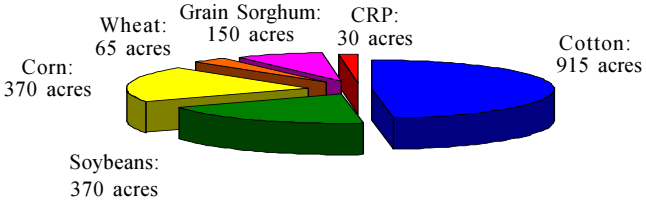
TN FARMS
Financial Analyses and Risk Management Strategies

TNCotton | Bridging the Gap Between Ag Policy and Farm Finances | February 2002

TnFARMS is a group of representative farm models in Tennessee created by panels of farmers to reflect a farm typical of those in their region. The farms are processed and analyzed using the FLIPSIM model. The University of Tennessee's Agricultural Policy Analysis Center (APAC) uses the TnFARMS models to analyze the impacts of agricultural policies and economic conditions on Tennessee farms. The two Tennessee cotton farms are also part of a national set of farms used by Texas A&M University to analyze policy for Congress.

Southwest Tennessee Moderate Cotton Farm

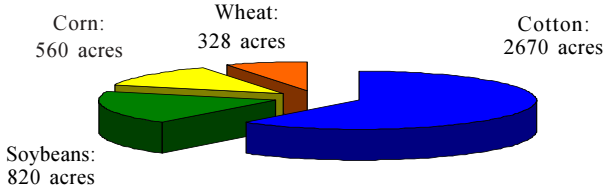
1900-acre cotton farm in Fayette County, TN



Land Owned:	225	Farm assets are:	$1,342,800
Land Leased:	1,675	Real Estate:	$665,000
Cash Rent:	838	Machinery:	$377,800
Share Rent:	837	Other Assets:	$300,000

Southwest Tennessee Large Cotton Farm

4050-acre cotton farm in Haywood County, TN



Land Owned:	1,000	Farm assets are:	$3,224,100
Land Leased:	3,050	Real Estate:	$1,680,000
Cash Rent:	610	Machinery:	$1,322,100
Share Rent:	2,440	Other Assets:	$200,000

Farm Bill Alternatives continued on page 4

This analysis addresses the House of Representatives' farm bill proposal, H.R.2646; and the Senate's proposal, S.1731. The two proposals are very similar. Each includes marketing loans, fixed decoupled payments, and counter-cyclical payments.

H.R. 2646 continues fixed, decoupled payments, expanded to include soybeans and oilseeds, as well as continuing LDPs and marketing loans. The House plan continues planting flexibility and allows optional updating of farm base acres. The House proposal adds new counter-cyclical payments (variable AMTA) based on target prices and base acres. It covers commodities not included in the 1996 Farm Bill and expands conservation programs.

Projected cost: $168 billion over 10 years

S. 1731 retains fixed annual payments, but changes base acreage, yields, and rates. The Senate proposal adds a new counter-cyclical subsidy program, and has a 3-tiered payment plan for conservation practices. This bill doubles conservation spending with a cap of $50,000 per farm per year. The commodity income protection component includes fixed decoupled payments, counter-cyclical payments based on target prices, and marketing loans.

Projected cost: $170 billion over 10 years

Summary of the Effects of the House and Senate Farm Bill Proposals on the Representative Cotton Farms

The two legislative proposals improve the financial outlook for both cotton farms. The proposals have essentially the same effect on the farms: significantly greater net cash farm income, and a much improved probability of retaining real net worth. The proposals have common factors that positively influence farm income. Both proposals spend more money overall, with the Senate bill spending more in early years. Each of the policy scenarios essentially incorporates the higher-than-anticipated spending levels observed since 1998 (double AMTA payments) into the new farm legislation through counter-cyclical payment programs (in effect, double AMTA guarantees). Both farms benefit from the opportunity to update base acres and the addition of soybeans as a program crop.

