

DEVELOPING A FARM INCOME PROJECTION MODEL FOR ILLINOIS FARMS TO DETERMINE ADVANTAGES
OF THE AGRICULTURAL ACT OF 2014'S FARM SAFETY NET OPTIONS

BY

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THESIS

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ABSTRACT

The Farm Income Projection Model is intended to model the effects of the new provisions in the Agricultural Act of 2014, particularly in the farm safety net area, on the financial statements of case farms located throughout Illinois. The Farm Income Projection Model is detailed, and can be made to accurately represent a specific size grain farm located in all counties in the state of Illinois. The model produces financial statements for a five year projection. These statements include budgets, balance sheets, income statements, cash flows, and capital repayment capacities. The results from the model are dependent on the several inputs including farm size, location, crops planted, base acres, expense adjustments, yields, prices, crop insurance products, and Farm Bill policies. Specific case grain farms were selected to include a variety of locations, sizes, and rotations that are run with price scenarios and compare the different Agricultural Act of 2014 choices.

In memory of my grandfather,

Clare E. Kelly,

for passing on his dedication to the family farm and passion for the agricultural industry.

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CHAPTER 1

INTRODUCTION

The Farm Income Projection Model is a tool created to model financial performance of a farm over several years. An application of the model is to evaluate the decisions with the new commodity programs in the Agricultural Act of 2014. It simulates five years of financial statements including: balance sheets, income statements, capital repayment capacities, and budgets. In order to do this it uses data sourced from the Farm Business Farm Management Association and the National Agricultural Statistics Service for counties and regions within the state of Illinois. The model can be customized to portray a specific farm with adjustable inputs including but not limited to: farm size, location, crops planted, base acres, expenses, yields, prices, and crop insurance products. This paper includes a detailed description on how the model works in Chapter 2: Documentation. Here an example case farm will be used to demonstrate how the model works, specifically the inputs that can be adjusted and the output results that will be examined.

The third chapter of this paper, Chapter 3: Case Studies, will analyze specific scenarios based off of a case farm located in Illinois. The different scenarios compared will differ in cost structure, predicted price sets, policy choices, and regional location. The goal of this paper is to evaluate the optimal economic choice of the commodity program options for a specific farm, and examine how different situations can affect that decision.

The Appendix has several sections. The first section, Appendix A, describes how to update the case farm data from year to year. Appendix B includes the calculations that go into solving crop insurance and government program payments. Appendix C shows more in depth on how budgets are calculated from year to year. The final section in the Appendix is Appendix D, where the case farm financial statements from the Case Studies chapter are located.

CHAPTER 2

DOCUMENTATION

2.1 INTRODUCTION

The Illinois Farm Income Projection Model is designed to produce five years of pro forma income statements and balance sheets for Illinois case farms. The model has the ability to specify a case farm by its location and farm size using averaged Farm Business Farm Management data for counties and regions. The model and its general uses are described here in the documentation. The model has several features and adjustments within it. It is based in Microsoft Excel. The input data is projected to represent case farms throughout the entire state of Illinois. The model has the ability to change specific crop insurance selections for each crop, and also the 2014 commodity government programs. Another aspect of this model is being able to compare financial performance under differing yields and prices.

There are eleven sections within the documentation. After this introduction there is a section on the case farm information. This section describes the initial page in the model, where case farms can be chosen and it displays the base year budget sheets.

The third section in this documentation gives background and insight into the data used in the model: Farm Business Farm Management data. There it describes how the data is collected, its benefits, and other applications for it.

Case farm selection is next. This is the point in the documentation that describes the particular case farm chosen to represent the model throughout the documentation. It also includes the statements for the base year chosen in the model.

The section following case farm selection is changes in costs. Costs are obviously variable from year to year, and here is where that variability is adjusted. Defaults are shown later in the documentation, but adjustments can be made by the user of the model. The changes are adjusted by a percent. It includes all expenses, interest rates, and total acres that can be changed.

The crop insurance input section allows a selection between all of the most common crop insurance products for the state of Illinois. This section will describe the inputs into this page, and the outputs, or payments, which come out of it. It also describes the different options, and what the most common products are for the areas.

The section that demonstrates one of the main purposes of the model is the government program input section. This section describes how to compare the different programs using the model, and how to select the best fit option.

The changes in yields and prices section describes how to adjust these options in the model. There are descriptions on how the defaults are found, and how custom yields and prices can be inputted.

The budgets section is another key section within the model. This section describes the detailed budget reports from the base year to the projected five years. In that section, it shows where the data comes from, what are included in the budgets, and how the budgets are determined.

The last two sections include the financial reports and the summary. The financial reports section shows examples of the financial statements produced, and the summary of the entire model from a financial side. It explains where this data comes from, and how it is used.

2.2 CASE FARM INFORMATION

The Illinois Farm Income Projection Model is based on Illinois grain farms, and is designed to provide financial performance for cash farms. The bulk of the data used to make these projections comes from the Farm Business Farm Management (FBFM) program at the University of Illinois, and the rest is retrieved from the National Agricultural Statistics Service (NASS). The grain farms are divided into 4 regions and 6 farm sizes. There are seven options for farm size from less than 500 acres to greater than 2500 acres in 500 acre increments, and then also an "All Farms" option. Much of the data used in

the model was based on four statewide regions in Illinois: North, West-Central, East-Central, and South. Within each region, the different size farms were averaged.

These averages are used in the financial statements, specifically the base year balance sheet and income statement. Other specific information for each farm includes acres by crop and ownership or rental agreement, and which government program is chosen. The average number of acres planted for each crop also comes from FBFM data. The way that the state of Illinois was split into four sections is listed here: North (counties lying north of Interstate 80), West-Central (counties located between Interstate 80, Interstate 70, and west of Interstate 39/51), East-Central (counties located between Interstate 80, Interstate 70, and east of Interstate 39/51), and South (counties lying south of Interstate 70). FBFM data is also used for land tenure statistics. NASS data is used for county yield averages and grain prices.

Base acreage needs to be chosen for each case farm. Since there is no planted acreage history in the model, the base acreage chosen is assumed to be the higher of the current or reallocated base acres. Base acreage is put in the model as a percent for simplicity, and it is then split across the entire farm. This case farm is also assumed to be one FSA farm.

Other decisions that need to be made for the case farms are how they will change over the years, including: acres increase or decrease, cash rent change, share lease details, expenses increasing or decreasing, and interest rate changes. This is all located on the “%Changes” sheet. For simplicity of the model and a fair comparison, much of this will remain the same throughout the case farms, besides region specific details.

The last adjustable variable for the case farms is the crop insurance options. These selections are made on the “Crop Insurance” sheet. There are county and individual options, and within those revenue or yield protection. These can be selected differently for each crop, although once again for simplicity in the comparisons in this documentation they will be kept the same for each crop.

After the case farms have been determined a comparison will be done on the “Farm Bill Options” sheet. There it can be determined what program will generate the most profit over the next five years. The program options are ARC Individual, ARC County, PLC, and PLC with. The prices can be adjusted manually, or from three different predictions: USDA, CBO, and FAPRI. Once it is determined what will generate the most revenue for the specific crop it can be selected at the top, and then it will reflect the “Projected Financial Statements” sheet. On that sheet will be found summarized financial statements representing the next five years including: an income statement, cash flow statement, projected capital repayment capacity, and balance sheet.

2.3 FARM BUSINESS FARM MANAGEMENT DATA

As stated earlier most of the data used in this model originates from Illinois Farm Business Farm Management farms (FBFM). FBFM has played a crucial role in research, especially at the University of Illinois. FBFM data includes a lot of different variables; income statements, balance sheets, yield data, planting rotations, taxes paid, and many more. This data is gathered from Illinois farmers by FBFM association members out in the field that are traveling to farms and assisting with the process and the understanding of the FBFM data. “FBFM is a cooperative educational-service program designed to assist farmers with management decision-making.” “It provides help with business and family records” (About FBFM, 2013). This shows that the FBFM data is dual purpose; it is a big key for research to help farmers in the long run, but it also helps them in the short run by providing them with records and tax information that can be easily accessed.

2.4 CASE FARM SELECTION

Figure 2.1: Farm Information Page

| Farm Information | | | | | | |
|---------------------------------|-------------------------------|-----------------|----------------|-----------------|-----------------|----------------|
| Name | Regional Analysis | | County | - | Champaign | |
| Base Year | 2013 | | Region | - | East Central IL | |
| Date | 10/30/2014 | | Farm Size | - | 1501-2000 | |
| <u>Crops Planted</u> | | | Avg County SPR | - | 92.3 | |
| | <u>Corn</u> | <u>Soybeans</u> | <u>Wheat</u> | <u>DbI SB</u> | Avg Region SPR | |
| | Yes | Yes | No | No | - | |
| Base Acres | Default | | | | | |
| | 53% | 47% | 0% | 0% | | |
| Total Farmed Acres -> | | | | | | 1,691 |
| <u>Acres</u> | | | | | | <u>Planted</u> |
| <i>Tenure Type</i> | <i>Region % of Total Acre</i> | | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> |
| Total | | | 894 | 797 | - | - |
| Owned | 12% | | 109 | 97 | - | - |
| Cash Rent | 46% | | 408 | 363 | - | - |
| Share Lease | 42% | | 377 | 336 | - | - |
| Total Acres | | | 894 | 797 | - | - |
| | | | | | | Total |
| | | | | | | 1,691 |

At this point in the documentation, a case farm will be described and it will be used to demonstrate the model. The case farm used for the descriptions in this documentation is in Champaign County, Illinois. Shown in figure 2.1 is the Farm Information for the Champaign County case farm. All of the figures in this document are pages within the excel model. The base year of 2013 is used since it is the most current financial information. Champaign County is located in the East Central Region of Illinois, and has a county SPR of 92.3, far above the region average of 86.6. Here is a list of what is selected for inputs on this page:

- 1) County: Champaign
- 2) Farm Size: 1,501-2,000 acres
- 3) Crops Planted:
 - a. Corn: Yes
 - b. Soybeans: Yes

- c. Wheat: No
 - d. Double-Crop Soybeans: No
- 4) Base Acres: Defaults
- a. Corn: 53% (894 acres)
 - b. Soybeans: 47% (797 acres)
 - c. Wheat: 0% (0 acres)
 - d. Double-Crop Soybeans: 0% (0 acres)

The acreage range used in this case farm is 1,501 to 2,000 acres, and averages out to 894 acres planted in corn and 797 acres planted in soybeans in 2013. This totals 1,691 farmed acres. For this case farm the base acres are the defaults chosen for this farm, which are the actual planted acres for 2013. If the actual base acres are known, they can be manually inputted into the case farm. The base acres are assumed to be the higher of the current or reallocated base acres. Here the default base acres are 53% (894 acres) for corn and 47% (797 acres) for soybeans. For these case farms an average price scenario will be depicted, so the FAPRI prices will be used. This input will be described later as it is adjusted on the "Farm Bill Options" page. Next in the documentation the initial sheet will be discussed and how it pertains to the case farms.

In this model there are several adjustments that can be made in order to accurately depict a specific farm in the state of Illinois. As stated before, the model represents average figures and acres within specific regions and farm sizes as reported by FBFM farms. On the initial "Farm Information" Page, the adjustments are all pertaining to the farm demographics. This is where the location and size of the farm are selected. The county selection determines what region the financial data represents and what county the yield data shows. The farm size data also varies between the regions, and it is selected between the seven different options for farm size. This page is also where what crops are planted is selected from four options: corn, soybeans, wheat, and double crop soybeans. It is a "Yes" or "No"

option, and determines inputs and revenues based on the crops planted. The next selection is for base acres. This is generally determined by the local FSA office for each separate FSA farm. This is an important adjustment because with the 2014 Farm Bill, farmers are allowed to reallocate their previous base acres. The base acres are determined on a percent basis across the entire farm. The averages also determine what percent of planted acres are owned, cash rented, or share leased, and the average county and regional soil productivity rating.

Figure 2.2: Base Year Balance Sheet - Assets

| Balance Sheet | | |
|-------------------------------------|-----------------------|-----------------------|
| | Fair Market Value | |
| | Beg of Year | End of Year |
| Current Assets | | |
| Bank Balance | \$57,000.00 | \$88,664.64 |
| Savings & CD's | \$43,642.79 | \$55,056.36 |
| Hedging Account Balance | \$10,782.57 | \$10,021.86 |
| Marketable Stocks & Bonds | \$82,559.50 | \$96,529.86 |
| Accounts Recievable/FSA LDP & CCP's | \$113,576.43 | \$21,249.21 |
| Crops & Feed | \$642,621.57 | \$721,477.79 |
| Market Livestock | \$0.00 | \$0.00 |
| Prepaid Expenses | \$193,804.64 | \$159,242.64 |
| Non-Farm Business/Other* | \$32,955.29 | \$56,106.93 |
| Total Current Assets | \$1,176,942.79 | \$1,208,349.29 |
| Intermediate Assets | | |
| Assets Under Capital Lease | \$0.00 | \$0.00 |
| Machinery & Equipment | \$807,905.79 | \$970,904.50 |
| Breeding Livestock | \$0.00 | \$0.00 |
| Non-Farm Business/Other | \$7,928.57 | \$8,842.86 |
| Notes Recievable | \$0.00 | \$0.00 |
| Retirement Accounts* | \$170,784.79 | \$214,775.57 |
| Securities Not Readily Marketable | \$21,640.79 | \$23,774.07 |
| Cash Value of Life Insurance* | \$49,238.93 | \$55,273.57 |
| Home Furnishings & Personal Items* | \$49,150.00 | \$54,507.14 |
| Total Intermediate Assets | \$1,106,648.86 | \$1,328,077.71 |
| Fixed Assets | | |
| Farm Real Estate-Bare Land | \$2,382,785.71 | \$2,536,267.86 |
| Buildings & Improvements | \$68,071.43 | \$84,571.43 |
| Personal Residence | \$166,785.71 | \$257,857.14 |
| Other Non-Farm Real Estate | \$153,214.29 | \$153,214.29 |
| Contracts & Notes Receivable | \$0.00 | \$0.00 |
| Non-Farm Business/Other/Amort. | \$338,636.36 | \$337,379.79 |
| Total Fixed Assets | \$3,109,493.50 | \$3,369,290.50 |
| Total Assets | \$5,393,085.14 | \$5,905,717.50 |

Figure 2.3: Base Year Balance Sheet - Liabilities

| | | |
|--|-----------------------|-----------------------|
| <u>Current Liabilities</u> | | |
| Accounts Payable with Merchants & Dealers | \$10,174.21 | \$12,441.64 |
| Lease Payment | \$0.00 | \$0.00 |
| Feed Accounts Payable/FSA | \$0.00 | \$0.00 |
| Commodity Credit Corp Loans* | \$0.00 | \$0.00 |
| Operating / Short Term Notes | \$272,254.00 | \$356,059.57 |
| Estimated Accrued Tax Liability (Inc & RE) | \$86,618.00 | \$74,968.14 |
| Accrued Interest | \$11,079.79 | \$14,568.07 |
| Principal Due Within Twelve Months: | | |
| Intermediate Term Notes | \$48,200.36 | \$47,351.71 |
| Long Term Notes | \$7,759.50 | \$10,745.00 |
| Current, IT & LT Other* | \$7,808.14 | \$8,250.79 |
| Total Current Liabilities | \$443,894.00 | \$524,384.93 |
| <u>Intermediate Liabilities</u> | | |
| Capital Lease/Deferred Portion | \$0.00 | \$0.00 |
| Intermediate Notes | \$155,617.07 | \$139,220.79 |
| Life Insurance Policy Loans* | \$0.00 | \$0.00 |
| Other* | \$2,284.29 | \$1,575.86 |
| Total Intermediate Liabilities | \$157,901.36 | \$140,796.64 |
| <u>Long Term Liabilities</u> | | |
| Real Estate Mortgages | \$201,918.00 | \$270,604.64 |
| Other | \$41,266.50 | \$38,690.86 |
| Total Long Term Liabilities | \$243,184.50 | \$309,295.50 |
| Contingent Tax Liability | \$0.00 | \$0.00 |
| Total Liabilities | \$844,979.86 | \$974,477.07 |
| Net Worth | \$4,548,105.29 | \$4,931,240.43 |
| Total Liab. & Net Worth | \$5,393,085.14 | \$5,905,717.50 |
| Change in Net Worth | | \$383,135.14 |
| Debt to Asset Ratio | 0.16 | 0.17 |

The base year balance sheet and income statement are also shown on the “Farm Information” page. Figure 2.2 and 2.3 show the base year balance sheet for the Champaign County case farm. The balance sheet includes specific current assets, intermediate assets, fixed assets, current liabilities, intermediate liabilities, long term liabilities, and net worth. The income statement includes farm revenue, receipts, along with all farm expenses, interest, and depreciation. Lastly, it displays the net farm income for the base year. The base year balance sheet is one of the main inputs for this model, and

these values come from the input decisions of county and farm size. It displays the average Fair Market Value for assets and liabilities. These values vary depending on the region the county selected is in, and also the farm size. The projected balance sheets are changed from year to year due to projected investments, increasing or decreasing liabilities, and the change in cash balance due to net income.

Figure 2.4: Base Year Income Statement

| Income Statement | | |
|---|--------------|---------------------|
| Revenue | | |
| Crop Sales | \$593,245.00 | |
| Inventory Change | \$176,206.50 | \$769,451.50 |
| Livestock, Livestock Product Sales | \$0.00 | |
| Inventory Change | \$0.00 | \$0.00 |
| Government Payments | | \$8,399.50 |
| Settlements | | \$0.00 |
| Other Farm Receipts | | \$201,312.50 |
| Accounts Recivable (net Change) | | -\$99,689.50 |
| Less: Purchased Feed & Grain | \$0.00 | |
| Less: Purchased Livestock | \$0.00 | \$0.00 |
| Gross Farm Returns | | \$879,474.00 |
| Expenses | | |
| Fertilizer | \$63,752.00 | |
| Pesticides | \$50,034.00 | |
| Seed | \$108,589.50 | |
| Machinery Repair | \$26,690.00 | |
| Machine Hire/Lease | \$5,010.50 | |
| Fuel & Oil | \$28,317.50 | |
| Drying | \$11,912.00 | |
| Storage | \$3,792.50 | |
| Building & Fence Repair/S&W Cons | \$8,835.50 | |
| Hired Labor | \$43,516.50 | |
| Vet, Medicine and Livestock Supplies | \$0.00 | |
| Utilities | \$2,831.50 | |
| Insurance | \$36,627.00 | |
| Taxes | \$4,630.50 | |
| Rents and Settlements | \$52,038.00 | |
| Light Vehicle | \$1,314.00 | |
| Miscellaneous | \$13,088.00 | |
| Cash Farm Operating Expenses Excluding Interest | | \$460,979.00 |
| Expense Adjustments | | |
| Prepaid Expenses (- if increase) | \$71,473.00 | |
| Accounts Payable (+ if increase) | \$444.00 | \$71,917.00 |
| Total Operating Expense Excluding Interest | | \$532,896.00 |
| Income Before Interest Expense | | \$346,578.00 |
| Interest Expense | | |
| Cash Paid | \$8,017.50 | |
| Accrued Interest Adjustments | \$6,915.00 | |
| Total Interest Expense | | \$14,932.50 |
| Total Operating Expense | | \$547,828.50 |
| Income Before Depreciation | | \$331,645.50 |
| Less: Depreciation (Tax Depr: 0) | | \$105,520.50 |
| Farm Operating Income | | \$226,125.00 |
| Gain (Loss) on Machinery and Building Sales less Amortization | | \$0.00 |
| NET FARM INCOME | | \$226,125.00 |
| Reference: Non-Farm Income (Estimated) | | |
| Wages | | \$0.00 |
| Interest and Dividends | | \$303.50 |
| Other Non-Farm Income | | \$679.50 |

The base year income statement is used as a comparison next to future budgets. Figure 2.4 shows the case farm base year income statement. The income statement comes from FBFM averages. The income statement is based off of a whole farm value, and is best used to compare the gross farm returns and total net farm income to future projections.

2.5 CHANGES IN COSTS

Figure 2.5: %Change Page

| % Change Main Page | | | | | | | | |
|--|--------------------------|--------------------|----------------------------|-------------------|-------------|-------------|-------------|----|
| | | Year 1- | 2014 | | | | | |
| Change in Acres: | | | 2014 | 2015 | 2016 | 2017 | 2018 | |
| | Corn | | -100 | 100 | -100 | 100 | -100 | |
| | Soybeans | | 100 | -100 | 100 | -100 | 100 | |
| | Wheat | | 0 | 0 | 0 | 0 | 0 | |
| | Double Crop Soybeans | | 0 | 0 | 0 | 0 | 0 | |
| Change in Cash Rent: | | | -\$10.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | |
| | Cash Rent | \$258.57 | \$248.57 | \$248.57 | \$248.57 | \$248.57 | \$248.57 | |
| | %Change | | -4% | 0% | 0% | 0% | 0% | |
| Change in Share Lease Information: | | | Click Here | | | | | |
| **Select how to increase/decrease expenses | | | All Change Same % | | | | | |
| If you chose "All Change Same %": | | | | | | | | |
| | % Change | | 1% | 1% | 1% | 1% | 1% | |
| If chose "Expenses Individually Change, But Not Between Crops": | | | Click Here | | | | | |
| If chose "All Individual Expenses Change": | | | Click Here | | | | | |
| Other Changes | | | Base Year | Adjustment | | | | |
| | | Costs (/ac) | Base Year | | | | | |
| | Non-Farm Income | \$5.51 | \$0.00 | 1% | 1% | 1% | 1% | 1% |
| | Family Living | \$40.18 | \$5.00 | 1% | 1% | 1% | 1% | 1% |
| | Income and SS Tax | \$29.31 | -\$1.00 | 1% | 1% | 1% | 1% | 1% |
| | Capital Purchases | \$114.41 | -\$60.00 | 1% | 1% | 1% | 1% | 1% |
| Interest Rate | | | | | | | | |
| | Current Liabilities | | 5% | 5% | 5% | 5% | 5% | |
| | Intermediate Liabilities | | 4% | 4% | 4% | 4% | 4% | |
| | Long Term Liabilities | | 3% | 3% | 3% | 3% | 3% | |
| Principal Payment | | | Years | Payment | | | | |
| | Current Liabilities | | 0 | \$0.00 | | | | |
| | Intermediate Liabilities | | 7 | \$20,113.81 | | | | |
| | Long Term Liabilities | | 15 | \$20,619.70 | | | | |

The next page for adjustments is the "%Changes" sheet. The "%Change" page is show below in Figure 2.5. This is where several of the yearly increases and decreases are determined, either by a value or a percent. There are seven sections on the "%Changes" page. The inputs for this case farm on this

page are as described next, but also shown in Figure 2.5. This case farm will alternate 100 acres from corn to soybeans every year from 2014 to 2018. This makes it a pure corn-soybean rotation. Cash rent will decrease \$10.00 for 2014, and then remain constant through 2018. The \$10.00 decrease is due to lower prices than what they were in 2013, and most likely lower incomes. All other expenses will increase by 1.0% every year, along with non-farm income, family living, income and Social Security tax, and capital purchases. Interest rates on current, intermediate, and long term liabilities will remain consistent at 5.0%, 4.0%, and 3.0%, respectively. Starting at the top of the page, the number of acres in each crop can be adjusted. This will depend if there is a reason to make an adjustment in the average rotation, or an addition of land farmed. The change in cash rent is the next adjustable option, which is changed in dollars, but also displays a percent change. In order to have a customizable land rental agreement the "Lease Information" page is used, which is found by clicking the button next to "Change in Share Lease Information." This is shown in Figure 2.6. Here the percent of owner's share of revenue, government payments, and expenses can be adjusted. There is a default set of 50% for total revenue and direct expenses, and 100% of property taxes.

Figure 2.6: Lease Information Page

| Lease Information | |
|---|-----------------------|
| <div style="border: 1px solid gray; padding: 2px; display: inline-block;">%Changes Homepage</div> | Share Lease |
| | Percent Owner's Share |
| | Default |
| Crop revenue | 50% |
| ARC Revenue | 50% |
| Other Govt Payments | 50% |
| Crop Insurance Proceeds | 50% |
| Total revenue | |
| Expenses | |
| Fertilizer | 50% |
| Pesticide | 50% |
| Seed | 50% |
| Drying | 50% |
| Storage | 50% |
| Crop insurance | 50% |
| Direct expense | |
| Machine hire/lease | 0% |
| Utilities | 0% |
| Machine repair | 0% |
| Fuel and oil | 0% |
| Light Vehicle | 0% |
| Mach. Depreciation | 0% |
| Power expense | |
| Hired labor | 0% |
| Building repair and rent | 0% |
| Building depreciation | 0% |
| Insurance | 0% |
| Misc. | 0% |
| Interest | 0% |
| Overhead expenses | |
| Property Taxes | 100% |
| Other expenses | |
| Base Share Lease Rent(Income) | 100% |
| Total expenses | |
| Revenue(+Rent) less expenses | |
| SHARE LEASE TENANT OWES | |

Beyond that all of the percentages of the owner's share can be changed from 0-100%. This replicates into all five projected years budgets. Selecting how to increase or decrease expenses has three different options: "All Change Same %," "Expenses Individually Change, But Not Between Crops," or "All Individual Expenses Change." If "All Change Same %" is selected, the percentage adjustments are listed on this page. If either of the other two are selected, the buttons next to the option selected needs to be clicked and it will switch to another page where these can be adjusted. The next list of other changes come from the projected financial statements and are changed on a percentage basis. It includes: non-farm income, family living expenses, income and social security tax, and capital purchases. Interest rate is also adjusted from here. This is not an increase or decrease, but the actual interest rate for the following five years. Finally, the principal payment is determined by selecting how many years the current, intermediate, and long term liabilities will be paid off in. These payments are consistent throughout the projected five years.

2.6 CROP INSURANCE INPUT

Figure 2.7: Crop Insurance Page – Year 1 & 2

| Crop Insurance | | | | | | | | | |
|-----------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Base Year - | | 2013 | | | | | | | |
| | | Corn | | Soybeans | | Wheat | | Dbl SB | |
| | | Individual | | Individual | | None | | None | |
| County: | Champaign | | | | | | | | |
| Region: | East Central IL | | | | | | | | |
| | | Individual | | | | County | | | |
| | | Corn | Soybeans | Wheat | Dbl SB | Corn | Soybeans | Wheat | Dbl SB |
| Product | | RP | RP | RP | RP | ARP | ARP | ARP | ARP |
| Coverage Level | | 85% | 85% | 75% | 75% | 85% | 85% | 75% | 75% |
| Protection Factor | | | | | | 1.20 | 1.20 | 1.20 | 1.20 |
| Crop Insurance Year - 2014 | | | | | | | | | |
| | | Individual | | | | County | | | |
| Expected County Yield | | 172.2 | 54.1 | 70.9 | 23.9 | 172.2 | 54.1 | 70.9 | 23.9 |
| APH | | 169.0 | 53.1 | 66.5 | 25.8 | 169.0 | 53.1 | 66.5 | 25.8 |
| Base Price | | \$4.62 | \$11.36 | \$6.51 | \$11.36 | \$4.62 | \$11.36 | \$6.51 | \$11.36 |
| Harvest Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Trigger Yield | | 143.6 | 45.1 | 56.5 | 21.9 | 143.6 | 45.1 | 49.9 | 19.3 |
| Trigger Revenue | | \$676.38 | \$522.45 | \$345.99 | \$203.32 | \$663.55 | \$512.31 | \$324.60 | \$219.39 |
| Proj Yield | | 192.2 | 62.1 | 80.9 | 26.9 | 172.2 | 54.1 | 70.9 | 23.9 |
| Proj Revenue | | \$747.81 | \$639.70 | \$507.01 | \$276.70 | \$670.01 | \$557.30 | \$444.31 | \$245.80 |
| Payment | 2014 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Year - 2015 | | | | | | | | | |
| | | Individual | | | | County | | | |
| Expected County Yield | | 173.7 | 54.5 | 71.5 | 23.9 | 173.7 | 54.5 | 71.5 | 23.9 |
| APH | | 168.1 | 53.2 | 66.8 | 25.9 | 168.1 | 53.2 | 66.8 | 25.9 |
| Base Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Harvest Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Trigger Yield | | 142.9 | 45.2 | 56.8 | 22.0 | 142.9 | 45.2 | 50.1 | 19.5 |
| Trigger Revenue | | \$590.42 | \$463.52 | \$268.16 | \$196.88 | \$571.52 | \$451.91 | \$250.43 | \$213.98 |
| Proj Yield | | 193.7 | 62.5 | 81.5 | 26.9 | 173.7 | 54.5 | 71.5 | 23.9 |
| Proj Revenue | | \$792.04 | \$602.81 | \$467.05 | \$258.97 | \$710.24 | \$525.69 | \$409.75 | \$230.05 |
| Payment | 2015 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |

The “Crop Insurance” page is shown in Figure 2.7 for years 1 and 2 for the case farm in Champaign County. The inputs on this page include: individual or county coverage, crop insurance product, coverage level, and protection factor. The crop insurance for this case farm will be set at 85% revenue protection on both corn and soybeans, and will be individual coverage, so a protection factor is

not necessary. This an essential element to the proper functioning and variability of the Illinois Farm Income Projection Model. Since the new government programs are becoming more “insurance-like” there could be some definite changes in crop insurance decisions. There are several options with this page, and they are all adjusted on the page itself. From these selections payments are determined for the following five years. The payments are then plugged into the projected year’s budget. The expected county yield is from NASS data. The projected price and harvest price are from the Risk Management Agency through the USDA for the current year, while the future prices are determined by the operator of the model. The projected farm yield comes from either FBFM data, or the custom yields set.

