LANDBID

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A farmland purchase is one of the most difficult investment decisions confronting farm operators. Compared with other production inputs, land is purchased infrequently and usually involves a large, long-term financial obligation. The land investment decision is especially critical today, when many farmers are examining land purchase decisions.

The purchase of land should be analyzed using a capital budgeting model. The traditional appraisal formula values land by simply taking the net return to land and dividing it by a capitalization rate. LANDBID, the capital budgeting model presented here, incorporates other relevant factors such as mortgage interest rates, inflation, and income taxes. Based on 11 factors, LANDBID calculates a maximum bid price. This bid price gives the maximum amount that can be paid for farmland, while still having a profitable investment.

Installation Instructions

LandBid can be downloaded off the Internet at:
> http://www-agecon.ag.ohio-state.edu/faculty/rmoore/index.htm

Go to the bottom of the page and click on "Farm Management Computer Programs" then click on LandBid. This page contains links to these instructions and to the LandBid computer program. To install the program follow the steps below:

1. Click on the LandBid computer program link.
2. A message box will appear asking if you want to run the program or save this program to disk. Select "save this program to disk" and click OK
3. A Save As box will appear asking where you would like to save the installation program. Select where you would like to save the installation program. It can be saved to anywhere on the hard drive of your computer. Click on "Save".
4. The program will begin to download. After download click "Open Folder" (if your browser does not have an open folder button, manually open the folder that you saved the program to).
5. After opening the folder, double click on the LandBidInstall file.
6. A self-extracting file window box will appear, select a folder to download the program into. Click on "Unzip" button. A folder named LandBid will be added to the designated folder on your hard drive. The folder will contain three files.
7. Go to the LandBid folder that contains the three downloaded files, double click on setup.exe.

8.   Follow the installation instructions. You may be asked to restart your computer during the installation process. If so, restart your computer then start over at step #7.

9.   The program is now loaded and can be started by going to the "Start" button (lower left corner of screen) then "Programs" then "Landbid".

Instructions for Using LANDBID

The number in the yellow box in the upperr left corner identifies each screen.

Screen #1 - INPUTS

Screen #1 will ask you to enter eleven factors. Enter all information in numerical form (i.e. use only digits 0 through 9 and decimal points). Do not use symbols such as dollar signs ($) percentage signs (%), or commas. For example, if your answer is 9.5%, enter 9.5 or $1,000 enter 1000, or 20 years enter 20.

FACTOR DEFINITIONS

The eleven factors LANDBID ask for are:

1.   Price of recent sales is a reasonable estimate of the fair market value of comparable quality farmland in the surrounding area. The model uses this value as the base for the future growth in land value, depending on the rate specified in factor 10 below.

2.   Opportunity cost is the annual, after-tax rate of return you can receive on your equity in an alternate investment of comparable risk. A good benchmark for the minimum rate is the after-tax interest rate on a first mortgage loan plus a risk premium.

3.   Planning horizon is the number of years into the future for which cash flow projections are desired. Typically, 10 to 30 years is used for long range forecasting. This value must be 30 years or less.

4.   Net income is the anticipated annual net return per acre. It equals gross income less all fixed and variable expenses except land debt servicing expenses. The going cash rental rate minus property tax and other ownership costs is also a good estimate of net income.

5.   Marginal tax rate is the rate at which the next dollar of net income will be taxed, including federal, state, and social security taxes. Consult IRS and Ohio income tax tables for current rates.

6.   <u>Growth in income</u> is the average annual rate at which you expect net income to grow over the entire planning horizon.

7.   <u>Proportion paid down</u> equals the down payment as a percent of the land purchase price.

8.   <u>Mortgage interest</u> is the effective interest rate you will be paying the lender. Include the effects of closing costs, appraisal fees, stock, etc… on the effective cost of funds.

9.   <u>Loan amortization period</u> is the number of years that it will take to repay the loan. Standard terms are between 15 to 30 years. If the loan amortization period exceeds the planning horizon, the outstanding balance of the loan is repaid when the land is sold. This value must be 30 years or less.

10.   <u>Land inflation</u> is the average annual rate at which you expect the land value to increase.

11.   <u>Capital gains tax rate</u> is the rate at which any gain in value will be taxed upon the sale of the land.

Click on the "Continue" button to proceed with the program.

Screen #1, like all consequent screens, will have a "Print" button at the bottom. Selecting this option will print the active screen to your computer.

Screen #2 – Maximum Land Bid Price

Screen #2 shows the input data from screen #1 and also the maximum bid price. The maximum bid price is the price that can be paid for the farmland while meeting all input values.

From this screen four options are available.

1.   <u>Back</u> – this will take you back to the input screen and allow you to change any of the inputs.

2.   <u>Change an Input Factor</u> – this option calculates the bid price for a range of factors.

3.   <u>Cash Flow</u> – this option calculates a cash flow scenario for the price you wish to pay for farmland and the eleven inputs.

4.   <u>End Program</u> – this option will terminate the program.

Screen #3 – Change Input Factors

This screen allows you to select any of the eleven factors and enter a minimum value and an increment. Start by selecting one of the inputs in the box on the left side of the screen. The selected input and its value will appear to the right. Then enter the lower limit and the increment. If loan amortization period or loan amortization period is selected, then the minimum value must be 21 or less and the increment will be 1 year.

Click on "Continue" button to see results or "Back" to go back to Screen #2.

Screen #4 – Input Factor Results

This screen shows the ten land bids based on the selected input, its minimum value, and incremental increase.

Three options are available on this screen.

1. The "Back" button takes the user back to Screen #3 to change the input, lower limit, or the increment.

2. "Return to Start" – will take the user back to screen #2.

3. "End Program" – this option will terminate the program.

Screen #5 – Land Bid Price

This screen asks for the bid price that the user wishes to pay for the land. It can be the same as the calculated maximum bid price or another value.

Click on "Continue" to go to cash flow.

Screen #6 – Cash Flow

This screen shows the cash flow of the bid price and eleven factors. Screen #6 will show up to the first 15 years of the cash flow. If the planning horizon is beyond 15 years, year 16 up to 30 will be on Screen #7. The cash flow is made up of the following nine columns:

Loan Payment –   this is the annual payment for the land. The year 0 payment is the down payment.

Loan Balance –   the amount still owed on the loan.

Interest –   the interest portion of the loan payment.

Cash Inflow –   the net income per acre factor adjusted by the growth in income factor. This value is the amount of income generated off the purchased land.

Taxable Income –   the amount of income that will be subject to income tax. It is calculated by subtracting the interest payment from the cash inflow.

Income Tax -   the amount of income tax that will be paid on income generated on the land. It is the taxable income times the tax rate factor.

Cash Flow –   The amount of cash the buyer will receive or pay out as a result of owning the land. It is calculated by subtracting the loan payment and income tax from the cash inflow.

Present Value of
Cash Flow -   The cash flow adjusted by the opportunity cost factor.

Land Value -   The value of land in that year calculated by adjusting the original land value by the land inflation factor.

Five options are available on this screen:

"Continue" to next screen (only if planning horizon is beyond 15 years).

"Back" will take you back to the previous screen

"Return to Start" will take you back to screen #2.

"Print" will print out the active screen.

"End" program will terminate the LandBid program.

Screen #7 – Cash Flow continued

Screen #7 is interpreted in the same way as screen #6.

Questions or comments concerning LANDBID should be addressed to:
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