



Innovative Technical Assistance & Transformative Education for Farmers and Ranchers in Arkansas



FARM BUSINESS PLANNING

HANDBOOK

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Introduction

This handbook is a resource to complement the Farm Business Planning webinar series. It is composed of previously published fact sheets.

About TransformAR

Innovative Technical Assistance & Transformative Education for Farmers and Ranchers in Arkansas

TransformAR is a statewide program to help farmers and ranchers, especially small-scale family producers, thrive through innovative technical assistance and transformative education. Specialists and extension agents will utilize a state-of-the-art mobile lab equipped to deliver on-farm, real-time analyses, generating indicators in key parameters that improve the accuracy of recommendations and the excellence of the University of Arkansas Cooperative Extension Services. The mobile lab will also be used extensively for hands-on demonstrations at educational events, such as workshops, field days, farm-trials, county fairs, and expos. Additionally, TransformAR will implement a comprehensive outreach plan to increase the adoption of best farming practices, including webinars, workshops, seminars, and field days.

TransformAR goals are to:

- Improve the ability of farmers and ranchers to start and maintain successful agricultural and/or forestry-related operations
- Implement a comprehensive outreach program to promote best farming practices for sustainable agriculture
- Increase participation of farmers and ranchers in USDA programs

The objective of TransformAR is to promote best management practices for sustainable agriculture and strengthen local food systems. The mobile laboratory capabilities and education program will cover multiple areas of agriculture, such as crop production, animal husbandry, horticulture, agricultural engineering, agricultural economics, forestry, soil science, and fisheries science, as well as environmental and food sciences.

More information: www.uaex.uada.edu/TransformAR

Farm Business Planning

Webinar	Theme	Core Topics	Factsheets
Part 1	Getting Organized: Record Keeping & the Balance Sheet	Building a recordkeeping system for production and financial data; current vs. noncurrent assets and liabilities; developing a balance sheet to capture financial position	FSA100, FSA76
Part 2	Measuring Performance: Income Statement & Cash Flow	Receipts, operating vs. fixed expenses, accrual adjustments, and Net Farm Income; tracking operating, investing, and financing cash flows and the ending cash balance	FSA95, FSA113
Part 3	Using the Numbers: Breakeven Analysis & Financial Ratios	Enterprise budgets and calculating breakeven price/yield; liquidity, solvency, profitability, and efficiency ratios pulled from the big three statements	FSA88, FSA115

Part 1 — Getting Organized: Record Keeping & the Balance Sheet

Learning Objectives	1) Compare paper, spreadsheet, and farm-specific software recordkeeping tools and choose one that fits the operation. 2) Distinguish production records from financial records and identify what to track in each. 3) Explain financial position and the role of the balance sheet as a snapshot in time. 4) Identify current vs. noncurrent assets and liabilities and build a basic balance sheet.
Factsheets Referenced	FSA100 (From Shoeboxes to Spreadsheets: An Overview of Farm Financial and Production Record Keeping); FSA76 (Financial Insight: Navigating Performance, Position, and the Balance Sheet)
Take-Home Tools	Production recordkeeping checklist and template (FSA100, Tables 2–3); blank farm balance sheet template (FSA76, Table 2)

Part 2 — Measuring Performance: Income Statement & Cash Flow

Learning Objectives	1) Identify the three documents that form the basis of an income statement. 2) Build the receipts and expense sections of an income statement and calculate Net Operating Income. 3) Apply accrual adjustments to calculate Net Farm Income (NFI). 4) Track operating, investing, and financing activities on a cash flow statement and calculate the ending cash balance.
Factsheets Referenced	FSA95 (Measuring Profitability: Understanding the Ins-and-Outs of a Farm Income Statement); FSA113 (Tracking Cash Flow on Your Farm: A Guide for Producers)
Take-Home Tools	Blank income statement template (FSA95); blank quarterly cash flow statement template (FSA113, Tables 1–5)

Part 3 — Using the Numbers: Breakeven Analysis & Financial Ratios

Learning Objectives	1) Identify the four components of an enterprise budget (income, direct expenses, fixed expenses, profit). 2) Calculate a breakeven price and a breakeven yield from an enterprise budget. 3) Calculate the core liquidity and solvency ratios from the balance sheet. 4) Calculate profitability ratios from the income statement and cash flow ratios from the cash flow statement, and benchmark all of them against strong/caution/vulnerable ranges.
Factsheets Referenced	FSA88 (Leveraging Enterprise Budgets to Calculate Breakeven Points); FSA115 (Putting It Together: Ratio Analysis of the 'Big Three' Financial Statements)
Take-Home Tools	Breakeven price/yield worksheet (FSA88); financial ratio quick-reference tables (FSA115, Tables 1–3)

From Shoeboxes to Spreadsheets: An Overview of Farm Financial and Production Record Keeping

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Overview

Effective farm management depends on accurate record-keeping. Although easy to overlook, a detailed and precise set of records is a valuable tool for agricultural producers. While it may seem like a daunting task, maintaining accurate records is worth the time and effort, especially if a financial issue arises. These records help track income, expenses, and production activities, supporting informed business decisions. Farm financial and production records should be complete, clear, neat, simple, and consistent. These qualities ensure that records are useful for daily operations as well as long-term planning, such as securing loans or grants, meeting legal and financial obligations, and preparing essential tax documentation. It's never too early (or late) to develop a record-keeping system tailored to your operation(s).

