Farm Savings Accounts as a Tool For Dairy Farm Risk Management

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with acknowledgements to

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and

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How Does an FSA Work?

Farms deposit unneeded revenue from a "boom" year into the FSA (Schedule F "expense")

Farms withdraw needed cash from the FSA during a "bust" year - or whenever they need cash for investment or personal expenditure (Schedule F income)

Generically, the amount and type of incentive includes

- Tax deferral on farm income - this is essential
- Government match on level of the deposit (like a subsidy to purchasing crop - or margin - insurance) - this is decidedly optional but could make a large difference

Details (where the devil lives)

- rules on deposits but especially rules on withdrawal can be made hard, so hard as to severely restrict usefulness
- Keep it simple, keep it personal

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Key Differences Between Farm Savings Accounts and Government Subsidies

- Farmers have personal responsibility and manage savings and withdrawals to suit their needs with an FSA
- Government programs have national, state or county triggers to determine payouts

- FSAs primarily manage your own money
- Government subsidies primarily transfer other people's money

Background on FSAs

History: Originally proposed as an alternative to loan and other traditional crop programs prior to 2002 Farm Bill

Policy Purpose: Give farmers a new tool to better manage their own net revenue risk

- whole farm basis
- voluntary
- no or reduced taxpayer cost
- does not require government determination of need

Program Premise:

- Average farm profitability over a period of years is "good" (adequacy)
- Annual net returns are highly variable (instability)

If Net Income is really the issue - are there tools for that?

- A lot of talk on the crops side about revenue tools instead of price tools
  - There is production risk and price risk
  - Average Crop Revenue Election program (ACRE)
    - Compares "actual" state average revenue against benchmark, makes supplemental payment to target
    - Uses individual's base acres to determine payment
    - Payment trigger based on State average yield times national average price
      - 5 year Olympic average on yield
      - Last 2 years on price (this could get us into trouble)
    - Substitute for CCP, 20% cut in DP, 30% cut in LDP
  - Crop Revenue Coverage (CRC) insurance
  - Adjusted Gross Revenue (AGR and AGR-Lite)
    - Insurance payment when AGR is less than 5-year average
    - Insure 65-80% of average income @ 90% of loss

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Examples of FSAs

- Proposed: Farm and Ranch Risk Management (FARRM) Accounts
  - Tax deferral incentives
- Proposed: Counter-Cyclical Accounts
  - Direct government support program
- Proposed: Individual Risk Management Accounts (IRMA)
  - Blends aspects of CC and FARRM
- Actual: Canadian Net Income Stabilization Account
  - complex deposit and withdrawal rules, typically used for retirement
- Proposed: Farm Income Stabilization Account Act of 2007, proposed by Sen. Richard Lugar
  - $10K limit, withdrawal rules, government contributions to "seed" the account and/or reward environmental stewardship

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Why Haven't FSAs Been Adopted Before?

- Traditional programs in crops have been satisfactory to farms (the devil you know)
- Previous proposals were too complicated
- Most farms currently find other ways to avoid high tax rates
- Problem is adequacy not instability?
  - I would never have any money to save
- Transition from current situation hard to imagine?
  - if I had any savings the bank would just take it

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We Know Relatively Little About

- The extent/magnitude of variation in annual farm income at the farm level
- The extent to which savings accounts might impact this situation
- Farmers' ability and willingness to fund the accounts

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What Risks Do Dairy Farmers Face? Are FSAs the Better/Right Tool for these Risks?

- Production Risk
  - weather related (acts of God)
  - management related (my fault or stuff happens)
- Market Risk
  - will someone buy my milk
- Price Risk
  - output price
  - input price
  - Maintain cash reserves?
- Margin or Net Revenue or Profit Risk
  - net revenue primarily at risk because of production, marketings, output price, input prices or all of the above?
- Enterprise (Dairy) vs Business (whole farm) Risk

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What does the variability look like for individual farms?