Moderate Cotton Farm Baseline

Important management considerations:

- About 2/3 no-till
- Crop rotation

Expenditures per acre of cotton are:

- $29.60/acre for seed and associated technology fees
- $42.50 for fertilizer
- $36.00 for herbicides and fungicides
- $23.80 for insecticides
- $30.00 for the Boll Weevil Eradication Program (BWEP)

Some other farm statistics:

- Rental rate for cropland: $55/acre
- Employs 1 full-time laborer
- 550 hours of part-time labor per year
- Total variable crop production costs: $255,854 in 2001
- Total cash expenses: $409,616 in 2001
- 20% debt load (by assumption)

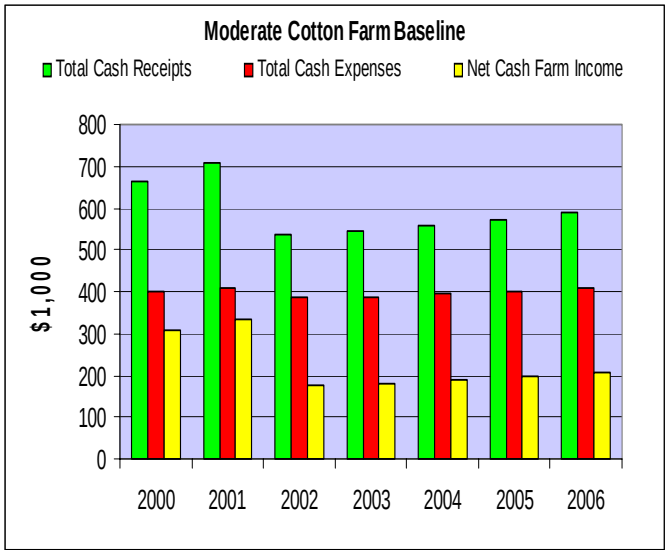
This farm experienced an unexpectedly good year in 2001 with cotton yields up 35 percent (875 pounds/acre) over 2000. Favorable weather conditions, timing, and some attribution to the BWEP combined to give this farm an economic boost in 2001 that is above future expectations. The favorable conditions in 2001 set the stage for the farm to perform relatively well over the projection period. The favorable cash position in 2001 allows the farm to generate a considerable cash reserve.

This farm is close to Memphis, so land values are higher than they would be for other farms in West Tenenssee further from a metropolitan area. These higher land values indicate higher property taxes as well as offering farmers the safety net of better than average opportunities for liquidity if necessary.

The baseline net cash farm income (NCFI) is presented below:

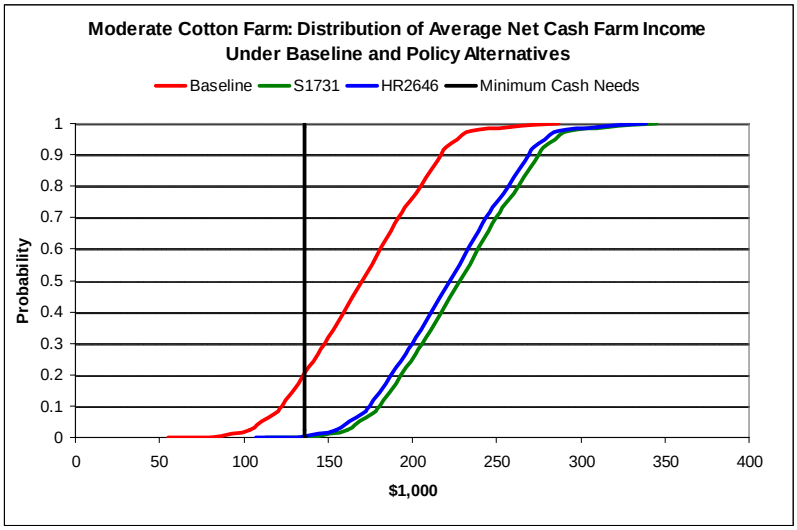
(NCFI is total cash receipts minus total cash expenses. Family living expenses, principal payments, income and self-employment taxes, and machinery replacement costs must be paid from NCFI.)

- NCFI peaks at $300,119 in 2001.
- 0% probability of negative NCFI (averaged over the period)
- < 25% probability that NCFI will fall below $100,000
- 92% probability that the farm will cash flow over the period
- Cash receipts (and therefore NCFI) are lower in 2002 than in 2001 because the baseline assumes a return to trend yields after 2001.



Moderate Cotton Farm, Farm Bill Proposal Analysis

The chart below shows NCFI probability distributions for Baseline, House, and Senate scenarios, averaged over the 2002-2006 projection years. The vertical line indicates the average minimum cash needs required annually by the farm. Minimum Cash Needs is the amount required to cover family living expenses, income and self-employment taxes, principal payments, and to replace machinery ($136,000 for the moderate cotton farm). The vertical axis measures the probability of acheiving a given NCFI. To read the chart, find the point where the curve crosses the Minimum Cash Needs line. Then look to the probability axis to find the probability that the farm will cash flow. The further to the right the curve is, the better the financial position of the farm.



