Why Farm Property Values Fluctuate

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Since 1974, most farmland in Ohio has been assessed for property tax purposes on its Current Agricultural Use Value (CAUV) instead of the fair market value used for most other types of real estate. CAUV results in a significant reduction in farmland assessed values. CAUV's as a percent of fair market values range from about 20% in metropolitan areas to around 40% in rural farming counties. Real estate parcels are reappraised every six years and assessed values are updated every three years. The objective of this article is to explain why CAUV's may change between reappraisals and updates.

CAUV's are estimated by dividing the estimated net income per acre by a capitalization rate (Cap Rate). The Cap Rate reflects the opportunity cost of money for someone who is considering an investment in farmland. Consider an example where the gross revenue = 150 bu. x $2.00 = $300 per acre, non-land production cost = $200 per acre and the Cap Rate = 10%. The CAUV for this parcel would be ($300- $200) / 0.10 = $1,000 per acre. (Another way to understand Cap Rates is to show this calculation in reverse or from an investor's perspective. An acre of land worth $1000/A that nets $100/Yr. would have a Cap Rate of 10%; $100/$1000 = .10 or 10%)

Causes of Fluctuation

Crop Rotations and Yields

The "highest and best use" of the parcel is a cropping program determined by soil type, slope and drainage characteristics. The actual use of the parcel, which may be similar or quite different from the highest and best use, has no bearing on CAUV. Crop yields are based on the soil productivity indexes for over 3,300 soil types in Ohio. Crop rotations are based on slope and drainage. For example, as slope increases, the rotation shifts from row crops to more hay. Farmland parcels with greater than 25% slope are classified as permanent pasture or woodland and are assigned a minimum value of $100 per acre. Crop yields and rotations do not change from year to year and are not a source of variation in CAUV's.

CAUV's do not include the values of buildings and other improvements. These improvements are appraised separately so the total assessed value may increase if improvements have been added.

Commodity Prices

Gross income = yields x prices, so even though yields are constant, changes in commodity prices do cause changes in CAUV's. Commodity prices used to determine CAUV's are based on five year moving averages of prices received by farmers. Prices received over a total of seven years are considered with the highest and lowest values

deleted. Government payments received by farmers are not included in the CAUV calculations.

Despite the "smoothing" effects of the moving averages, some changes in CAUV's can be attributed to changes in commodity prices over time. CAUV calculations for Tax Years 2002 through 2005 were based on moving averages of commodity prices that ranged from $2.05 to $2.12 per bushel for corn, $5.11 to $5.42 for soybeans, $2.49 to $2.79 for wheat, $70.20 to $73.98 per ton for mixed hay and $56.11 to $58.06 for grass hay.

Non-land Production Costs

Non-land production costs are based on OSU Extension Enterprise Budgets. These costs have generally been increasing slowly over time and rising production costs have a dampening effect on CAUV's. Production costs for base yields are adjusted on per bushel increases for higher yields to account for added fertilizer, harvesting, drying and other marginal costs. To illustrate the trends, non-land production costs for corn with a base yield of 100 bu. per acre increased from $212 in 2002 to $230 in 2005. Over the same period, the added costs for corn yields above the 100 bu. per acre base yield ranged from 89 to 92 cents per bu. Production costs are also "smoothed" over time by using a five-year moving average.

Capitalization Rates

The Cap Rates used in the CAUV calculations are based on farm mortgage interest rates, the opportunity cost of equity capital and a risk premium to reflect slope, drainage and other soil-specific characteristics. Changes in Cap Rates have been a significant source of variation in CAUV's in the past. Between tax years 1990 and 1993, the base Cap Rate dropped from 12.3% to 9.25% due to a sharp drop in mortgage interest rates. As a result, CAUV's on parcels that were reappraised or adjusted in 1993 were significantly higher than they were three years earlier.

Cap Rates used in the CAUV calculations are now based on five-year moving averages of interest rates. In recent years, the base Cap Rate has trended slowly downward from 10% in 2000 to 8.5% in 2005. With no changes in commodity prices or production costs, declining Cap Rates cause CAUV's to rise, and vice versa.

How Much Might CAUV's Change?

Consider the effects of 5% changes in the variables that affect the CAUV using our earlier example. A 5% increase in commodity prices to $2.10 with a yield of 150 bu. per acre and no change in production costs or the Cap Rate, would cause the CAUV to increase from $1,000 to $1,150 [(150 x 2.10) - $200 / 0.10]. So, a 5% increase in the commodity price resulted in a 15% increase in the CAUV in this example.

A 5% increase in production costs to $210 per acre would cause the CAUV to decline by 10% - from $1,000 to $900 per acre. A 5% decrease in the Cap Rate from 10% to 9.5% would result in a CAUV of $1,053 (a 5.3% increase).

It is important to recognize that increases in CAUV's do not result in proportionate increases in property taxes. Property value increases apply only to the 10 mills of inside millage. Tax reduction factors are applied to avoid windfall gains to taxing districts supported by voted outside millage.

Summary

Most Ohio farmland used in agricultural production is appraised for property tax purposes on the current agricultural use value. CAUV yields are based on soil type, slope and drainage. Five year moving averages of commodity prices, production costs and interest rates are the other variables used in the capitalization formula. Property taxes paid on CAUV's are significantly lower than taxes based on fair market values.

To qualify for CAUV, the parcel must be not less than 10 acres and it must be used exclusively for agricultural purposes. If land under CAUV is converted to non-agricultural use, some of the CAUV tax savings are subject to three years of recoupment. Applications to and questions about the program are handled by local County Auditors' offices.

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