There are several different options within modern-day crop insurance; this model summarizes the most popular of the choices available. For each of the individual crops, there is a selection between “County” or “Individual” insurance. This changes the different products available, the coverage levels, and how each are configured. If “Individual” is selected for a specific crop, the product options include: Yield Protection (YP), Revenue Protection (RP), and Revenue Protection with Harvest Price Exclusion (RP-HPE). Coverage levels are available from 50% to 85% in 5% increments. If “County” coverage is selected, there are three similar choices: Area Yield Protection (AYP), Area Revenue Protection (ARP), and Area Revenue Protection with Harvest Price Exclusion (ARPwHPE). These three options make up the Area Risk Protection Insurance Policy, which replaces the GRIP policies beginning in 2014. The coverage level range is smaller with county coverage; as it is from 70% to 90% by 5% increments. The last adjustment is the Protection Factor. It is adjusted from 0.80 to 1.20 by 0.01; this influences the size of the payments when they occur. With the new ARPI options, there is also a “loss limit factor” of .18, which is figured in when finding the payment factor. There are several calculations in solving the payments for future years, and each one is different from the other. Listed for each year are the expected county yield, the actual production history (APH), base price, harvest price, trigger yield, trigger revenue, projected yield, projected revenue, and the payment for the specific year. Expected county yield is figured by taking the

NASS yield values for the specific county from 1975 through 2012, using a slope and intercept formula to project the next five years as to where the year falls on the line. APH is found differently, by taking the average of the past 10 years for the county. Both are solved on the “CornPayments,” “SoybeanPayments,” “WheatPayments,” and “DblSbPayments” pages. The current base and harvest prices are up to date from the Risk Management Agency website. Base prices for corn are the average of December’s futures contract prices during February, while the harvest prices are set during October using the average of December’s futures contract prices (Schnitkey, 2014). Soybean base and harvest prices are both still set in February and October, respectively, but uses November’s futures contract prices. However, wheat prices are different. The base prices are determined by the average of September’s future contract prices during September of the previous year, and the harvest prices are the average of September’s future prices during July of the current year (Spartan Insurance Agency). The future projected and harvest prices can be adjusted on the “Crop Insurance Data” page. For the projected yield, FBFM county yield averages are the default. To use these, data from 2003 to 2013 had the NASS county yield subtracted from it, and then the differences were averaged and that was added to the county yield. Lastly, projected revenue is taken from the “...Payments” pages, where the projected farm yield is multiplied by the projected price for the given year. Since county averages are being used, the differences in payments from individual and county coverages is made by the way they are determined, specifically the payment factor and coverage levels available.

2.7 GOVERNMENT PROGRAM INPUT

Figure 2.8: Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | | | |
|--------------------|--|--------------------|--------------|--|---|-----------------|--------------|---------------|---------------------------------|--|
| County | Champaign | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | | | | |
| Region | East Central IL | | <Formula | | | | | | | |
| Farm Size | 1501-2000 | | | | | | | | | |
| 1) FIPS | 17019 | | | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | 2a) Select Future Price Source | | | FAPRI | | | |
| | Corn | Soybeans | Wheat | DbI SB | *** (Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins) | | | | | |
| | ARC County Revenue | ARC County Revenue | None | None | | | | | | |
| 2) Base Acreage | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | <i>Total</i> | | | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | | | |
| | 894 | 797 | 0 | 0 | | | | | | |
| 3) MYA Prices | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | | | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | | | |
| 2014 | 3.89 | 10.30 | 6.27 | 10.30 | | | | | | |
| 2015 | 4.09 | 9.64 | 5.73 | 9.64 | | | | | | |
| 2016 | 4.09 | 10.11 | 5.72 | 10.11 | | | | | | |
| 2017 | 4.12 | 10.29 | 5.79 | 10.29 | | | | | | |
| 2018 | 4.21 | 10.54 | 5.87 | 10.54 | | | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 4) Payment Yields | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | for PLC payments | | | | | |
| | 145.55 | 46.97 | 58.91 | 23.67 | | | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | | | |
| | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | <i>Total</i> | | | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 6) Farm Yields | For Individual ARC payments | | | | County Yields | | | | will update based on FIPS input | |
| | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | | |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | 176.0 | 50.0 | 66.9 | 33.0 | | |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | 190.0 | 56.0 | 64.4 | 29.0 | | |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | 169.5 | 56.2 | 59.1 | 51.0 | | |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | 164.1 | 51.6 | 68.2 | 16.5 | | |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | 108.9 | 47.1 | 68.7 | 2.0 | | |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | 168.1 | 52.6 | 68.1 | 19.0 | | |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | 172.2 | 54.1 | 70.9 | 23.9 | | |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | 173.7 | 54.5 | 71.5 | 23.9 | | |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | 175.1 | 55.0 | 72.2 | 23.9 | | |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | 176.5 | 55.4 | 72.8 | 23.9 | | |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | 177.9 | 55.8 | 73.4 | 23.9 | | |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | 179.3 | 56.2 | 74.1 | 23.9 | | |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | 180.7 | 56.7 | 74.7 | 23.9 | | |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | 182.1 | 57.1 | 75.4 | 23.9 | | |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | 183.5 | 57.5 | 76.0 | 23.9 | | |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | 185.0 | 57.9 | 76.7 | 23.9 | | |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | 186.4 | 58.4 | 77.3 | 23.9 | | |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | 187.8 | 58.8 | 78.0 | 23.9 | | |

Figure 2.9: Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|-------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| County ARC Payments | | | | | |
|----------------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$6 | \$0 | \$0 | \$71,373 |
| 2015 | \$50 | \$31 | \$0 | \$0 | \$59,220 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|--------------------------------|-------------------|-------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$0 | \$0 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | |
|---|------|---------|-------|--------|-------|
| Product | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | | |
|----------------------|---|-----------|
| PLC | - | \$0 |
| County ARC | - | \$130,594 |
| Individual ARC | - | \$0 |
| SCO | - | \$0 |
| PLC w/ SCO | - | \$0 |

The “Farm Bill Options” page allows comparisons of the entire model. Figures 2.8 and 2.9 show the “Farm Bill Options” page for the case farm. This page allows the selection of which coverage options are to be looked at, including: ARC Individual, ARC County Revenue, PLC with SCO Option, and PLC without SCO option. Besides ARC Individual, these can be selected between different crops, but not between each FSA farm for lack of information in this model. All of the calculations are included on this page, and a comparison can be done between the four options over the projected next five years. A note needs to be made that the SCO payment option on the PLC payments will not be available until 2015. On this page is also where prices sets are selected. There are four options for predicted prices

within the model; those chosen by USDA, CBO, FAPRI, or Custom. Custom prices are adjusted by visiting the “Price & Yield Changes” page. The inputs used for this Champaign County case farm are:

- 1) ARC Individual: No
- 2) Corn: ARC County Revenue
- 3) Soybeans: ARC County Revenue
- 4) Wheat: N/A
- 5) Double-Crop Soybeans: N/A
- 6) Price Source: FAPRI

For this case farm in Champaign County, the only payments that will be made are during 2014 and 2015 for corn and soybeans under the ARC County Revenue option. Therefore this will be chosen for all crops.

The “Farm Bill Options” page includes several calculations for each of the potential selections for coverage. The initial part of the page are the inputs highlighted in orange. After the coverage is selected, the farms base acreage is shown. These percent’s are adjustable on the “Farm Information” page. Base acreage is used to determine the amount of the payments. Next are the MYA Prices. MYA prices are determined by the National Agricultural Statistics Service, but for this model since they have not been determined yet they come from either USDA, FAPRI, CBO, or a custom set of predicted prices for the following five years. These are all adjustable from the respective pages. Payment yields are then inputted. These are found by taking 90% of the average yields of the previous 5 years for each county (for this model 2008-2012). These values are used in PLC payments. The planted acreage for the farm is next. These come from each of the individual budget pages, and can be adjusted from year to year on the “%Changes” page. The farm yields for each crop are also listed on this page from 2008 to the projected yields of 2025. The last inputs on this page are the payment rates for PLC, County ARC, and

Individual ARC, and the reference and loan rates for each crop. Shown in two places on the “Farm Bill Options” page is a comparison of total revenue from the options over the predicted five years.

2.8 CHANGES IN YIELDS AND PRICES

Figure 2.10: Price & Yield Changes Page

| Price & Yield Changes | | | | | | | | | | | | |
|-----------------------|-----------|---------------|---------------|-----------|--------------|--------------|-----------|--------------|--------------|-----------|--------------|--------------|
| | Corn | | | Soybeans | | | Wheat | | | Dbl SB | | |
| | Projected | | Projected | Projected | | Projected | Projected | | Projected | Projected | | Projected |
| | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield |
| 2014 | 3.89 | 172.24 | 192.24 | 10.30 | 54.11 | 62.11 | 6.27 | 70.86 | 80.86 | 10.30 | 23.86 | 26.86 |
| 2015 | 4.09 | 173.65 | 193.65 | 9.64 | 54.53 | 62.53 | 5.73 | 71.51 | 81.51 | 9.64 | 23.86 | 26.86 |
| 2016 | 4.09 | 175.07 | 195.07 | 10.11 | 54.96 | 62.96 | 5.72 | 72.16 | 82.16 | 10.11 | 23.86 | 26.86 |
| 2017 | 4.12 | 176.48 | 196.48 | 10.29 | 55.38 | 63.38 | 5.79 | 72.80 | 82.80 | 10.29 | 23.86 | 26.86 |
| 2018 | 4.21 | 177.89 | 197.89 | 10.54 | 55.81 | 63.81 | 5.87 | 73.45 | 83.45 | 10.54 | 23.86 | 26.86 |
| 2019 | 4.00 | 179.30 | 199.30 | 10.00 | 56.23 | 64.23 | 5.00 | 74.10 | 84.10 | 10.00 | 23.86 | 26.86 |
| 2020 | 4.00 | 180.72 | 200.72 | 10.00 | 56.66 | 64.66 | 5.00 | 74.74 | 84.74 | 10.00 | 23.86 | 26.86 |
| 2021 | 4.00 | 182.13 | 202.13 | 10.00 | 57.08 | 65.08 | 5.00 | 75.39 | 85.39 | 10.00 | 23.86 | 26.86 |
| 2022 | 4.00 | 183.54 | 203.54 | 10.00 | 57.51 | 65.51 | 5.00 | 76.04 | 86.04 | 10.00 | 23.86 | 26.86 |
| 2023 | 4.00 | 184.96 | 204.96 | 10.00 | 57.93 | 65.93 | 5.00 | 76.68 | 86.68 | 10.00 | 23.86 | 26.86 |
| 2024 | 4.00 | 186.37 | 206.37 | 10.00 | 58.36 | 66.36 | 5.00 | 77.33 | 87.33 | 10.00 | 23.86 | 26.86 |
| 2025 | 4.00 | 187.78 | 207.78 | 10.00 | 58.78 | 66.78 | 5.00 | 77.98 | 87.98 | 10.00 | 23.86 | 26.86 |

*Current Yields are projected, but customizable here. Select the "Projected" button to return the projected yields
 **To manually adjust prices, select this button ->

Figure 2.10 shows the “Price & Yield Changes” page. Here the inputs include: prices, county yields, and farm yields. For this case farm, original county yields were used, and due to the great crop seasons Champaign County has experienced in the last two years, farm yields were increased off of the county yields. Those increases are listed here:

- 1) Corn: +20 bushels
- 2) Soybeans: + 8 bushels
- 3) Wheat: + 10 bushels (Not relevant to this case farm)
- 4) Double-Crop Soybeans: +3 bushels (Not relevant to this case farm)

The Illinois Farm Income Projection Model uses prices and yields that date back to 1975. Both of these come out of the ARC calculator, created by Paulson, Schnitkey, and Coppess. The price data originates from MYA prices. 2014 MYA prices are the most recent in the model. The future prices are

inputs into the model, and can be adjusted for every year up to 2025. The average county yields are originally taken from National Agricultural Statistics Service (NASS) data. Every county is given a FIPS code (Federal Information Processing Standards), and that is how it is found within this model. All counties have their own yield data for corn, soybeans and wheat; which is dated back to 1975. The most recent NASS data is from 2013. Some of the yield data from 2012 is skewed, thanks to the dry summer and way below average yields, especially for the Southern IL region. For this reason the projected yields use the data back to 1975. The yields from 1975 to 2013 are basically plotted on a graph and a slope is found, all in a similar formula. The yields are then projected off of this line until 2025. The actual yields can be updated on the individual "YieldData" pages as they are announced. In order to get accurate farm yield data, and so there was a variability from NASS county yields, average yields were taken from FBFM data for the last 10 years. NASS yields were subtracted from those, and the average difference from the last 10 years is added to the NASS county yields (could be positive or negative). This is how the default farm yield is determined.

In order to depict specific price or yield scenarios, the "Price & Yield Changes" page was created. The price set is chosen on the "Farm Bill Options" page. It will be one of four choices: USDA, CBO, FAPRI, or Custom. These prices can be seen on the "Prices" tab, which can be found by clicking the button at the bottom of the "Price & Yield Changes" page. On the "Prices" tab is also where prices will be adjusted if "Custom" was chosen. The yields are the county averages found by the process described above. Here the yields can be adjusted. Any value in green font can be changed, and it will affect the results of the model for that specific year. If after customizing the user would like to go back to the predicted yields, the button on top of each crop column can be clicked and it will automatically replace the custom yields with the predicted ones.

2.9 BUDGETS

The Soil Productivity Rating, or SPR, is an important characteristic in determining how productive a piece of land will be. These ratings are based on a 0-100 scale, 0 being not productive and 100 being extremely productive. The SPR across the state of Illinois varies greatly, and even within regions. The NASS yield data that was used did not include all of the county SPR's, so if there was none listed a projected SPR was found. It was found by running a regression on five year average yields (2008-2012) and the SPRs that were listed. Then the coefficient of the X variable was taken times the yield for the county that there was no SPR listed for, and finally this was added to the intercept. In this model the budgets for the two central regions is dependent on the SPR, but the northern and southern regions are not. The base budget comes out of the average income and expenses for Illinois regions, put together by Dr. Gary Schnitkey. In the central region, it is split into a high productive county and a low productive county using an SPR of 85 as the determination. Therefore unlike the income statement and balance sheet, the budgets are either high or low within the central region instead of east and west.

In the base year budget and projected years budgets reports there are six sections: crop details, revenue, direct expenses, power expenses, overhead expenses, and land costs. The yearly budget calculates the total revenue based on acres, price, yield, crop insurance, and government payments. It also takes account of all expenses: direct expenses (seed, fertilizer, etc.), power expenses (machine costs, fuel, etc.), overhead expenses (labor, building costs, etc.), and land costs (property taxes, cash rent, or share lease rent). Here on this sheet is also the change in cash over the year, the term debt repayment margin, and a total net worth change due to depreciation, interest payments and accumulated assets. Shown in Figure 2.11 is the projected budget page for 2015, and Figure 2.12 shows the projected statement of cash flow, projected capital repayment capacity, and projected balance sheet summary for the case farm in Champaign County.

Figure 2.11: 2015 Projected Budget

| Year 2 - Financial Statements | | | | | | | |
|--------------------------------|--------------------|--------------------|-----------------|------------------|-----------------|-----------------------|------|
| | | | | | | Champaign | 2015 |
| Budget | | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | Per Acre | Total | |
| Acres | 894 | 797 | - | - | | 1,691 | |
| Acres (%) | 53% | 47% | 0% | 0% | 100% | | |
| Yield per acre | 193.65 | 62.53 | 81.51 | 26.86 | | | |
| Total bushels | 173,125 | 49,838 | - | - | | | |
| Futures Price (\$/bu.) | 4.09 | \$9.64 | \$5.73 | \$9.64 | | | |
| Basis (\$/bu.) | \$0.00 | \$0.00 | \$0.00 | \$0.00 | | | |
| Cash Price (\$/bu.) | \$4.09 | \$9.64 | \$5.73 | \$9.64 | | | |
| Revenue | | | | | \$/acre | | |
| Crop Revenue | \$792.04 | \$602.81 | \$467.05 | \$258.97 | \$702.85 | \$1,188,519.42 | |
| Crop Gov't Payments | \$50.18 | \$31.13 | \$0.00 | \$0.00 | \$35.02 | \$59,220.24 | |
| Crop Insurance Proceeds | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | |
| Total Revenue (\$/acre) | \$842.22 | \$633.93 | \$467.05 | \$258.97 | \$737.87 | \$1,247,739.67 | |
| Expenses | | | | | \$/acre | | |
| Fertilizer | \$204.02 | \$69.37 | \$105.07 | \$38.76 | \$140.56 | \$237,679.22 | |
| Pesticide | \$49.98 | \$39.78 | \$22.44 | \$30.60 | \$45.18 | \$76,394.27 | |
| Seed | \$110.17 | \$70.39 | \$44.88 | \$44.88 | \$91.42 | \$154,591.05 | |
| Drying | \$16.32 | \$1.02 | \$0.00 | \$1.02 | \$9.11 | \$15,404.53 | |
| Storage | \$7.14 | \$4.08 | \$1.02 | \$0.00 | \$5.70 | \$9,635.86 | |
| Crop Insurance | \$25.50 | \$17.34 | \$8.16 | \$4.08 | \$21.66 | \$36,620.57 | |
| Total Direct Expense | \$413.14 | \$201.98 | \$181.58 | \$119.35 | \$313.62 | \$530,325.51 | |
| Machine Hire/Lease | \$10.20 | \$9.18 | \$17.34 | \$11.22 | \$9.72 | \$16,436.87 | |
| Utilities | \$5.10 | \$4.08 | \$6.12 | \$5.10 | \$4.62 | \$7,811.93 | |
| Machine Repair | \$22.44 | \$19.38 | \$23.46 | \$26.52 | \$21.00 | \$35,510.70 | |
| Fuel & Oil | \$23.46 | \$20.40 | \$23.46 | \$19.38 | \$22.02 | \$37,235.69 | |
| Light Vehicle | \$2.04 | \$1.02 | \$2.04 | \$2.04 | \$1.56 | \$2,636.96 | |
| Mach. Depreciation | \$56.11 | \$48.96 | \$40.80 | \$27.54 | \$52.74 | \$89,183.26 | |
| Total Power Expense | \$119.35 | \$103.03 | \$113.23 | \$91.81 | \$111.66 | \$188,815.41 | |
| Hired Labor | \$14.28 | \$13.26 | \$15.30 | \$13.26 | \$13.80 | \$23,336.83 | |
| Building Repair & Rent | \$8.16 | \$6.12 | \$10.20 | \$7.14 | \$7.20 | \$12,173.87 | |
| Building Depreciation | \$9.18 | \$8.16 | \$8.16 | \$5.10 | \$8.70 | \$14,711.88 | |
| Insurance | \$9.18 | \$9.18 | \$9.18 | \$0.00 | \$9.18 | \$15,524.90 | |
| Misc. | \$8.16 | \$8.16 | \$7.14 | \$0.00 | \$8.16 | \$13,799.91 | |
| Interest | \$23.48 | \$23.48 | \$23.48 | \$23.48 | \$23.48 | \$39,706.83 | |
| Total Overhead | \$72.45 | \$68.37 | \$73.47 | \$48.98 | \$70.52 | \$119,254.23 | |
| Total Expenses | \$604.94 | \$373.38 | \$368.28 | \$260.14 | \$495.80 | \$838,395.15 | |
| Revenue Less Expenses | \$237.28 | \$260.56 | \$98.77 | -\$1.18 | \$242.07 | \$409,344.52 | |
| Property Taxes | \$44.81 | \$44.37 | \$44.81 | \$44.81 | \$44.60 | \$75,426.11 | |
| Cash Rent | \$248.57 | \$248.57 | \$248.57 | \$248.57 | \$248.57 | \$420,335.64 | |
| Share Lease Rent | \$214.54 | \$215.98 | \$142.73 | \$69.81 | \$215.22 | \$363,932.40 | |
| Total Tenure Cost | \$209.33 | \$209.88 | \$179.04 | \$148.28 | \$209.59 | \$354,420.87 | |
| Net Revenue | \$27.95 | \$50.67 | -\$80.27 | -\$149.46 | \$38.66 | \$65,374.28 | |
| Total Net Revenue | \$24,987.99 | \$40,386.29 | \$0.00 | \$0.00 | | \$65,374.28 | |

Figure 2.12: 2015 Statement of Cash Flow, Capital Repayment Capacity, & Balance Sheet

| Projected Statement of Cash Flow | | |
|---|-------------------|-----------------------|
| (before financing activities) | | |
| Net cash income from farming | \$100.10 | \$169,269.42 |
| plus: non-farm income | \$5.62 | \$9,510.68 |
| less: family living | \$46.09 | \$77,942.05 |
| income and ss tax | \$28.87 | \$48,827.23 |
| capital purchases | \$55.50 | \$93,856.34 |
| principal payments | \$24.09 | \$40,733.51 |
| Net change in cash | -\$48.83 | -\$82,579.02 |
| Projected Capital Repayment Capacity | | |
| Farm operation income | \$242.07 | \$409,344.52 |
| plus: net non-farm income | \$5.62 | \$9,510.68 |
| plus: depreciation | \$61.44 | \$103,895.14 |
| less: income and ss tax | \$28.87 | \$48,827.23 |
| less: family living | \$46.09 | \$77,942.05 |
| Capital replacement and term debt repayment capacity | \$234.17 | \$395,981.06 |
| less: principal payments | \$24.09 | \$40,733.51 |
| Capital replacement and term debt repayment margin | \$210.08 | \$355,247.56 |
| Projected Balance Sheet Summary | | |
| | Per Acre | Total |
| Bank Balance (Inc. Savings & CD's) | \$0.00 | \$0.00 |
| Crops & Feed | \$426.66 | \$721,477.79 |
| Total Current Assets | \$629.59 | \$1,064,628.29 |
| Machinery & Equipment | \$571.23 | \$965,945.12 |
| Total Intermediate Assets | \$782.45 | \$1,323,118.33 |
| Farm Real Estate-Bare Land | \$1,499.86 | \$2,536,267.86 |
| Buildings & Improvements | \$41.61 | \$70,360.60 |
| Total Fixed Assets | \$1,984.08 | \$3,355,079.67 |
| Total Assets | \$3,396.11 | \$5,742,826.29 |
| Operating / Short Term Notes | \$215.87 | \$365,038.05 |
| Estimated Accrued Tax Liability (Inc & RE) | \$44.33 | \$74,968.14 |
| Total Current Liabilities | \$315.41 | \$533,363.41 |
| Total Intermediate Liabilities | \$59.47 | \$100,569.03 |
| Total Long Term Liabilities | \$158.52 | \$268,056.10 |
| Total Liabilities | \$533.41 | \$901,988.54 |
| Net Worth | \$2,862.71 | \$4,840,837.75 |
| Total Liab & Net Worth | \$3,396.11 | \$5,742,826.29 |
| Change in Net Worth | -\$30.68 | -\$51,884.32 |

The information for the projected budgets comes from several different places. Acres comes from the adjustment on the “%Changes” page. The yields are the farm yields, not the county yields from NASS. The futures price is the projected futures price for the next five years, depending on the selection on the “Farm Bill Options” page. All direct expenses, power expenses, and overhead expenses start with the averages from 2013 FBFM data, and then are adjusted by the “%Changes” page. Land costs

(property taxes and cash rent) come from FBFM averages for the specific region. The share lease rent is dependent on the expenses and revenues for the specific year. The share lease agreement is adjusted on the "Lease Info" page, which can be found on the "%Changes" page. These three are then multiplied by the percent of acres that are under each type of tenure, then added together to form a total tenure cost.

Most of the projected statement of cash flow comes from the previous year's statement multiplied by the percent change on the "%Changes" page. Family living and income and social security tax come from the base year FBFM data multiplied by the percent change. For the net cash from farming, the total net revenue from the current year's budget is used, and then depreciation is subtracted from it. Capital purchases for the future years, are taken from a base split between machinery and equipment purchases and building and improvement purchases. A ratio is found using the total assets of machinery and equipment compared to buildings and improvement. Throughout the predicted years, that ratio is used to determine what percent of the capital purchases needs to be added to machinery and equipment and what needs to be added to buildings and improvements. Principal payments remain constant throughout the 5 year period. The principal payment is determined on the "%Changes" page. The payment is found by taking the total liabilities owed (each individual first: intermediate and long term), and dividing them by the amount of years on the loan.

The projected capital repayment capacity all comes from the current year budget or cash flow statement. Farm operation income is from the current year's budget. Net non-farm income, depreciation, income and social security tax, and family living all come from the cash flow statement. Net non-farm income and depreciation are added to the farm operation income, while income and social security tax and family living are subtracted to make the capital replacement and term debt repayment capacity. The principal payments are then subtracted, and that makes the capital replacement and term debt repayment margin.

The projected balance sheet summary mostly comes straight from the base year balance sheet. The bank balance is one that is yearly dependent. If there is a positive income in the current year, and there is enough cash to cover the interest on the liabilities, then the leftover is added to the current year bank balance. On the other hand, if there is not enough income to cover the interest, the amount needed is added to the current liabilities. Crops and feed, along with the rest of the current assets, remain the same from the base year. Machinery and equipment is taken from the previous year, then depreciation from the budget is subtracted and the capital purchases from the ratio described earlier is added. The rest of the intermediate assets remain the same. Farm real estate stays consistent, but buildings and improvements is found in the same manner that machinery and equipment is found: subtract depreciation and add capital purchases. The rest of the fixed assets stay the same. The total current assets, total intermediate assets, and total fixed assets are added together to get the total assets for the year. The liabilities all remain the same except for operating/short term notes. This is where interest expense is added if there is not enough cash to cover the interest. Otherwise if there is enough cash, the short term notes decreases by how much it can pay off. The total current, intermediate, and long term liabilities are added together to make the total liabilities for the current year. Net worth is total assets minus liabilities, and the change in net worth is the current year's net worth minus the past years net worth. Can be either positive or negative.

These reports are produced for the projected five years, and then are summarized on the "Projected Financial Statements" page.

2.10 FINANCIAL REPORTS

The "Projected Financial Statements" sheet combines summaries of the five projected yearly budgets. This can be displayed in "Whole Farm" or "Per Acre" values, which is adjusted in the top left corner of the page. The main goal of this model is to see how these financial statements are affected due to the different 2014 Farm Bill options, and this page you can specifically see the after effects.

Figures 2.13 and 2.14 show the Projected Financial Statements. If there are questions on how these figures are found other than what is found here, refer to section 2.9 Budgets.