Under the baseline, the moderate farm has close to an 80% probability that it will meet cash needs. Under both the Senate and House proposals, the probability of meeting cash needs improves to near 100%.

Under baseline conditions, the average probability of losing net worth is about 5%. Under the House or Senate proposals, this figure improves to practically 0% chance of declining net worth.

The average NCFI under the baseline is about $171,000, improving to about $225,000 under the farm bill proposals. That is about a 31.5% increase.

Large Cotton Farm Baseline

Important management considerations:

- Over 1/2 no-till
- Introducing skip-row planting

Expenditures per acre of cotton are:

- $54.00/acre for seed and associated technology fees
- $57.00 for fertilizer
- $44.60 for herbicides and fungicides
- $23.23 for insecticides
- $24.50 for the BWEP

Some other farm statistics:

- Rental rate for cropland: $80/acre
- Five full-time laborers
- Total variable crop production costs: $857,257 in 2001
- Total cash expenses: $1,302,386 in 2001
- 20% debt load (by assumption)

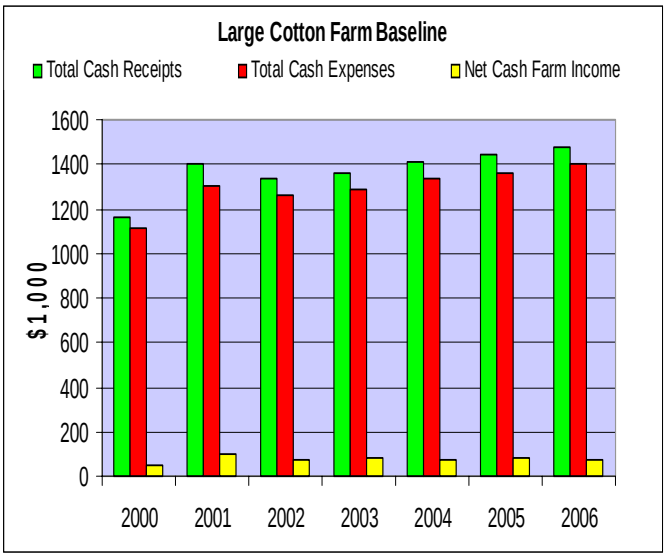
Higher than expected yields in 2001 (808 pounds/acre) contribute to a better cash position in 2001, while future yields are projected at their trend levels (with yield variability incorporated). Recall that NCFI must be used to pay family living expenses, principal payments, taxes, and machinery replacement. Since the farm starts the simulation period without any cash reserves (by assumption) and does not generate a significant cash reserve to carry forward into 2001, the farm begins to carryover operating debt in 2001. Without additional government payments (above 2002-level AMTA), the farm's ability to cover its cash expenses deteriorates. The farm is projected to experience cash flow deficits each year, carrying more than $800,000 in operating losses forward into 2005.

This farm has increased its acreage over the past three years, primarily the result of a preference to buy or lease available farmland instead of allowing it to be offered for sale.

The baseline net cash farm income (NCFI) is presented below:

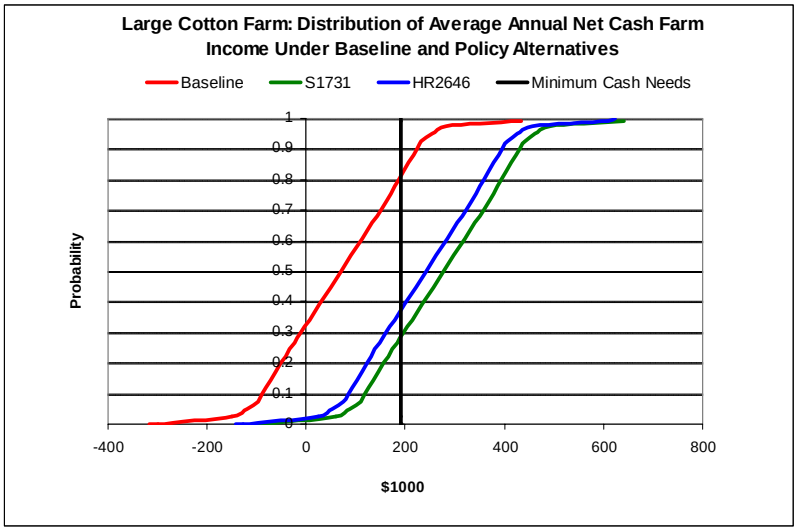
(NCFI is total cash receipts minus total cash expenses. Family living expenses, principal payments, income and self-employment taxes, and machinery replacement costs must be paid from NCFI.)