Basic Record Keeping

Record keeping involves collecting, organizing, and storing information about an operation.



It covers both production records (what is grown or raised and/or resource management) and financial records (expenses and income). An effective farm record-keeping system doesn't need the latest technology, but it must be simple to follow and update regularly.

Record Keeping Tools

A successful and efficient record-keeping system depends not only on what information a producer collects, but also on how it is recorded, stored, accessed, and used over time. Tools used to manage farm records should match the scale of the operation, the producer's comfort level with technology, and the intended purpose of the records. There is no single, universally effective method of record-keeping that works for all agricultural producers. The key

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to success is selecting a process that makes consistent and accurate record-keeping as simple as possible.

Many farmers start with a paper-based record system, especially for keeping daily field notes. Spiral notebooks, binders with printed forms, or pre-made record-keeping templates can be customized by crop type, field, or live-stock type. These paper tools are inexpensive and easy to use. However, they can be challenging to keep organized, especially when records are needed for production year summaries or annual tax filings. Microsoft Excel and Google Sheets are affordable digital options for producers comfortable with electronic recording methods. Spreadsheets simplify calculations, sorting, and organization, and they can be easily backed up to physical drives or to cloud storage. Additionally, this method makes data sharing more straight-forward.

As an operation expands, farm-specific record-keeping software may become worthwhile if a producer needs more in-depth analysis. There is no shortage of specialized farm-specific software for record-keeping, including some that provide mobile apps for real-time data entry from the field, integration with GPS or yield monitors, and automatically generated reports (Wantoch, 2025). Program and subscription costs vary significantly and can be expensive depending on the size of the operation.

Table 1: Attributes of Record-Keeping Systems

Feature	Paper Record System	Digital Record System
Cost	Low (notebooks, printed forms)	Varies (free to subscription-based)
Ease of Use	Easy to start and maintain	Initial learning curve, but better organization
Accessibility	Requires physical access	Access from phone, tablet, or computer
Data Analysis	Manual	Built-in tools for reports, charts, and summaries
Backup	Store physically	Digital backup and data protection
Scalability (Farm Size)	Difficult to maintain as the operation grows	Cost-prohibitive to smaller operations, but is integral for larger operations

General accounting software (e.g., Quick-Books) is a valuable tool specifically for financial record-keeping. These platforms make it easier to track income and expenses, categorize transactions, generate invoices, and reconcile bank accounts. When used correctly, this type of software can produce accurate and essential financial statements quickly. There is usually a steep learning curve and cost associated with most accounting software; however, many accountants are familiar with it, which can make tax season or loan applications smoother processes.

Regardless of the chosen system, digital backup and security should be integral to any record-keeping setup. Paper records should be regularly scanned or photographed, and electronic files ought to be stored on external hard drives or cloud-based platforms. Access should be restricted to trusted individuals. Consider using passwords for additional protection of sensitive information. Table 1 outlines the key differences between paper and digital record-keeping systems.

Production Records

Production records keep track of the physical activities and inputs needed for a farm’s production, such as growing crops or raising livestock. Detailed and accurate production records allow producers to evaluate and compare performance over time, make better management decisions, and enhance the overall efficiency and profitability of their operation. Proper production records should be organized so that producers can access and analyze them easily. Regardless of the method used, these records are most useful when updated frequently—ideally daily or weekly—and organized by crop type, field, or animal group. Backup records should be stored in a location that is easily accessible, whether physical or digital. An example of a production record template is included in Table 3. This template is not meant to be a comprehensive or perfect document; it offers a foundation for building more detailed records.

Crop Records

Crop records include all essential details about planting, input use, maintenance practices, and harvest. Planting dates, crop varieties, field locations, seed sources, and seeding rates should be recorded. As the season advances, crop records should be continually updated with information regarding fertilizer and pesticide applications, including the product name, rate, and application date. Irrigation schedules and methods should also be documented. Detailed notes on pest and disease observations should be recorded, along with records of any mitigation steps taken. Harvest data should be documented, including yield by field (or enterprise) and harvest dates. Consistently collecting this type of data allows for comparisons across years, varieties, and production plans, supporting better future decision-making.

Livestock Records

Livestock records should include animal identification numbers or names, sex, breed, and birth dates. Daily or weekly records might include feeding schedules, weight gains, pasture movements, breeding and calving or farrowing dates, and any health issues and veterinary treatments. Vaccinations and medications need to be accurately tracked for regulatory com-

pliance. Mortality and culling records can help identify management or environmental issues impacting herd or flock health. It may also be helpful for producers to track production outputs, such as milk yield, egg count, or carcass weight, depending on the enterprise's goals.

Labor Records

Labor records help track and manage workforce efficiency and costs. Records should include workers' names, dates and hours worked, tasks performed, and wages paid. Monitoring labor inputs for specific tasks, such as planting, application, and harvesting, can help identify which production operations are most labor-intensive and reveal opportunities for cost savings.

Weather Records

Weather records are crucial for understanding production results and are useful in planning future strategies. Consider tracking daily high and low temperatures, along with any extreme weather events such as frost, hail, droughts, floods, or excessive heat. Usually, this data can be collected using a simple on-farm weather station or accessed online if a National Oceanic and Atmospheric Administration (NOAA) weather station is available.