Figure 2.13: Projected Financial Statements – Part 1

| Projected Financial Statements | | | | | | |
|---|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,238,944.39 | \$1,247,739.67 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$601,904.45 | \$629,957.65 | \$614,002.73 | \$642,619.80 | \$626,344.18 |
| Other costs | | \$63,890.58 | \$64,835.52 | \$65,174.78 | \$66,138.71 | \$66,484.79 |
| Tenure (% of Acres) | | | | | | |
| Owned (Prc 12% | | \$75,029.44 | \$75,426.11 | \$76,135.56 | \$76,942.18 | \$77,665.88 |
| Cash Rent 46% | | \$420,335.64 | \$420,335.64 | \$420,335.64 | \$420,335.64 | \$420,335.64 |
| Share Lease 42% | | \$369,573.56 | \$363,932.40 | \$345,051.30 | \$351,253.32 | \$370,060.83 |
| Total Tenure Cost | | \$356,752.14 | \$354,420.87 | \$346,542.58 | \$349,257.39 | \$357,279.66 |
| Total Operating Costs | | \$1,022,547.17 | \$1,049,214.04 | \$1,025,720.09 | \$1,058,015.90 | \$1,050,108.64 |
| Income before interest expense | | \$216,397.22 | \$198,525.63 | \$178,684.05 | \$185,475.80 | \$214,652.02 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$38,732.61 | \$43,009.88 | \$47,268.03 |
| Income before depreciation | | \$175,267.25 | \$158,818.79 | \$139,951.44 | \$142,465.92 | \$167,383.99 |
| Depreciation | | \$102,058.48 | \$103,895.14 | \$104,109.86 | \$105,983.44 | \$106,202.46 |
| Net Farm Income | | \$73,208.77 | \$54,923.65 | \$35,841.58 | \$36,482.48 | \$61,181.53 |
| Projected Statement of Cash Flow | | | | | | |
| (before financing activities) | | | | | | |
| Net cash income from farming | | \$179,637.74 | \$169,269.42 | \$139,951.44 | \$142,465.92 | \$167,383.99 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$70,120.46 | -\$82,579.02 | -\$114,008.16 | -\$113,625.94 | -\$90,861.45 |

Figure 2.14: Projected Financial Statements – Part 2

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Projected Capital Repayment Capacity | | | | | |
| Farm operation income | \$429,960.90 | \$409,344.52 | \$382,384.16 | \$385,739.87 | \$418,461.19 |
| plus: net non-farm income | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | \$102,058.48 | \$103,895.14 | \$104,109.86 | \$105,983.44 | \$106,202.46 |
| less: income and ss tax | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | \$415,921.76 | \$395,981.06 | \$368,062.83 | \$372,107.80 | \$403,852.00 |
| less: principal payments | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | \$375,188.25 | \$355,247.56 | \$327,329.32 | \$331,374.30 | \$363,118.49 |
| Projected Balance Sheet Summary | | | | | |
| Bank Balance (Inc. Savings & CD's) | \$73,600.54 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | \$1,138,228.83 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | \$968,792.40 | \$965,945.12 | \$963,790.57 | \$960,886.05 | \$958,688.19 |
| Total Intermediate Assets | \$1,325,965.62 | \$1,323,118.33 | \$1,320,963.78 | \$1,318,059.26 | \$1,315,861.41 |
| Farm Real Estate-Bare Land | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | \$77,552.12 | \$70,360.60 | \$63,200.20 | \$55,864.13 | \$48,559.80 |
| Total Fixed Assets | \$3,362,271.19 | \$3,355,079.67 | \$3,347,919.27 | \$3,340,583.20 | \$3,333,278.88 |
| Total Assets | \$5,826,465.63 | \$5,742,826.29 | \$5,733,511.33 | \$5,723,270.75 | \$5,713,768.57 |
| Operating / Short Term Notes | \$356,059.57 | \$365,038.05 | \$479,046.21 | \$592,672.15 | \$683,533.60 |
| Estimated Accrued Tax Liability (Inc & RE) | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | \$524,384.93 | \$533,363.41 | \$647,371.57 | \$760,997.51 | \$851,858.96 |
| Total Intermediate Liabilities | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | \$933,743.57 | \$901,988.54 | \$975,263.19 | \$1,048,155.63 | \$1,098,283.57 |
| Net Worth | \$4,892,722.07 | \$4,840,837.75 | \$4,758,248.14 | \$4,675,115.12 | \$4,615,484.99 |
| Total Liab & Net Worth | \$5,826,465.63 | \$5,742,826.29 | \$5,733,511.33 | \$5,723,270.75 | \$5,713,768.57 |
| Change in Net Worth | -\$38,518.36 | -\$51,884.32 | -\$82,589.61 | -\$83,133.02 | -\$59,630.13 |
| Summary | | | | | |
| <i>Income from Commodity Govt Program</i> | <i>\$71,373.27</i> | <i>\$59,220.24</i> | <i>\$0.00</i> | <i>\$0.00</i> | <i>\$0.00</i> |
| <i>Net farm income</i> | <i>\$73,208.77</i> | <i>\$54,923.65</i> | <i>\$35,841.58</i> | <i>\$36,482.48</i> | <i>\$61,181.53</i> |
| <i>Net change in cash</i> | <i>-\$70,120.46</i> | <i>-\$82,579.02</i> | <i>-\$114,008.16</i> | <i>-\$113,625.94</i> | <i>-\$90,861.45</i> |
| <i>End of Year Cash</i> | <i>\$73,600.54</i> | <i>\$0.00</i> | <i>\$0.00</i> | <i>\$0.00</i> | <i>\$0.00</i> |
| <i>Capital replacement and term debt repayment margin</i> | <i>\$375,188.25</i> | <i>\$355,247.56</i> | <i>\$327,329.32</i> | <i>\$331,374.30</i> | <i>\$363,118.49</i> |
| <i>Change in Net Worth</i> | <i>-\$38,518.36</i> | <i>-\$51,884.32</i> | <i>-\$82,589.61</i> | <i>-\$83,133.02</i> | <i>-\$59,630.13</i> |
| <i>Debt to Asset Ratio</i> | <i>0.16</i> | <i>0.16</i> | <i>0.17</i> | <i>0.18</i> | <i>0.19</i> |

The projected net farm income statement is a summarized version of the yearly budgets. Total revenue is composed of crop revenue, crop government payments, and crop insurance proceeds, which come straight from the yearly budgets. Variable costs are equal to total direct expenses plus total power expenses minus machine depreciation. Other costs are equal to total overhead costs minus building depreciation and interest. Tenure costs come straight from the yearly budgets. Variable costs, other costs, and tenure costs are added together to equal the total operating costs. Income before interest

expense is equal to total revenue minus total operating costs. The interest cost from the current year is then subtracted to get income before depreciation. Then depreciation is subtracted from that to find the net farm income for the year.

The projected statement of cash flow, projected capital repayment capacity, and the projected balance sheet summary all come straight from the yearly budgets. For information on how those financial statements are put together, refer to section 2.9 Budgets.

The summary table at the bottom of the “Projected Financial Statements” page includes: income from commodity government program, net farm income, net change in cash, end of year cash, capital replacement and term debt repayment margin, change in net worth, and the debt to asset ratio. These are the key financial measures that will be used to compare the different options in the 2014 Farm Bill and the different future scenarios.

2.11 SUMMARY

These statements described in this documentation are all available in the 2014 Farm Income Projection Model excel document, and will be in a printable format. For more detailed descriptions on calculations, refer to the appendixes. Appendix A will describe how to update the case farm data from year to year, Appendix B will demonstrate how to calculate crop insurance and government program payments, and Appendix C will be the specific calculations of budgets from year to year. In the next chapter, Chapter 3: Case Studies, other types of case farms will be chosen, and different scenarios will be run on these case farms including: policy scenarios, price scenarios, and cost structure scenarios.

CHAPTER 3

CASE STUDIES

3.1 INTRODUCTION

This paper will describe several different scenarios that were ran in the Illinois Farm Projection Model. These scenarios include changes in cost structure, predicted prices, policies, and farm locations. One of the goals of these scenarios is to analyze how they will affect the case farm's financial statistics, and in particular the new commodity program payments that were changed in the Agricultural Act of 2014. There have been several previous studies using simulation models, and their effectiveness, some of which will be described in section 3.2 Review of Research. A methodology section will follow that, along with a short description of the model and the base case farm selection. The scenarios will be shown and described in depth in the results section of this chapter, followed by a brief discussion and summary.

3.2 REVIEW OF RESEARCH

There are several previous studies on farm projection models. Many deal with farmer decision-making techniques, and others depicting financial statements in future years. In this section relevant studies will be described and summarized.

The Illinois Farm Income Projection Model was modeled after "The Farm Financial Simulation Model: Documentation and User Guidelines" by Schnitkey, Barry, and Ellinger. The Farm Financial Simulation Model (FFSM) simulates the financial structure over a four-year period (Schnitkey, Barry, & Ellinger, 1986). The purpose of the FFSM is to be used as a research tool that analyzes changes in the asset and liability structure of farm businesses (Schnitkey, Barry, & Ellinger, 1986).

The Illinois Farm income Projection Model uses a similar calculation as the FFSM to determine where the spare cash is allocated or deducted from. In the FFSM model, the calculations are done on a quarterly basis (Schnitkey, Barry, & Ellinger, 1986). Available cash is found by adding the beginning

balances of cash and marketable securities to all cash inflows, and then subtracting overhead expenses, down payments, principal payments, tax payments, beginning accounts payable, the previous quarter's loan, and interest payments (Schnitkey, Barry, & Ellinger, 1986). If production expenses are greater than available cash, the amount needed to cover expenses is added to current loans to cover the costs (Schnitkey, Barry, & Ellinger, 1986). If after taking out production costs the available cash is still positive, some of the cash is taken out to cover the current loans (Schnitkey, Barry, & Ellinger, 1986).

The model for Annual Crop Management uses studies on winter wheat in France to demonstrate their decision making processes. For their different cases, they use six descriptive variables and five types of decision-making rules (Aubry, Papy, & Capillon, 1997). Their variables include: three that describe the timing of the operations, one shows the potential modes of operation, and one puts the fields of wheat into sets where different management modes can be used (Aubry, Papy, & Capillon, 1997). Three years of wheat crops are used which compare the different practices, and especially different weather patterns during the study (Aubry, Papy, & Capillon, 1997). The main goal of this journal article is to create a model of the decision-making process of farmers with respect to the technical management of an annual crop (Aubry, Papy, & Capillon, 1997).

The article also addresses whether extension services are beneficial to farmers and producers. Often times it had been questioned whether it was due to the farmers not wanting to expand in the technological area of the information that was being provided (Aubry, Papy, & Capillon, 1997). Recently, it was found that the relationship of extension to farmers was not due to this, but rather the information being provided did not follow the farmers' production practices (Aubry, Papy, & Capillon, 1997). This study takes surveys and uses specific on-farm information to understand why farmers do what they do and to be able to make advances on their programs (Aubry, Papy, & Capillon, 1997).

The journal article called "Interactive Simulation Modeling in Farm Decision-Making", takes a similar approach as the earlier French study. This article makes an attempt to expand interactivity of

farmers and technology by using simulation tools (Attonaty, Chatelin, & Garcia, 1999). It goes through some history of farm simulation tools from before the computer and after. A similar result was found to the other French article:

“Substantial rationality and the possibility of using computers to resolve farm management problems by providing the decision-maker with an optimal solution have been replaced by a more modest concept based on the idea of learning and the formulation of models representing the concerned actors.” (Attonaty, Chatelin, & Garcia, 1999). They make it clear though, that this does not rule out using computers to find ‘optimal solutions’ (Attonaty, Chatelin, & Garcia, 1999).

Another basic decision-making tool was the FARMSCAPE model. Using a Participatory Action Research approach the FARMSCAPE team explored whether farmers would benefit from a decision support tool that simulated alternatives in the management of their farming operations (Carberry, et al., 2002). This research approach was done over a 10 year period. The FARMSCAPE team also wanted to determine if the decision support tool could be delivered economically (Carberry, et al., 2002). The simulation tools used soil characterization, soil sampling, and climate forecasts to assist in the model simulation (Carberry, et al., 2002). The main goal was to improve farm management practices for grain and cotton farmers in the northeast Australia region (Carberry, et al., 2002). The FARMSCAPE team concluded that there were major benefits to the model simulation program, and it became economical for the farmers to use from year to year (Carberry, et al., 2002).

An article related to a large decision section in the Farm Income Projection Model is one published by Woodard, Sherrick, and Schnitkey, titled “Revenue Risk-Reduction Impacts of Crop Insurance in a Multicrop Framework.” This model takes case farms using Farm Business Farm Management and NASS data to average county statistics that assist in projecting the effects of risk management tools, particularly Multi-Peril Crop Insurance (MPCI) (Woodard, Sherrick, & Schnitkey, 2010). The federal government oversees MPCI, which is seen in the forms of individual or group

protection guaranteeing revenue or yields (Woodard, Sherrick, & Schnitkey, 2010). This in turn reduces the risk taken on by the farmers for a premium each year. This article specifically analyzes farms in a multi-crop scenario, because incomes and decisions can be very different from a single-crop perspective (Woodard, Sherrick, & Schnitkey, 2010). The main goal and focus of the study is to have the case farms represent average farms within the specific counties, which generally includes multiple crops being grown (Woodard, Sherrick, & Schnitkey, 2010). Similar to a comparison of the new Farm Bill alternatives, the main goal of crop insurance decisions is to pick the options that reduces the risk the greatest.

A more in depth but similar model to the Illinois Farm Income Projection Model is the FLIPSIM model produced by Texas A&M. This model was released in 1981 by a team from the Policy Center at A&M (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.). It was first used to analyze the impacts of farm policy on grain and cotton farms in Texas (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.). It was later made to represent livestock and dairy farms; and simulate other farm programs, risk management strategies, technologies and income tax provisions (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.). This model was then used after the passing of the 1985 farm bill to analyze the farm program implementations of conservation compliance, flex, and marketing loans (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.). "FLIPSIM is a Fortran simulation model that uses accounting equations, identities, and probability distributions to simulate the annual economic activities of a representative or actual farm over a multiple year planning horizon" (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.). The FLIPSIM model has been used more recently during the 1995/96 farm bill debate and the 2002 farm bill debate to analyze several different policy alternatives (Description of FLIPSIM: The Farm Level Income and Policy Simulation Model, n.d.).

3.3 METHODOLOGY

There are several different approaches that supported the creation of the 2014 Farm Income Projection Model. Initially and most importantly, the goal for this tool was to predict what farm incomes would look like over the next five years, depending on the specific farmer's selections within the new provisions of the Agricultural Act of 2014. This is then needed to be specifically relatable to most farms in the state of Illinois; so average financial statements were made depending on region, farm size, and the soil productivity rating. Throughout the creation and building process of the model, several adjustable factors and variables were added to make it more accurate and representable of a modern-day grain farm located in Illinois. Farm Business Farm Management data was the key contributor to this model, in depicting average farms across the state of Illinois. The financial statements were intentionally designed similar to the FBFM statements, so an easy comparison could be made. Crop insurance options were included in the model, as crop insurance is becoming a very important asset in today's farming scene. Not only that, but the new programs are resembling crop insurance, in way that they are county and farm specific, and can project revenues, prices, or yields.

A common question asked by farmers when making a change in their program is, "how much money is this going to make?" This is a driving force for the University of Illinois Farmdoc team: to create a program that allows farmers to compare the results of the different commodity program options and simulate financial performance over time. There are several models aimed to help make the decision on the new programs designed by universities and other industry experts across the county. The goal of this model is not only to help with that decision making, but also show predicted incomes for the next five years with forecasted prices and predicted yields. The next question that would get asked is, "will the county averages portray my farm?" For the reason that every farm is different, there are several adjustments that can be made within the model to make it very farm specific. These adjustments include but are not limited to crop rotations, expense changes, customizable rents, and even adjustable

yield and price predictions. The goal is to predict the most accurate financial statements; including specific incomes from crop insurance and the new farm programs.

It can be assumed that these programs are going to increase revenue, since that is what they are for. Will it be enough? As this model will show, with county average yields and predicted prices over the next five years there will be a loss in income. Is this realistic? Maybe not. In 2013 and currently 2014 record yields have been recorded, even without optimal weather conditions throughout the year. This is a very recent trend, and seeing yields for many farmers in the mid to high 200 bushel range will boost revenues even with a low price scenario. To make the model more realistic for a farmers particular yields, adjustments may need to be made for yield considerations. This model has no impacts from weather, which is the biggest price and yield changer. Predicted yields and prices are consistent with the current trends. The yield trend is from 1975 to 2013, and the prices are determined by FAPRI, USDA, and CBO.

Farmers are now leaning on crop insurance more than ever, it could be said that “Crop insurance has become the foundation of farm risk management” (Davis, Anderson, & Young, 2013). In the past year there have not only been changes with the new Farm Bill, but also with the programs offered by crop insurance agencies. What was once the Group Risk Income Protection (GRIP) and Group Risk Plan (GRP), has now been replaced by the Area Risk Protection Insurance (ARPI) Policies. These county insurance plan choices include Area Revenue Protection (ARP), Area Yield Protection (AYP), and Area Revenue Protection with Harvest Price Exclusion (ARP-HPE). The similar individual insurance plans include Revenue Protection (RP), Yield Protection (YP), and Revenue Protection with Harvest Price Exclusion (RP-HPE). Descriptions of all of these choices are available within the documentation section. The new Farm Programs are made to be relatable, and somewhat tied in with crop insurance. An option in the new Farm Bill is the Supplemental Coverage Option (SCO). SCO is basically an insurance program that adds on to the farmer’s current insurance product. It will not be available until 2015, and is only

available in certain counties and on certain crops. It can only be used if the PLC program is selected; it cannot be used with ARC County or ARC Individual. It is offered a consistent rate of 86% coverage, and has a flat subsidy rate of 65% (Paulson, Schnitkey, & Kelly, 2014). Is there an advantage with the SCO option? This is a question Nicholas Paulson and Gary Schnitkey have answered in several articles on Farmdoc. In Illinois, most of the advantage will be on wheat. In most counties in Illinois crop insurance coverage is limited to 75% on wheat. Therefore the extra 11% would provide the farmer risk management benefits worth the extra cost associated with the SCO option (Schnitkey & Paulson, Supplemental Coverage Option (SCO) in Wheat, 2014). For corn and soybeans in Illinois, maximum insurance coverage is generally 85%, so the marginal benefits would be much less. As farmers are depending more on insurance, the SCO option could be a key player in the near future, particularly for farmers producing wheat.

The cost structure is a scenario that needs to be addressed. In the last several years, there has been a major jump in farm incomes, and therefore costs have followed the increasing trend. Land rents are at record prices, and non-land costs are much higher than they have been in the past, too. If prices were to remain lower over the next five years, similar to what is being predicted by USDA, FAPRI, and CBO alike, it would be expected that incomes would drop and therefore expenses would also see a decrease. For this reason, two other scenarios will be tested from the base case farm dealing with cost structure. In the first scenario, land costs will decrease \$100 per acre. For the second scenario, land costs will remain the same, but non-land costs will be decreased \$100 per acre.

The second type of scenario that will be run are price scenarios. Programed into the model are CBO, FAPRI, and USDA predicted prices, as shown in Table 3.2, 3.3, and 3.4. When comparing the predictions, it can be seen that there are three different scenarios represented amongst them; a high, medium, and low price scenario. Although none of them are extremes. CBO represents the high price

scenario, USDA the low price scenario, and FAPRI the middle price scenario. In this paper, comparisons of the changes in the financial structure due to these price differences will be discussed.

The main goal of the Illinois Farm Income Projection Model is to compare incomes due to changes in policy. The policy changes that will be looked at are three options: a farm with ARC County, a farm with PLC, and a farm with neither. ARC County and PLC are the two major players in the new policy changes, so in that case they will be the two compared against each other. Then from there the no choice scenario is to answer the question asked earlier, “how much money is this going to make?”

The last two scenarios are location scenarios. A case farm will be chosen in the Northern region and the Southern Region. This will change several of the inputs including: farm size, planted acres, base acres, yields, expenses, and incomes.

3.4 DESCRIPTION OF THE MODEL

The entire description of the Illinois Farm Income Projection Model is included in Chapter 2: Documentation. This model takes inputs related to farm demographics, production practices, predicted prices, and predicted yields, and uses them to produce simulated financial statements for the next five years.

Section 2.4 describes how to select a case farm. This is where the county, size, crops planted, and base acres are selected. Shown on this page are also the base year’s balance sheet and income statement. These can be seen in the Documentation section in Figures 2.1, 2.2, 2.3, and 2.4. Section 2.5 is another main input section, where cost adjustments can be made. Figure 2.5 is a screenshot of the “% Change Main Page”. All averages are from regional FBFM data, so this page allows more customization of the case farm. Planted acres, cash rents, non-land expenses, and interest rates can all be adjusted on this page for the predicted five years.

The crop insurance and Farm Bill program pages are detailed projections depending on selections on each of the pages. Figure 2.7 in the documentation shows an example of the first two

years on the crop insurance page. Specific products and coverages are selected here, and can also be compared. Figures 2.8 and 2.9 show the “Farm Bill Options” page. This is the page where the new Farm Bill programs are chosen and compared amongst each other. This is also where the price set can be chosen between CBO, USDA, FAPRI, and custom predictions.

Other adjustable inputs within the model are the price and yield predictions. The default county yields are average predicted yields for the specific county from NASS data. The default farm yields are predicted the same way, but using FBFM data instead. For the example shown in Figure 2.10, default county yields are used, but farm yields are manually adjusted.

The projected financial statements are the final results of the model. The projected budgets can be seen in Figures 2.11 and 2.12. The five year budgets include detailed revenues and expenses for each individual crop on the farm. These are all summarized on the “Projected Financial Statements” page; Figures 2.13 and 2.14. Also on this page are the projected cash flow statements, projected capital repayment capacity, the projected balance sheet, and a summary of the projected statistics to compare from year to year.

3.5 CASE FARMS

In order to demonstrate how different farms are affected by the Agriculture Act of 2014 in the Farm Income Projection Model, case farms were selected to represent regions and specific scenarios. They will be described in the Approach and Results sections of this paper. The base case farm will be located in Champaign County, Illinois. The majority of the scenarios will branch off of this base case farm. These scenarios will include changing costs, prices, and policies. Two additional scenarios will be compared that are located in DeKalb and Washington Counties.

The base case farm located in Champaign County will be in the size range of 1,501 to 2,000 acres. Farms in the Eastern region in that range average out at 1,691 planted acres, with 894 acres in corn and 797 acres in soybeans. Averages are also used for tenure statistics. For the Eastern region, it is

averaged that 12% of the planted acres are owned, 46% are cash rented, and 42% are share leased. This comes out to 207, 771, and 713 acres, respectively. Figure 3.1 shows the asset portion of the base year balance sheet and Figure 3.2 is the liabilities portion for the base case farm.

Figure 3.1: Base Case Farm Base Year Balance Sheet - Assets

| Balance Sheet | | |
|-------------------------------------|-----------------------|-----------------------|
| | Fair Market Value | |
| | Beg of Year | End of Year |
| Current Assets | | |
| Bank Balance | \$57,000.00 | \$88,664.64 |
| Savings & CD's | \$43,642.79 | \$55,056.36 |
| Hedging Account Balance | \$10,782.57 | \$10,021.86 |
| Marketable Stocks & Bonds | \$82,559.50 | \$96,529.86 |
| Accounts Recievable/FSA LDP & CCP's | \$113,576.43 | \$21,249.21 |
| Crops & Feed | \$642,621.57 | \$721,477.79 |
| Market Livestock | \$0.00 | \$0.00 |
| Prepaid Expenses | \$193,804.64 | \$159,242.64 |
| Non-Farm Business/Other* | \$32,955.29 | \$56,106.93 |
| Total Current Assets | \$1,176,942.79 | \$1,208,349.29 |
| Intermediate Assets | | |
| Assets Under Capital Lease | \$0.00 | \$0.00 |
| Machinery & Equipment | \$807,905.79 | \$970,904.50 |
| Breeding Livestock | \$0.00 | \$0.00 |
| Non-Farm Business/Other | \$7,928.57 | \$8,842.86 |
| Notes Recievable | \$0.00 | \$0.00 |
| Retirement Accounts* | \$170,784.79 | \$214,775.57 |
| Securities Not Readily Marketable | \$21,640.79 | \$23,774.07 |
| Cash Value of Life Insurance* | \$49,238.93 | \$55,273.57 |
| Home Furnishings & Personal Items* | \$49,150.00 | \$54,507.14 |
| Total Intermediate Assets | \$1,106,648.86 | \$1,328,077.71 |
| Fixed Assets | | |
| Farm Real Estate-Bare Land | \$2,382,785.71 | \$2,536,267.86 |
| Buildings & Improvements | \$68,071.43 | \$84,571.43 |
| Personal Residence | \$166,785.71 | \$257,857.14 |
| Other Non-Farm Real Estate | \$153,214.29 | \$153,214.29 |
| Contracts & Notes Receivable | \$0.00 | \$0.00 |
| Non-Farm Business/Other/Amort. | \$338,636.36 | \$337,379.79 |
| Total Fixed Assets | \$3,109,493.50 | \$3,369,290.50 |
| Total Assets | \$5,393,085.14 | \$5,905,717.50 |

Figure 3.2: Base Case Farm Base Year Balance Sheet - Liabilities

| | | |
|--|-----------------------|-----------------------|
| Current Liabilities | | |
| Accounts Payable with Merchants & Dealers | \$10,174.21 | \$12,441.64 |
| Lease Payment | \$0.00 | \$0.00 |
| Feed Accounts Payable/FSA | \$0.00 | \$0.00 |
| Commodity Credit Corp Loans* | \$0.00 | \$0.00 |
| Operating / Short Term Notes | \$272,254.00 | \$356,059.57 |
| Estimated Accrued Tax Liability (Inc & RE) | \$86,618.00 | \$74,968.14 |
| Accrued Interest | \$11,079.79 | \$14,568.07 |
| Principal Due Within Twelve Months: | | |
| Intermediate Term Notes | \$48,200.36 | \$47,351.71 |
| Long Term Notes | \$7,759.50 | \$10,745.00 |
| Current, IT & LT Other* | \$7,808.14 | \$8,250.79 |
| Total Current Liabilities | \$443,894.00 | \$524,384.93 |
| Intermediate Liabilities | | |
| Capital Lease/Deferred Portion | \$0.00 | \$0.00 |
| Intermediate Notes | \$155,617.07 | \$139,220.79 |
| Life Insurance Policy Loans* | \$0.00 | \$0.00 |
| Other* | \$2,284.29 | \$1,575.86 |
| Total Intermediate Liabilities | \$157,901.36 | \$140,796.64 |
| Long Term Liabilities | | |
| Real Estate Mortgages | \$201,918.00 | \$270,604.64 |
| Other | \$41,266.50 | \$38,690.86 |
| Total Long Term Liabilities | \$243,184.50 | \$309,295.50 |
| Contingent Tax Liability | \$0.00 | \$0.00 |
| Total Liabilities | \$844,979.86 | \$974,477.07 |
| Net Worth | \$4,548,105.29 | \$4,931,240.43 |
| Total Liab. & Net Worth | \$5,393,085.14 | \$5,905,717.50 |
| Change in Net Worth | | \$383,135.14 |
| Debt to Asset Ratio | 0.16 | 0.17 |

Three price scenarios are incorporated. For this study, the price scenarios used are the same as the ones used in the Web Tools produced by the University of Illinois and Texas A&M University: USDA, CBO, & FAPRI. The USDA prices are forecasted by the Economic Research Service (ERS) and are predicted to be lower than the CBO and FAPRI prices, so this will be used for a low price scenario (Agricultural Baseline Projections, 2014). CBO (Congressional Budget Office) prices are generally a higher prediction, therefore these would be used as a high price scenario (Congressional Budget Office, 2014). FAPRI (Food

and Agricultural Policy Research Institute), is made up of researchers from the University of Missouri (Integrated Policy Group, Division of Applied Social Sciences University of Missouri, 2014). In general, FAPRI prices tend to fall in between those of CBO and USDA. These prices were selected to represent recent price fluctuations, and can have effects on crop insurance and Farm Bill option triggers. The three different price sets for 2014 through 2018 are compared in the tables below. Table 3.1 are corn prices; Table 3.2 are soybean prices; and Table 3.3 are wheat prices.