- NCFI peaks in 2001 at $97,660
- NCFI declines, ability to cash flow deteriorates
- 25-50% probability of negative NCFI in any projection year
- >60% probability of within-year cash flow deficits
- The probability of declining real net worth increases from near zero in 2002 to near 75 percent by 2006.



Large Cotton Farm, Farm Bill Proposal Analysis

The chart below shows NCFI probability distributions for Baseline, House, and Senate scenarios, averaged over the 2002-2006 projection years. The vertical line indicates the average minimum cash needs required annually by the farm. Minimum Cash Needs is the amount required to cover family living expenses, income and self-employment taxes, principal payments, and to replace machinery ($198,500 for the large cotton farm). The vertical axis measures the probability of acheiving a given NCFI. To read the chart, find the point where the curve crosses the Minimum Cash Needs line. Then look to the probability axis to find the probability that the farm will cash flow. The further to the right the curve is, the better the financial position of the farm.



Under the baseline, the large farm has only a 20% probability that it will cash flow. The Senate proposal improves the probability to near 70%, while the House proposal shows an increase to about 60%.

Under the baseline, the large farm has over a 30% probability that NCFI will be negative. The Senate and House proposals both reduce that probability to close to 2%.

Under baseline conditions, the average probability of losing real net worth is about 64%. Under the House or Senate proposals, this figure improves to as little as 14%.

The average NCFI under the baseline is about $85,000, improving to about $255,000 under the farm bill proposals. That is a 64.7% increase.

Farm Bill Alternatives continued from page 1.

Simulations are conducted for each of two policy alternatives under consideration (House and Senate versions of the 2002 Farm Bill) and compared to the baseline scenario over the 2002-2006 period. The Farm Security Act of 2001 (H.R. 2646) was approved and passed in the House Agriculture Committee on July 27, 2001, and passed the full House of Representatives on October 5, 2001. The Agriculture, Conservation, and Rural Enhancement Act of 2001 (S. 1731) was approved and passed in the Senate Committee on Agriculture, Nutrition and Forestry on November 15, 2001. The proposed farm bill passed by the Senate Ag Committee was introduced on the Senate floor in early December but failed to reach a vote by the full Senate prior to the December recess. Both the House and Senate have expressed a desire to replace the 1996 Farm Bill prior to its expiration in September 2002 while the Administration has expressed a desire to move more slowly. This analysis includes the provisions of H.R.2646 and S.1731 that address loan rates and direct payments for producers of grains, cotton, and oilseeds other than peanuts. This analysis does not consider the impacts of other provisions of the legislation. Relevant loan rates, fixed payment rates, and counter-cyclical payment rates for each alternative policy scenario are presented below.

		Proposed Loan Rate		Proposed Fixed Decoupled Payment Rate		Proposed Target Price/Revenue	
Crop	Units	HR2646	S1731	HR2646	S1731	HR2646	S1731
Wheat	$/Bu.	2.58	3.00	0.53	0.25	4.04	3.45
Corn	$/Bu.	1.89	2.08	0.30	0.15	2.78	2.35
Sorghum	$/Bu.	1.89	2.08	0.36	0.17	2.64	2.35
Upland Cotton	$/Lb.	0.519	0.550	0.067	0.046	0.736	0.680
Soybeans	$/Bu.	4.92	5.20	0.42	0.25	5.86	5.75
Minor Oilseeds	$/Lb.	0.087	0.093	0.0074	0.0057	0.104	0.105

Baseline assumptions for both farms: 20% debt load (as of 1998, when the farm was created), provisions of 1996 Farm Bill continue through 2006 at present levels with no extra government payments, MCPI coverage is maintained at 50/100.

APAC would like to extend special thanks to the farmers and Extension personnel who devoted their time to the development of the rep farms.

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Large Tennessee Cotton Farm:
Panel Participants:
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DeWayne Hendrix
Allen King
Facilitators:
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Chuck Danehower

The representative farms and associated financial information used in the TnFARMS project do not represent the farm of any one panelist. However, panelists regard the representative farm as a reasonable reflection of economic activity on actual farms with similar parameters in their region.

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Visit our website for more information on TnFARMS, our model/methods/data, the farm bill scenario and it's implications, or other ag policy issues. As we receive more detailed information on the final farm bill, expect to see more analysis about the effects of the bill on Tennessee farms. Questions, comments and input are welcomed.

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