Table 2: General Production Recordkeeping Checklist

Task	Completed	Notes
Record planting and harvesting dates for each field/crop		
Track fertilizer, pesticide, and herbicide applications (product, rate, date)		
Record labor hours per activity (per field, per crop if necessary)		
Track irrigation amounts		
Record machinery uses and fuel costs		
Record yield per field at harvest (or livestock group at sale)		
Maintain receipts (or logs) for input purchases.		
Maintain sales receipts		
Record severe weather events impacting production		
Document necessary changes or observations for the next production season		

Table 3: Simple Production Recordkeeping Template

General Information					
Farm Name					
Field #					
Crop/Livestock					
Season/Year					
Variety/Breed					
Field Activities & Inputs Log					
Date	Activity	Input	Rate	Amount Used	Weather Conditions
Labor & Equipment Use Log					
Date	Task	Labor Hours	Rate	Equipment	Fuel Used (gal)
Harvest Record Log					
Date	Crop	Yield	Unit	Acreage	Moisture %
Season-end Observations or Issues:					

Financial Records

Financial records help farmers understand their farm's financial position and performance (Loy and Ahrendsen, 2023). While production records document the physical aspects of farming, financial records show how money moves through the operation. Proper financial records are essential for managing risk, planning for growth, securing credit, and meeting tax and legal requirements. Like production records, accuracy, consistency, and organization are vital for financial records to be useful, no matter the methods used to keep them.

A basic financial record-keeping system tracks income, expenses, assets, liabilities, and net worth, also called equity. Income records should include all revenue sources, such as sales of livestock, crops, value-added products, and any off-farm income related to the farm. It's important to record not just the totals but also the date, source, and type of income (such as direct sales at a farmers market, a wholesale contract, or government support). Expense records should document all farm-related costs, including input purchases (like seed, fertilizer, and feed) and operating expenses (such as fuel,

repairs, utilities, and hired labor). Each entry should clearly state the date, vendor, purpose, and amount paid. Capital expenditures, like equipment purchases or building improvements, should be recorded separately from regular farm operating costs.

Along with income and expenses, keep a record of assets, liabilities, and owner's equity. These details are essential for creating key financial statements, including the income statement, balance sheet, and cash flow statement, which can be prepared monthly, quarterly, or annually based on a farm's needs. Refer to additional chapters for detailed explanations and examples of a farm balance sheet, income statement, and cash flow statement. Developing and maintaining these statements are the most crucial parts of financial record-keeping.

Strong financial records not only support a producer's daily decision-making but also help demonstrate credibility to lenders, insurers, and government programs. They enable producers to monitor profitability by enterprise, set goals for future investments into their business, and adjust practices based on economic results. Especially during times of uncertainty, having accurate and current financial records can be a vital tool for producers to respond effectively to situations and access available support.

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Financial Insight: Navigating Performance, Position, and the Balance Sheet

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Overview

Financial health describes the state of a farm's monetary affairs. Understanding how financial health impacts a farm is important for informed decision-making, optimal allocation of resources and successful financing. This idea can be split into two concepts: financial position and financial performance, each providing unique perspectives into the health of a farm business. Evaluation of a farm requires an understanding of all financial aspects by using multiple factors. These factors are the building blocks for evaluating a farm's financial health. As such, accurate record-keeping is imperative for the longevity of a farm business.

Financial Position

This concept refers to the financial health of a farm at a given moment in time. In accounting terms, financial position is the daily balance of assets, liabilities and equity of a farm (Wantoch and Bernhardt, 2021). Position does not include the past or future and only pertains to the present; it is a snapshot of a farm on a specific date. Furthermore, financial position refers to measures derived from the balance sheet, where the balance sheet is a snapshot of the

financial position on a given day subject to change depending on the time of the year – especially in agriculture, where planting and harvesting impact day-to-day financials.

Financial health is described in the balance sheet as all assets owned by the farm and liabilities owed to others. Proper organization and upkeep can provide an objective measure of farm business growth, liquidity, solvency and the ability to withstand risk (Richer and Shoemaker, 2018). The idea of “current” assets are assets that are cash or can be turned into cash in less than a year. Similarly, current liabilities are debts to be paid in a year or less (Farm Financial Standards Council (FFSC) 2023). In contrast, noncurrent assets have a useful life greater than a year while noncurrent liabilities are debt obligations not due for more than a year (FFSC, 2023).

Table 1 provides a brief overview of assets and liabilities included at the farm level. All four of these categories (current, non-current, assets and liabilities) are included in developing a farm's balance sheet. More details for these categories in the balance sheet are found in Table 2.

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Table 1. Common Farm Current Assets and Liabilities

Current Assets	Current Liabilities	Noncurrent Assets	Noncurrent Liabilities
Cash	Operating Loans	Breeding Livestock	Deferred Taxes
Stored Grain	Accrued Interest	Machinery	Livestock Loans
Feed on-hand	Credit Card Balances	Equipment	Equipment Loans
Livestock to Sell	Account Payable (e.g., bills)	Vehicles	Land Loans
Farm Supplies	Taxes	Real Estate	Building Loans
Prepaid Expenses (e.g., fertilizer)	Debt Principal Payments Due Within 12 months	Buildings	

Financial Performance

Financial performance is the measure of financial health across time (e.g., quarters, months or years); it is also the result of production practices over time (Wantoch and Bernhardt, 2021). Financial performance may include external factors (e.g., drought, volatile commodity prices and global disruptions) and focuses on a farm's financial decisions to handle these external factors. Additionally, it describes cash flows of a farm and how well the entity has met its debt obligations (FFSC, 2023).