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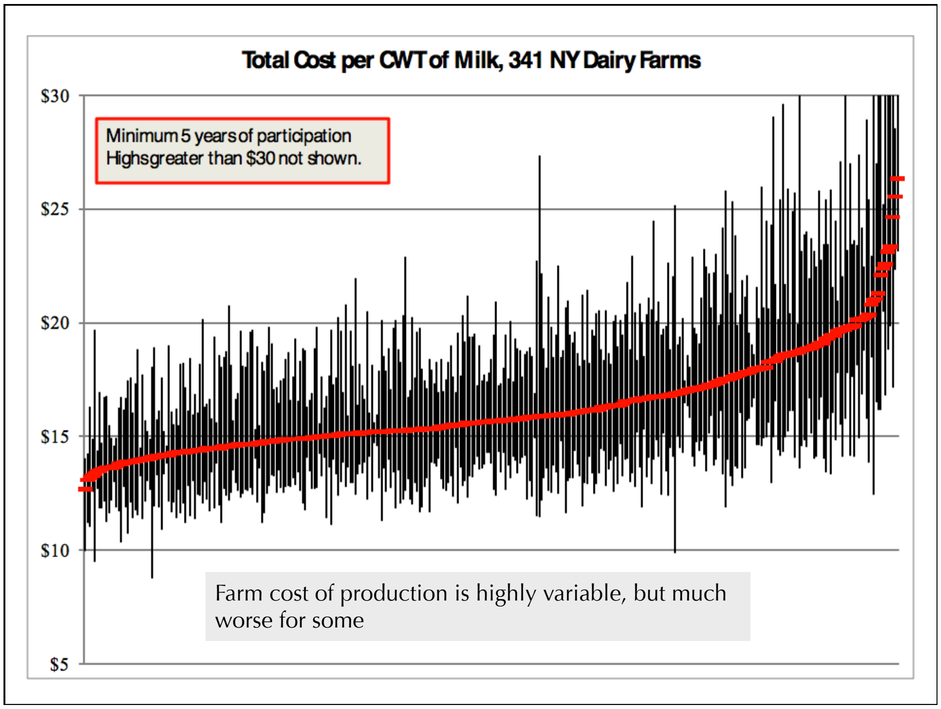