Table 3.1: Corn Prices

| Corn | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|
| CBO (April) | \$3.50 | \$4.00 | \$4.19 | \$4.35 | \$4.45 |
| USDA (May) | \$3.50 | \$3.68 | \$3.38 | \$3.47 | \$3.53 |
| FAPRI (August) | \$3.89 | \$4.09 | \$4.09 | \$4.12 | \$4.21 |

Table 3.2: Soybean Prices

| Soybeans | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|
| CBO (April) | \$10.00 | \$10.02 | \$10.06 | \$10.87 | \$11.11 |
| USDA (May) | \$10.00 | \$8.66 | \$9.00 | \$8.97 | \$9.19 |
| FAPRI (August) | \$10.30 | \$9.64 | \$10.11 | \$10.29 | \$10.54 |

Table 3.3: Wheat Prices

| Wheat | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|
| CBO (April) | \$5.40 | \$5.60 | \$5.63 | \$5.65 | \$5.78 |
| USDA (May) | \$5.40 | \$5.10 | \$4.38 | \$4.33 | \$4.56 |
| FAPRI (August) | \$6.27 | \$5.73 | \$5.72 | \$5.79 | \$5.87 |

3.6 RESULTS

3.6.1 Base Case Farm

The base case farm for this paper will be located in Champaign County, Illinois. The inputs will remain similar to the case farm used in the documentation, with some minor changes. Shown in Table 3.4 are the inputs for the base case farm in the model.

Table 3.4: Base Case Farm Inputs

| Base Case Farm - Inputs | | | | | |
|----------------------------|------------------------|------------------------------|-------------------|---|-------------------|
| County | <i>Champaign</i> | Family Living Adjustment | \$5 | Policy - Soybeans | <i>ARC County</i> |
| Region | <i>East Central</i> | Family Living Change | 1%/year | Price Set | <i>FAPRI</i> |
| County SPR | 92.3 | Inc & SS Tax Adjustment | -\$1 | Farm Yield Adj-Corn | +20bu |
| Farm Size | 1501-2000ac | Inc & SS Tax Change | 1%/year | Farm Yield Adj-Soybeans | +8bu |
| Farmed Acres | 1,691 | Capital Purchases Adjustment | -\$60 | County Yields - 2014 Corn (bu) ¹ | 172.24 |
| Corn Acres | 894 | Capital Purchases Change | 1%/year | 2015 Corn (bu) | 173.65 |
| Soybean Acres | 797 | Current Liab. Interest | 5% | 2016 Corn (bu) | 175.07 |
| Base Acres-Corn | 53% (894ac) | Intermediate Liab Int | 4% | 2017 Corn (bu) | 176.48 |
| Base Acres-Soybeans | 47% (797ac) | Intermediate Liab Years | 7 | 2018 Corn (bu) | 177.89 |
| Yearly Planted Acres | <i>Alternate 100ac</i> | Long Term Liab Int | 3% | 2014 Soybeans (bu) | 54.11 |
| Cash Rent Change | \$0 (0%) | Long Term Liab Years | 15 | 2015 Soybeans (bu) | 54.53 |
| Expenses Change | 0%/year | Crop Insurance | <i>Individual</i> | 2016 Soybeans (bu) | 54.96 |
| Non-Farm Income Adjustment | \$0 | | <i>RP - 85%</i> | 2017 Soybeans (bu) | 55.38 |
| Non-Farm Income Change | 1%/year | Policy - Corn | <i>ARC County</i> | 2018 Soybeans (bu) | 55.81 |

Table 3.5: Input Descriptions

| Input | Model Page | Description |
|--------------------------------|-----------------------|---|
| County | Farm Information | Case Farm location - yields are county specific |
| Region | Farm Information | County location - financial statistics are region specific |
| County SPR | Farm Information | Soil Productivity Rating - important for central regions (separates exp. for high and low prod. counties) |
| Farm Size | Farm Information | Regional Range - for financial statistics |
| Farmed Acres | Farm Information | Average within the <i>Farmed Acres</i> range for the region |
| Corn Acres | Farm Information | Average acres planted in corn for the region and farm size |
| Soybean Acres | Farm Information | Average acres planted in soybeans for the region and farm size |
| Base Acres-Corn | Farm Information | Used for new Farm Program comparisons |
| Base Acres-Soybeans | Farm Information | Used for new Farm Program comparisons |
| Yearly Planted Acres | %Changes | Can be due to changes in crop rotations |
| Cash Rent Change | %Changes | Changed by a dollar amount, shows the % change - can be adjusted yearly |
| Expenses Change | %Changes | Adjusts all expenses (except direct tenure) - changed by a percent - can be adjusted yearly |
| Non-Farm Income Adjustment | %Changes | Dollar adjustment from the base year finances |
| Non-Farm Income Change | %Changes | Yearly percent changes |
| Family Living Adjustment | %Changes | Dollar adjustment from the base year finances |
| Family Living Change | %Changes | Yearly percent changes |
| Inc & SS Tax Adjustment | %Changes | Dollar adjustment from the base year finances |
| Inc & SS Tax Change | %Changes | Yearly percent changes |
| Capital Purchases Adjustment | %Changes | Dollar adjustment from the base year finances |
| Capital Purchases Change | %Changes | Yearly percent changes |
| Current Liab. Interest | %Changes | Interest Rate for current liabilities - can be adjusted yearly |
| Intermediate Liab Int | %Changes | Interest Rate for intermediate liabilities - can be adjusted yearly |
| Intermediate Liab Years | %Changes | Number of years on the intermediate liabilities loans |
| Long Term Liab Int | %Changes | Interest Rate for long term liabilities - can be adjusted yearly |
| Long Term Liab Years | %Changes | Number of years on the long term liabilities loans |
| Crop Insurance | Crop Insurance | Products and coverage levels for insurance on each individual crop |
| Policy - Corn | Farm Bill Options | New Farm Bill Policy chosen for corn |
| Policy - Soybeans | Farm Bill Options | New Farm Bill Policy chosen for soybeans |
| Price Set | Farm Bill Options | Predicted price set used for the case farm |
| Farm Yield Adj-Corn | Price & Yield Changes | Manual farm yield adjustment made for corn |
| Farm Yield Adj-Soybeans | Price & Yield Changes | Manual farm yield adjustment made for soybeans |
| County Yields - 2014 Corn (bu) | Price & Yield Changes | Projected county yield - corn |
| 2015 Corn (bu) | Price & Yield Changes | Projected county yield - corn |
| 2016 Corn (bu) | Price & Yield Changes | Projected county yield - corn |
| 2017 Corn (bu) | Price & Yield Changes | Projected county yield - corn |
| 2018 Corn (bu) | Price & Yield Changes | Projected county yield - corn |
| 2014 Soybeans (bu) | Price & Yield Changes | Projected county yield - Soybeans |
| 2015 Soybeans (bu) | Price & Yield Changes | Projected county yield - Soybeans |
| 2016 Soybeans (bu) | Price & Yield Changes | Projected county yield - Soybeans |
| 2017 Soybeans (bu) | Price & Yield Changes | Projected county yield - Soybeans |
| 2018 Soybeans (bu) | Price & Yield Changes | Projected county yield - Soybeans |

In Table 3.5 are brief descriptions of each of the inputs, and what they effect. In the first column of Table 3.4, from *County* to *Base Acres-Soybeans*, are inputs found on the “Farm Information” Page. *County* is the county the case farm is located in, and the yields are decided from this. *Region* is the location of the county, which will be one of the four regions that the state is split into: Northern, Southern, West Central, or East Central. This is how all of the financial data is projected. The *County SPR* is the soil productivity rating for the county. This is important in the two central regions, because it determines the expenses by whether they are a high productivity farm (>85), or a low productivity farm

(<85). For simplicity sake, the base acres are equal to the base year planted acres, and it is assumed that these are the reallocated base acres. The inputs in the figure from *Yearly Planted Acres* to *Long Term Liab Years*, are all changed on the “%Changes” page. To mock a pure corn-soybean rotation, every year this farmer alternates from 100 planted acres more of corn, to 100 planted acres more of soybeans, and vice-versa. The percent increase per year on family living, income and social security tax, and capital purchases are set to 1% every year, due to these costs continuing to rise, despite what happens on the farm. The initial adjustments are for similar reasons, except the capital purchases adjustment. After averaging the FBFM data, the \$114.41 per acre capital purchases for the year was deemed unrealistic. Capital purchases should average from \$50 to \$60 per acre. A possible explanation for the dramatic increase in FBFM data would be that farm incomes were very high, and therefore the opportunity for capital purchases was also high. Now that a decrease in farm incomes is projected to take place, a decrease in spending on capital purchases should also be seen. There are two Crop Insurance inputs, found on the “Crop Insurance” page. The “Farm Bill Options” page inputs include corn and soybean policy choices, and the price set decision. Here ARC County is chosen for both corn and soybean, and the middle price set, FAPRI, is used. All of the remaining adjustments can be made on the “Price & Yield Changes” page. Listed there are the default county average yields, which are used in this scenario. In order to continue with an ongoing exponential increase in yields, a farm yield adjustment has been made on both corn and soybeans. It is an increase of 20 bushels per acre for corn and 8 bushels per acre for soybeans.

As mentioned before, the other scenarios that will be examined involve changes in cost structure (land costs and non-land costs), price predictions (FAPRI, USDA, and CBO), the new Farm Bill policy options (ARC County, PLC, and none), and other regional case farms. In this subsection, the financial statements from the base case farm will be discussed.

Table 3.4 shows some of the farm demographics, so now base year financial statements will be highlighted. On the base year balance sheet can be found several of the assets and liabilities for the 2013 fiscal year. The base year balance sheet is shown in Figures 3.1 and 3.2 on pages 42 and 43. At the end of the year, the average *Bank Balance* for 1,501 to 2,000 acre farms in Champaign County was \$88,664.64. After adding all of the current assets together, including *Savings, Stocks and Bonds, Crops and Feed on hand, Prepaid Expenses*, and more, the *Total Current Assets* comes out to \$1,208,349.29. Moving down to intermediate assets, of the \$1,328,077.71 total, \$970,904.50 is accredited to *Machinery and Equipment*. The big player in the fixed assets is the *Farm Real Estate-Bare Land*. The bare land value is \$2,536,267.86. For the 207 acres of owned land projected for this farm that puts the value at \$12,252.50 per acre. Other fixed assets include *Buildings and Improvements, Personal Residence, and Other Non-Farm Real Estate*. These all total up to \$3,369,290.50 for *Fixed Assets*, and *Total Assets* sums up to \$5,905,717.50. Next comes the liabilities section. *Total Current Liabilities* is equal to \$524,384.93. This includes all short term loans and accounts payable. *Intermediate Liabilities* totals up to \$140,796.64, and *Long Term Liabilities* is equal to \$309,295.50. *Real Estate Mortgages* would make up most of the *Long Term Liabilities*. *Total Liabilities* for this Champaign County case farm equals \$974,477.07 for the end of 2013. Subtracting that from the assets it is found that the *Net Worth* for 2013 is \$4,931,240.43 and the *Debt to Asset Ratio* is 0.17.

The *Income Statement* for the base year of 2013 is rather impressive for the average 1,501 to 2,000 acre grain farm in Champaign County. This is due to high prices along with higher than average yields. The *Gross Farm Returns* for 2013 equal \$977,667.00. After taking out expenses, adjustments, interest, and depreciation, the final *Net Farm Income* comes out to \$197,571.50.

As shown in Table 3.4, the number of years on the intermediate loans and long term loans is set to 7 and 15 years, respectively. With these choices, the principal payments come out to \$20,113.81 for

Intermediate Liabilities, and \$20,619.70 for *Long Term Liabilities*. These will remain constant over the five year period.

In this case farm, above average yields are used. Therefore, if prices do not dip to extreme lows, no crop insurance payments should be expected under the *Individual Revenue Protection* product. This case farm uses an 85% coverage level. The *Trigger Revenue* in 2014 for the 85% coverage level for corn and soybeans is \$676.38 and \$522.45, respectively. *The Projected Revenue* is quite a bit higher, at \$747.81 for corn and \$639.70 for soybeans in 2014. There are no payments projected in 2015, 2016, 2017, or 2018; this is even the case for county *Area Revenue Protection* coverage at 85% and a 1.20 protection factor.

The big key to be noted in the first two years incomes, 2014 and 2015, is that a majority is from the government payments. For this particular case farm, the only payments there would be to take advantage of would be the first two years under County Agricultural Risk Coverage. As long as prices stay above the reference price, a payment from the Price-Loss Coverage program should not be expected. There is also no payment predicted for Individual Agricultural Risk Coverage. Over the 5 year period, County ARC is predicted to pay out \$130,594 total.

Similar to the income statement, the base year balance sheet shows good figures due to high prices and higher than average yields. The prices used in the budget is not selling price, but 2013 MYA prices, so the budget will be different than the *Income Statement*, possibly substantially. This data is also regionally averaged from FBFM data; which is compiled annually by Dr. Gary Schnitkey (Schnitkey G. , *Crop Costs*, 2014). The average yield for Champaign County in 2013 was 182.21 bushels of corn per acre and 56.15 bushels of soybeans per acre. The MYA Prices were \$4.46 and \$13.00 per bushel, respectively. Crop Revenue comes out to \$812.66 for corn and \$729.97 for soybeans for the year. There was an average *ACRE Payment* of \$3.19 per acre for corn, and no payment for soybeans. Crop Insurance paid out significantly last year, for the places that experienced severe weather circumstances. Corn saw a

payment of \$295.00 and soybeans paid out \$26.00 per acre. These all sum together to get \$1,110.84 *Total Revenue* for corn and \$755.97 for soybeans. Listed next are all of the expenses for both crops: *Direct Expenses* – Corn = \$405.00, Soybeans = \$198.00; *Power Expenses* – Corn = \$117.00, Soybeans = \$101.00; *Overhead Expenses* – Corn = \$59.00, Soybeans = \$54.00; *Land Expenses* – Corn = \$272.16, Soybeans = \$240.97. After taking the *Total Revenue* minus all of these expenses, it comes out to \$257.68 per acre and \$230,369.32 total for corn and \$162.00 per acre and \$129,111.16 for soybeans. *Total Net Revenue* for the whole farm is equal to \$359,480.48.

Figure 3.3: Base Case Farm Summary Financial Statement – Per Acre

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|----------|----------|----------|----------|----------|
| Summary | | | | | |
| <i>Income from Commodity Govt Program</i> | \$42.21 | \$35.02 | \$0.00 | \$0.00 | \$0.00 |
| <i>Net farm income</i> | \$42.66 | \$36.01 | \$28.56 | \$33.70 | \$52.44 |
| <i>Net change in cash</i> | -\$42.70 | -\$46.52 | -\$61.87 | -\$57.51 | -\$40.52 |
| <i>End of Year Cash</i> | \$42.29 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| <i>Capital replacement and term debt repayment margin</i> | \$225.77 | \$218.18 | \$205.44 | \$212.65 | \$235.44 |
| <i>Change in Net Worth</i> | -\$23.41 | -\$27.16 | -\$41.48 | -\$37.03 | -\$19.01 |
| <i>Debt to Asset Ratio</i> | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |

Figure 3.4: Base Case Farm Summary Financial Statement – Whole Farm

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|--------------|--------------|---------------|--------------|--------------|
| Summary | | | | | |
| <i>Income from Commodity Govt Program</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| <i>Net farm income</i> | \$72,137.64 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| <i>Net change in cash</i> | -\$72,202.06 | -\$78,665.21 | -\$104,618.04 | -\$97,248.87 | -\$68,525.03 |
| <i>End of Year Cash</i> | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| <i>Capital replacement and term debt repayment margin</i> | \$381,780.28 | \$368,937.73 | \$347,395.44 | \$359,590.93 | \$398,124.44 |
| <i>Change in Net Worth</i> | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |
| <i>Debt to Asset Ratio</i> | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |

Figure 3.3 displays the summary of the projected financial statements for the years 2014 through 2018 on a per acre basis. Figure 3.4 shows it on a whole farm basis. The top line in each of the figures above shows how much income comes from the new government programs, in this case ARC County. For 2014 there would be an increase in income by \$42.21 per acre, totaling up to \$71,373.27 for a 1,691 acre farm. In 2015, the payment would be a little less, at \$35.02 per acre and \$59,220.24 for the entire farm. That being said, with net farm incomes for 2014 and 2015 at \$42.66 and \$36.01 per acre, respectively, over 97 percent of each those years' incomes comes from the government payments. From

2016 to 2018, incomes rise enough that there is not a government payment, and incomes recover to \$28.56, \$33.70, and \$52.44, respectively. These changes would most likely be due to price fluctuations. Net change in cash decreases every year over the five year period, because the income is not enough to cover the entirety of the interest payments. After 2015, cash runs out. At that point the extra interest that cannot be paid with cash or incomes gets added on to current liabilities. That would be why there is an increase seen in the *Debt to Asset Ratio*. The *Capital Replacement and Term Debt Repayment Margin* is how much debt the farmer would be able to cover at the current point in time, including non-farm incomes. It is at \$381,780.28 for 2014, decreases some in 2015 and 2016, and then starts climbing in 2017 to finish up at \$398,124.44 in 2018. This is a decent amount, although by 2018 the projected liabilities are at \$1,048,347.76. Over the five year period there is also a decrease seen in *Net Worth*. The change is consistently negative from year to year. At the end of the base year (2013) the *Net Worth* was \$4,931,240.43, and then at the end of 2018 it was down to \$4,680,830.19. As mentioned earlier, an increase is seen in the *Debt to Asset Ratio*, but not by much. In 2014 and 2015 it remains steady at 0.16. Each of the two years after, it bounces up 0.01, to 0.17 in 2016 and 0.18 in 2017, then remains at 0.18 for 2018.

3.6.2 Cost Structure Scenarios

Expenses for the future, similar to crop prices, are uncertain. There are a lot of variables that go into each individual expense. To evaluate variability, two different costs scenarios will be used. The first is using the base case farm in Champaign County, but decreasing the cash rent for the predicted five years by \$100. The second scenario also uses the base case farm in Champaign County, but instead of rents the non-land costs will be decreased by \$100. The inputs for the cost structure scenarios will be shown in Table 3.6.

Table 3.6: Cost Structure Scenarios - Input Changes

| Cost Scenario Input Changes | | | | | |
|-----------------------------|----------|------------------------------|---------------|------------------------------|-----------------|
| Base Case | | \$100 Reduction in Cash Rent | | \$100 Reduction in All Costs | |
| Cash Rent Change | \$0 (0%) | Cash Rent Change | -\$100 (-39%) | Cash Rent Change | \$0 (0%) |
| Expenses Change | \$0 (0%) | Expenses Change | \$0 (0%) | Expenses Change | -\$100 (-22.2%) |

In the 1,691 acre base case farm located in Champaign County, the original cash rent was \$258.57. With 46% of acres in cash rent, 12% owned, and 42% share leased, the average land cost was \$216.10 per acre for 2014. After the \$100 per acre decrease in cash rent, the new rent is at \$158.57 and the average land cost is down \$45.60 to \$170.50 per acre. That is a 21% decrease. This doubles the *Net Income* per acre, from \$42.66 to \$88.26. The whole farm value for *Net Income* in 2014 is \$149,252.38. Looking ahead to 2018, the whole farm value is \$176,483.44, which comes out to \$104.37 per acre; up from \$52.44 per acre. Shown in Table 3.7 are the financial summaries for both Cost Structure scenarios compared to the Base Case Farm.

Table 3.7: Cost Structure Scenarios - Financial Summaries

| Cost Structure Financial Summaries | | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|-------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Income from Commodity Govt. Program | | | | | | |
| | <i>Base Case</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| | <i>\$100 Reduction in Cash Rent</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| | <i>\$100 Reduction in All Costs</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| Net Farm Income | | | | | | |
| | <i>Base Case</i> | \$71,373.27 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| | <i>\$100 Reduction in Cash Rent</i> | \$149,252.38 | \$138,244.98 | \$126,011.24 | \$139,943.58 | \$176,483.44 |
| | <i>\$100 Reduction in All Costs</i> | \$219,553.44 | \$215,009.57 | \$201,348.19 | \$220,650.84 | \$255,310.42 |
| End of Year Cash | | | | | | |
| | <i>Base Case</i> | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | <i>\$100 Reduction in Cash Rent</i> | \$143,721.00 | \$142,416.16 | \$115,515.81 | \$101,215.53 | \$101,215.53 |
| | <i>\$100 Reduction in All Costs</i> | \$143,721.00 | \$143,721.00 | \$143,721.00 | \$143,721.00 | \$143,721.00 |
| Change in Net Worth | | | | | | |
| | <i>Base Case</i> | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |
| | <i>\$100 Reduction in Cash Rent</i> | \$37,525.26 | \$31,437.01 | \$7,580.06 | \$20,328.08 | \$55,671.79 |
| | <i>\$100 Reduction in All Costs</i> | \$107,826.31 | \$108,201.60 | \$82,917.00 | \$101,035.34 | \$134,498.77 |
| Debt to Asset Ratio | | | | | | |
| | <i>Base Case</i> | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |
| | <i>\$100 Reduction in Cash Rent</i> | 0.16 | 0.15 | 0.14 | 0.14 | 0.13 |
| | <i>\$100 Reduction in All Costs</i> | 0.15 | 0.13 | 0.12 | 0.11 | 0.09 |

The income from the government programs remains the same, since it is based off of county revenues, and not farm costs. From looking at the summary financial statements, it can be seen that a \$100 decrease in cash rent will keep the farm income positive for the next five years. The *End of Year Cash* for this scenario after the five year period is predicted to be \$101,215.53; comparing this to the base case farm *End of Year Cash* in 2018 at \$0 because the income is not enough to cover the interest, so the payments go into the current liabilities. *Net Worth* also increases every year, including the negative change in cash years. The last comparison for this scenario is the *Debt to Asset Ratio*. For this scenario, a 0.13 debt to asset ratio is predicted by 2018. This is compared to the 0.18 debt to asset ratio predicted by the base case farm.

As discussed earlier, the second scenario in the cost structure comparisons will have non-land costs decreased by \$100, or 22.2%.

This scenario decreased all expenses other than interest by 22.2%, which comes out to a \$99.81 decrease per acre. *Total Expenses* before land costs for the base case farm were \$431.91, and for this scenario they are down to \$374.10 per acre. One would assume that this will effect more of the farm; as a decrease in cash rent only applies to 46% of the farmed acres, and the decrease in expenses not only effects every acre, but also reflects in an increase in share lease rent owed on 42% of the farmed acres. *Share Lease Rent* increased \$32.77 per acre for the second scenario, which raised average land cost per acre to \$228.73, a 5.8% increase.

Similar to the previous scenario, there will be no change in the *Income from Commodity Govt. Programs*. The rest of the financial summary sees drastic changes, especially when compared to the base case farm. Compared to the first scenario, *Net Farm Income* increases in 2014 47.1% to \$129.84 per acre. From the base case farm, it comes out to a 204.4% increase; a difference of \$87.18 per acre. By 2018, this second scenario is projected to see a \$150.98 average *Net Farm Income* per acre. The *Net Change in Cash* throughout the five projected years remains positive; while being nearly \$50,000 higher

than the cash rent scenario, and over \$100,000 higher than the base case farm scenario. The *End of Year Cash* remains positive, at \$143,721.00. It does not decrease, because the additional income is being used to pay off current, intermediate, and long term liabilities. By 2018, the *Capital Replacement and Term Debt Repayment Margin* is more than the *Total Liabilities* (Liabilities = \$519,697.97, Capital Replacement = \$563,689.73). *Net Worth* also increases each year; over double the amount from the cash rent scenario. By 2018 the *Change in Net Worth* for the year is projected at \$134,498.77, \$55,671.79, and -\$22,808.88, for the non-land expense scenario, the cash rent scenario, and the base case farm scenario, respectively. There is a phenomenal and potentially unrealistic feat in lowering the *Debt to Asset Ratio* in this scenario. Compared to a projected 0.18 *Debt to Asset Ratio* in the base case farm, this scenario projects a 0.09 *Debt to Asset Ratio* by 2018.

3.6.3 Price Scenarios

There are three price predictions for the next five years that have been commonly used in research and tools pertaining to the new Farm Bill options. The three predicted price sets used are FAPRI, USDA, and CBO. The price set used for the base case farm was FAPRI. The FAPRI predictions are considered to be in between USDA and CBO; USDA being the lower predictions and CBO being the higher predictions. In this section two more scenarios will be compared to the base case farm, along with compared to each other. The only variable that will change between the three of them are the price sets. By changing the prices, it should be expected to see differing revenues, potential crop insurance payments, government payments, and therefore incomes and cash flows. Besides price, all of the same inputs will be used. The first price scenario will use CBO prices, and the second will use USDA prices.

Table 3.8: Price Scenarios - Input Changes

| Price Scenario Input Changes | | | | | |
|------------------------------|-------|-------------|-----|------------|------|
| Base Case | | High Prices | | Low Prices | |
| Price Set | FAPRI | Price Set | CBO | Price Set | USDA |

The Congressional Budget Office's predicted prices are the higher than the predicted prices from the USDA or FAPRI on average. For this reason it would be expected that incomes would be higher than the base case, and government and crop insurance payments would be less. By comparing the prices directly it can be seen the first couple years the CBO prices are projected lower, but in the long run average they will be higher. When comparing the 2014's revenues, a lower revenue is seen from the CBO price predictions. Looking ahead to 2015, the revenues begin to make a turn in the other direction. The FAPRI 2015 revenues are broken down as \$702.85 from *Crop Revenue*, and \$35.02 from County ARC government payments; totaling \$737.87 per acre. This is compared to the revenues of the CBO prices of \$704.84 for *Crop Revenue* and \$33.74 for government payments to sum up to \$738.58 per acre revenue. This is not much of a difference (\$0.71 per acre), but the gap only increases from there. By 2018, a difference of \$41.59 is seen. All of the costs remain the same, besides *Share Lease Rent*. This then changes the total tenure cost per acre. For 2015, it is predicted that *Share Lease Rents* will change to \$218.55, only raising the *Total Tenure Cost* \$0.11. The *Net Income* increase from the FAPRI price set for 2015 only amounts to \$0.60, but by 2018 it is predicted to be \$33.26. Shown in Table 3.9 are the financial statement summaries for the FAPRI, CBO, and USDA price scenarios.

Table 3.9: Price Scenarios - Financial Summaries

| Price Scenario Financial Summaries | | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|-------------------|--------------|--------------|---------------|---------------|---------------|
| Income from Commodity Govt. Program | | | | | | |
| | Base Case (FAPRI) | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| | High Prices (CBO) | \$82,369.62 | \$57,058.33 | \$0.00 | \$0.00 | \$0.00 |
| | Low Prices (USDA) | \$82,369.62 | \$111,053.14 | \$89,977.55 | \$0.00 | \$0.00 |
| Net Farm Income | | | | | | |
| | Base Case (FAPRI) | \$71,373.27 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| | High Prices (CBO) | \$22,124.18 | \$61,908.18 | \$55,996.48 | \$110,087.59 | \$144,920.99 |
| | Low Prices (USDA) | \$22,124.18 | \$5,306.31 | -\$24,134.27 | -\$93,374.26 | -\$71,786.88 |
| End of Year Cash | | | | | | |
| | Base Case (FAPRI) | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | High Prices (CBO) | \$25,069.20 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | Low Prices (USDA) | \$25,069.20 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Change in Net Worth | | | | | | |
| | Base Case (FAPRI) | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |
| | High Prices (CBO) | -\$86,039.22 | -\$45,281.31 | -\$62,434.70 | -\$9,527.91 | \$24,109.34 |
| | Low Prices (USDA) | -\$86,039.22 | -\$92,354.67 | -\$130,483.48 | -\$212,989.76 | -\$192,598.53 |
| Debt to Asset Ratio | | | | | | |
| | Base Case (FAPRI) | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |
| | High Prices (CBO) | 0.16 | 0.16 | 0.17 | 0.18 | 0.17 |
| | Low Prices (USDA) | 0.16 | 0.17 | 0.19 | 0.23 | 0.26 |

The *Commodity Government Program Payments* for the CBO price set are actually higher for the five years, then they would be under the FAPRI predictions. The total payments for CBO are predicted to be \$139,428; \$8,834 higher than the FAPRI scenario. *Net Change in Cash* remains negative over the five year period, and the cash balance hits \$0.00 in 2015. *Net Worth* also decreases every year, until 2018 where it increases by \$24,109.34. *Debt to Asset Ratio* bounces up and down, starting at 0.16 in 2014, then gets up to 0.18 in 2017, and finishes out in 2018 at 0.17.