Performance is an important tool to help a farm manager to understand the outcomes of financial decisions throughout his or her farm business. Agricultural lenders often use financial performance in evaluating past decisions to assess survivability and debt capacity (FFSC, 2011). In contrast to financial position, it uses a combination of the balance sheet, income statement and statement of cash flows to evaluate a farm (Bir et al., 2022). Financial performance influences a farm's financial position since performance pertains to financial and operational decisions over time that ultimately impact a farm's position at a specific time. How to properly measure and evaluate each concept will be discussed in a later fact sheet.

What Can a Producer Do Right Now?

For a producer to successfully evaluate a farm's financial health, he or she must begin with accurate financial records. Those records

must be maintained by staying up to date with detailed transaction reports.

Having a system in place to accurately record this information is important to determine financial position and financial performance. Historically, farm financial records were not standardized, thus creating difficulties for financial analysts and lenders in accurately evaluating farms (FFSC, 2011). The Farm Financial Standards Council (FFSC) was established in response to these concerns and today provides financial guidelines for producers to follow when maintaining their financial records (FFSC, 2023).

If a producer wants to begin maintaining consistent financial records, a good way to start is to develop the "minimum set of financial statements" as set forth by the FFSC that include 1) a balance sheet, 2) a income statement, 3) a statement of cash flows and 4) a statement of owner equity (FFSC, 2011). These statements are universally agreed upon by the FFSC and are in line with principles laid out by the Financial Accounting Standards Board (FASB) (FFSC, 2011). An example balance sheet (Table 2) is given after this section to provide producers with a starting point for developing financial records. It's worth noting that these statements are only as good as how well they are maintained; if records are not accurately kept then evaluation of the farm could be misguided.

Table 2. Example Farm Balance Sheet

FARM BALANCE SHEET

As of _____, _____
Date Year

List only the assets and liabilities associated or supported by your farming business.

FARM ASSETS

Current Assets:	Market Value	Cost Value
1. Cash & Checking		
2. Accounts Receivable		
3. Prepaid Expenses		
4. Cash Investment in Growing Crops		
5. Inventory: Marketable Livestock		
6. Raised Crops and Feed		
7. Purchased Feed		
8. Supplies		
9. Other Current Assets		
10. Total Current Farm Assets (Sum Lines 1 thru 9)		
Non-Current Assets:		
11. Breeding Livestock: Purchased		
12. Raised		
13. Machinery and Equipment		
14. Vehicles		
15. Investment in Capital Leases		
16. Contracts and Notes Receivable		
17. Investment in Cooperatives		
18. Real Estate		
19. Buildings and Improvements		
20. Other Non-Current Assets		
21. Total Non-Current Farm Assets (Sum Lines 11 thru 20)		
22. Total Farm Assets (Line 10 + Line 21)		

FARM LIABILITIES AND EQUITY

Current Liabilities:	Market Value	Cost Value
23. Accounts and Notes Payable		
24. Line of Credit and Operating Notes		
25. Current Portion of Term Debt		
26. Accrued Interest		
27. Taxes Payable: Ad Valorem		
28. Taxes Payable: Employee Withholding		
29. Taxes Payable: Income Taxes		
30. Taxes Payable: Deferred Taxes		
31. Other Accrued Expenses		
32. Other Current Liabilities		
33. Total Current Farm Liabilities (Sum Lines 23 thru 32)		Same
Non-Current Liabilities:		
34. Non-Current Portion of Term Debt		
35. Deferred Taxes		
36. Other Non-Current Liabilities		
37. Total Non-Current Farm Liabilities (Sum Lines 34 thru 36)		Same
38. Total Farm Liabilities (Line 33 + Line 37)		
39. Contributed Capital		
40. Retained Earnings		
41. Total Valuation Equity		
42. Farm Equity (Line 22-Line 38)		
43. Total Farm Liabilities and Equity (Line 38 + Line 42)		

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Measuring Profitability: Understanding the Ins-and-Outs of a Farm Income Statement

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Overview

What is an Income Statement?

An income statement (also known as the Earnings or Profit and Loss Statement) is an integral part of on-farm financial record keeping. In short, the income statement can be used to reveal the overall success of a farm enterprise over a specific unit of time, usually one calendar year. The income statement is used to assess a farm's overall profitability and is an indicator of financial health. It summarizes all returns (income) and costs (expenses) associated with how a farm generates capital (cash). As such, the income statement provides a systematic way for farm managers to determine net farm income (or profit). Net farm income (NFI) refers to the farm-generated returns, given the capital (money, time and labor) invested in the enterprise. If positive, the farm generated a profit; if negative, the farm did not and may have to make production, marketing or financial adjustments in the future. The income statement can be used to evaluate profitability in a single

year while allowing for year-to-year comparisons to understand how efficiently the farm generates income over time.

This factsheet details the specific sections in all income statements and how to use them to measure financial health. A blank income statement is provided at the end, allowing readers to develop their own on-farm income statements.

Developing an Income Statement

Before developing an income statement, it's important to familiarize yourself with the documents/records that serve as the foundation. Three documents form the basis for an income statement: 1) the beginning of-the-year balance sheet, 2) the end-of-the-year balance sheet, and 3) the most recent cash-basis Schedule F tax form (Form 1040 – Profit and Loss from Farming).