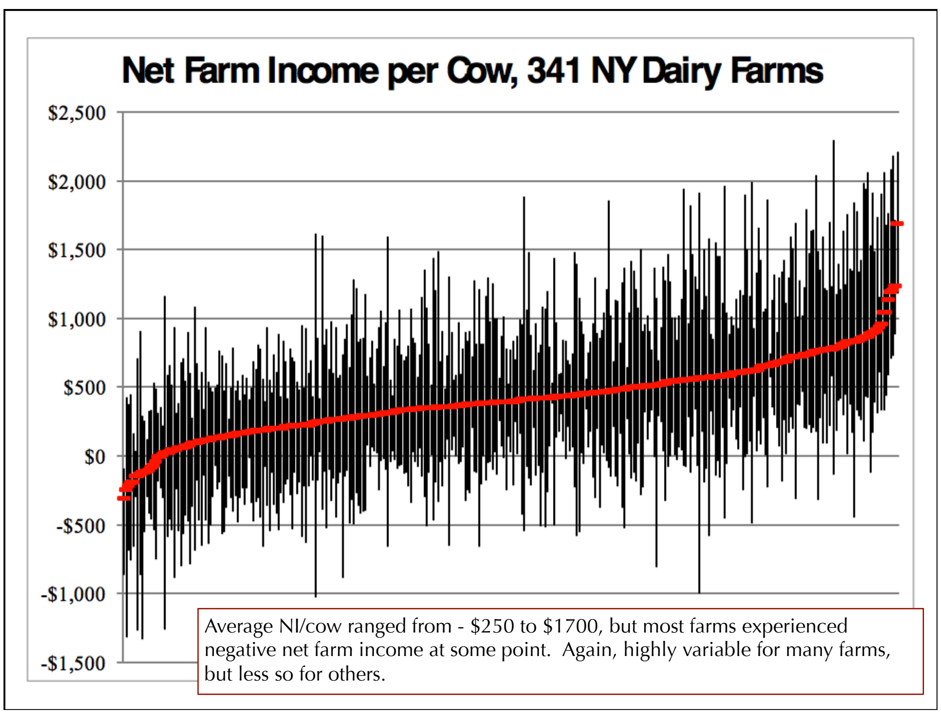
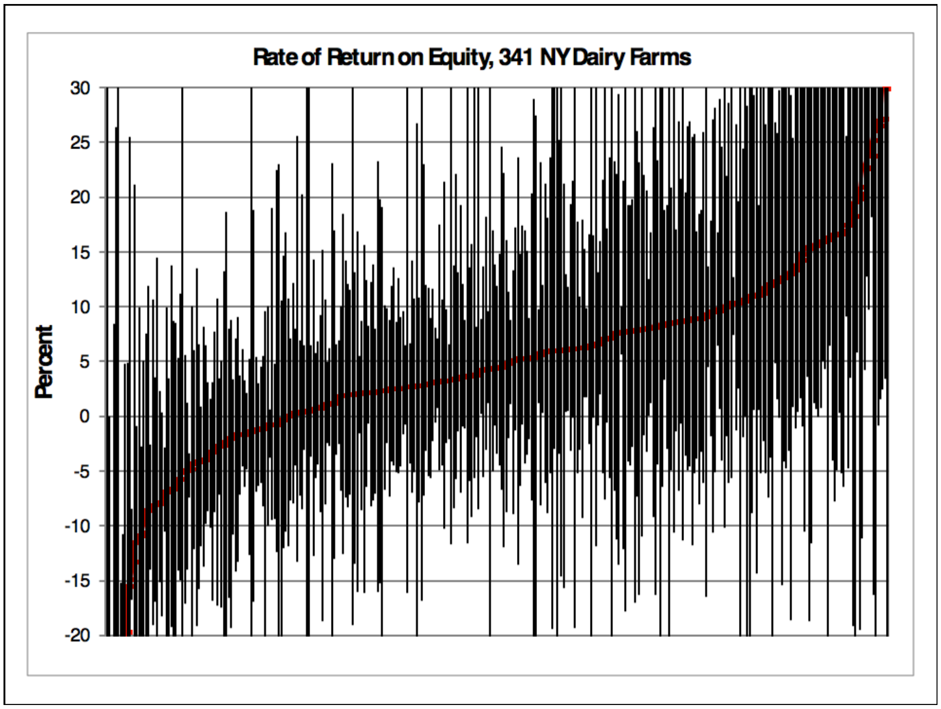
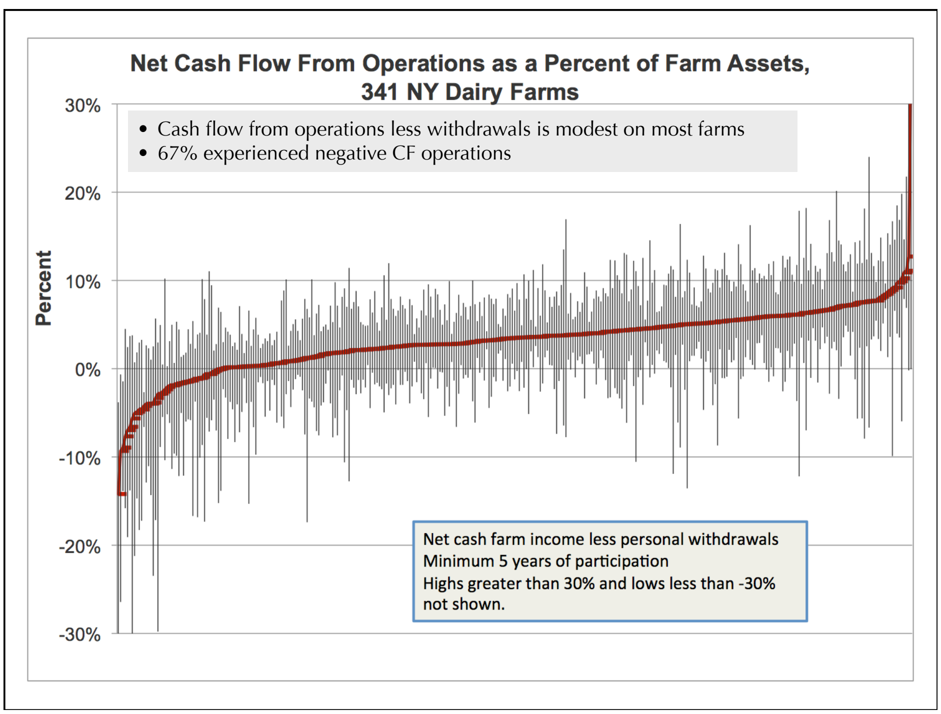
