation 1. Assume that the sector is one big farm that replaces lower-payment base with higher-payment base, whenever possible. The change in commodity base between the 1996 Act (PFC base acres) and the 2002 Act (DP and CCP base acres) should be proportionate to commodity payments per acre. Relatively high-payment commodities such as rice and cotton should increase the most; relatively low-payment commodities such as wheat, sorghum, and barley should decline; and, oats, the least valuable base crop, should decline the most.

We test whether there is a correlation between payments per acre for program commodities and the relative changes in program commodity base acres using the following regression equation.

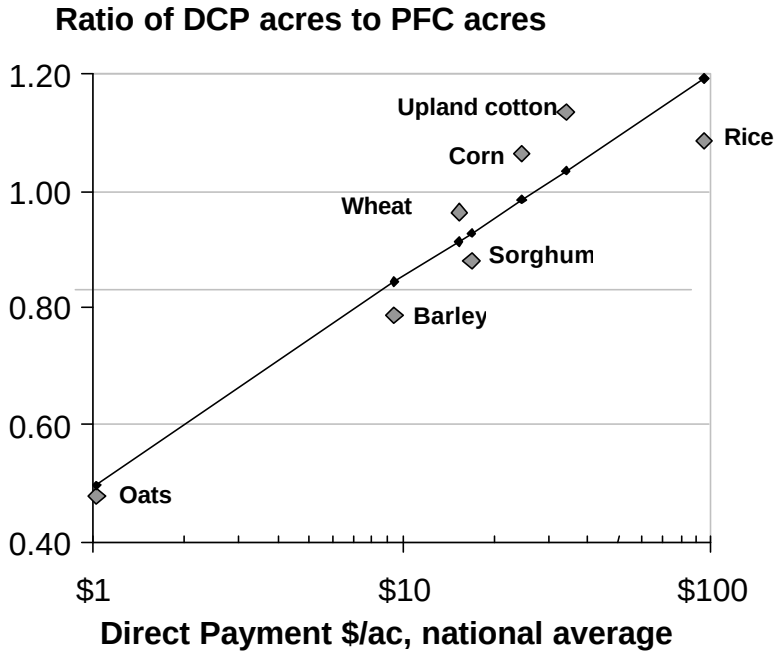
[1] $DP_acres_i / PFC_acres_i = 0.5005 + 0.0247 \ln(DP_i)$
(6.707) (6.137) (t-stats)
R2 adjusted = 0.859

For the each of the seven PFC commodities (i) the ratio of base acres designated under the 2002 Act [DP_acres-direct-payment base acres] to the production flexibility contract acres enrolled in 2002 under the 1996 Act [PFC_acres] is regressed on the natural log of payments per acre under the 2002 Act [ln(DP)]. The coefficient on the log of payments is positive and significant ($p < .0005$). The payment variable is economically as well as statistically significant because it accounts for 86% of the observed variation in base acres changes. This seven-observation single-variable regression does not pretend to be a full analysis of the problem. It merely indicates (rather strongly) that the simple payment-maximization hypothesis is viable (figure 4).

Option 4 designation rates

Figure 5 maps counties by the proportion of base acreage designated under option 4. The national average proportion is 39.1 percent. The figure uses 40%-70% to represent an above average incidence of option 4, and 70%-100% to represent a very high option-4 incidence. The map reveals some clear spatial patterns. Tidewater Virginia and North Carolina, for example, greatly expanded cotton acreage after 1996 because of the eradication of the boll weevil in this