The beginning- and end-of-year balance sheets highlight changes in assets and liabilities throughout the year that will eventually be included on an income statement through an

accrual adjustment (more discussion on this in later sections). On the other hand, the Schedule F provides a summary of income and expenses from the calendar year that can be used to develop that year's income statement.

Section 1: Receipts

The income statement's receipt (also known as revenue) section includes all the items for which one received receipts during the calendar year. These items include crop/livestock sales, government payments (including crop insurance proceeds) and custom work income. Be sure to record income only from the farm business during the calendar year. For example, include the sale of a grown crop but do not include items such as sold land or machinery. Capital assets (land or machinery) are not included because they are revenue earned outside of farm-generated income¹. Table 1 is an example of a farm's receipts section. In this case, the farm generated \$110,000 in revenue from various sources.

Table 1. Income Statement Revenue.

CATEGORY	AMOUNT (\$)
REVENUE	
Crop Sales	50,000
Livestock Sales	30,000
Government Payments	10,000
Custom Work Income	20,000
Other Farm Revenue	-
GROSS FARM INCOME (Sum of revenue categories)	110,000

Section 2: Expenses, Net Operating Income, and Net Farm Income (Before Adjustment)

The expense section of an income statement records all costs (both operating and fixed) for the calendar year (Table 2). Operating expenses vary with production (for example, seed expenses vary with the number of crop acres planted). On the other hand, fixed expenses do not vary with production and must be paid regardless of farm-level output (e.g., interest paid on an outstanding loan). It's important to note the paid-principal portion of outstanding debt is

not recorded as an expense. This is because the income statement should capture only the cost (e.g., interest) incurred to use the bank's money during the year — think of this as a “rent” charge for using borrowed money.

Like revenue, the purchase of land, machinery or other large capital purchases should not be included as expenses. Accrual adjustments — changes between the beginning and end-of-year balance sheets — will likely have to be made. Again, just like the revenue section, accrual adjustments are made to ensure costs are related to the year's production and to isolate them from the previous year's expenses.

Two critical pieces of information can be pulled from this section: net operating income (NOI) and net farm income before adjustment. NOI is any farm-generated revenue above operating expenses (\$110,000 (farm revenue) - \$56,700 (operating expenses) = \$53,300). This is a good measure of profitability, which doesn't account for fixed economic costs like depreciation. Net farm income (before adjustment) is revenue above both operating and fixed expenses (\$110,000 - \$56,700 - \$11,700 (fixed

Table 2. Income Statement Expenses.

OPERATING EXPENSES	
Seed and Plants	10,000
Fertilizers and Chemicals	5,000
Pesticides and Herbicides	10,000
Feed	11,000
Veterinary and Medicine	1,200
Fuel and Oil	3,000
Repairs and Maintenance	1,000
Labor Wages	10,000
Utilities	1,500
Insurance	4,000
Other Operating Expenses	-
NET OPERATING INCOME (Gross Farm Income – Operating Expenses)	53,300
FIXED EXPENSES	
Interest Expense	8,200
Depreciation	3,500
Other Fixed Expenses	-
NET FARM INCOME (Before Adjustment) (Net Operating Income – Fixed Expenses)	41,600

¹While capital sales are not included on the income statement, they do have an impact on the balance sheet and cash flow statement. For example, selling a tractor would increase capital (cash) reserves and/or reduce outstanding liabilities.

expenses) = \$41,600) and measures economic profit by accounting for “non-cash” expenses and overhead.

Section 3: Accrual Adjustments and Net Farm Income

An accrual adjustment accounts for changes in inventory over the year. An accrual adjustment simply means to account for revenues when they are earned, rather than only recording it when cash is received or paid². These inventory changes are derived from the beginning-of-the-year balance sheet and the end-of-the-year balance sheet. The idea is to compare the two balance sheets, isolate the changes related to this year’s production, and remove non-cash current asset and liability changes that do not pertain to this year’s production.

Table 3 is an example of an accrual adjustment section. The inventory items listed are some of the most common items that may need adjusting throughout the year. Let’s say, for instance, the farm had an increase in crops and feed inventory (current asset) of \$2,500. This would be recorded as a revenue adjustment and added to the total adjustment value, since it’s an increase in the current asset item throughout the year. But what if there was a reduction in a current asset (e.g., accounts receivable) over the year? This difference would also be recorded, but treated as a revenue reduction (see accounts receivable in Table 3)³. On the current liability side, an increase would be recorded as a negative value, and the negative value is added to the total adjustment, while a decline would be recorded as a positive value and added to the total adjustment.

Let’s take accounts payable and assume an increase of \$500. In this case, the \$500 would be recorded as a negative in the accrual adjustments (see accounts payable in Table 3). This may seem backward, but we’re essentially ensuring three things: 1) accounting for the value of inventory change throughout the

year, 2) helping to offset production expenses incurred to build that inventory, and 3) removing the value of inventory that was previously produced but used this year. In the given example, total inventory adjustment amounts to \$1,000 = \$2,500 + (\$1,000) + (\$500).

The total adjustment value is added to net farm income before adjustment and total net farm income (NFI) is then determined. In this example, the NFI is \$42,600 (\$41,600 + 1,000). NFI is the amount of money the farm made after accounting for all expenses during the year, and is a key metric for measuring the financial performance of a farm enterprise.