Similar to the first price scenario, the only input that changes is price set; this scenario uses the USDA predicted prices. USDA's predicted set of prices averages out to be the least of the three sets. For this reason, it would be expected that incomes would be lower and government payments would be higher. The crop revenue for 2014 is much lower than for the FAPRI scenario. For this scenario, it is predicted to have a *Net Revenue from Crops* of \$645.38 per acre; \$45.08 lower than the FAPRI scenario. *Crop Government Payments* are up \$6.50 compared to the FAPRI scenario. This scenario also sees a *Crop Insurance Payment* of \$1.67 per acre.

After looking at the summary financial statements, it can be seen that there will be a government payment in three out of the five predicted years, totaling \$283,400 from ARC County. The *Net Farm Income* stays positive for the first two years, then dives into the negatives for the last three years in the model. The *Net Change in Cash* is negative every year, reaching -\$228,984.32 in 2018. After 2014, the *End of Year Cash* is also \$0.00, similar to the FAPRI scenario. The *Change in Net Worth* remains negative throughout the five year period. All of these indirectly compile together to make the *Debt to Asset Ratio* sky rocket. It starts at 0.16 in 2014, and by 2018 it is up to 0.26, the highest of the price scenarios.

3.6.4 Policy Scenarios

The base case farm in Champaign County uses the County Agricultural Risk Coverage government program to make up for some of the lost income due to low prices and yields. ARC County seems to be the common selection for the Central Illinois area in the early predictions of the best option. This section is going to compare the other main option available, Price-Loss Coverage, with the ARC County and if there were no government program. For this base case farm, with FAPRI prices, there is only one government payment that will actually pay over the next five years. That option is the ARC County. PLC, Individual ARC, and SCO do not pay over the next five years for a case farm in Champaign County with between 1,501 and 2,000 acres. Both inputs and financial statement summaries are shown in Tables 3.10 and 3.11.

Table 3.10: Policy Scenarios - Input Changes

| Policy Scenario Input Changes | | | | | |
|-------------------------------|------------|---------------------|-----|-------------------|------|
| Base Case | | Price Loss Coverage | | No Policy | |
| Policy - Corn | ARC County | Policy - Corn | PLC | Policy - Corn | None |
| Policy - Soybeans | ARC County | Policy - Soybeans | PLC | Policy - Soybeans | None |

Table 3.11: Policy Scenarios - Financial Summaries

| Policy Scenario Financial Summaries | | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|-------------------------------|--------------|---------------|--------------|--------------|--------------|
| Income from Commodity Govt. Program | | | | | | |
| | <i>Base Case (ARC County)</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| | <i>Price Loss Coverage</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | <i>No Policy</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Net Farm Income | | | | | | |
| | <i>Base Case (ARC County)</i> | \$71,373.27 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| | <i>Price Loss Coverage</i> | \$16,740.51 | \$16,359.59 | \$42,556.39 | \$50,970.96 | \$82,347.19 |
| | <i>No Policy</i> | \$16,740.51 | \$16,359.59 | \$42,556.39 | \$50,970.96 | \$82,347.19 |
| End of Year Cash | | | | | | |
| | <i>Base Case (ARC County)</i> | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | <i>Price Loss Coverage</i> | \$11,751.31 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | <i>No Policy</i> | \$11,751.31 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Change in Net Worth | | | | | | |
| | <i>Base Case (ARC County)</i> | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |
| | <i>Price Loss Coverage</i> | -\$99,357.11 | -\$100,899.01 | -\$75,874.80 | -\$68,644.54 | -\$38,464.47 |
| | <i>No Policy</i> | -\$99,357.11 | -\$100,899.01 | -\$75,874.80 | -\$68,644.54 | -\$38,464.47 |
| Debt to Asset Ratio | | | | | | |
| | <i>Base Case (ARC County)</i> | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |
| | <i>Price Loss Coverage</i> | 0.16 | 0.18 | 0.19 | 0.20 | 0.21 |
| | <i>No Policy</i> | 0.16 | 0.18 | 0.19 | 0.20 | 0.21 |

From these policy scenarios, it can be seen the advantages of ARC County. The total payments for ARC County over the five year period total \$130,594. If prices were adjusted, more payments would be seen from ARC County and PLC. This extra revenue from ARC County adds \$71,373.27 for 2014 and \$59,220.24 for 2015. This keeps the *Net Farm Income* at a fairly consistent level for all five years in the ARC County scenario. In the PLC and no program scenarios, a major decline in incomes for the first two years of the model can be seen. A large difference in the financial figures that comes out of this comparison is the *Debt to Asset Ratio*. For the ARC County scenario, the *Debt to Asset Ratio* is at 0.18 by 2018. In the PLC and no program scenarios, the *Debt to Asset Ratio* climbs all the way to 0.21 in 2018.

3.6.5 Northern Case Farm

In the next two sections case farms were chosen from the Northern and the Southern regions of the State of Illinois. Prices, adjustments, and policies remain the same for these two scenarios, but planted acres, base acres, SPR, and yields are different because they are the county averages. Shown in Table 3.12 are the inputs for the Northern case farm located in DeKalb County.

Table 3.12: Northern Case Farm - Input Changes

| Northern Case Farm - Inputs | | | | | |
|-----------------------------|-----------------|------------------------------|------------|--------------------------------|------------|
| County | DeKalb | Family Living Adjustment | \$5 | Policy - Soybeans | ARC County |
| Region | Northern | Family Living Change | 1%/year | Price Set | FAPRI |
| County SPR | 90.3 | Inc & SS Tax Adjustment | -\$1 | Farm Yield Adj-Corn | +20bu |
| Farm Size | 1501-2000ac | Inc & SS Tax Change | 1%/year | Farm Yield Adj-Soybeans | +8bu |
| Farmed Acres | 1,673 | Capital Purchases Adjustment | -\$60 | County Yields - 2014 Corn (bu) | 180.93 |
| Corn Acres | 1,158 | Capital Purchases Change | 1%/year | 2015 Corn (bu) | 182.63 |
| Soybean Acres | 515 | Current Liab. Interest | 5% | 2016 Corn (bu) | 184.32 |
| Base Acres-Corn | 69% (1,158ac) | Intermediate Liab Int | 4% | 2017 Corn (bu) | 186.02 |
| Base Acres-Soybeans | 31% (515ac) | Intermediate Liab Years | 7 | 2018 Corn (bu) | 187.72 |
| Yearly Planted Acres | Alternate 100ac | Long Term Liab Int | 3% | 2014 Soybeans (bu) | 53.72 |
| Cash Rent Change | \$0 (0%) | Long Term Liab Years | 15 | 2015 Soybeans (bu) | 54.12 |
| Expenses Change | \$0 (0%) | Crop Insurance | Individual | 2016 Soybeans (bu) | 54.52 |
| Non-Farm Income Adjustment | \$0 | | RP - 85% | 2017 Soybeans (bu) | 54.92 |
| Non-Farm Income Change | 1%/year | Policy - Corn | ARC County | 2018 Soybeans (bu) | 55.33 |

In the input table, it shows how the planted acres have changed. Of all of the farms that have between 1,501 and 2,000 acres in Northern IL, they plant 1,673 acres on average. Of that they have 1,158 acres of corn and 515 acres of soybeans. These are also their base acres; 69% for corn and 31% for soybeans. Another point to be made about the Northern region is that the percent of acres that is cash rented is much higher. *Owned* is at 15%, *Cash Rent* is at 65%, and *Share Lease* is at 20%. On the balance sheet it can be seen that *Total Assets* is about \$1,501,000 less than the Champaign County base case farm, and the *Debt to Asset Ratio* is much higher at 0.21 for the base year. Average *Cash Rent* for this case farm is lower than the base case; it is \$233.61, compared to \$258.57 for Champaign County.

The projected year's financial sheets are different than the base case farm in Champaign County. The *Crop Revenue* is higher; this is due to higher yields predicted, nearly 10 bushels to the acre more for corn and similar yields for soybeans. Although, the government payments are higher. It is projected for 2014, 2015, and 2016 to get \$63.30, \$64.77, and \$15.54 per acre from ARC County. This totals the *Total Revenue* to \$791.27 per acre for 2014. *Variable Costs* increase per acre by \$42.94. The other big swing was how *Cash Rent* is much lower, but *Total Operating Costs* are still \$36.37 more than the base case scenario. Table 3.13 shows summaries of the financial statements for the Northern and Southern region case farms.

Table 3.13: Regional Case Farm Scenarios - Financial Summaries

| Regional Financial Summaries | | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| Income from Commodity Govt. Program | | | | | | |
| | <i>Base Case (East Central)</i> | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| | <i>Northern Case Farm</i> | \$105,903.05 | \$108,362.92 | \$26,006.31 | \$0.00 | \$0.00 |
| | <i>Southern Case Farm</i> | \$45,721.36 | \$38,255.00 | \$0.00 | \$0.00 | \$0.00 |
| Net Farm Income | | | | | | |
| | <i>Base Case (East Central)</i> | \$71,373.27 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| | <i>Northern Case Farm</i> | \$99,997.44 | \$125,911.20 | \$88,037.45 | \$82,160.61 | \$126,857.47 |
| | <i>Southern Case Farm</i> | -\$60,098.01 | -\$72,052.42 | -\$84,643.02 | \$83,887.09 | -\$67,602.32 |
| End of Year Cash | | | | | | |
| | <i>Base Case (East Central)</i> | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | <i>Northern Case Farm</i> | \$207,674.33 | \$207,674.33 | \$207,674.33 | \$207,674.33 | \$207,674.33 |
| | <i>Southern Case Farm</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Change in Net Worth | | | | | | |
| | <i>Base Case (East Central)</i> | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |
| | <i>Northern Case Farm</i> | \$10,578.10 | \$41,665.13 | -\$11,894.39 | -\$23,286.05 | \$20,356.35 |
| | <i>Southern Case Farm</i> | -\$70,611.08 | -\$76,502.36 | -\$95,955.86 | -\$95,313.06 | -\$79,142.54 |
| Debt to Asset Ratio | | | | | | |
| | <i>Base Case (East Central)</i> | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |
| | <i>Northern Case Farm</i> | 0.19 | 0.16 | 0.15 | 0.14 | 0.12 |
| | <i>Southern Case Farm</i> | 0.21 | 0.23 | 0.26 | 0.29 | 0.31 |

The new ARC County government commodity program pays out for the first three years in the scenario: 2014, 2015, and 2016. The payments total up to \$240,272 for the five year period. *Net Farm Income* is positive the entire prediction period: \$99,997.44 for 2014 and up to \$126,857.47 in 2018. The *Net Change in Cash* is positive for all five years, which is the opposite of the Champaign County base farm. Therefore, *End of year Cash* also remains positive and steady at \$207,674.33. *Net Worth* increases three out of the five years; 2016 and 2017 are the two years that a decrease is seen. With such good financial standing throughout the five year period, it is no surprise that by 2018 the *Debt to Asset Ratio* is down to 0.12.

3.6.6 Southern Case Farm

The Southern case farm will be set in Washington County, Illinois. The inputs for this scenario are shown in Table 3.14.

Table 3.14: Southern Case Farm - Input Changes

| Southern Case Farm - Inputs | | | | | |
|-----------------------------|-----------------|------------------------------|------------|--------------------------------|------------|
| County | Washington | Family Living Adjustment | \$5 | Policy - Soybeans | ARC County |
| Region | Southern | Family Living Change | 1%/year | Price Set | FAPRI |
| County SPR | 77.7 | Inc & SS Tax Adjustment | -\$1 | Farm Yield Adj-Corn | +20bu |
| Farm Size | 1501-2000ac | Inc & SS Tax Change | 1%/year | Farm Yield Adj-Soybeans | +8bu |
| Farmed Acres | 1,495 | Capital Purchases Adjustment | -\$60 | County Yields - 2014 Corn (bu) | 133.70 |
| Corn Acres | 718 | Capital Purchases Change | 1%/year | 2015 Corn (bu) | 135.16 |
| Soybean Acres | 777 | Current Liab. Interest | 5% | 2016 Corn (bu) | 136.62 |
| Base Acres-Corn | 48% (718ac) | Intermediate Liab Int | 4% | 2017 Corn (bu) | 138.08 |
| Base Acres-Soybeans | 52% (777ac) | Intermediate Liab Years | 7 | 2018 Corn (bu) | 139.54 |
| Yearly Planted Acres | Alternate 100ac | Long Term Liab Int | 3% | 2014 Soybeans (bu) | 36.42 |
| Cash Rent Change | \$0 (0%) | Long Term Liab Years | 15 | 2015 Soybeans (bu) | 36.66 |
| Expenses Change | \$0 (0%) | Crop Insurance | Individual | 2016 Soybeans (bu) | 36.89 |
| Non-Farm Income Adjustment | \$0 | | RP - 85% | 2017 Soybeans (bu) | 37.13 |
| Non-Farm Income Change | 1%/year | Policy - Corn | ARC County | 2018 Soybeans (bu) | 37.36 |

In order to keep the scenarios similar, wheat was left out of this case farm. Therefore the average amount of acres planted in corn and soybeans, dips just below 1,501. If wheat were to be included, there would be 264 acres of wheat. Instead, there are 718 acres of corn and 777 acres of soybeans planted; totaling 1,495 acres. Base acres come out to 48% corn and 52% soybeans. Of these acres, 22% are owned, 33% are cash rented, and 44% are share leased. On the *Base Year Balance Sheet*, *Total Assets* are \$1,410,166.37 lower than the Champaign County base farm, and then the *Debt to Asset Ratio* jumps up to 0.21 for the base year. *Cash Rent* for the Southern region is much lower than the East Central region. Washington County's *Cash Rents* averaged out at \$157.38 per acre, when Champaign County's was at \$258.57 per acre.

In the predicted five years, revenues are much less, but so are expenses. For 2014, *Crop Revenues* are predicted at \$515.55 and *Government Payments* at \$30.58 per acre totaling \$546.13 for *Total Revenue*. *Variable Costs* are lower, at \$325.18 per acre compared to \$352.42. *Total Tenure Cost* comes out to \$121.69 per acre, when Champaign County was predicted at \$216.10 per acre. Refer back to Table 3.13 for the financial summaries for the Southern case farm.

These summaries do not look nearly as sound as the Champaign or DeKalb County financial statements. There are predicted to be payments in the first two years, 2014 and 2015, from ARC County

that totals \$83,976. Unlike the other scenarios, all five years the *Net Farm Income* is negative. It is -\$60,098.01 for 2014, and reaches its lowest in 2016 at -\$84,643.02. Therefore, *Net Change in Cash* is in the negatives every year, and gets put into the *Current Liabilities* so there is no value for cash each year. *Net Worth* decreases every year, anywhere from -\$70,611.08 to -\$95,955.86. It is no surprise that the *Debt to Asset Ratio* becomes outrageous. In 2014 it is at 0.21, but then by 2018 it is projected to be 0.31.

3.7 DISCUSSION

There are many different variations of scenarios that could be used in this model, these just barely scratch the surface. The specific reason that these scenarios were chosen, is because the case farms had the most data between 1,501 and 2,000 acres, and it is a size that can show good representation of how the different costs, prices, and policies can affect the financial statements of the farm. In this discussion section, comparisons will be discussed between the different scenarios.

The base case farm located in Champaign County is a good place to start. Champaign has seen record yields over the last couple years, and is one of the most fertile landscapes in the State of Illinois. Other records that have been set recently are cash rents and land prices. Even with record yields, the inverse relationship it has to prices will cause a constant income level, naturally. There are instances where this is not the case, and therefore insurance is purchased, and the new government programs are relied on. Which each of these scenarios the question that is asked is, "How are farm incomes affected by the new provisions in the Agricultural Act of 2014?" In the base case farm scenario, a major benefit is seen for the first two years from ARC County. Although the *Change in Cash* is still negative, a positive income is seen every year, and the first two years most of the income comes from the government program. Using average yields and average prices it is hard to assume farmers will make money in general over the next five years. In the last five years, prices have varied from under \$3.00 to over \$7.00 for corn, and from \$9.00 to over \$14.00 for soybeans. Yields have also been taken off of the same fields

in the last five years from 50 bushels per acre to 280 bushels per acre for corn. That being said, prices and yields are extremely variable and difficult to predict.

The first set of scenarios tested were the cost structure analyses. Lately rents and expenses have risen high because of the extreme farm incomes that have been seen, 2013 was a good example of that. So to use the 2013 cash rents and expenses is slightly unrealistic when predicting average yields and prices. Therefore these two scenarios were drawn up. Cost Structure Scenario 1 lowered the cash rent \$100. This took the high rents of Champaign County from \$258.57 down to \$158.57. As expected this made a major shift in the *Net Farm Income*; an increase of \$45.60 per acre for 2014 and \$51.93 for 2018. It did not affect the payments from *Government Programs*, because expenses are not included in finding any of those payments. Cost Structure Scenario 2 had total expenses lowered roughly \$100. For this scenario an even bigger difference was seen *in Net Farm Incomes*. Once again the *Commodity Government Program Payments* remained the same, but now they do not impact the profitability of the farm as much. There is so much excess income from this scenario that the *Debt to Asset Ratio* plummets to 0.09 by 2018. These two scenarios affect farm incomes substantially. By lowering the costs, the impact of government programs becomes less, but yet there is still a payment. In summary for the two cost structure scenarios, there is a severe importance in the relationship of expenses to revenues. If one changes without the other, profitability of farms can be impacted dramatically; good or bad.

The second pair of scenarios are the price predictions scenarios. The FAPRI price set was used in the base case farm, because it is assumed to be the middle set of the three. CBO prices are used in Price Scenario 1 and USDA prices are used in Price Scenario 2. The price sets average out over the next five years as follows: CBO - \$4.10 Corn, \$10.41 Soybeans; FAPRI - \$4.08 Corn, \$10.18 Soybeans; USDA - \$3.51 Corn, \$9.16 Soybeans. In the last year, prices have varied way out of the range of prices represented by these scenarios, but they are the best predictions that have been made for the next five years. These price sets do still make an impact on incomes and government payments alike. Price Scenario 1, the

higher price set that uses CBO prices, shows an increase in incomes over the years compared to the base case farm. For the first year, the CBO predicted prices are actually lower than the FAPRI, so there is a higher government payment, and much lower income. If not for the government payment in 2014, the *Net Farm Income* would be negative. As the CBO prices do get above FAPRI prices, an increase in income and a decrease in government payments is seen. In this first scenario, the *Debt to Asset Ratio* is 0.01 less than the base case farm, so the farm is better off financially. Price Scenario 2, which uses USDA predicted prices, sees a major difference in incomes and government payments. The *Government Program Payments* for the first two years keeps the farm out of the red, and the third year it is not even enough to make up for the losses. The *Debt to Asset Ratio* climbs all the way to 0.26, which is 0.08 higher than the base case farm. With the USDA prices averaging out at \$3.51 per bushel for corn and \$9.16 per bushel for soybeans for the five years and average predicted yields, it is no surprise that the farm will take a major hit financially. In these scenarios, it is shown how important government payments can be. A majority of the income for several years with lower prices may come from the government payments, but without them many farms may go under.

Section 3.5.5 covers the different Farm Bill policy options in two scenarios. The issue with this case farm, is that there are no payments from any of the other Farm Bill options. FAPRI prices do not dip low enough to go below the reference price of \$3.70 for corn and \$8.40 for soybeans in order to get a payment for the Price-Loss Coverage option. ARC Individual also does not see a payment, because the farm yields are high enough to keep the revenue from going under the trigger revenue. Nevertheless a comparison can still be made on the scenario that includes ARC County and the scenario that doesn't have any government program coverage, Policy Scenario 2. The additional benefits to ARC County were discussed in subsection 3.5.5 of the Results section. With the FAPRI predicted prices, average predicted yields, and base expenses, ARC County is the option for Champaign County farmers that farm between 1,501 and 2,000 acres.

The Northern case farm is fairly similar to the Central Illinois case farm. This farm was staged in DeKalb County, and has all the same inputs as the Champaign County case farm, besides the yields, expenses, and planted acres. The farm actually gets more financially sound, and is better off by 2018 with a 0.12 *Debt to Asset Ratio*. For the first three years in the model, *the Commodity Government Payments* do make a large impact on keeping *the Net Farm Incomes* positive. Over the five year period the ARC County payments make up \$240,272 of the *Net Farm Income*. Of the other option choices, ARC Individual is the only other one that makes a payment. For the five year period the total payment from ARC Individual adds up to \$80,439. So for DeKalb County the more profitable option would be ARC County.

The last scenario is the Southern region case farm. This farm is located in Washington County, Illinois and only has corn and soybeans. For this reason the average 1,501 to 2,000 acre farm only has 1,495 acres of corn and soybeans. Most farms in the county would have some wheat in the rotation, and therefore make up the amount of acres to bounce into the 1,501 to 2,000 acre range. The financial standing of this farm throughout the model period is the complete opposite of the Northern case farm. The government payments are not enough to cover the loss in *Net Income*, and the *Debt to Asset Ratio* increases 0.10 over the five years to 0.31. The total *Government Program Payments* from ARC County total \$83,976 for the five years, and there would be no payments from either of the other options. This case farm is better off with the ARC County selection, but it still is not enough to cover the losses.

3.8 SUMMARY

The Illinois Farm Income Projection Model was designed to predict future financial statements as accurately as possible using FBFM and NASS data. The other goals of this model is to predict the most optimal choices in the new commodity program provisions in the Agricultural Act of 2014.

With the projected average yields put into this model, it is difficult to show high incomes with the current predicted prices. Predicted prices are much lower than what they have been the past five

years. Weather is the biggest impact on yields and prices, and it is completely unpredictable. Most often supply and demand is also fluctuated around the weather. Therefore the accuracy of this model is difficult to gauge over the next five years. It is relatively obvious that for the scenarios ran in this paper that ARC County is the optimal choice. There are hundreds of different scenarios that can be ran through the model, and several different results will be seen. If prices are adjusted to dip below the reference prices set, Price Loss Coverage will see a major improvement in income. This would most likely be on years with high yields, and therefore the ARC payments may not be the maximum income from the programs.

The decisions that need to be made regarding the changes in the 2014 Farm Bill, are extremely farm specific. This model is intended to be a helpful tool to portray a specific farm, and display the financial situations for the next five years depending on the farmer's commodity program choices.

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APPENDIX A

UPDATING CASE FARM DATA

A.1 BASE YEAR BUDGET

The base year budget originally stems from FBFM data. Dr. Gary Schnitkey puts together a budget every year including the exact ones used in this model, in the same form. Once that budget is completed for the previous year, it can be copied over the old one on the “Base Year-Expenses” page, and it will update the base year budget automatically. Be sure to double check that the format is the same.

A.2 FBFM DATA

In order to simplify, and make the data more accurate, the data has all been averaged regionally and by farm size. In order to do that, “=AVERAGEIFS” functions were used to pull out the data with the two criteria (region and farm size). The model was built similar to the FBFM reports, so that an easy transition and comparison could be made by an individual farmer.

The FBFM data needed for the model includes: fin stats, h stats, and o stats. Once these are updated using the formula above, they can be copied into the “Fin-Data” and “Crop Data” pages. The FBFM data generally originates in a text file. The steps to prepare the fin data to put into the model are listed here:

- 1) Covert Text file to Excel file
- 2) Filter it for grain farms (A017 = 2)
- 3) Filter it for Income statement certification (A019 = 1)
- 4) Add column to the front – “region”
- 5) On a second sheet, copy the County list that has the region listed on it from the “Fin-Data” page

- 6) On a third sheet, copy the format that includes all of the “=AVERAGEIFS” formulas for the “Fin-Data” page

`=AVERAGEIFS(Sheet1!F$3:F$11843,Sheet1!V3:V11843,$B2,Sheet1!$A$3:$A$11843,Sheet3!$A2)”`
- 7) On Sheet3, go to cell G2 (A_year). Update the ranges for the average_range and criteria_range
- 8) Copy and paste those VALUES into the model.
- 9) Use the document “fin-data.xml” as a reference.

Repeat this process with the h stats. This data will need to be copy and pasted also on the “Fin-Data” page. (Scroll to the right until the h stats begin) There are also =COUNTIFS done, those can also be updated in a similar way, by updating the ranges.

The o stats are a similar process. The simplest way to update the o stats would be to open up the o_data.xml file to use as a reference, or just update it within that document. The example used here will be for corn, it will need to be replicated for soybeans, wheat and double-crop soybeans.

- 1) Convert Text file to Excel file
- 2) Filter it for grain farms (A017 = 2)
- 3) Add column to the front – “region”
- 4) Add a sheet, copy the County list with the regions to that sheet
- 5) Enter a vlookup formula, similar to this one to match the region to the county:

`=VLOOKUP(C304,region_table,3,FALSE)”`
- 6) Sort for corn (O000 = 20)
- 7) Copy and paste that sort to a separate sheet (ex. “Corn”)
- 8) Create another sheet with the format from the “Crop Data” sheet in the model (or “Corn sum” sheet in o_data.xml)

9) Replicate the averageif formula, similar to this one. Or update the current formulas ranges:

```
"=AVERAGEIFS(Corn!E$2:E$3761,Corn!$A$2:$A$3761,'Corn  
sum'!$A2,Corn!$H$2:$H$3761,'Corn sum'!$B2)"
```

10) Copy and paste those VALUES into the "Crop Data" sheet

11) Repeat with the other three crops

Farm Yields will also have to be updated from FBFM data. In a separate file, pull out the average yields for each county, and copy them to the "...YieldData" sheets for each crop. For the double-crop soybeans, the Farm Yields table is equal to the County Yields table, both from FBFM data not NASS.

A.3 NASS YIELDS

NASS yields are relatively simple to update. Once the yields have become available, they will be found on the NASS website in the Query tool. Pull the current years data from there for each county. Order the counties by their fips number. They should easily be copied over into the "...YieldData" pages. This process cannot be used for double-crop soybeans, as there is no yield data for them through NASS.

A.4 MYA PRICES

To update MYA prices, it will be done on the "Prices" tab. At the bottom of the page, there is a block of cells highlighted in green. Those are the projected cells, currently by formulas. As soon as the prices are released, write over the formula in those cells to permanently update the prices.

The "Prices" tab is also where predicted prices can be adjusted, as they are released.

A.5 CROP INSURANCE PRICES

Crop Insurance prices, or Base and Harvest prices, are on the "Crop Ins data" tab. Here is where they will be updated as the prices are released. This is also where prices can be predicted for base and harvest prices until 2025. These prices are not linked to the MYA price predictions, this is all manual inputting.