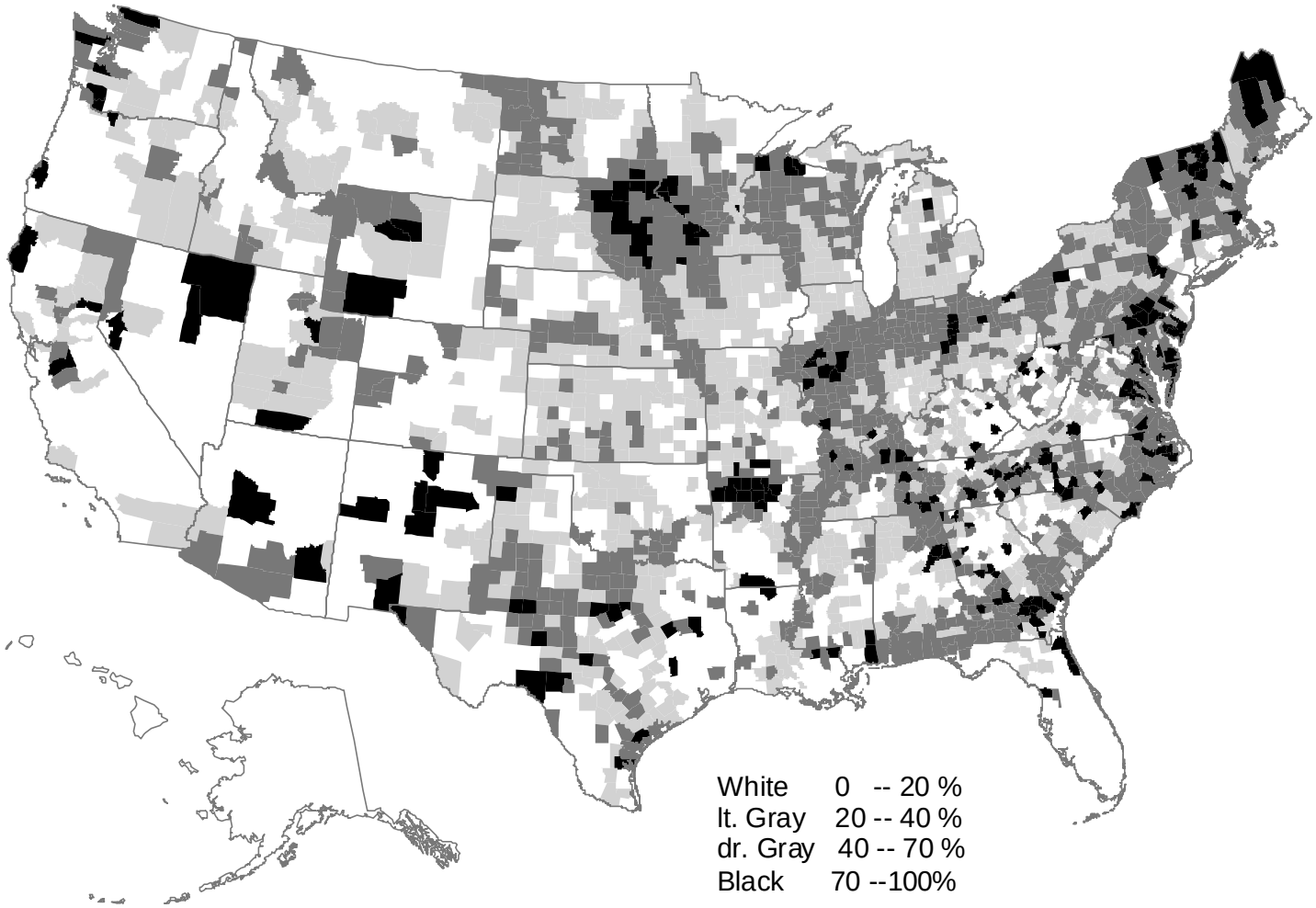
Figure 4. Farmers Maximize Payments



region as well as planting flexibility. Cotton base is very valuable, thus option 4 allows an expansion of acreage and, potentially, of yield. Cotton is also the determining factor in the Tennessee River valley and in Coastal Georgia and Alabama. Corn and oilseed yield increases account for most of the high option-4 counties in the Northeast, the Corn Belt and South Dakota.

Incentives to update base acres using option 4 relate in part to the plantings in 1998-2001 compared to the PFC acres. The larger the recent plantings of higher-valued program crops, the greater the likelihood of choosing option 4 to update base acres. The incentive was particularly strong when the expansion was to high-payment crops such as cotton. To illustrate this

Figure 5 Proportion of eligible acreage electing Option 4



incentive, cotton signup data for counties with cotton plantings were analyzed. The percentage of cotton base acres in the county that used option 4 was related to the relationship of plantings to PFC acres. Plantings for 2002 rather than 1998-2001 were used since the available cross-tabulated county level dataset only covered that year. However, 2002 plantings are a reasonable proxy for the recent plantings of the previous 4 years. The independent variable includes cotton plantings in the denominator to prevent division by 0 for counties where there were cotton plantings but no historical PFC acres.

