

# Financial Analysis

## Chapter 7

Farm Management: Principles and Strategies, Kent Olson, 2003

### ✦ Financial position (or condition):

- The total resources controlled by a business and the claims against those resources
- Assets versus debts

### ✦ Financial performance:

- The results of decisions over time
- Net Income, rates of return, ...

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## Main concerns

- ✦ Profitability
- ✦ Solvency
- ✦ Liquidity
- ✦ Repayment capacity

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## Main Financial Statements

### ✦ Income Statement

- Income and expenses during a certain time period (usually, a year)
- Also called a profit and loss statement

### ✦ Balance Sheet

- Assets and liabilities on a certain date
- Also called a net worth statement

### ✦ Cash Flow Statement

- Flow of cash IN and OUT
- ONLY CASH

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## Income Statement

- ✦ Cash Farm Income
- ✦ Cash Farm Expenses
- ✦ Net Cash Income
  - = Cash income – cash expenses
- ✦ Inventory Change
- ✦ Depreciation & Capital Adjustments
- ✦ Net Farm Income
  - = Net cash income
  - inventory change
  - depreciation

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## Example Income Statement

(from Fig. 7.1)

Gross Cash Farm Income	\$563,461
Total Cash Farm Expense	417,181
Net Cash Farm Income	146,280
Adjustments for Changes in Inventory	72,273
Depreciation & other Capital Adjustments	-62,836
Net Farm Income (NFI)	155,717
Net Non-Farm Income	0
Total Net Income	155,717
Proprietor Withdrawal	68,016
Addition to Retained Earnings	87,701

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## Balance Sheet

### ASSETS

- ✳ Current Assets
- ✳ Intermediate Assets
- ✳ Long-Term Assets

### LIABILITIES

- ✳ Current
- ✳ Intermediate
- ✳ Long-Term
- ✳ Total Liabilities (TL)
- ✳ Net Worth (NW) = TA-TL
- ✳ Total Assets (TA)
- ✳ TL + NW

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## Example Farm Balance Sheet (from Fig. 7.4)

Farm Assets			Farm Liabilities		
	Cost basis	Market value		Cost basis	Market value
Current	\$463,477	\$463,477	Current	\$102,875	\$102,875
Inter-mediate	104,437	350,207	Inter-mediate	83,629	152,445
Long	605,993	947,312	Long	131,866	227,435
<b>TOTAL</b>	<b>1,173,907</b>	<b>1,760,996</b>	<b>TOTAL</b>	<b>318,370</b>	<b>482,755</b>
			Farm net worth	855,537	1,278,241

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## Current Assets

- ✳ Cash, near-cash, or items normally used or sold in the course of business during a year
  - ◆ Cash, checking and savings accounts
  - ◆ Supplies, inventories, prepaid expenses
  - ◆ Feed, grain, growing crops,
  - ◆ Market livestock
  - ◆ Crops under government loan
  - ◆ Accounts receivable, and so on

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## Non-current Assets

- ✳ All other assets which are not current
  - ◆ machinery and equipment, breeding livestock
  - ◆ shares in a cooperative
  - ◆ land, buildings, and other improvements to land
- ✳ Intermediate assets include machinery, breeding livestock, and similarly aged assets
- ✳ Long-term assets include land, buildings, and so on

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## Current Liabilities

- ✳ Liabilities due within the next 12 months
  - ◆ Notes, operating loans, government crop loans
  - ◆ Accounts payable, accrued interest
  - ◆ Rents and lease payments due within 12 months
  - ◆ That portion of term debt due within 12 months

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## Non-Current Liabilities

- ✳ Liabilities associated with non-current assets
  - ◆ Machinery loans and leases
  - ◆ Real estate loans and contracts
  - ◆ Leases on buildings (e.g., silos)
  - ◆ And so on
- ✳ But, the portion of term debt due within 12 months is a current liability and, thus, not listed as a non-current liability

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## Asset Valuation

### ✦ Cost Basis

- Original basis minus depreciation taken

### ✦ Market Value

- Current value in the market
  - Minus cost of selling
- Deferred taxes must be listed as a liability when using the market value approach
  - Why?: Gains (losses) are subject to taxation

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## Cost or market?

### ✦ Cost basis

- More solid data
- GAAP method
- But doesn't reflect current values

### ✦ Market value

- Provides better information on the current resources
- Market valuation is a "softer" value

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## Measures of Financial Position and Performance

The short list of critical measures

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## Measures of Profitability

### ✦ Net farm income (NFI)

= gross cash farm income – farm cash expenses  
+ inventory change – depreciation

### ✦ Rate of return on farm equity (ROE)

=  $\frac{\text{NFI from operations} - \text{value of oper. labor \& mgt}}{\text{average farm net worth}}$

### ✦ Rate of return on farm assets (ROA)

=  $\frac{\text{NFI from oper. + int. paid} - \text{value of oper. labor \& mgt}}{\text{average farm investment}}$

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## Measures of Solvency

### ✦ Net Worth (NW) or Owner's Equity

= total assets (TA) – total liabilities (TL)

or:  $NW = TA - TL$

### ✦ Farm debt/asset ratio

=  $TL / TA * 100\%$

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## Measures of Liquidity

### ✦ Working capital

= current farm assets – current farm liabilities

=  $CA - CL$

### ✦ Current ratio

=  $CA / CL$

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## Measures of Repayment Capacity

- ✦ Term debt and capital lease coverage ratio  
(or: Term debt coverage ratio)
- ✦ Capital replacement and term debt repayment margin

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## Measures of efficiency

- ✦ Asset turnover ratio  
= gross revenues / average total farm assets
- ✦ Operational ratios (as a % of gross revenues)
  - Operating expense ratio
  - Depreciation expense ratio
  - Interest expense ratio
  - Net farm income from operations ratio
- ✦ Cost measures

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## Initial Analysis

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## Steps for an Initial Analysis

1. Gain an overview of the farm
2. Identify the vision, goals, objectives, and standards of the farm
3. Check the accuracy of the records
4. Prepare the financial statements
5. Evaluate profitability
6. Evaluate solvency
7. Evaluate liquidity

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## Steps for an Initial Analysis, cont.

8. Evaluate repayment capacity
9. Evaluate efficiencies
10. Examine marketing performance
11. Analyze livestock and crop enterprises
12. Analyze internally, historically, vertically and comparatively
13. Evaluate managerial ability & personal characteristics

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## Questions for diagnostic analysis

1. Is there an earnings problem?
2. Is the problem temporary or permanent?
3. Is it an operational or organizational problem?
4. Should the resources be put to other uses?

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