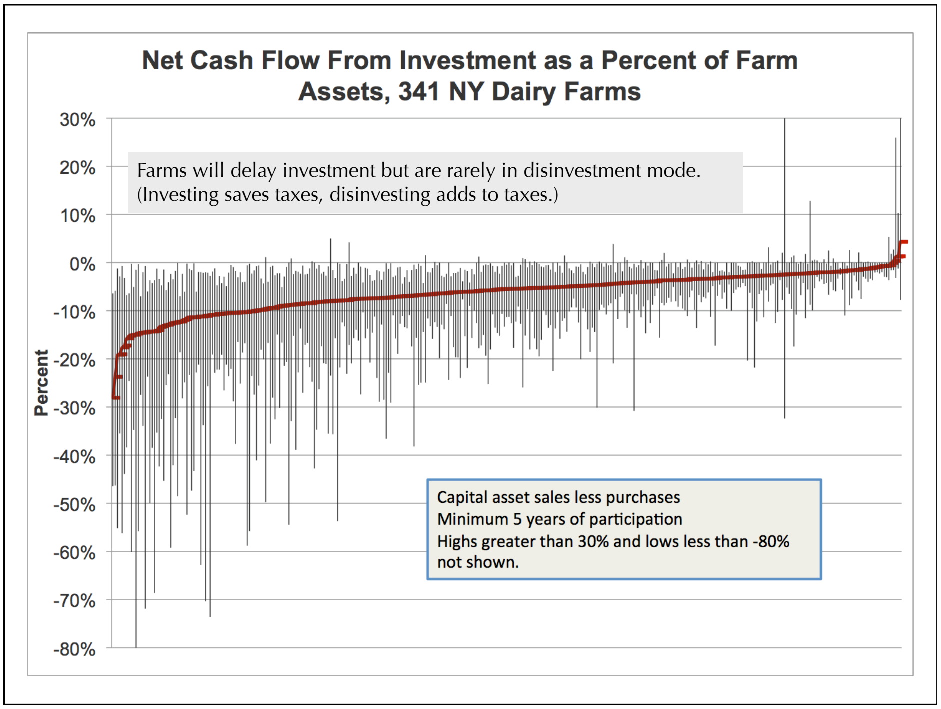
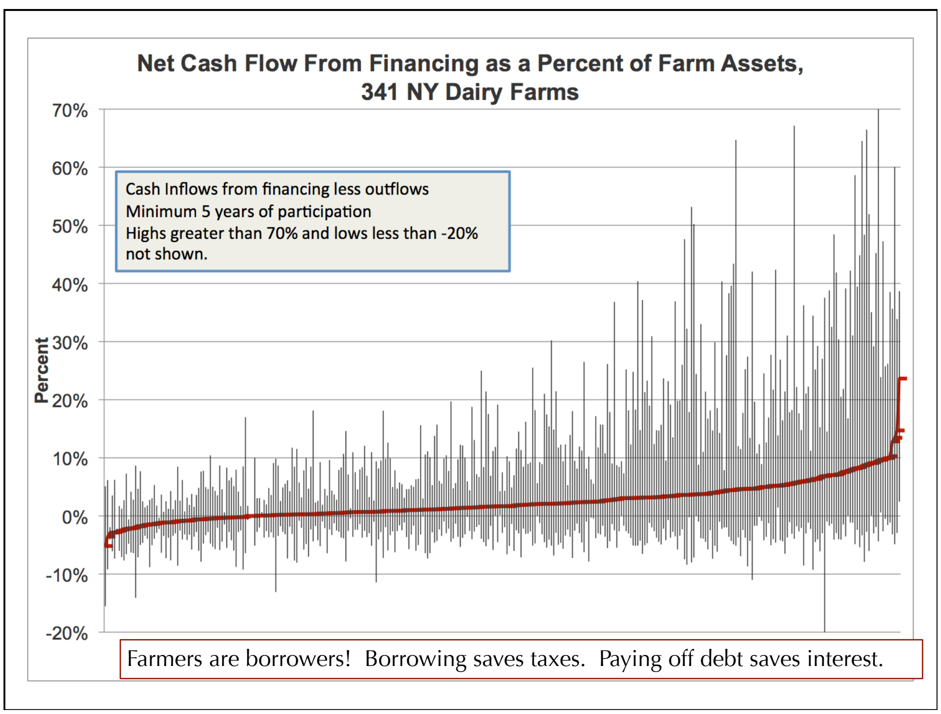