The estimated cross sectional regression equation is shown in equation 2, illustrating the hypothesized relation between the decision to update base acres and plantings compared to PFC acres.

[2] % Ctbase in option 4 = -8.51 + 119.69 [Ct plantings/(Ct plantings + Ct PFC)]
(3.23) (t-stats)
R2 adjusted = 0.749

2002 planting decisions

When the 2002 Farm Act was signed into law on May 13, 2002, much of the 2002 cropland was already planted. The general provisions of the 2002 Farm Act were known in advance and it can be assumed that to the extent that farm programs influence production decisions, farmers viewed the 2002 Farm Act provisions as applying to planting decisions.[5]

In 2002, area planted to program crops was 95 percent of base acres (table 6). On this basis one could argue that plantings are linked to base acreage. However, disaggregation by crop indicates that actual plantings differ from base. Producers based their planting decisions on expected market returns, expected marketing loan benefits and agronomic/rotational considera-tions rather than on base acreage and payments associated with base (DPs and CCPs). About 83

[5] At time this analysis was conducted NASS county-level data on 2003 crop production were not yet available.

Table 6. Base acres and actual plantings, 2002

	Base Acres	Actual 2002 plantings	Percent of base planted
		(million acres)	
Wheat	76.20	60.5	79.4
Rice	4.51	3.24	71.8
Cotton	18.86	13.7	72.7
Corn	87.86	79.1	90.0
Sorghum	12.08	9.6	79.5
Barley	8.79	5.1	58.0
Oats	3.15	5	158.9
Subtotal "PFC" commodities	211.44	176.24	83.4
Soybeans	53.55	73.9	138.0
Sunflower	1.85	2.58	139.2
Canola	0.73	1.459	200.5
Other oilseeds	0.34	1.20	347.5
Subtotal oilseeds	56.47	79.14	140.1
Peanuts	1.47	1.358	92.6
Total	267.91	255.38	95.3

percent of base acreage associated with the former PFC commodities was planted to those seven commodities, while 140 percent of oilseed acreage (excluding peanuts) was planted to oilseeds.

Cotton base

Further disaggregation of base planted to the county level reveals an even weaker link between designated base under the 2002 Farm Act and planted acreage (figure 6).[6] For example, increased cotton acreage near the Kansas-Oklahoma border has stimulated the construction of cotton gins in Anthony, KS (1998) and more recently in Moscow, KS (2004) in the Southwestern part of the state. Nearby ginning capacity reduces transport costs for seed cotton and the higher return per acre stimulates more planting.

[6] If individual farm-level data were available, this relationship would be even weaker.

Nationally about 73 percent of cotton base was planted to cotton. In 351 of the 458 counties that NASS reports county-level cotton plantings, base acreage exceeds planted acreage, by a total of about 5.2 million acres. In the remaining 107 cotton counties, planted acreage exceed base by 0.3 million acres (table 7).