Table 3. Income Statement Accrual Adjustments.

ACCRUAL ADJUSTMENTS (FROM THE BALANCE SHEETS)	
Crops and Feed (Current Asset)	2,500
Market Livestock (Current Asset)	
Growing Crops (Current Asset)	
Accounts Receivable (Current Asset)	(1,000)
Prepaid Expenses (Current Asset)	
Accrued Interest (Current Liability)	
Accounts Payable (Current Liability)	(500)
Other Adjustments	-
TOTAL ADJUSTMENT (sum all inventory adjustments)	1,000
Net Farm Income (NFI (before adjustment) + Total Adjustment)	42,600

References

Farm Financial Standards Council. (2025). *Financial Guidelines for Agriculture*. Retrieved March 3, 2025, from <https://www.ffa.org/guidelines.php>.

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²The logic behind making an accrual adjustment, such as changes in inventory, is to match the changes to the expenses that were incurred.

³If the farmer earned income in the previous year but received the payment this year, the \$1,000 accounts receivable on the beginning-of-year balance sheet represents prior-year income. When the farmer is paid by December 31, it reduces accounts receivable to zero on the end-of-year balance sheet and reflects a deduction since the income was already recognized in the previous year.

CATEGORY	AMOUNT (\$)
REVENUE	
Crop Sales	
Livestock Sales	
Government Payments	
Custom Work Income	
Other Farm Revenue	
GROSS FARM INCOME (Sum of revenue categories)	
OPERATING EXPENSES	
Seed and Plants	
Fertilizers and Chemicals	
Pesticides and Herbicides	
Feed	
Veterinary and Medicine	
Fuel and Oil	
Repairs and Maintenance	
Labor Wages	
Utilities	
Insurance	
Other Operating Expenses	
NET OPERATING INCOME (Gross Farm Income – Operating Expenses)	
FIXED EXPENSES	
Interest Expense	
Depreciation	
Other Fixed Expenses	
NET FARM INCOME (Before Adjustment) (Net Operating Income – Fixed Expenses)	
ACCRUAL ADJUSTMENTS	
Crops and Feed	
Market Livestock	
Accounts Receivable	
Prepaid Expenses	
Growing Crops	
Accounts Payable	
Accrued Interest	
TOTAL ADJUSTMENT (sum all inventory adjustments)	
Net Farm Income (NFI (before adjustment) + Total Adjustment)	

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Tracking Cash Flow on Your Farm: A Guide for Producers

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What is a Cash Flow Statement?

A cash flow statement tracks how cash moves throughout a farm enterprise over a specific period, usually a year. The statement provides a clear view of cash generation and cash uses. It covers cash inflows and outflows, investing and financing activities and the ending cash balance. Cash inflows reflect money coming into the business from typical operations, such as crop or livestock sales. Cash outflows reflect money spent on business operations, such as purchasing seed or fertilizer. Accurately capturing and reviewing the inflows and outflows helps determine necessary changes to cover expenses.

Investing and financing activities capture cash movements related to long-term assets, loans and other capital transactions that help grow or improve the enterprise. The ending cash balance brings all these components together, highlighting cash on hand at the end of the period. A positive cash flow indicates the business can cover its expenses, while a negative cash balance signals potential difficulty paying bills without additional financing.

The following factsheet explains the components of the cash flow statement and how to accurately account for inflows and outflows, with examples and a blank cash flow template to assist on-farm development.

Section 1: Operating Cash Inflows

Operating activities include the cash that comes into and leaves the business through normal farm operations. Cash inflows usually come from selling crops or livestock and receiving government payments. Please consider the following example for an Arkansas Delta soybean and rice farm. Referring to Table 1, the farm receives \$18,000 during the first quarter. No operating inflows occur again until the fourth quarter, when \$98,000 is generated in crop sales and \$9,200 is received in government payments. Total operating inflows for the year equal \$125,200. This means the farm goes through two full quarters with zero cash coming in, while expenses continue to occur as is typically the case. This timing difference between income and expenses is a common challenge for many producers.

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Table 1. Example Operating Cash Inflows

Category	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Annual Total
Cash Inflows					
1. Crop Sales (Cash Received)	\$18,000			\$98,000	
2. Livestock/poultry Sales					
3. Government Program Payments				\$9,200	
4. Crop Insurance					
5. Other Cash Inflows (e.g., off-farm, custom harvesting)					
6. Total Cash Inflows (<i>sum lines 1 - 5</i>)	\$18,000	\$ -	\$ -	\$107,200	\$125,200

Section 2: Operating Cash Outflows

Operating outflows are the expenses needed to grow, harvest, and sell their crop. During the first quarter, the farm incurred \$25,500 in expenses (Table 2). The second quarter is the most expensive, with \$41,500 spent on fertilizer, seed, chemicals and other input costs. Third-quarter expenses total \$19,200, and by the fourth quarter, expenses decrease to \$9,000 as the season wraps up. Even though the farm ends the year with a positive net operating cash flow of \$30,000, it operates with a deficit of \$68,200 in the first three quarters of the year. Looking at not only the yearly total but also the quarterly activity gives a clearer picture of the timing of the farm's cash surpluses and deficits.