APPENDIX B

CROP INSURANCE AND GOVERNMENT PAYMENTS

B.1: CROP INSURANCE PAYMENTS

Crop insurance and the new Farm Bill programs are very complicated, and there are several calculations that go into them. Here is a short summary on how the payments for each crop insurance product is figured:

Yield Protection (YP): The payment for Yield Protection coverage is solely based off of individual yields and the base price. A trigger yield is found by multiplying the APH by the coverage level. If the trigger yield is greater than the projected yield then the projected yield is subtracted from the trigger yield, and the result is multiplied by the base price for the year to determine the payment.

$$YP \text{ Trigger Yield} = APH \times \text{Coverage Level}$$

$$YP \text{ Payment} = (\text{Trigger Yield} - \text{Projected Yield}) \times \text{Base Price}$$

Revenue Protection (RP): In order to find the payment for Revenue Protection coverage, first the trigger revenue must be found. In order to find the trigger revenue, the highest price between the base and the harvest is multiplied by the APH and the coverage level selected. Similarly to yield protection, if the trigger revenue is greater than the projected revenue, a payment is made an amount equaling the trigger revenue minus the projected revenue.

$$RP \text{ Trigger Revenue} = \text{Higher of Base or Harvest Price} \times APH \times \text{Coverage Level}$$

$$RP \text{ Payment} = \text{Trigger Revenue} - \text{Projected Revenue}$$

Revenue Protection with Harvest Price Exclusion (RP-HPE): The Revenue Protection with Harvest Price Exclusion payment is determined exactly the same as Revenue Protection payments, besides the fact that only base prices are used instead of the greater of base or harvest prices.

$$RP\text{-HPE} \text{ Trigger Revenue} = \text{Base Price} \times APH \times \text{Coverage Level}$$

$$RP\text{-HPE} \text{ Payment} = \text{Trigger Revenue} - \text{Projected Revenue}$$

Area Yield Protection (AYP): In the ARPI options, also labeled as county options, the biggest differences are that a protection factor is used and a payment factor has to be determined. First off, a trigger yield is found the same way it was for YP, by multiplying the coverage level by the APH. Next a payment factor needs to be found. The payment factor is equal to the trigger yield minus the projected county yield, which is divided by the trigger yield minus the APH times the loss limit factor of 0.18. The final protection is determined next, which is equal to the APH, the base price, and the protection factor all multiplied together. The payment is then determined by multiplying the payment factor times the final protection.

$$AYP \text{ Trigger Yield} = APH \times \text{Coverage Level}$$

$$AYP \text{ Payment Factor} = (\text{Trigger Yield} - \text{Projected Yield}) / [\text{Trigger Yield} - (APH \times \text{Loss Limit Factor})]$$

$$AYP \text{ Final Protection} = APH \times \text{Base Price} \times \text{Protection Factor}$$

$$AYP \text{ Payment} = \text{Payment Factor} \times \text{Final Protection}$$

Area Revenue Protection (ARP): The way the ARP payment is found is similar to AYP, except that it uses revenues instead of yields. First a trigger revenue is found, by multiplying the APH by the higher of the base or harvest price and the coverage level. Then if the projected revenue is below the trigger, a payment factor is calculated. The payment factor is equal to the trigger revenue minus the projected county revenue which is then divided by the APH times the higher or base or harvest prices times the limit loss factor of 0.18 subtracted from the trigger revenue. If the payment factor equation is greater than 1, then the payment factor is equal to 1. The final protection is solved by multiplying the APH by the higher of the base or harvest prices and the protection factor. The payment factor is then multiplied by the final protection to find the total payment.

$$ARP \text{ Trigger Revenue} = \text{Higher of Base or Harvest Price} \times APH \times \text{Coverage Level}$$

$$ARP \text{ Payment Factor} = (\text{Trigger Revenue} - \text{Projected Revenue}) / [\text{Trigger Revenue} - (APH \times \text{Higher Price} \times \text{Loss Limit Factor})]$$

ARP Final Protection = APH x Higher of Base or Harvest Price x Protection Factor

ARP Payment = Payment Factor x Final Protection

Area Revenue Protection with Harvest Price Exclusion (ARPwHPE): ARPwHPE is exactly the same as the regular ARP, the only thing that is different between the two is that ARPwHPE only uses the base price, instead of the higher of the two prices. So therefore ARPwHPE will always pay the same or less than ARP if the harvest price is higher than the base price.

ARPwHPE Trigger Revenue = Base Price x APH x Coverage Level

ARPwHPE Payment Factor = (Trigger Revenue – Projected Revenue) / [Trigger Revenue – (APH x Base Price x Loss Limit Factor)]

ARPwHPE Final Protection = APH x Base Price x Protection Factor

ARPwHPE Payment = Payment Factor x Final Protection

B.2: GOVERNMENT PROGRAM PAYMENTS

Below are descriptions on how the payments are determined within the new programs (Coppess, Schnitkey, Paulson, & Zulauf, 2014).

Agricultural Risk Coverage Individual Revenue: The ARC Individual Revenue covers all of the crops on the farm, unlike the other choices which can differ between commodities. The first step to finding the payments for ARC Individual is finding the projected revenues for each crop. This is done by using the higher of either the projected price or the PLC reference price of \$3.70, and the yields in the input section of the Farm Bill page. These are then averaged across the farm with the share of acres planted of the total farm of each crop. Next a trigger revenue needs to be found. In order to find it a benchmark revenue needs to be determined first. To find the benchmark revenue the Olympic average of the previous 5 years for each crop is used, and then an average across the shares of each commodity is derived for the benchmark. The benchmark revenue is then multiplied by .86 to get the trigger revenue. If the projected revenue is less than the trigger revenue, the whole farm payment will equal

ten percent of the benchmark revenue. To find the actual payment that the farmer would receive, the per-acre payment needs to be taken times .65 and then times the total acres covered. This payment cannot exceed \$125,000. If the projected revenue is greater than the trigger revenue there will be no payment.

Agricultural Risk Coverage County Revenue: The ARC County Revenue is similar to the Individual Revenue program, except that the County Revenue program is found for each commodity. First a trigger revenue needs to be found, and there are lots of steps to get to that point. An ARC yield guarantee is found by taking the Olympic average of the previous 5 years. ARC price guarantee is found also by taking the Olympic average of the previous 5 years, but the prices that are used are the higher of the projected price or the PLC reference price. These two are multiplied together to find the ARC revenue guarantee. This is then multiplied by .86 in order to find the trigger revenue. If the projected revenue is less than the trigger revenue, then 10% of the ARC revenue guarantee will be the payment per acre for that specific commodity. If the projected revenue is greater than the trigger revenue of that commodity, then no payment is made for that commodity. In order to find the total payment, the-per acre payments for each commodity are multiplied by the amount of planted acres, respectively, and then taken times the payment rate of .85. There is also a maximum payment of \$125,000 for ARC County.

Price Loss Coverage: The PLC program is based solely off of prices, but also uses a payment yield to determine payments for each commodity. The first thing that needs to be found are the payment yields. There are two choices for payment yields. Either the farmer can keep the yields used to make counter-cyclical payments under the 2008 Farm Bill, or they can update it be 90% of the average yields from 2008 to 2012. For this model the 90% of the average yields from 2008 to 2012 is used. Next, there are a few qualifications if a payment will be made. A payment will be made if the MYA (or projected) price is less than the reference price. If this is the case, the higher of the MYA price and the loan rate will be subtracted from the reference price, and then multiplied by the payment yields to determine the

payment for each commodity. There is still a max payment of \$125,000, and the payment rate is .85. Each of the payments per acre are multiplied by the total acres of the commodity, and then taken times .85 to show the total payment.

Price Loss Coverage with Supplemental Coverage Option: The Supplemental Coverage Option is more complicated than the other choices. It starts with the exact same process of PLC, and makes the same payments. The SCO option is basically an extension to the farmer's insurance policy. There are several restrictions on the SCO policy. First off, the farmer must have individual crop insurance coverage, either YP, RP, or RP-HPE. Payments are triggered on the county level though. So therefore within a county all farmers will either get a payment or not, but the amount depends on which insurance program they have and what their coverage is. The set coverage level for SCO is 86%. There is also no payment limitation, on the SCO portion of the payment. The farmer must have individual farm crop insurance, and choose one of the following: Yield Protection, Revenue Protection, or Revenue Protection with Harvest Price Exclusion. The same calculations are used to find the trigger yields and trigger revenues, except at an 86% coverage level. Next, there is a maximum revenue that can be made for the SCO. For YP, the trigger yield from the regular crop insurance coverage, say 70%, is subtracted from the 86% coverage, and then multiplied by the base price. For RP, the trigger revenue of the 70% coverage is subtracted from the 86% coverage trigger revenue. The max of the harvest or base price has already been figured into the trigger revenues. The RP-HPE is the same, it would only be different if the harvest price were higher than the base price. Now to determine if there is a payment or not in YP, the trigger yield for the SCO must be less than the projected yield. If so, the higher of either the projected yield or 70% trigger yield will be subtracted from the trigger yield of the 86% coverage and then multiplied by the base price. For RP and RP-HPE, if the projected revenue is less than the 86% coverage trigger revenue, then there will be a payment. The higher of the projected revenue or the 70% coverage

revenue is subtracted from the 86% coverage trigger revenue. This equals the payment for each of these options.

APPENDIX C

CALCULATION OF BUDGETS FROM YEAR TO YEAR

The yearly budgets and the projected financial statements are built using all of the other inputs and calculations in the model. The “Projected Financial Statements” sheet summarizes the yearly budget sheets, including a short income statement, projected statement of cash flow, projected capital repayment capacity, projected balance sheet, and a short summary of them all at the bottom. The figures can be adjusted from a whole farm statistic to a per acre statistic. These statements are broken down more on the yearly budget sheets. The budgets have all of the base incomes and expenses broken down within each crop, including corn, soybeans, wheat, and double crop soybeans. The total acres of each crop farmed is taken from the initial page. The yields for each crop then comes from the NASS data, and the futures price is from either MYA Prices or the ones inputted on the price sheet. All of the individual crop revenues and expenses are on a per acre basis. The Crop Government Payments come from the “Farm Bill Options” page, where this will adjust depending on the programs that are selected. All of the direct, power, and overhead expenses start with the base budget, and are adjusted every year by the “%Changes” page. Property taxes and cash rent also come from county averages and can be adjusted on the “%Changes” page, but the share lease rent is adjusted on the “Lease Info” page (which is found through the “%Changes” page), and depends on the expenses of the current year. A net revenue per acre is then shown, along with a total net revenue for the crop and the entire farm.

The projected statement of cash flow starts out with the net cash income from farming, taken from the budget sheet of that year. The non-farm income is added next, and the expenses for family living, income and social security tax, capital purchases, and principal payments is taken out to show the net change in cash. The first four all come from a base year statement, adjusted by the “%Change” sheet while the principal payment is dependent on the liabilities. On the “%Change” sheet the number of years for the liabilities can be adjusted, and this will adjust the principal payment every year. This also

effects the amount of interest paid, too. The principal payment is consistent throughout the five year budget scheme.

The next statement in line is the projected capital repayment capacity. The first thing to do is find the capital replacement and term debt repayment capacity, and to do that it starts with the farm operation income from the budget (revenue-expenses). From there the net non-farm income and depreciation is added, while the income and social security tax and family living are subtracted to find the repayment capacity. Next the principal payments are subtracted from it, and that shows the repayment margin.

Lastly, on the yearly budget pages is the projected balance sheet summary. This is a shortened version of the original balance sheet, including all of the major assets and liabilities. Several of these figures will remain consistent throughout the years, but many of them are adjusted. The bank balance changes depending on income, and paying off liabilities. If there is not enough income to cover the principal and interest on the liabilities then the bank balance will be set to zero, and the remaining negative value will be added to operating/short term notes. Crops and feed will remain consistent throughout the five years, it is too difficult to determine the variability in that and it should remain close from year to year. The total current assets includes some of the values from the original balance sheet, the current bank balance, and crops and feed. Machinery and equipment and buildings and improvements do adjust across the years. The percent capital purchases is first found, and that is between machinery and equipment and buildings and improvements off of the base year balance sheet. The capital purchases from the cash flow statement is then split into machinery and equipment and buildings and improvements by these percentages. Then the depreciation is taken out of both of the categories, and the new capital purchases are added. Machinery and equipment, along with some others from the original balance sheet, make up the intermediate assets. Building and improvements and farm real estate-bare land combined with some from the base year balance sheet are the total fixed

assets. Farmland real estate remains the same across the years. These are all combined to total all of the assets. The liabilities portion of the balance sheet is similar to the assets as there are some that remain the same over the 5 years, and some that are variable. As mentioned earlier the operating/short term notes varies by how much money is made each year, how much the capital purchases are, and whether the cash balance can cover the interest and principal payments. The estimated accrued tax liability remains constant over the years, and those plus a few other liabilities make up the current liabilities section. Total intermediate and total long term liabilities change depending on the principal payments made. These all sum together to make the total liabilities. The last three lines on the yearly budget pages are the net worth, the total liability and net worth, and the change in net worth, respectively.

On the “Projected Financial Statements” page, there is a short summary, which would most likely be included in a print out to hand out for examples of case farms and how the different farms are affected. This summary includes: net farm income, net change in cash, end of year cash, capital replacement and term debt repayment margin, change in net worth, and the debt to asset ratio.

APPENDIX D

CASE FARM FINANCIAL STATEMENTS

Figure D.1: Base Case Farm – Farm Information

| Farm Information | | | | | | |
|---------------------------------|-------------------------------|-----------------|-----------------|----------------|---------------|----------------------|
| Name | Regional Analysis | | | County | - | Champaign |
| Base Year | 2013 | | | Region | - | East Central IL |
| Date | 11/5/2014 | | | Farm Size | - | 1501-2000 |
| | | | | Avg County SPR | - | 92.3 |
| | | | | Avg Region SPR | - | 86.6 |
| Crops Planted | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | | |
| | Yes | Yes | No | No | | |
| Base Acres | Default | | | | | |
| | 53% | 47% | 0% | 0% | | |
| Total Farmed Acres -> | | | | | | 1,691 |
| Acres | | | | | | |
| <i>Tenure Type</i> | <i>Region % of Total Acre</i> | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>Dbl SB</i> | <i>Planted Total</i> |
| Total | | 894 | 797 | - | - | 1,691 |
| Owned | 12% | 109 | 97 | - | - | 207 |
| Cash Rent | 46% | 408 | 363 | - | - | 771 |
| Share Lease | 42% | 377 | 336 | - | - | 713 |
| Total Acres | | 894 | 797 | - | - | 1,691 |

Figure D.2: Base Case Farm – Base Year Balance Sheet – Assets

| Balance Sheet | | |
|-------------------------------------|-----------------------|-----------------------|
| | Fair Market Value | |
| | Beg of Year | End of Year |
| Current Assets | | |
| Bank Balance | \$57,000.00 | \$88,664.64 |
| Savings & CD's | \$43,642.79 | \$55,056.36 |
| Hedging Account Balance | \$10,782.57 | \$10,021.86 |
| Marketable Stocks & Bonds | \$82,559.50 | \$96,529.86 |
| Accounts Recievable/FSA LDP & CCP's | \$113,576.43 | \$21,249.21 |
| Crops & Feed | \$642,621.57 | \$721,477.79 |
| Market Livestock | \$0.00 | \$0.00 |
| Prepaid Expenses | \$193,804.64 | \$159,242.64 |
| Non-Farm Business/Other* | \$32,955.29 | \$56,106.93 |
| Total Current Assets | \$1,176,942.79 | \$1,208,349.29 |
| Intermediate Assets | | |
| Assets Under Capital Lease | \$0.00 | \$0.00 |
| Machinery & Equipment | \$807,905.79 | \$970,904.50 |
| Breeding Livestock | \$0.00 | \$0.00 |
| Non-Farm Business/Other | \$7,928.57 | \$8,842.86 |
| Notes Recievable | \$0.00 | \$0.00 |
| Retirement Accounts* | \$170,784.79 | \$214,775.57 |
| Securities Not Readily Marketable | \$21,640.79 | \$23,774.07 |
| Cash Value of Life Insurance* | \$49,238.93 | \$55,273.57 |
| Home Furnishings & Personal Items* | \$49,150.00 | \$54,507.14 |
| Total Intermediate Assets | \$1,106,648.86 | \$1,328,077.71 |
| Fixed Assets | | |
| Farm Real Estate-Bare Land | \$2,382,785.71 | \$2,536,267.86 |
| Buildings & Improvements | \$68,071.43 | \$84,571.43 |
| Personal Residence | \$166,785.71 | \$257,857.14 |
| Other Non-Farm Real Estate | \$153,214.29 | \$153,214.29 |
| Contracts & Notes Receivable | \$0.00 | \$0.00 |
| Non-Farm Business/Other/Amort. | \$338,636.36 | \$337,379.79 |
| Total Fixed Assets | \$3,109,493.50 | \$3,369,290.50 |
| Total Assets | \$5,393,085.14 | \$5,905,717.50 |

Figure D.3: Base Case Farm – Base Year Balance Sheet – Liabilities

| | | |
|--|-----------------------|-----------------------|
| <u>Current Liabilities</u> | | |
| Accounts Payable with Merchants & Dealers | \$10,174.21 | \$12,441.64 |
| Lease Payment | \$0.00 | \$0.00 |
| Feed Accounts Payable/FSA | \$0.00 | \$0.00 |
| Commodity Credit Corp Loans* | \$0.00 | \$0.00 |
| Operating / Short Term Notes | \$272,254.00 | \$356,059.57 |
| Estimated Accrued Tax Liability (Inc & RE) | \$86,618.00 | \$74,968.14 |
| Accrued Interest | \$11,079.79 | \$14,568.07 |
| Principal Due Within Twelve Months: | | |
| Intermediate Term Notes | \$48,200.36 | \$47,351.71 |
| Long Term Notes | \$7,759.50 | \$10,745.00 |
| Current, IT & LT Other* | \$7,808.14 | \$8,250.79 |
| Total Current Liabilities | \$443,894.00 | \$524,384.93 |
| <u>Intermediate Liabilities</u> | | |
| Capital Lease/Deferred Portion | \$0.00 | \$0.00 |
| Intermediate Notes | \$155,617.07 | \$139,220.79 |
| Life Insurance Policy Loans* | \$0.00 | \$0.00 |
| Other* | \$2,284.29 | \$1,575.86 |
| Total Intermediate Liabilities | \$157,901.36 | \$140,796.64 |
| <u>Long Term Liabilities</u> | | |
| Real Estate Mortgages | \$201,918.00 | \$270,604.64 |
| Other | \$41,266.50 | \$38,690.86 |
| Total Long Term Liabilities | \$243,184.50 | \$309,295.50 |
| Contingent Tax Liability | \$0.00 | \$0.00 |
| Total Liabilities | \$844,979.86 | \$974,477.07 |
| Net Worth | - | \$4,931,240.43 |
| Total Liab. & Net Worth | \$5,393,085.14 | \$5,905,717.50 |
| Change in Net Worth | | \$383,135.14 |
| Debt to Asset Ratio | 0.16 | 0.17 |

Figure D.4: Base Case Farm – Base Year Income Statement

| Income Statement | | |
|---|--------------------|---------------------|
| Revenue | | |
| Crop Sales | \$832,016.43 | |
| Inventory Change | <u>\$78,856.29</u> | \$910,872.71 |
| Livestock, Livestock Product Sales | \$0.00 | |
| Inventory Change | <u>\$0.00</u> | \$0.00 |
| Government Payments | | \$28,520.57 |
| Settlements | | \$0.00 |
| Other Farm Receipts | | \$131,097.71 |
| Accounts Receivable (net Change) | | -\$92,327.21 |
| Less: Purchased Feed & Grain | \$496.79 | |
| Less: Purchased Livestock | <u>\$0.00</u> | \$496.79 |
| Gross Farm Returns | | \$977,667.00 |
| Expenses | | |
| Fertilizer | \$143,353.93 | |
| Pesticides | \$55,281.50 | |
| Seed | \$115,527.14 | |
| Machinery Repair | \$32,424.29 | |
| Machine Hire/Lease | \$13,293.43 | |
| Fuel & Oil | \$35,169.43 | |
| Drying | \$12,685.93 | |
| Storage | \$10,371.64 | |
| Building & Fence Repair/S&W Cons | \$3,316.07 | |
| Hired Labor | \$19,366.43 | |
| Vet, Medicine and Livestock Supplies | \$366.86 | |
| Utilities | \$3,895.21 | |
| Insurance | \$40,439.57 | |
| Taxes | \$8,730.14 | |
| Rents and Settlements | \$115,693.57 | |
| Light Vehicle | \$1,739.50 | |
| Miscellaneous | <u>\$9,321.36</u> | |
| Cash Farm Operating Expenses Excluding Interest | | \$620,976.00 |
| Expense Adjustments | | |
| Prepaid Expenses (- if increase) | \$34,562.00 | |
| Accounts Payable (+ if increase) | <u>\$3,764.79</u> | \$38,326.79 |
| Total Operating Expense Excluding Interest | | \$659,302.79 |
| Income Before Interest Expense | | \$318,364.21 |
| Interest Expense | | |
| Cash Paid | \$20,705.43 | |
| Accrued Interest Adjustments | <u>\$3,488.29</u> | |
| Total Interest Expense | | \$24,193.71 |
| Total Operating Expense | | \$683,496.50 |
| Income Before Depreciation | | \$294,170.43 |
| Less: Depreciation (Tax Depr: 0) | | <u>\$96,343.93</u> |
| Farm Operating Income | | \$197,826.57 |
| Gain (Loss) on Machinery and Building Sales less Amortization | | -\$255.07 |
| NET FARM INCOME | | \$197,571.50 |
| Reference: Non-Farm Income (Estimated) | | |
| Wages | | \$7,507.93 |
| Interest and Dividends | | \$316.86 |
| Other Non-Farm Income | | -\$429.71 |

Figure D.5: Base Case Farm – % Change Main Page

| % Change Main Page | | | | | | | | |
|--|--------------------------|--------------------|----------------------------|-------------------|---------------|---------------|---------------|---------------|
| Year 1- | | | 2014 | | | | | |
| Change in Acres: | | | 2014 | 2015 | 2016 | 2017 | 2018 | |
| | Corn | | -100 | 100 | -100 | 100 | -100 | |
| | Soybeans | | 100 | -100 | 100 | -100 | 100 | |
| | Wheat | | 0 | 0 | 0 | 0 | 0 | |
| | Double Crop Soybeans | | 0 | 0 | 0 | 0 | 0 | |
| Change in Cash Rent: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | Cash Rent | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 |
| | %Change | | 0% | 0% | 0% | 0% | 0% | 0% |
| Change in Share Lease Information: | | | Click Here | | | | | |
| **Select how to increase/decrease expenses | | | All Change Same % | | | | | |
| If you chose "All Change Same %": | | | | | | | | |
| | % Change | | 0% | 0% | 0% | 0% | 0% | 0% |
| If chose "Expenses Individually Change, But Not Between Crops": | | | Click Here | | | | | |
| If chose "All Individual Expenses Change": | | | Click Here | | | | | |
| Other Changes | | | Base Year | Adjustment | | | | |
| | | Costs (/ac) | Base Year | | | | | |
| | Non-Farm Income | \$5.51 | \$0.00 | 1% | 1% | 1% | 1% | 1% |
| | Family Living | \$40.18 | \$5.00 | 1% | 1% | 1% | 1% | 1% |
| | Income and SS Tax | \$29.31 | -\$1.00 | 1% | 1% | 1% | 1% | 1% |
| | Capital Purchases | \$114.41 | -\$60.00 | 1% | 1% | 1% | 1% | 1% |
| Interest Rate | | | | | | | | |
| | Current Liabilities | | 5% | 5% | 5% | 5% | 5% | 5% |
| | Intermediate Liabilities | | 4% | 4% | 4% | 4% | 4% | 4% |
| | Long Term Liabilities | | 3% | 3% | 3% | 3% | 3% | 3% |
| Principal Payment | | | Years | Payment | | | | |
| | Current Liabilities | | 0 | \$0.00 | | | | |
| | Intermediate Liabilities | | 7 | \$20,113.81 | | | | |
| | Long Term Liabilities | | 15 | \$20,619.70 | | | | |

Figure D.6: Base Case Farm – Crop Insurance Page – 2014 & 2015

| Crop Insurance | | | | | | | | | |
|-----------------------------------|-----------------|-------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <i>Base Year - 2013</i> | | | | | | | | | |
| | | Corn | Soybeans | Wheat | Dbl SB | | | | |
| | | Individual | Individual | None | None | | | | |
| <u>County:</u> | Champaign | | | | | | | | |
| <u>Region:</u> | East Central IL | | | | | | | | |
| | | Individual | | | | County | | | |
| | | Corn | Soybeans | Wheat | Dbl SB | Corn | Soybeans | Wheat | Dbl SB |
| Product | | RP | RP | RP | RP | ARP | ARP | ARP | ARP |
| Coverage Level | | 85% | 85% | 75% | 75% | 85% | 85% | 75% | 75% |
| Protection Factor | | | | | | 1.20 | 1.20 | 1.20 | 1.20 |
| Crop Insurance Year - 2014 | | | | | | | | | |
| | | Individual | | | | County | | | |
| Expected County Yield | | 172.2 | 54.1 | 70.9 | 23.9 | 172.2 | 54.1 | 70.9 | 23.9 |
| APH | | 169.0 | 53.1 | 66.5 | 25.8 | 169.0 | 53.1 | 66.5 | 25.8 |
| Base Price | | \$4.62 | \$11.36 | \$6.51 | \$11.36 | \$4.62 | \$11.36 | \$6.51 | \$11.36 |
| Harvest Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Trigger Yield | | 143.6 | 45.1 | 56.5 | 21.9 | 143.6 | 45.1 | 49.9 | 19.3 |
| Trigger Revenue | | \$676.38 | \$522.45 | \$345.99 | \$203.32 | \$663.55 | \$512.31 | \$324.60 | \$219.39 |
| Proj Yield | | 192.2 | 62.1 | 80.9 | 26.9 | 172.2 | 54.1 | 70.9 | 23.9 |
| Proj Revenue | | \$747.81 | \$639.70 | \$507.01 | \$276.70 | \$670.01 | \$557.30 | \$444.31 | \$245.80 |
| Payment | 2014 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Year - 2015 | | | | | | | | | |
| | | Individual | | | | County | | | |
| Expected County Yield | | 173.7 | 54.5 | 71.5 | 23.9 | 173.7 | 54.5 | 71.5 | 23.9 |
| APH | | 168.1 | 53.2 | 66.8 | 25.9 | 168.1 | 53.2 | 66.8 | 25.9 |
| Base Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Harvest Price | | \$4.00 | \$10.00 | \$5.00 | \$11.00 | \$4.00 | \$10.00 | \$5.00 | \$11.00 |
| Trigger Yield | | 142.9 | 45.2 | 56.8 | 22.0 | 142.9 | 45.2 | 50.1 | 19.5 |
| Trigger Revenue | | \$590.42 | \$463.52 | \$268.16 | \$196.88 | \$571.52 | \$451.91 | \$250.43 | \$213.98 |
| Proj Yield | | 193.7 | 62.5 | 81.5 | 26.9 | 173.7 | 54.5 | 71.5 | 23.9 |
| Proj Revenue | | \$792.04 | \$602.81 | \$467.05 | \$258.97 | \$710.24 | \$525.69 | \$409.75 | \$230.05 |
| Payment | 2015 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |

Figure D.7: Base Case Farm – Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | | |
|--------------------|--|--------------------|-------|-------------|---|-------|----------|-------|--------|
| County | Champaign | | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | | |
| Region | East Central IL | | | <Formula | | | | | |
| Farm Size | 1501-2000 | | | | | | | | |
| 1) FIPS | 17019 | | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | | 2a) Select Future Price Source FAPRI | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | *** (Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins) | | | | |
| | ARC County Revenue | ARC County Revenue | None | None | | | | | |
| 2) Base Acreage | Corn | Soybeans | Wheat | Dbl SB | Total | | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | | |
| | 894 | 797 | 0 | 0 | | | | | |
| 3) MYA Prices | Corn | Soybeans | Wheat | Dbl SB | | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | | |
| 2014 | 3.89 | 10.30 | 6.27 | 10.30 | | | | | |
| 2015 | 4.09 | 9.64 | 5.73 | 9.64 | | | | | |
| 2016 | 4.09 | 10.11 | 5.72 | 10.11 | | | | | |
| 2017 | 4.12 | 10.29 | 5.79 | 10.29 | | | | | |
| 2018 | 4.21 | 10.54 | 5.87 | 10.54 | | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | |
| 4) Payment Yields | Corn | Soybeans | Wheat | Dbl SB | for PLC payments | | | | |
| | 145.55 | 46.97 | 58.91 | 23.67 | | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | Total | | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | | |
| 6) Farm Yields | For Individual ARC payments | | | | County Yields will update based on FIPS input | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | | Corn | Soybeans | Wheat | Dbl SB |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | 2008 | 176.0 | 50.0 | 66.9 | 33.0 |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | 2009 | 190.0 | 56.0 | 64.4 | 29.0 |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | 2010 | 169.5 | 56.2 | 59.1 | 51.0 |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | 2011 | 164.1 | 51.6 | 68.2 | 16.5 |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | 2012 | 108.9 | 47.1 | 68.7 | 2.0 |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | 2013 | 168.1 | 52.6 | 68.1 | 19.0 |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | 2014 | 172.2 | 54.1 | 70.9 | 23.9 |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | 2015 | 173.7 | 54.5 | 71.5 | 23.9 |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | 2016 | 175.1 | 55.0 | 72.2 | 23.9 |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | 2017 | 176.5 | 55.4 | 72.8 | 23.9 |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | 2018 | 177.9 | 55.8 | 73.4 | 23.9 |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | 2019 | 179.3 | 56.2 | 74.1 | 23.9 |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | 2020 | 180.7 | 56.7 | 74.7 | 23.9 |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | 2021 | 182.1 | 57.1 | 75.4 | 23.9 |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | 2022 | 183.5 | 57.5 | 76.0 | 23.9 |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | 2023 | 185.0 | 57.9 | 76.7 | 23.9 |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | 2024 | 186.4 | 58.4 | 77.3 | 23.9 |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | 2025 | 187.8 | 58.8 | 78.0 | 23.9 |

| 5-Year Totals | |
|---------------|-----------|
| PLC | \$0 |
| County ARC | \$130,594 |
| Individual AR | \$0 |
| SCO | \$0 |
| PLC w/ SCO | \$0 |

| Payment Rates | |
|----------------|------|
| PLC | 0.85 |
| County ARC | 0.85 |
| Individual ARC | 0.65 |

| | Corn | Soybeans | Wheat | Dbl SB |
|-----------------|--------|----------|--------|--------|
| Reference Price | \$3.70 | \$8.40 | \$5.50 | \$8.40 |
| Loan Rates | \$1.95 | \$5.00 | \$2.94 | \$5.00 |