Table 7. Cotton plantings in 2002 compared to base acreage 1/

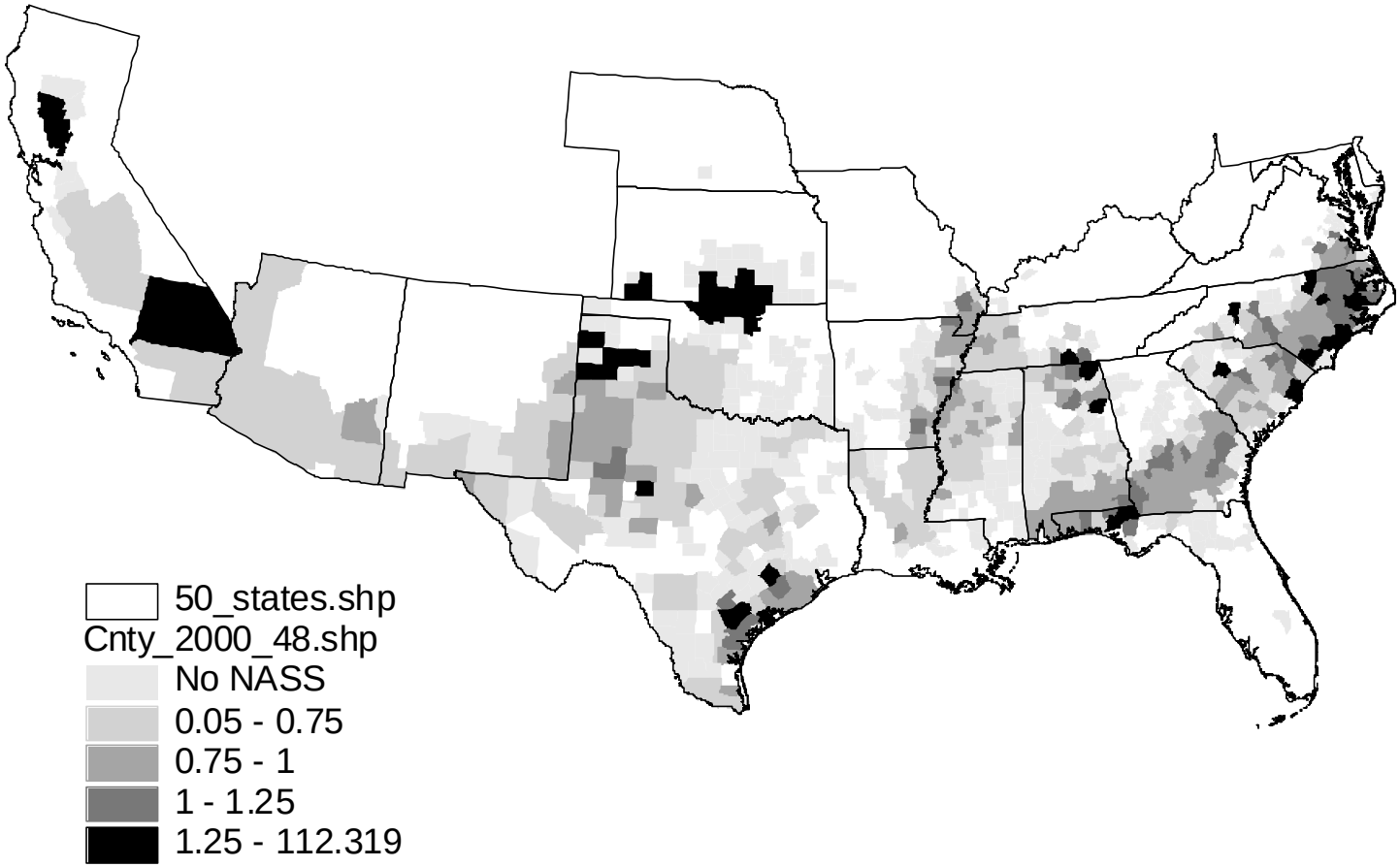
Percent of base planted	Planted in 2002	Planted minus base	Number of counties	Percent of base acres in option 4
< 75%	3,865,050	-4,092,314	197	30.6
75% to 90%	4,516,200	-929,241	91	59.8
90% to 100%	2,565,800	-144,490	63	71.1
100% to 110%	1,534,510	60,952	40	76.6
110% to 125%	558,120	67,682	21	75.0
>125%	407,100	173,020	46	83.8
Total	13,446,780		458	46.2

1/ Counties with limited amounts of cotton planted are excluded. NASS does not report data for counties with limited production in order to avoid disclosing data for individual farms.

Concluding thoughts

County-level data on program signup under the 2002 Farm Act provides information regarding farmers' base acres and program yield designations. Initial analysis of this data demonstrates that maximization of payments that are linked to base acres (DPs and CCPs) was an important factor in base designations. Crops with the largest expected payments, such as cotton and rice, were provided with strong economic incentives to maximize base acres for those crops. However, analysis of 2002 plantings on both a crop specific basis and on a county level for

Figure 6. 2002 Cotton Planting relative to Cotton Base



cotton suggest that there does not appear to be a strong link between current plantings and current base designations, which supports the hypothesis that DPs and CCPs are decoupled payments. This initial analysis supports the hypothesis that base updating was motivated by maximizing direct and counter-cyclical payments, while current plantings are determined by expected prices and marketing loan benefits.

Further research using this county-level data can provide additional information for understanding the 2002 Farm Act signup decisions. For example, additional work is needed to explore more thoroughly the role of yield gains relative to acreage shifts underlying decisions to update base acres and program yields using option 4. Planting data from 2003 and future years may provide a basis to assess the assertion that farmers alter their plantings in anticipation of some future base updating opportunity.

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