Section 3: Investing Activities

Investing activities involve buying and selling assets such as machinery, equipment, buildings, and land. These transactions may not be part of normal day-to-day operations, but they still impact overall cash flows. In Table 3, the farm sells old equipment for \$10,000 during the first quarter, providing a cash inflow. In the second quarter, the farm purchased a used grain trailer for \$8,000. The equipment sale brought in more cash than was spent on the trailer, so the farm reports positive net cash from investing activities of \$2,000 for the year.

Table 2. Example Operating Cash Outflows

Cash Outflows					
7. Seed, Fertilizer, & Chemicals	\$8,500	\$30,000	\$5,000		\$43,500
8. Feed, Vet, & Livestock Supplies					
9. Fuel, Oil, & Repairs	\$2,000	\$4,000	\$6,000	\$2,000	\$14,000
10. Labor Wages & Contract Services	\$500	\$3,000	\$2,500	\$2,500	\$8,500
11. Cash Rent, Utilities, & Insurance	\$12,000	\$2,000	\$2,000	\$2,000	\$18,000
12. Property Taxes Paid			\$1,200		\$1,200
13. Other Outflows (e.g., family living withdrawals)	\$2,500	\$2,500	\$2,500	\$2,500	\$10,000
14. Total Cash Outflows (<i>sum lines 7 - 13</i>)	\$25,500	\$41,500	\$19,200	\$9,000	\$95,200
15. Net Cash (<i>line 6 – line 14</i>)	\$ (7,500)	\$ (41,500)	\$ (19,200)	\$98,200	\$30,000

Table 3. Example Investing Activities

Investing Activities					
16. Capital Asset Sales (Machinery, Land, & Livestock)	\$10,000				\$10,000
17. Capital Asset Purchases (Machinery, Land, & Livestock)		\$8,000			\$8,000
18. Net Cash From Investing (<i>line 16 – line 17</i>)	\$10,000	\$ (8,000)			\$2,000

Section 4: Financing Activities

Financing activities show how the farm manages debt. Since the farm experiences large operating deficits, it uses an operating loan to help cover those expenses, borrowing \$35,000 in the second quarter to maintain sufficient cash balances. This would be considered a cash inflow, even though it will be repaid later. In the first quarter, the farm makes a \$5,000 principal payment on a previous equipment loan. After receiving income from the sale of crops, the farm repays the \$35,000 operating loan balance in the fourth quarter, resulting in a cash outflow. In this case, financing activities represent a \$5,000 annual net shortfall due to the first-quarter principal payment. This section demonstrates how loans can help bridge the gap between operating expenses and income when an operating deficit occurs (Table 4).

Section 5: Cash Position and Ending Cash Balance

The Statement of Cash Flows also shows how the farm's cash balance changes throughout the year. The farm begins with \$8,000 in cash. As production expenses, equipment purchases, and family living costs accumulate, the cash balance declines. By the end of the third quarter, the farm's cash position falls to -\$28,200. This temporary decline may appear concerning, but it is not unusual for farmers to rely on operating loans during the growing season. It highlights the importance of planning cash flows and communicating with lenders before financial stress occurs. In this case, the farm may need an operating loan in the third quarter so as not to have a \$28,200 cash deficit, although a third quarter loan is not shown in the example. Once revenue is received in the fourth quarter, the farm's financial position improves significantly. By the end of the year, the farm reports an ending cash balance of \$35,000 that will be treated as the starting check book balance on next year's beginning balance sheet (Table 5).

Table 4. Example Financing Activities

Financing Activities					
19. Loan Proceeds & Line of Credit Draws		\$35,000			\$35,000
20. Principal Payments & Repayments	\$5,000			\$35,000	\$40,000
21. Net Cash From Financing (line 19 – line 20)	\$(5,000)	\$35,000		\$(35,000)	\$(5,000)

Table 5. Example Cash Position

Cash Position					
22. Beginning Check Book Balance	\$8,000	\$5,500	\$(9,000)	\$(28,200)	
23. Ending Cash Balance (line 15 + line 18 + line 21 + line 22)	\$5,500	\$(9,000)	\$(28,200)	\$35,000	

Category	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Annual Total
Cash Inflows					
1. Crop Sales (Cash Received)					
2. Livestock/poultry Sales					
3. Government Program Payments					
4. Crop Insurance					
5. Other Cash Inflows (e.g., off-farm, custom harvesting)					
6. Total Cash Inflows (<i>sum lines 1 - 5</i>)					
Cash Outflows					
7. Seed, Fertilizer, & Chemicals					
8. Feed, Vet, & Livestock Supplies					
9. Fuel, Oil, & Repairs					
10. Labor Wages & Contract Services					
11. Cash Rent, Utilities, & Insurance					
12. Property Taxes Paid					
13. Other Outflows (e.g., family living withdrawals)					
14. Total Cash Outflows (<i>sum lines 7 - 13</i>)					
15. Net Cash (<i>line 6 – line 14</i>)					
Investing Activities					
16. Capital Asset Sales (Machinery, Land, & Livestock)					
17. Capital Asset Purchases (Machinery, Land, & Livestock)					
18. Net Cash From Investing (<i>line 16 – line 17</i>)					
Financing Activities					
19. Loan Proceeds & Line of Credit Draws					
20. Principal Payments & Repayments					
21. Net Cash From Financing (<i>line 19 – line 20</i>)					
Cash Position					
22. Beginning Check Book Balance					
23. Ending Cash Balance (<i>line 15 + line 18 + line 21 + line 22</i>)					