Total Cost per CWT of Milk, 341 NY Dairy Farms
$30
$25
$20
$15
$10
$5
Minimum 5 years of participation
Highs greater than $30 not shown.
Farm cost of production is highly variable, but much worse for some

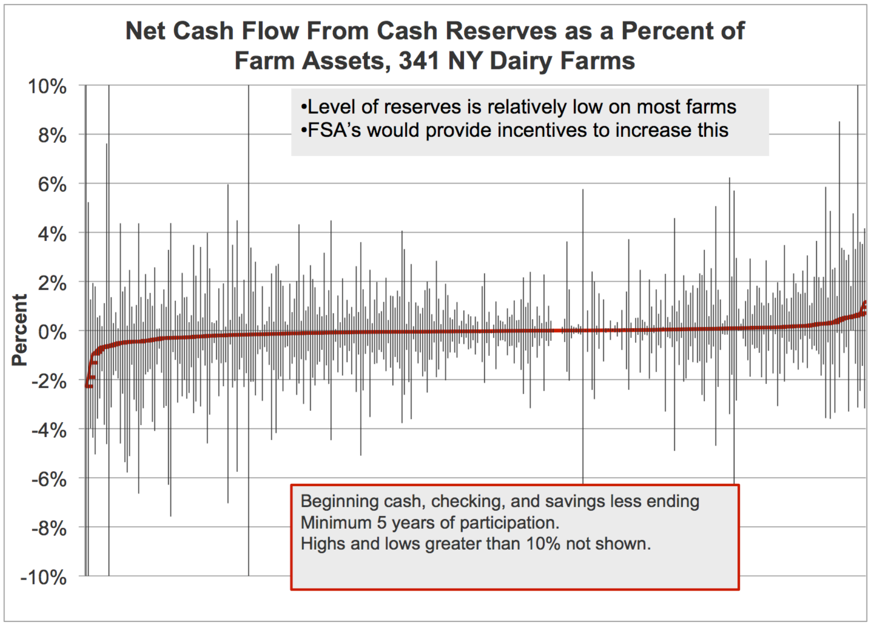

Net Farm Income per Cow, 341 NY Dairy Farms
$2,500
$2,000
$1,500
$1,000
$500
$0
-$500
-$1,000
-$1,500
Average NI/cow ranged from - $250 to $1700, but most farms experienced negative net farm income at some point. Again, highly variable for many farms, but less so for others.


Rate of Return on Equity, 341 NY Dairy Farms
Percent
30
25
20
15
10
5
0
-5
-10
-15
-20


Net Cash Flow From Operations as a Percent of Farm Assets, 341 NY Dairy Farms
• Cash flow from operations less withdrawals is modest on most farms
• 67% experienced negative CF operations
Net cash farm income less personal withdrawals
Minimum 5 years of participation
Highs greater than 30% and lows less than -30% not shown.
Percent
30%
20%
10%
0%
-10%
-20%
-30%


Net Cash Flow From Investment as a Percent of Farm Assets, 341 NY Dairy Farms
Percent
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
-70%
-80%
Farms will delay investment but are rarely in disinvestment mode. (Investing saves taxes, disinvesting adds to taxes.)
Capital asset sales less purchases
Minimum 5 years of participation
Highs greater than 30% and lows less than -80% not shown.


Net Cash Flow From Financing as a Percent of Farm Assets, 341 NY Dairy Farms
Percent
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
Cash Inflows from financing less outflows
Minimum 5 years of participation
Highs greater than 70% and lows less than -20% not shown.
Farmers are borrowers! Borrowing saves taxes. Paying off debt saves interest.



What Does this Mean?

- There are wide differences across farms with respect to incomes and costs
- Differences in averages
- Differences in variability, some low, some very high
- Most farms experience periods of negative net returns
- *How are they managing this?*

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Risk Management Strategies and Context?