Figure D.8: Base Case Farm – Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|--------------|-------------------|----------|-------|--------|-------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| County ARC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$6 | \$0 | \$0 | \$71,373 |
| 2015 | \$50 | \$31 | \$0 | \$0 | \$59,220 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|-------------------------|-------------------|-------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$0 | \$0 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | |
|----------------------------------|------|---------|-------|--------|-------|
| | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | | |
|----------------|---|-----------|
| PLC | - | \$0 |
| County ARC | - | \$130,594 |
| Individual ARC | - | \$0 |
| SCO | - | \$0 |
| PLC w/ SCO | - | \$0 |

Figure D.9: Base Case Farm – Price & Yield Changes

| Price & Yield Changes | | | | | | | | | | | | |
|-----------------------|-----------|-----------|------------|-----------|-----------|------------|-----------|-----------|------------|-----------|-----------|------------|
| | Corn | | | Soybeans | | | Wheat | | | Dbl SB | | |
| | Projected | | Projected | Projected | | Projected | Projected | | Projected | Projected | | Projected |
| | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield | Prices | Cty Yield | Farm Yield |
| 2014 | 3.89 | 172.24 | 192.24 | 10.30 | 54.11 | 62.11 | 6.27 | 70.86 | 80.86 | 10.30 | 23.86 | 26.86 |
| 2015 | 4.09 | 173.65 | 193.65 | 9.64 | 54.53 | 62.53 | 5.73 | 71.51 | 81.51 | 9.64 | 23.86 | 26.86 |
| 2016 | 4.09 | 175.07 | 195.07 | 10.11 | 54.96 | 62.96 | 5.72 | 72.16 | 82.16 | 10.11 | 23.86 | 26.86 |
| 2017 | 4.12 | 176.48 | 196.48 | 10.29 | 55.38 | 63.38 | 5.79 | 72.80 | 82.80 | 10.29 | 23.86 | 26.86 |
| 2018 | 4.21 | 177.89 | 197.89 | 10.54 | 55.81 | 63.81 | 5.87 | 73.45 | 83.45 | 10.54 | 23.86 | 26.86 |
| 2019 | 4.00 | 179.30 | 199.30 | 10.00 | 56.23 | 64.23 | 5.00 | 74.10 | 84.10 | 10.00 | 23.86 | 26.86 |
| 2020 | 4.00 | 180.72 | 200.72 | 10.00 | 56.66 | 64.66 | 5.00 | 74.74 | 84.74 | 10.00 | 23.86 | 26.86 |
| 2021 | 4.00 | 182.13 | 202.13 | 10.00 | 57.08 | 65.08 | 5.00 | 75.39 | 85.39 | 10.00 | 23.86 | 26.86 |
| 2022 | 4.00 | 183.54 | 203.54 | 10.00 | 57.51 | 65.51 | 5.00 | 76.04 | 86.04 | 10.00 | 23.86 | 26.86 |
| 2023 | 4.00 | 184.96 | 204.96 | 10.00 | 57.93 | 65.93 | 5.00 | 76.68 | 86.68 | 10.00 | 23.86 | 26.86 |
| 2024 | 4.00 | 186.37 | 206.37 | 10.00 | 58.36 | 66.36 | 5.00 | 77.33 | 87.33 | 10.00 | 23.86 | 26.86 |
| 2025 | 4.00 | 187.78 | 207.78 | 10.00 | 58.78 | 66.78 | 5.00 | 77.98 | 87.98 | 10.00 | 23.86 | 26.86 |

*Current Yields are projected, but customizable here. Select the "Projected" button to return the projected yields

**To manually adjust prices, select this button ->

Figure D.10: Base Case Farm – 2013 Budget

| Base Year - Financial Statements | | | | | | | |
|----------------------------------|---------|---------------------|---------------------|------------------|------------------|-----------------|-----------------------|
| | | Champaign | | | Base Year | | 2013 |
| Budget | | | | | | | |
| | | Corn | Soybeans | Wheat | Dbl SB | Per Acre | Total |
| Acres | | 894 | 797 | - | - | | 1,691 |
| Acres (%) | | 53% | 47% | 0% | 0% | 100% | |
| Yield per acre | | 182.21 | 56.15 | 45.00 | 19.00 | | |
| Total bushels | | 162,896 | 44,753 | - | - | | |
| Futures Price (\$/bu.) | | 4.46 | \$13.00 | \$6.87 | \$13.00 | | |
| | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | | |
| Cash Price (\$/bu.) | | \$4.46 | \$13.00 | \$6.87 | \$13.00 | | |
| Revenue | \$/acre | | | | | \$/acre | |
| Crop Revenue | | \$812.66 | \$729.97 | \$309.15 | \$247.00 | \$773.68 | \$1,308,298.55 |
| ACRE Revenue | | \$3.19 | \$0.00 | \$0.00 | \$6.31 | \$1.69 | \$2,849.90 |
| Crop Insurance Proceeds | | \$295.00 | \$26.00 | \$0.00 | \$12.00 | \$168.22 | \$284,452.00 |
| Total Revenue (\$/acre) | | \$1,110.84 | \$755.97 | \$309.15 | \$265.31 | \$943.58 | \$1,595,600.45 |
| Expenses | \$/acre | | | | | \$/acre | |
| Fertilizer | | \$200.00 | \$68.00 | \$103.00 | \$38.00 | \$137.79 | \$232,996.00 |
| Pesticide | | \$49.00 | \$39.00 | \$22.00 | \$30.00 | \$44.29 | \$74,889.00 |
| Seed | | \$108.00 | \$69.00 | \$44.00 | \$44.00 | \$89.62 | \$151,545.00 |
| Drying | | \$16.00 | \$1.00 | \$0.00 | \$1.00 | \$8.93 | \$15,101.00 |
| Storage | | \$7.00 | \$4.00 | \$1.00 | \$0.00 | \$5.59 | \$9,446.00 |
| Crop Insurance | | \$25.00 | \$17.00 | \$8.00 | \$4.00 | \$21.23 | \$35,899.00 |
| Total Direct Expense | | \$405.00 | \$198.00 | \$178.00 | \$117.00 | \$307.44 | \$519,876.00 |
| Machine Hire/Lease | | \$10.00 | \$9.00 | \$17.00 | \$11.00 | \$9.53 | \$16,113.00 |
| Utilities | | \$5.00 | \$4.00 | \$6.00 | \$5.00 | \$4.53 | \$7,658.00 |
| Machine Repair | | \$22.00 | \$19.00 | \$23.00 | \$26.00 | \$20.59 | \$34,811.00 |
| Fuel & Oil | | \$23.00 | \$20.00 | \$23.00 | \$19.00 | \$21.59 | \$36,502.00 |
| Light Vehicle | | \$2.00 | \$1.00 | \$2.00 | \$2.00 | \$1.53 | \$2,585.00 |
| Mach. Depreciation | | \$55.00 | \$48.00 | \$40.00 | \$27.00 | \$51.70 | \$87,426.00 |
| Total Power Expense | | \$117.00 | \$101.00 | \$111.00 | \$90.00 | \$109.46 | \$185,095.00 |
| Hired Labor | | \$14.00 | \$13.00 | \$15.00 | \$13.00 | \$13.53 | \$22,877.00 |
| Building Repair & Rent | | \$8.00 | \$6.00 | \$10.00 | \$7.00 | \$7.06 | \$11,934.00 |
| Building Depreciation | | \$9.00 | \$8.00 | \$8.00 | \$5.00 | \$8.53 | \$14,422.00 |
| Insurance | | \$9.00 | \$9.00 | \$9.00 | \$0.00 | \$9.00 | \$15,219.00 |
| Misc. | | \$8.00 | \$8.00 | \$7.00 | \$0.00 | \$8.00 | \$13,528.00 |
| Interest | | \$11.00 | \$10.00 | \$16.00 | \$8.00 | \$10.53 | \$17,804.00 |
| Total Overhead | | \$59.00 | \$54.00 | \$65.00 | \$33.00 | \$56.64 | \$95,784.00 |
| Total Expenses | | \$581.00 | \$353.00 | \$354.00 | \$240.00 | \$473.54 | \$800,755.00 |
| Revenue Less Expenses | | \$529.84 | \$402.97 | -\$44.85 | \$25.31 | \$470.04 | \$794,845.45 |
| Property Taxes | | \$43.93 | \$43.93 | \$43.93 | \$43.93 | \$43.93 | \$74,286.58 |
| Cash Rent | | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$437,245.64 |
| Share Lease Rent | | \$352.92 | \$278.98 | \$65.58 | \$74.16 | \$318.07 | \$537,862.22 |
| Total Tenure Cost | | \$272.16 | \$240.97 | \$150.94 | \$154.56 | \$257.46 | \$435,364.97 |
| Net Revenue | | \$257.68 | \$162.00 | -\$195.79 | -\$129.25 | \$212.58 | \$359,480.48 |
| Total Net Revenue | | \$230,369.32 | \$129,111.16 | \$0.00 | \$0.00 | | \$359,480.48 |

Figure D.11: Base Case Farm – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,238,944.39 | \$1,247,739.67 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$372,069.44 | \$369,157.15 | \$352,614.07 | \$361,807.85 | \$382,792.33 |
| Total Tenure Cost | | \$365,425.77 | \$364,197.23 | \$357,218.58 | \$361,096.95 | \$369,949.19 |
| Total Operating Costs | | \$1,024,628.77 | \$1,045,300.23 | \$1,016,421.58 | \$1,042,199.95 | \$1,029,152.19 |
| Income before interest expense | | \$214,315.62 | \$202,439.44 | \$187,982.56 | \$201,291.75 | \$235,608.47 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$38,641.00 | \$42,448.76 | \$45,888.06 |
| Income before depreciation | | \$173,185.64 | \$162,732.61 | \$149,341.55 | \$158,842.98 | \$189,720.41 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$72,137.64 | \$60,884.61 | \$48,293.55 | \$56,994.98 | \$88,672.41 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$177,556.14 | \$173,183.24 | \$149,341.55 | \$158,842.98 | \$189,720.41 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$72,202.06 | -\$78,665.21 | -\$104,618.04 | -\$97,248.87 | -\$68,525.03 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$437,563.41 | \$425,081.83 | \$405,512.13 | \$418,091.93 | \$458,621.60 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$422,513.79 | \$409,671.23 | \$388,128.95 | \$400,324.43 | \$438,857.95 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$381,780.28 | \$368,937.73 | \$347,395.44 | \$359,590.93 | \$398,124.44 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$71,518.94 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,136,147.22 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate-Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,825,394.51 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Operating / Short Term Notes | | \$356,059.57 | \$363,205.84 | \$467,823.89 | \$565,072.76 | \$633,597.79 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$524,384.93 | \$531,531.20 | \$636,149.24 | \$733,398.12 | \$801,923.15 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$933,743.57 | \$900,156.33 | \$964,040.87 | \$1,020,556.23 | \$1,048,347.76 |
| Net Worth | | \$4,891,650.94 | \$4,845,727.58 | \$4,775,589.95 | \$4,712,969.43 | \$4,680,830.19 |
| Total Liab & Net Worth | | \$5,825,394.51 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Change in Net Worth | | -\$39,589.48 | -\$45,923.36 | -\$70,137.63 | -\$62,620.51 | -\$32,139.24 |

Figure D.12: \$100 Reduction In Cash Rent - % Change Main Page

| % Change Main Page | | | | | | | |
|--|--------------------------|----------------------------|-------------------|---------------|---------------|---------------|---------------|
| Year 1- | | 2014 | | | | | |
| Change in Acres: | | 2014 | 2015 | 2016 | 2017 | 2018 | |
| | Corn | -100 | 100 | -100 | 100 | -100 | |
| | Soybeans | 100 | -100 | 100 | -100 | 100 | |
| | Wheat | 0 | 0 | 0 | 0 | 0 | |
| | Double Crop Soybeans | 0 | 0 | 0 | 0 | 0 | |
| Change in Cash Rent: | | -\$100.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | Cash Rent | \$258.57 | \$158.57 | \$158.57 | \$158.57 | \$158.57 | \$158.57 |
| | %Change | 0% | 0% | 0% | 0% | 0% | 0% |
| Change in Share Lease Information: | | Click Here | | | | | |
| **Select how to increase/decrease expenses | | All Change Same % | | | | | |
| If you chose "All Change Same %": | | | | | | | |
| | % Change | 0% | 0% | 0% | 0% | 0% | 0% |
| If chose "Expenses Individually Change, But Not Between Crops": | | Click Here | | | | | |
| If chose "All Individual Expenses Change": | | Click Here | | | | | |
| Other Changes | | Base Year | Adjustment | | | | |
| | | Costs (/ac) | Base Year | | | | |
| | Non-Farm Income | \$5.51 | \$0.00 | 1% | 1% | 1% | 1% |
| | Family Living | \$40.18 | \$5.00 | 1% | 1% | 1% | 1% |
| | Income and SS Tax | \$29.31 | -\$1.00 | 1% | 1% | 1% | 1% |
| | Capital Purchases | \$114.41 | -\$60.00 | 1% | 1% | 1% | 1% |
| Interest Rate | | | | | | | |
| | Current Liabilities | 5% | 5% | 5% | 5% | 5% | 5% |
| | Intermediate Liabilities | 4% | 4% | 4% | 4% | 4% | 4% |
| | Long Term Liabilities | 3% | 3% | 3% | 3% | 3% | 3% |
| Principal Payment | | Years | Payment | | | | |
| | Current Liabilities | 0 | \$0.00 | | | | |
| | Intermediate Liabilities | 7 | \$20,113.81 | | | | |
| | Long Term Liabilities | 15 | \$20,619.70 | | | | |

Figure D.13: \$100 Reduction In Cash Rent – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,238,944.39 | \$1,247,739.67 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent (46%) | | \$268,145.64 | \$268,145.64 | \$268,145.64 | \$268,145.64 | \$268,145.64 |
| Share Lease (42%) | | \$372,069.44 | \$369,157.15 | \$352,614.07 | \$361,807.85 | \$382,792.33 |
| Total Tenure Cost | | \$288,311.03 | \$287,082.49 | \$280,103.84 | \$283,982.21 | \$292,834.45 |
| Total Operating Costs | | \$947,514.03 | \$968,185.49 | \$939,306.84 | \$965,085.21 | \$952,037.45 |
| Income before interest expense | | \$291,430.36 | \$279,554.18 | \$265,097.30 | \$278,406.49 | \$312,723.21 |
| Interest costs | | \$41,129.98 | \$39,461.20 | \$38,038.06 | \$36,614.91 | \$35,191.77 |
| Income before depreciation | | \$250,300.38 | \$240,092.98 | \$227,059.24 | \$241,791.58 | \$277,531.44 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$149,252.38 | \$138,244.98 | \$126,011.24 | \$139,943.58 | \$176,483.44 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$254,670.88 | \$250,543.61 | \$227,059.24 | \$241,791.58 | \$277,531.44 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | \$4,912.68 | -\$1,304.84 | -\$26,900.35 | -\$14,300.28 | \$19,286.00 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$437,563.41 | \$425,327.47 | \$406,115.08 | \$423,925.78 | \$469,317.89 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$422,513.79 | \$409,916.87 | \$388,731.89 | \$406,158.28 | \$449,554.24 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$381,780.28 | \$369,183.36 | \$347,998.39 | \$365,424.78 | \$408,820.73 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$143,721.00 | \$142,416.16 | \$115,515.81 | \$101,215.53 | \$101,215.53 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,208,349.29 | \$1,207,044.45 | \$1,180,144.10 | \$1,165,843.82 | \$1,165,843.82 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate-Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,897,596.57 | \$5,888,300.08 | \$5,855,146.63 | \$5,834,741.20 | \$5,830,393.48 |
| Operating / Short Term Notes | | \$351,146.89 | \$351,146.89 | \$351,146.89 | \$351,146.89 | \$331,860.89 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$519,472.25 | \$519,472.25 | \$519,472.25 | \$519,472.25 | \$500,186.24 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$928,830.88 | \$888,097.38 | \$847,363.87 | \$806,630.37 | \$746,610.86 |
| Net Worth | | \$4,968,765.69 | \$5,000,202.70 | \$5,007,782.75 | \$5,028,110.83 | \$5,083,782.62 |
| Total Liab & Net Worth | | \$5,897,596.57 | \$5,888,300.08 | \$5,855,146.63 | \$5,834,741.20 | \$5,830,393.48 |
| Change in Net Worth | | \$37,525.26 | \$31,437.01 | \$7,580.06 | \$20,328.08 | \$55,671.79 |

Figure D.14: \$100 Reduction In All Costs - % Change Main Page

| % Change Main Page | | | | | | | |
|--|--------------------------|------------------------------|-----------------------------|---------------|---------------|---------------|---------------|
| Year 1- | | 2014 | | | | | |
| Change in Acres: | | 2014 | 2015 | 2016 | 2017 | 2018 | |
| | Corn | -100 | 100 | -100 | 100 | -100 | |
| | Soybeans | 100 | -100 | 100 | -100 | 100 | |
| | Wheat | 0 | 0 | 0 | 0 | 0 | |
| | Double Crop Soybeans | 0 | 0 | 0 | 0 | 0 | |
| Change in Cash Rent: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | Cash Rent | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 | \$258.57 |
| | %Change | 0% | 0% | 0% | 0% | 0% | 0% |
| Change in Share Lease Information: | | Click Here | | | | | |
| **Select how to increase/decrease expenses | | All Change Same % | | | | | |
| If you chose "All Change Same %": | | | | | | | |
| | % Change | -20% | 0% | 0% | 0% | 0% | 0% |
| If chose "Expenses Individually Change, But Not Between Crops": | | Click Here | | | | | |
| If chose "All Individual Expenses Change": | | Click Here | | | | | |
| Other Changes | | Base Year Costs (/ac) | Adjustment Base Year | | | | |
| | Non-Farm Income | \$5.51 | \$0.00 | 1% | 1% | 1% | 1% |
| | Family Living | \$40.18 | \$5.00 | 1% | 1% | 1% | 1% |
| | Income and SS Tax | \$29.31 | -\$1.00 | 1% | 1% | 1% | 1% |
| | Capital Purchases | \$114.41 | -\$60.00 | 1% | 1% | 1% | 1% |
| Interest Rate | | | | | | | |
| | Current Liabilities | 5% | 5% | 5% | 5% | 5% | 5% |
| | Intermediate Liabilities | 4% | 4% | 4% | 4% | 4% | 4% |
| | Long Term Liabilities | 3% | 3% | 3% | 3% | 3% | 3% |
| Principal Payment | | Years | Payment | | | | |
| | Current Liabilities | 0 | \$0.00 | | | | |
| | Intermediate Liabilities | 7 | \$20,113.81 | | | | |
| | Long Term Liabilities | 15 | \$20,619.70 | | | | |

Figure D.15: \$100 Reduction In All Costs – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|--|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$71,373.27 | \$59,220.24 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,238,944.39 | \$1,247,739.67 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$476,756.00 | \$494,036.00 | \$476,756.00 | \$494,036.00 | \$476,756.00 |
| Other costs | | \$50,606.40 | \$50,846.40 | \$50,606.40 | \$50,846.40 | \$50,606.40 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$59,429.26 | \$59,429.26 | \$59,429.26 | \$59,429.26 | \$59,429.26 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$421,987.04 | \$421,144.75 | \$402,531.67 | \$413,795.45 | \$432,709.93 |
| Total Tenure Cost | | \$384,668.95 | \$384,313.63 | \$376,461.76 | \$381,213.35 | \$389,192.37 |
| Total Operating Costs | | \$912,031.35 | \$929,196.03 | \$903,824.16 | \$926,095.75 | \$916,554.77 |
| Income before interest expense | | \$326,913.04 | \$318,543.64 | \$300,579.98 | \$317,395.94 | \$348,205.89 |
| Interest costs | | \$41,129.98 | \$37,687.07 | \$34,290.98 | \$32,251.37 | \$29,375.59 |
| Income before depreciation | | \$285,783.06 | \$280,856.57 | \$266,288.99 | \$285,144.57 | \$318,830.30 |
| Depreciation | | \$80,838.40 | \$81,478.40 | \$80,838.40 | \$81,478.40 | \$80,838.40 |
| Net Farm Income | | \$204,944.66 | \$199,378.17 | \$185,450.59 | \$203,666.17 | \$237,991.90 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$290,153.56 | \$291,307.20 | \$266,288.99 | \$285,144.57 | \$318,830.30 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | \$40,395.36 | \$39,458.75 | \$12,329.40 | \$29,052.71 | \$60,584.86 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$589,613.61 | \$583,691.80 | \$561,912.35 | \$584,879.52 | \$627,184.27 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$80,838.40 | \$81,478.40 | \$80,838.40 | \$81,478.40 | \$80,838.40 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$554,354.39 | \$547,911.60 | \$524,319.57 | \$546,742.42 | \$587,211.02 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$513,620.88 | \$507,178.10 | \$483,586.06 | \$506,008.92 | \$546,477.51 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$143,721.00 | \$143,721.00 | \$143,721.00 | \$143,721.00 | \$143,721.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,208,349.29 | \$1,208,349.29 | \$1,208,349.29 | \$1,208,349.29 | \$1,208,349.29 |
| Machinery & Equipment | | \$987,004.86 | \$1,003,400.04 | \$1,021,218.57 | \$1,039,349.10 | \$1,058,920.34 |
| Total Intermediate Assets | | \$1,344,178.08 | \$1,360,573.25 | \$1,378,391.79 | \$1,396,522.32 | \$1,416,093.56 |
| Farm Real Estate-Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$80,559.74 | \$76,542.50 | \$72,680.47 | \$68,814.39 | \$65,105.03 |
| Total Fixed Assets | | \$3,365,278.81 | \$3,361,261.57 | \$3,357,399.54 | \$3,353,533.47 | \$3,349,824.11 |
| Total Assets | | \$5,917,806.17 | \$5,930,184.11 | \$5,944,140.61 | \$5,958,405.07 | \$5,974,266.95 |
| Operating / Short Term Notes | | \$315,664.21 | \$276,205.46 | \$263,876.06 | \$234,823.35 | \$174,238.49 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$483,989.57 | \$444,530.81 | \$432,201.42 | \$403,148.70 | \$342,563.84 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$893,348.21 | \$813,155.95 | \$760,093.04 | \$690,306.82 | \$588,988.46 |
| Net Worth | | \$5,024,457.96 | \$5,117,028.17 | \$5,184,047.57 | \$5,268,098.25 | \$5,385,278.49 |
| Total Liab & Net Worth | | \$5,917,806.17 | \$5,930,184.11 | \$5,944,140.61 | \$5,958,405.07 | \$5,974,266.95 |
| Change in Net Worth | | \$93,217.54 | \$92,570.20 | \$67,019.41 | \$84,050.67 | \$117,180.25 |

Figure D.16: High Prices – Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | |
|--------------------|--|--------------------|-----------|--------------------------------|--|---------------------------------|-------|--------|
| County | Champaign | | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | |
| Region | East Central IL | | | <Formula | | | | |
| Farm Size | 1501-2000 | | | | | | | |
| 1) FIPS | 17019 | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | 2a) Select Future Price Source | CBO | | | |
| | Corn | Soybeans | Wheat | DbI SB | *** (Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins) | | | |
| | ARC County Revenue | ARC County Revenue | None | None | | | | |
| 2) Base Acreage | Corn | Soybeans | Wheat | DbI SB | Total | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | |
| | 894 | 797 | 0 | 0 | | | | |
| 3) MYA Prices | Corn | Soybeans | Wheat | DbI SB | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | |
| 2014 | 3.50 | 10.00 | 5.40 | 10.00 | | | | |
| 2015 | 4.00 | 10.02 | 5.60 | 10.02 | | | | |
| 2016 | 4.19 | 10.06 | 5.63 | 10.06 | | | | |
| 2017 | 4.35 | 10.87 | 5.65 | 10.87 | | | | |
| 2018 | 4.45 | 11.11 | 5.78 | 11.11 | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | |
| | Payment Rates | | | | | | | |
| | PLC | 0.85 | | | | | | |
| | County ARC | 0.85 | | | | | | |
| | Individual ARC | 0.65 | | | | | | |
| | 5-Year Totals | | | | | | | |
| | PLC | - | \$22,121 | | | | | |
| | County ARC | - | \$139,428 | | | | | |
| | Individual AR | - | \$0 | | | | | |
| | SCO | - | \$0 | | | | | |
| | PLC w/ SCO | - | \$22,121 | | | | | |
| 4) Payment Yields | Corn | Soybeans | Wheat | DbI SB | for PLC payments | | | |
| | 145.55 | 46.97 | 58.91 | 23.67 | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | |
| | Corn | Soybeans | Wheat | DbI SB | Total | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | |
| 6) Farm Yields | For Individual ARC payments | | | | County Yields | will update based on FIPS input | | |
| | Corn | Soybeans | Wheat | DbI SB | Corn | Soybeans | Wheat | DbI SB |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | 176.0 | 50.0 | 66.9 | 33.0 |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | 190.0 | 56.0 | 64.4 | 29.0 |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | 169.5 | 56.2 | 59.1 | 51.0 |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | 164.1 | 51.6 | 68.2 | 16.5 |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | 108.9 | 47.1 | 68.7 | 2.0 |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | 168.1 | 52.6 | 68.1 | 19.0 |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | 172.2 | 54.1 | 70.9 | 23.9 |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | 173.7 | 54.5 | 71.5 | 23.9 |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | 175.1 | 55.0 | 72.2 | 23.9 |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | 176.5 | 55.4 | 72.8 | 23.9 |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | 177.9 | 55.8 | 73.4 | 23.9 |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | 179.3 | 56.2 | 74.1 | 23.9 |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | 180.7 | 56.7 | 74.7 | 23.9 |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | 182.1 | 57.1 | 75.4 | 23.9 |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | 183.5 | 57.5 | 76.0 | 23.9 |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | 185.0 | 57.9 | 76.7 | 23.9 |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | 186.4 | 58.4 | 77.3 | 23.9 |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | 187.8 | 58.8 | 78.0 | 23.9 |

Figure D.17: High Prices – Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$29 | \$0 | \$0 | \$0 | \$22,121 |
| 2015 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| County ARC Payments | | | | | |
|----------------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$22 | \$0 | \$0 | \$82,370 |
| 2015 | \$66 | \$10 | \$0 | \$0 | \$57,058 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|--------------------------------|-------------------|-------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$0 | \$0 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | |
|---|------|---------|-------|--------|-------|
| Product | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | | |
|-----------------------|---|-----------|
| PLC | - | \$22,121 |
| County ARC | - | \$139,428 |
| Individual ARC | - | \$0 |
| SCO | - | \$0 |
| PLC w/ SCO | - | \$22,121 |

