

Calculating the Various Farm Income Measures

Mitchell AAE 320

Essentially, all of these are Revenues minus Costs, but what each includes under Revenues and under Costs differs among them (for example, here I do not include taxes as a cost). Below, I report equations for each measure in terms of the most basic revenues and costs, then a few useful equations of the measures in terms of each other.

Revenue Sources

Revenues from selling things; could technically include accrual adjustments for non-cash revenues (such as accounts receivable or inventory changes). I use two types for these equations:

- Revenue (not clarifying whether its accrual adjusted)
- Capital Gains (CapGains) from sale of capital assets (think tractors or land).

Cost or Expenses

Anything that is a cost to the farm, again could be accrual adjusted (shifting pre-purchased feeds or fertilizers to correct cropping season), plus it can include non-cash costs, such as depreciation. I use three for these equations:

- Operating Costs (not clarifying whether its accrual adjusted and which non-cash costs it includes such as depreciation): think fertilizer and feed.
- Interest: in some cases, this may be part of Operating Costs, but here, I break it out, since it gets treated differently for some measures.
- Unpaid Labor & Management (UnpaidLabrMngmt): this is the cost of you as farm laborer and manager, how much you “pay yourself”, which may not be an explicitly paycheck you write yourself.

Measures

1) Net Farm Income from Operations (NFIfO)

$$\text{NFIfO} = \text{Revenue} - \text{OperatingCosts} - \text{Interest}$$

2) Net Farm Income (NFI)

$$\text{NFI} = \text{Revenue} - \text{OperatingCosts} - \text{Interest} - \text{UnpaidLabrMngmt} + \text{CapGains}$$

In terms of NFIfO

$$\text{NFI} = \text{NFIfO} - \text{UnpaidLabrMngmt} + \text{CapGains}$$

3) Return on Assets (ROA)

$$\text{ROA} = \text{Revenue} - \text{OperatingCosts} - \text{UnpaidLabrMngmt} + \text{CapGains}$$

In terms of NFIfO and NFI

$$\text{ROA} = \text{NFIfO} + \text{Interest} - \text{UnpaidLabrMngmt} + \text{CapGains}$$

$$\text{ROA} = \text{NFI} + \text{Interest}$$

4) Return on Equity (ROE)

$$\text{ROE} = \text{Revenue} - \text{OperatingCosts} - \text{Interest} - \text{UnpaidLabrMngmt} + \text{CapGains}$$

In terms of ROA and NFI

$$\text{ROE} = \text{ROA} - \text{Interest}$$

$$\text{ROE} = \text{NFI}$$