- How do farmers manage risk now
  - Insurance on production? Insurance on crops? on property.
  - Marketing via a cooperative. Contracting?
  - Hedging output prices and/or input prices? LGM-Dairy? Forward price contracts.
  - Revenue insurance?
  - Maintain cash reserves?
  - are multiple hedges = LGM-D? is hedging = margin insurance? is margin insurance = whole farm net revenue insurance? is FSA the same as any of the above?
- What management strategies affect perception of risk or how risk is managed
  - wealth accumulation vs profit maximization
  - cost minimization vs profit maximization
  - yield maximization vs profit maximization very long term planning horizon (lifetime) vs near term
  - risk preference and risk expectations
  - tax minimization

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Measures of Financial Performance of Farm Businesses.

Liquidity

• **Current Ratio**: (total current farm assets) / (total current farm liabilities). This measure reflects the extent to which current farm assets, if sold tomorrow, would pay off current farm liabilities.

• **Working Capital**: (total current farm assets) – (total current farm liabilities). This measure represents the short-term operating capital available from within the business.

• **Working Capital to Gross Income**: Measures operating capital available against the size of the business.

Solvency

• **Debt-to-Asset Ratio**: (total farm liabilities) / (total farm assets). This represents the bank's share of your business. A higher ratio is an indicator of greater financial risk and lower borrowing capacity.

• **Equity-to-Asset Ratio**: (farm net worth) / total farm assets). This measure of solvency compares farm equity to total farm assets.

• **Debt-to-Equity Ratio**: (total farm liabilities) / farm net worth. This measure compares the bank's ownership to your ownership of the business.

• **Capital Replacement Margin**: the value of (net farm income) + (net nonfarm income) + (depreciation – (family living expenses, taxes paid, scheduled payments on term debt). This measure describes the amount of money left over after all operating expenses, taxes, family living cost, and scheduled debt payments have been made.

•**Capital Debt Repayment Capacity**: Measurement of all sources of income that could be used to pay debt (both farm and non-farm sources of income.)

•**Replacement Margin**: Enables borrowers and lenders to evaluate the ability of the operation to generate funds necessary to repay debts with maturity dates longer than one year and to replace assets.
Replacement Margin Coverage Ratio: To show if enough income was generated to cover term debt payments and the cash contribution for new equipment.

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Measures of Financial Performance of Farm Businesses.

Profitability

- **Rate of Return on Assets**: [(net farm income) + (farm interest) – (value of operator labor and management)] / (average value of farm assets). This measure represents the average "interest" rate being earned on all investments in the business (your investment and that of your creditors).
- **Rate of Return on Equity**: [(net farm income) – (value of operator labor and management)] / (average farm net worth). This measure represents the "interest" rate being earned by your investment in the farm. This return can be compared to the return on your investments if equity were invested somewhere else, outside the business.
- **Operating Profit Margin**: (return on farm assets) / (value of farm production), where return on farm assets equals (net farm income from operation) + (farm interest expense) – opportunity return to labor and management). This measure of profitability shows the operating efficiency of the business. Low expenses relative to the value of farm production result in a healthy operating profit margin.
- **Net Farm Income**: (gross cash farm revenue) – (total cash farm expense) + (inventory changes) + (depreciation and other capital adjustments, including gains/losses from the sale of capital assets). This measure represents profitability or the farm's return to labor, management and equity.
- **EBITDA**: Earnings before interest, taxes, depreciation, and amortization—measurement shows the earnings of the business that are available for debt repayment.

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Measures of Financial Performance of Farm Businesses.

Financial Efficiency

- **Asset Turnover Rate**: the (gross farm revenue) / (average farm assets). This measures the efficiency of using capital. A high level of production in proportion to the level of capital investment yields a high (or efficient) asset turnover rate.
- **Operating Expense Ratio**: the value of [(total farm operating expenses) – (depreciation) – (farm interest)] / (gross farm revenue). This measure reflects the proportion of farm revenues used to pay operating expenses, not including principal or interest.
- **Interest Expense Ratio**: (farm interest) / (gross farm revenue). This measure of financial efficiency shows how much of gross farm revenue is used to pay for borrowed capital.
- **Depreciation Expense Ratio**: (depreciation and other capital adjustments) / (gross farm revenue). This measure indicates what proportion of farm revenue is needed to maintain the capital used by your business.
- Net Farm Income from Operations Ratio: (net farm income from operations) / (gross farm revenue). This measure of financial efficiency compares profit to gross farm revenue. It shows how much is left after all farm expenses, except for the return to unpaid operator and family labor, management and capital, are paid.