Figure D.18: High Prices – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,091,329.36 | \$1,191,876.53 | \$1,217,068.70 | \$1,313,190.70 | \$1,335,095.03 |
| Crop Gov't Payments | | \$82,369.62 | \$57,058.33 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$2,815.74 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,176,514.72 | \$1,248,934.86 | \$1,217,068.70 | \$1,313,190.70 | \$1,335,095.03 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$342,636.47 | \$369,563.99 | \$358,946.35 | \$396,657.35 | \$417,959.51 |
| Total Tenure Cost | | \$353,009.56 | \$364,368.85 | \$359,889.83 | \$375,798.11 | \$384,784.36 |
| Total Operating Costs | | \$1,012,212.56 | \$1,045,471.85 | \$1,019,092.83 | \$1,056,901.11 | \$1,043,987.36 |
| Income before interest expense | | \$164,302.16 | \$203,463.01 | \$197,975.87 | \$256,289.59 | \$291,107.66 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$40,931.39 | \$44,354.00 | \$45,138.67 |
| Income before depreciation | | \$123,172.18 | \$163,756.18 | \$157,044.48 | \$211,935.59 | \$245,968.99 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$22,124.18 | \$61,908.18 | \$55,996.48 | \$110,087.59 | \$144,920.99 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$131,106.41 | \$173,825.29 | \$157,044.48 | \$211,935.59 | \$245,968.99 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$118,651.80 | -\$78,023.16 | -\$96,915.11 | -\$44,156.27 | -\$12,276.45 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$375,133.74 | \$426,277.03 | \$415,886.32 | \$485,885.70 | \$529,705.36 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$360,084.11 | \$410,866.43 | \$398,503.13 | \$468,118.20 | \$509,941.70 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$319,350.61 | \$370,132.92 | \$357,769.62 | \$427,384.69 | \$469,208.20 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$25,069.20 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,089,697.49 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate- Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,778,944.77 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Operating / Short Term Notes | | \$356,059.57 | \$409,013.52 | \$505,928.64 | \$550,084.90 | \$562,361.35 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$524,384.93 | \$577,338.88 | \$674,253.99 | \$718,410.26 | \$730,686.71 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$933,743.57 | \$945,964.01 | \$1,002,145.62 | \$1,005,568.38 | \$977,111.32 |
| Net Worth | | \$4,845,201.21 | \$4,799,919.90 | \$4,737,485.20 | \$4,727,957.29 | \$4,752,066.63 |
| Total Liab & Net Worth | | \$5,778,944.77 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Change in Net Worth | | -\$86,039.22 | -\$45,281.31 | -\$62,434.70 | -\$9,527.91 | \$24,109.34 |

Figure D.19: Low Prices – Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | | | |
|--------------------|--|--------------------|-------------|--|---|----------|-------|--------|---------------------------------|--|
| County | Champaign | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | | | | |
| Region | East Central IL | | <Formula | | | | | | | |
| Farm Size | 1501-2000 | | | | | | | | | |
| 1) FIPS | 17019 | | | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | 2a) Select Future Price Source | | | USDA | | | |
| | Corn | Soybeans | Wheat | Dbl SB | *** (Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins) | | | | | |
| | ARC County Revenue | ARC County Revenue | None | None | | | | | | |
| 2) Base Acreage | Corn | Soybeans | Wheat | Dbl SB | Total | | | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | | | |
| | 894 | 797 | 0 | 0 | | | | | | |
| 3) MYA Prices | Corn | Soybeans | Wheat | Dbl SB | | | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | | | |
| 2014 | 3.50 | 10.00 | 5.40 | 10.00 | | | | | | |
| 2015 | 3.68 | 8.66 | 5.10 | 8.66 | | | | | | |
| 2016 | 3.38 | 9.00 | 4.38 | 9.00 | | | | | | |
| 2017 | 3.47 | 8.97 | 4.33 | 8.97 | | | | | | |
| 2018 | 3.53 | 9.19 | 4.56 | 9.19 | | | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 4) Payment Yields | Corn | Soybeans | Wheat | Dbl SB | for PLC payments | | | | | |
| | 145.55 | 46.97 | 58.91 | 23.67 | | | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | Total | | | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 6) Farm Yields | For Individual ARC payments | | | | County Yields | | | | will update based on FIPS input | |
| | Corn | Soybeans | Wheat | Dbl SB | Corn | Soybeans | Wheat | Dbl SB | | |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | 2008 | 176.0 | 50.0 | 66.9 | 33.0 | |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | 2009 | 190.0 | 56.0 | 64.4 | 29.0 | |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | 2010 | 169.5 | 56.2 | 59.1 | 51.0 | |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | 2011 | 164.1 | 51.6 | 68.2 | 16.5 | |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | 2012 | 108.9 | 47.1 | 68.7 | 2.0 | |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | 2013 | 168.1 | 52.6 | 68.1 | 19.0 | |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | 2014 | 172.2 | 54.1 | 70.9 | 23.9 | |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | 2015 | 173.7 | 54.5 | 71.5 | 23.9 | |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | 2016 | 175.1 | 55.0 | 72.2 | 23.9 | |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | 2017 | 176.5 | 55.4 | 72.8 | 23.9 | |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | 2018 | 177.9 | 55.8 | 73.4 | 23.9 | |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | 2019 | 179.3 | 56.2 | 74.1 | 23.9 | |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | 2020 | 180.7 | 56.7 | 74.7 | 23.9 | |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | 2021 | 182.1 | 57.1 | 75.4 | 23.9 | |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | 2022 | 183.5 | 57.5 | 76.0 | 23.9 | |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | 2023 | 185.0 | 57.9 | 76.7 | 23.9 | |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | 2024 | 186.4 | 58.4 | 77.3 | 23.9 | |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | 2025 | 187.8 | 58.8 | 78.0 | 23.9 | |

| 5-Year Totals | |
|---------------|-------------|
| PLC | - \$103,967 |
| County ARC | - \$283,400 |
| Individual AR | - \$16,647 |
| SCO | - \$10,463 |
| PLC w/ SCO | - \$114,430 |

| Payment Rates | |
|----------------|------|
| PLC | 0.85 |
| County ARC | 0.85 |
| Individual ARC | 0.65 |

| | Corn | Soybeans | Wheat | Dbl SB |
|-----------------|--------|----------|--------|--------|
| Reference Price | \$3.70 | \$8.40 | \$5.50 | \$8.40 |
| Loan Rates | \$1.95 | \$5.00 | \$2.94 | \$5.00 |

Figure D.20: Low Prices – Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$29 | \$0 | \$0 | \$0 | \$22,121 |
| 2015 | \$3 | \$0 | \$0 | \$0 | \$2,212 |
| 2016 | \$47 | \$0 | \$0 | \$0 | \$35,393 |
| 2017 | \$33 | \$0 | \$0 | \$0 | \$25,439 |
| 2018 | \$25 | \$0 | \$0 | \$0 | \$18,802 |

| County ARC Payments | | | | | |
|----------------------------|-------------------|----------|-------|--------|-----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$22 | \$0 | \$0 | \$82,370 |
| 2015 | \$88 | \$65 | \$0 | \$0 | \$111,053 |
| 2016 | \$80 | \$43 | \$0 | \$0 | \$89,978 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|--------------------------------|-------------------|----------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$15 | \$16,647 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | <i>Note: Not until 2015</i> |
|---|-------|---------|-------|--------|-----------------------------|
| Product | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 11.70 | 0.00 | 0.00 | 0.00 | \$10,463 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | |
|-----------------------|-------------|
| PLC | - \$103,967 |
| County ARC | - \$283,400 |
| Individual ARC | - \$16,647 |
| SCO | - \$10,463 |
| PLC w/ SCO | - \$114,430 |

Figure D.21: Low Prices – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,091,329.36 | \$1,068,696.95 | \$1,031,753.49 | \$1,062,637.36 | \$1,080,647.36 |
| Crop Gov't Payments | | \$82,369.62 | \$111,053.14 | \$89,977.55 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$2,815.74 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,176,514.72 | \$1,179,750.09 | \$1,121,731.04 | \$1,062,637.36 | \$1,080,647.36 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$342,636.47 | \$339,735.85 | \$317,318.51 | \$271,380.68 | \$290,735.68 |
| Total Tenure Cost | | \$353,009.56 | \$351,785.94 | \$342,329.25 | \$322,950.51 | \$331,115.36 |
| Total Operating Costs | | \$1,012,212.56 | \$1,032,888.94 | \$1,001,532.25 | \$1,004,053.51 | \$990,318.36 |
| Income before interest expense | | \$164,302.16 | \$146,861.15 | \$120,198.79 | \$58,583.84 | \$90,328.99 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$43,285.06 | \$50,110.11 | \$61,067.87 |
| Income before depreciation | | \$123,172.18 | \$107,154.31 | \$76,913.73 | \$8,473.74 | \$29,261.12 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$22,124.18 | \$5,306.31 | -\$24,134.27 | -\$93,374.26 | -\$71,786.88 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$131,106.41 | \$126,751.93 | \$88,995.71 | \$8,473.74 | \$29,261.12 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$118,651.80 | -\$125,096.52 | -\$164,963.89 | -\$247,618.12 | -\$228,984.32 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$375,133.74 | \$357,092.26 | \$318,194.98 | \$229,576.25 | \$259,328.49 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$360,084.11 | \$341,681.65 | \$300,811.80 | \$211,808.75 | \$239,564.83 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$319,350.61 | \$300,948.15 | \$260,078.29 | \$171,075.24 | \$198,831.33 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$25,069.20 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,089,697.49 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate-Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,778,944.77 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Operating / Short Term Notes | | \$356,059.57 | \$456,086.89 | \$621,050.77 | \$868,668.89 | \$1,097,653.21 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$524,384.93 | \$624,412.24 | \$789,376.13 | \$1,036,994.25 | \$1,265,978.57 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$933,743.57 | \$993,037.37 | \$1,117,267.75 | \$1,324,152.37 | \$1,512,403.18 |
| Net Worth | | \$4,845,201.21 | \$4,752,846.54 | \$4,622,363.06 | \$4,409,373.30 | \$4,216,774.77 |
| Total Liab & Net Worth | | \$5,778,944.77 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Change in Net Worth | | -\$86,039.22 | -\$92,354.67 | -\$130,483.48 | -\$212,989.76 | -\$192,598.53 |

Figure D.22: Price Loss Coverage – Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | | | |
|--------------------|--|-----------------|--------------|---------------|--|---|-----------------|--------------|---------------|--------|
| County | Champaign | | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | | | |
| Region | East Central IL | | | <Formula | | | | | | |
| Farm Size | 1501-2000 | | | | | | | | | |
| 1) FIPS | 17019 | | | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | | 2a) Select Future Price Source FAPRI | | | | | |
| | Corn | Soybeans | Wheat | DbI SB | ***(Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins) | | | | | |
| | PLC Revenue | PLC Revenue | None | None | | | | | | |
| 2) Base Acreage | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | <i>Total</i> | | | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | | | |
| | 894 | 797 | 0 | 0 | | | | | | |
| 3) MYA Prices | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | | | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | | | |
| 2014 | 3.89 | 10.30 | 6.27 | 10.30 | | | | | | |
| 2015 | 4.09 | 9.64 | 5.73 | 9.64 | | | | | | |
| 2016 | 4.09 | 10.11 | 5.72 | 10.11 | | | | | | |
| 2017 | 4.12 | 10.29 | 5.79 | 10.29 | | | | | | |
| 2018 | 4.21 | 10.54 | 5.87 | 10.54 | | | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| | | | | | | 5-Year Totals | | | | |
| | | | | | | PLC | - | | \$0 | |
| | | | | | | County ARC | - | | \$130,594 | |
| | | | | | | Individual AR | - | | \$0 | |
| | | | | | | SCO | - | | \$0 | |
| | | | | | | PLC w/ SCO | - | | \$0 | |
| | | | | | | Payment Rates | | | | |
| | | | | | | PLC | | | 0.85 | |
| | | | | | | County ARC | | | 0.85 | |
| | | | | | | Individual ARC | | | 0.65 | |
| | | | | | | Reference Prices and Loan Rates | | | | |
| | | | | | | Reference Price | Corn | Soybeans | Wheat | DbI SB |
| | | | | | | | \$3.70 | \$8.40 | \$5.50 | \$8.40 |
| | | | | | | Loan Rates | \$1.95 | \$5.00 | \$2.94 | \$5.00 |
| 4) Payment Yields | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | for PLC payments | | | | | |
| | 145.55 | 46.97 | 58.91 | 23.67 | | | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | | | |
| | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | <i>Total</i> | | | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 6) Farm Yields | For Individual ARC payments | | | | | County Yields will update based on FIPS input | | | | |
| | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | | <i>Corn</i> | <i>Soybeans</i> | <i>Wheat</i> | <i>DbI SB</i> | |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | | 2008 | 176.0 | 50.0 | 66.9 | 33.0 |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | | 2009 | 190.0 | 56.0 | 64.4 | 29.0 |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | | 2010 | 169.5 | 56.2 | 59.1 | 51.0 |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | | 2011 | 164.1 | 51.6 | 68.2 | 16.5 |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | | 2012 | 108.9 | 47.1 | 68.7 | 2.0 |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | | 2013 | 168.1 | 52.6 | 68.1 | 19.0 |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | | 2014 | 172.2 | 54.1 | 70.9 | 23.9 |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | | 2015 | 173.7 | 54.5 | 71.5 | 23.9 |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | | 2016 | 175.1 | 55.0 | 72.2 | 23.9 |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | | 2017 | 176.5 | 55.4 | 72.8 | 23.9 |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | | 2018 | 177.9 | 55.8 | 73.4 | 23.9 |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | | 2019 | 179.3 | 56.2 | 74.1 | 23.9 |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | | 2020 | 180.7 | 56.7 | 74.7 | 23.9 |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | | 2021 | 182.1 | 57.1 | 75.4 | 23.9 |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | | 2022 | 183.5 | 57.5 | 76.0 | 23.9 |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | | 2023 | 185.0 | 57.9 | 76.7 | 23.9 |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | | 2024 | 186.4 | 58.4 | 77.3 | 23.9 |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | | 2025 | 187.8 | 58.8 | 78.0 | 23.9 |

Figure D.23: Price Loss Coverage – Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|-------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| County ARC Payments | | | | | |
|----------------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$6 | \$0 | \$0 | \$71,373 |
| 2015 | \$50 | \$31 | \$0 | \$0 | \$59,220 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|--------------------------------|-------------------|-------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$0 | \$0 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | |
|---|------|---------|-------|--------|-------|
| | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | | |
|----------------------|---|-----------|
| PLC | - | \$0 |
| County ARC | - | \$130,594 |
| Individual ARC | - | \$0 |
| SCO | - | \$0 |
| PLC w/ SCO | - | \$0 |

Figure D.24: Price Loss Coverage – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$334,197.56 | \$334,321.71 | \$352,614.07 | \$361,807.85 | \$382,792.33 |
| Total Tenure Cost | | \$349,449.63 | \$349,502.00 | \$357,218.58 | \$361,096.95 | \$369,949.19 |
| Total Operating Costs | | \$1,008,652.63 | \$1,030,605.00 | \$1,016,421.58 | \$1,042,199.95 | \$1,029,152.19 |
| Income before interest expense | | \$158,918.49 | \$157,914.42 | \$187,982.56 | \$201,291.75 | \$235,608.47 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$44,378.17 | \$48,472.79 | \$52,213.29 |
| Income before depreciation | | \$117,788.51 | \$118,207.59 | \$143,604.39 | \$152,818.96 | \$183,395.19 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$16,740.51 | \$16,359.59 | \$42,556.39 | \$50,970.96 | \$82,347.19 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$117,788.51 | \$118,207.59 | \$143,604.39 | \$152,818.96 | \$183,395.19 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$131,969.69 | -\$133,640.86 | -\$110,355.21 | -\$103,272.90 | -\$74,850.26 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$366,190.14 | \$365,861.59 | \$399,774.97 | \$412,067.91 | \$452,296.38 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$351,140.52 | \$350,450.99 | \$382,391.78 | \$394,300.41 | \$432,532.72 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$310,407.01 | \$309,717.48 | \$341,658.28 | \$353,566.91 | \$391,799.22 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$11,751.31 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,076,379.60 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate- Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,765,626.88 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Operating / Short Term Notes | | \$356,059.57 | \$477,949.12 | \$588,304.32 | \$691,577.22 | \$766,427.47 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$524,384.93 | \$646,274.47 | \$756,629.68 | \$859,902.58 | \$934,752.83 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$933,743.57 | \$1,014,899.61 | \$1,084,521.31 | \$1,147,060.69 | \$1,181,177.44 |
| Net Worth | | \$4,831,883.32 | \$4,730,984.31 | \$4,655,109.51 | \$4,586,464.97 | \$4,548,000.51 |
| Total Liab & Net Worth | | \$5,765,626.88 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Change in Net Worth | | -\$99,357.11 | -\$100,899.01 | -\$75,874.80 | -\$68,644.54 | -\$38,464.47 |

Figure D.25: No Policy – Farm Bill Options Page – Part 1

| Farm Bill Options | | | | | | | | | | |
|--------------------|--|----------|-------|--------|---|--|-------|--------|---------------------------------|--|
| County | Champaign | | | | <Adjustable | **Scroll down for ARC/PLC comparison tables | | | | |
| Region | East Central IL | | | | <Formula | | | | | |
| Farm Size | 1501-2000 | | | | | | | | | |
| 1) FIPS | 17019 | | | | | | | | | |
| 2) Select Coverage | ARC Individual ? | No | | | 2a) Select Future Price Source | FAPRI | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | *** <i>(Only Select "PLC Revenue w/ SCO Option" if using Individual Crop Ins)</i> | | | | | |
| | None | None | None | None | | | | | | |
| 2) Base Acreage | Corn | Soybeans | Wheat | Dbl SB | Total | | | | | |
| | 53% | 47% | 0% | 0% | 1691 | | | | | |
| | 894 | 797 | 0 | 0 | | | | | | |
| 3) MYA Prices | Corn | Soybeans | Wheat | Dbl SB | | | | | | |
| 2013 | 4.46 | 13.00 | 6.87 | 13.00 | | | | | | |
| 2014 | 3.89 | 10.30 | 6.27 | 10.30 | | | | | | |
| 2015 | 4.09 | 9.64 | 5.73 | 9.64 | | | | | | |
| 2016 | 4.09 | 10.11 | 5.72 | 10.11 | | | | | | |
| 2017 | 4.12 | 10.29 | 5.79 | 10.29 | | | | | | |
| 2018 | 4.21 | 10.54 | 5.87 | 10.54 | | | | | | |
| 2019 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2020 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2021 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2022 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2023 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2024 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| 2025 | 4.00 | 10.00 | 5.00 | 10.00 | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | for PLC payments | | | | | |
| 4) Payment Yields | 145.55 | 46.97 | 58.91 | 23.67 | | | | | | |
| 5) Planted Acreage | For Individual ARC payment calculation (acreage share/weights) | | | | | | | | | |
| | Corn | Soybeans | Wheat | Dbl SB | Total | | | | | |
| 2014 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2015 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2016 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 2017 | 894 | 797 | 0 | 0 | 1691 | | | | | |
| 2018 | 794 | 897 | 0 | 0 | 1691 | | | | | |
| 6) Farm Yields | For Individual ARC payments | | | | County Yields | | | | will update based on FIPS input | |
| | Corn | Soybeans | Wheat | Dbl SB | Corn | Soybeans | Wheat | Dbl SB | | |
| 2008 | 182.4 | 52.2 | 70.3 | 33.0 | 2008 | 176.0 | 50.0 | 66.9 | 33.0 | |
| 2009 | 193.2 | 57.3 | 32.5 | 29.0 | 2009 | 190.0 | 56.0 | 64.4 | 29.0 | |
| 2010 | 166.4 | 59.0 | 19.0 | 51.0 | 2010 | 169.5 | 56.2 | 59.1 | 51.0 | |
| 2011 | 162.1 | 51.6 | 67.1 | 16.5 | 2011 | 164.1 | 51.6 | 68.2 | 16.5 | |
| 2012 | 116.6 | 49.6 | 44.0 | 2.0 | 2012 | 108.9 | 47.1 | 68.7 | 2.0 | |
| 2013 | 182.2 | 56.2 | 45.0 | 19.0 | 2013 | 168.1 | 52.6 | 68.1 | 19.0 | |
| 2014 | 192.2 | 62.1 | 80.9 | 26.9 | 2014 | 172.2 | 54.1 | 70.9 | 23.9 | |
| 2015 | 193.7 | 62.5 | 81.5 | 26.9 | 2015 | 173.7 | 54.5 | 71.5 | 23.9 | |
| 2016 | 195.1 | 63.0 | 82.2 | 26.9 | 2016 | 175.1 | 55.0 | 72.2 | 23.9 | |
| 2017 | 196.5 | 63.4 | 82.8 | 26.9 | 2017 | 176.5 | 55.4 | 72.8 | 23.9 | |
| 2018 | 197.9 | 63.8 | 83.4 | 26.9 | 2018 | 177.9 | 55.8 | 73.4 | 23.9 | |
| 2019 | 199.3 | 64.2 | 84.1 | 26.9 | 2019 | 179.3 | 56.2 | 74.1 | 23.9 | |
| 2020 | 200.7 | 64.7 | 84.7 | 26.9 | 2020 | 180.7 | 56.7 | 74.7 | 23.9 | |
| 2021 | 202.1 | 65.1 | 85.4 | 26.9 | 2021 | 182.1 | 57.1 | 75.4 | 23.9 | |
| 2022 | 203.5 | 65.5 | 86.0 | 26.9 | 2022 | 183.5 | 57.5 | 76.0 | 23.9 | |
| 2023 | 205.0 | 65.9 | 86.7 | 26.9 | 2023 | 185.0 | 57.9 | 76.7 | 23.9 | |
| 2024 | 206.4 | 66.4 | 87.3 | 26.9 | 2024 | 186.4 | 58.4 | 77.3 | 23.9 | |
| 2025 | 207.8 | 66.8 | 88.0 | 26.9 | 2025 | 187.8 | 58.8 | 78.0 | 23.9 | |

Figure D.26: No Policy – Farm Bill Options Page – Part 2

| PLC Payments | | | | | |
|---------------------|-------------------|----------|-------|--------|-------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| County ARC Payments | | | | | |
|----------------------------|-------------------|----------|-------|--------|----------|
| | Corn | Soybeans | Wheat | Dbl SB | Total |
| | (\$/payment acre) | | | | |
| 2014 | \$88 | \$6 | \$0 | \$0 | \$71,373 |
| 2015 | \$50 | \$31 | \$0 | \$0 | \$59,220 |
| 2016 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 | \$0 | \$0 |

| Individual ARC Payments | | |
|--------------------------------|-------------------|-------|
| | Whole Farm | Total |
| | (\$/payment acre) | |
| 2014 | \$0 | \$0 |
| 2015 | \$0 | \$0 |
| 2016 | \$0 | \$0 |
| 2017 | \$0 | \$0 |
| 2018 | \$0 | \$0 |

| SCO Payment - If PLC is Selected | | | | | |
|---|------|---------|-------|--------|-------|
| Product | RP | RP | RP | RP | |
| Coverage | 85% | 85% | 75% | 75% | |
| | Corn | Soybean | Wheat | Dbl Sb | Total |
| 2014 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2015 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2016 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2017 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |
| 2018 | 0.00 | 0.00 | 0.00 | 0.00 | \$0 |

| 5-Year Totals | | |
|----------------------|---|-----------|
| PLC | - | \$0 |
| County ARC | - | \$130,594 |
| Individual ARC | - | \$0 |
| SCO | - | \$0 |
| PLC w/ SCO | - | \$0 |

Figure D.27: No Policy – Projected Financial Statements

| Projected Financial Statements | | | | | | |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total Farm | Champaign | 2014 | 2015 | 2016 | 2017 | 2018 |
| Projected Net Farm Income | | | | | | |
| Crop Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Crop Gov't Payments | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crop Insurance Proceeds | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Revenue | | \$1,167,571.12 | \$1,188,519.42 | \$1,204,404.14 | \$1,243,491.69 | \$1,264,760.66 |
| Variable Costs | | \$595,945.00 | \$617,545.00 | \$595,945.00 | \$617,545.00 | \$595,945.00 |
| Other costs | | \$63,258.00 | \$63,558.00 | \$63,258.00 | \$63,558.00 | \$63,258.00 |
| Tenure (% of Acres) | | | | | | |
| Owned (Pr 12%) | | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 | \$74,286.58 |
| Cash Rent 46% | | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 | \$437,245.64 |
| Share Lease 42% | | \$334,197.56 | \$334,321.71 | \$352,614.07 | \$361,807.85 | \$382,792.33 |
| Total Tenure Cost | | \$349,449.63 | \$349,502.00 | \$357,218.58 | \$361,096.95 | \$369,949.19 |
| Total Operating Costs | | \$1,008,652.63 | \$1,030,605.00 | \$1,016,421.58 | \$1,042,199.95 | \$1,029,152.19 |
| Income before interest expense | | \$158,918.49 | \$157,914.42 | \$187,982.56 | \$201,291.75 | \$235,608.47 |
| Interest costs | | \$41,129.98 | \$39,706.83 | \$44,378.17 | \$48,472.79 | \$52,213.29 |
| Income before depreciation | | \$117,788.51 | \$118,207.59 | \$143,604.39 | \$152,818.96 | \$183,395.19 |
| Depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| Net Farm Income | | \$16,740.51 | \$16,359.59 | \$42,556.39 | \$50,970.96 | \$82,347.19 |
| Projected Statement of Cash Flow (before financing activities) | | | | | | |
| Net cash income from farming | | \$117,788.51 | \$118,207.59 | \$143,604.39 | \$152,818.96 | \$183,395.19 |
| plus: non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| capital purchases | | \$92,927.07 | \$93,856.34 | \$94,794.90 | \$95,742.85 | \$96,700.28 |
| principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Net change in cash | | -\$131,969.69 | -\$133,640.86 | -\$110,355.21 | -\$103,272.90 | -\$74,850.26 |
| Projected Capital Repayment Capacity | | | | | | |
| Farm operation income | | \$366,190.14 | \$365,861.59 | \$399,774.97 | \$412,067.91 | \$452,296.38 |
| plus: net non-farm income | | \$9,416.52 | \$9,510.68 | \$9,605.79 | \$9,701.85 | \$9,798.87 |
| plus: depreciation | | \$101,048.00 | \$101,848.00 | \$101,048.00 | \$101,848.00 | \$101,048.00 |
| less: income and ss tax | | \$48,343.79 | \$48,827.23 | \$49,315.50 | \$49,808.66 | \$50,306.75 |
| less: family living | | \$77,170.35 | \$77,942.05 | \$78,721.47 | \$79,508.69 | \$80,303.77 |
| Capital replacement and term debt repayment capacity | | \$351,140.52 | \$350,450.99 | \$382,391.78 | \$394,300.41 | \$432,532.72 |
| less: principal payments | | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 | \$40,733.51 |
| Capital replacement and term debt repayment margin | | \$310,407.01 | \$309,717.48 | \$341,658.28 | \$353,566.91 | \$391,799.22 |
| Projected Balance Sheet Summary | | | | | | |
| Bank Balance (Inc. Savings & CD's) | | \$11,751.31 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Crops & Feed | | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 | \$721,477.79 |
| Total Current Assets | | \$1,076,379.60 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 | \$1,064,628.29 |
| Machinery & Equipment | | \$969,659.66 | \$968,569.64 | \$969,042.97 | \$969,688.30 | \$971,914.34 |
| Total Intermediate Assets | | \$1,326,832.88 | \$1,325,742.85 | \$1,326,216.19 | \$1,326,861.52 | \$1,329,087.56 |
| Farm Real Estate-Bare Land | | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 | \$2,536,267.86 |
| Buildings & Improvements | | \$77,695.34 | \$70,793.70 | \$64,067.27 | \$57,316.79 | \$50,743.03 |
| Total Fixed Assets | | \$3,362,414.41 | \$3,355,512.77 | \$3,348,786.34 | \$3,342,035.87 | \$3,335,462.11 |
| Total Assets | | \$5,765,626.88 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Operating / Short Term Notes | | \$356,059.57 | \$477,949.12 | \$588,304.32 | \$691,577.22 | \$766,427.47 |
| Estimated Accrued Tax Liability (Inc & RE) | | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 | \$74,968.14 |
| Total Current Liabilities | | \$524,384.93 | \$646,274.47 | \$756,629.68 | \$859,902.58 | \$934,752.83 |
| Total Intermediate Liabilities | | \$120,682.84 | \$100,569.03 | \$80,455.22 | \$60,341.42 | \$40,227.61 |
| Total Long Term Liabilities | | \$288,675.80 | \$268,056.10 | \$247,436.40 | \$226,816.70 | \$206,197.00 |
| Total Liabilities | | \$933,743.57 | \$1,014,899.61 | \$1,084,521.31 | \$1,147,060.69 | \$1,181,177.44 |
| Net Worth | | \$4,831,883.32 | \$4,730,984.31 | \$4,655,109.51 | \$4,586,464.97 | \$4,548,000.51 |
| Total Liab & Net Worth | | \$5,765,626.88 | \$5,745,883.91 | \$5,739,630.81 | \$5,733,525.67 | \$5,729,177.95 |
| Change in Net Worth | | -\$99,357.11 | -\$100,899.01 | -\$75,874.80 | -\$68,644.54 | -\$38,464.47 |