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So What Problem are We Addressing?

- Profitability (includes non-cash values, longer term)
  - The level of profits is occasionally low (stability) or
  - Chronically low (adequacy)
- Cash flow (strictly cash, shorter term)
  - Measures sources and uses of cash
  - Assigns money to and from operations, investments, financing and/or reserves
  - Shocks to operations may result in inability to pay the bills even on a farm that is profitable in the longer term

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Cash Flow Model

Sources of Cash		Uses of Cash
Cash Farm Receipts (Sales)	**Operating Activities**	Cash Expenses (ordinary) Extraordinary Expenses Personal withdrawals, family expenses, nonfarm debt payments
Sale of Assets	**Investing Activities**	Capital Purchases
Money borrowed (structured debt) Increase in Operating debt Cash from nonfarm capital Nonfarm money borrowed	**Financing Activities**	Principal payments (structured debt) Decrease in Operating debt
Beginning farm cash	**Cash (Liquid) Reserves**	Ending Farm Cash

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Farm Savings Accounts

- Farmers manage cash flow by
  - Investing in years when net returns are high
    - May incur debt as well
    - May over invest to avoid taxes
  - Borrowing in years when net returns are low
  - Allows personal choice, in conjunction with lender
  - Requires that Capital markets work efficiently
- Farms don't carry large cash reserves
  - Incentives to do so will need to be large – tax deferral **and** contribution matches
  - Savings and withdrawal rules must permit farms to manage their own risks and rewards
  - Can earn interest instead of paying interest

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Risk Management Strategies and Context?

- What other factors impact risk management choices
  - availability and cost of credit
    - commercial credit
    - operating loans
    - investment loans
  - tax incentives
    - cash accounting
    - expensing investments
  - Lack of familiarity or comfort level with more complex financial tools
  - Reliance on trusted or familiar agents

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Possible Farmer Strategies

- substitute for conventional retirement account
- higher rate of return than current use of "extra" revenue
- survival strategy for farmers on the edge

- fundamental issue from investment strategy comparison is spread between cost of capital/debt vs returns to investment. favorable borrowing rates and favorable tax laws on expensing investment costs stack deck in favoring of using debt instead of cash reserves.

- however, for high risk farms the cost of capital is high to prohibitive.

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Basic Questions about FSAs

- What Problem(s) are FSAs intended to fix?
  - Do farmers lack sufficient risk management tools or are existing tools not as effective as FSAs
  - Is farm savings constrained? Do farmers systematically under-save?
  - Are FSAs "better" than other ag policy choices: DP, CCP, LDP, MILC, etc.
  - Less government cost? (US tax revenue vs other program direct costs)
  - Less user cost, either financial or transactions?
  - More adaptable to individual needs?
- What current strategies do farmers use to manage between good and bad times?
- By what criteria would farmers choose to use FSAs over current strategies?

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General Issues of an FSA

- Eligibility: who qualifies as a farm business (e.g., land owner vs operator); necessary economic conditions?
- Deposits: under what income/net revenue conditions can deposits be made into the FSA; maximum deposit by a farmer (e.g., percentage of net revenue or taxable income, fixed amount)
- Incentive:
  - federal income tax deferral on deposits
  - matching payment by the US government. Match may be an amount or a percentage; it may be fixed or variable. Variable incentive could be a higher percentage that declines or caps out with higher farm contributions or it could increase as need increases (e.g., Canadian disaster assistance concept)
- Withdrawal rules:
  - Farm net revenue triggers; maximum amount, deposit vs earnings, or individual discretion

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Do Farmers Need an Incentive to Save?

The government deposit match:

- Provides an income/wealth boost

- Encourages holding higher cash balances – something businesses don't necessarily like to do or lenders may not "allow"

- Ability of FSA to address the "problem" depends on the magnitude of "under-saving" and farmer's current alternatives

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So Where Do We Go from Here?

- Economic Analysis
  - Does it make sense?
  - for whom and why
  - What would be its marketwide effects
  - What would be its effects on other government programs or taxpayer costs
- Political or Policy Agenda
  - not up to me
  - depends a lot on whether it makes sense