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Leveraging Enterprise Budgets to Calculate Breakeven Points

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Overview

Enterprise budgets are valuable resources to producers. They contain estimates of potential revenues, expenses, and earnings for an agricultural enterprise. An agricultural enterprise can be defined as any business that is primarily engaged in agriculture (e.g. a farmer that grows and markets rice or soybeans in Arkansas). Understanding the information within an enterprise budget and how to utilize it for farm planning is fundamental in on-farm decision-making. Conventionally, an enterprise budget is based on one acre for one crop (one head in the case of livestock) in one year. Consider budgets as small feasibility studies helping make planting, purchasing, and marketing decisions wherein a producer can adjust prices, yields, rates, etc., to reflect their practices and current market conditions. Each budget is specifically tailored to a system of production, inputs, and operations and summarizes the associated costs and returns. These resources assist in estimating breakeven prices or yields and enterprise planning (hence the name “enterprise” budgets).

Components of an Enterprise Budget

An enterprise budget contains

several pieces of information, all aimed at capturing current market conditions and crop-specific sequences of operations (UADA-CES, 2024). Regardless of who developed the enterprise budget, it contains four important components: income (revenue), direct expenses (also known as variable or operating expenses), fixed (ownership) expenses, and profit (Wantoch and Bernhardt, 2022). Luckily, enterprise budget software, such as Excel spreadsheets, allow for quick and easy alternative calculations (Sahs and Bir, 2022). The University of Arkansas hosts enterprise budgets tailored to Arkansas crops and practices, usually released in the fall before next year’s crop. For instance, 2024 budgets for field crops planted in Spring 2024 have an expected release date of Fall 2023. For more information on enterprise budget software and best practices, contact your local Extension office or Breana J. Watkins at bjwatkins@uada.edu.

Income (Revenue)

The first budget item listed is revenue, or income. Income for field crops is calculated as the total quantity of units sold multiplied by the selling price per unit (See Figure 1). For instance, 60 bushels of conventional soybeans sold at \$13/ bushel gives an expected revenue of

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Figure 1. 2024 Conventional Soybean Enterprise Budget Revenue.

		Estimated Costs and Returns per Acre						
		Conventional Soybean						
		Furrow Irrigated, 12 ac-in., Arkansas, 2024						
ITEM	UNIT	PRICE	QUANTITY	Total Amount	Landlord Share %	Landlord Share	Tenant Share	
INCOME								
Soybean	bu	\$ 13.00	60	\$ 780.00	0.0%	\$ -	\$ 780.00	
TOTAL INCOME				\$ 780.00		\$ -	\$ 780.00	

Figure 2. 2024 Conventional Soybean Enterprise Budget Revenue, 25% Crop Share.

		Estimated Costs and Returns per Acre						
		Conventional Soybean						
		Furrow Irrigated, 12 ac-in., Arkansas, 2024						
ITEM	UNIT	PRICE	QUANTITY	Total Amount	Landlord Share %	Landlord Share	Tenant Share	
INCOME								
Soybean	bu	\$ 13.00	60	\$ 780.00	25.0%	\$195.00	\$ 585.00	
TOTAL INCOME				\$ 780.00		\$195.00	\$ 585.00	

\$780 per acre (60 bushels/acre X \$13/bushel).

A survey of local elevator forward cash price bids is taken each fall, and additional price data is gathered from August to November based on forward contracts for September 2024 (ZRU24) rough rice futures. Corn, grain sorghum, and cotton prices are derived from December 2024 (ZCZ24 and CTZ24) futures, and soybeans are priced from November 2024 (ZSX24) futures. The collected price data based on local forward cash price bids are then averaged and used as the expected price. Expected yields utilized in the budgets are an average of yields from the Arkansas Row Crop Verification Program. The on-farm practices utilized in the verification program are the practices assumed when developing the Arkansas Crop Enterprise Budgets.

For producers renting farmland, a rent expense is typically deducted from the total income in the form of a crop share. A 25% crop share (reducing total crop value by 25% as payment from tenant to land-owner) is a common rental agreement in Arkansas. Consider the previous example where a producer sold 60 bushels per acre and retained 100% of the revenue. Under a 25% crop share, the producer's soybean revenue is now 45 bushels of soybeans (60 bushels * 0.75 = 45 bushels) at \$13/bushel. Under this crop share, the producer has a total revenue of \$585 to cover expenses; In other words, a producer has 75% of the total revenue to cover 100% of the expenses (see Figure 2).

Direct (Operating) Expenses

Total operating expenses are the total of all production expenses incurred when planting a

crop, given the listed field activities (See Figure 3). For each Arkansas crop enterprise budget, a list of best practices is developed and updated regularly by agronomists, economists, weed scientists, entomologists, pathologists, and crop specialists within the University of Arkansas System Division of Agriculture. These field activities are located within each budget Excel file to give users the basis for each budget's development. Total production expense encompasses expected costs associated with each crop and irrigation type from pre-plant applications through post-harvest.

Pricing for Arkansas budgets is primarily sourced by surveying local dealers and suppliers of crop protectants, fuel, fertilizer, seed, and farm equipment (new, used and rental), among other items. If prices are unavailable locally, then online retailers, regional crop budget data, and last-sold prices are utilized.

Fixed Expenses and Returns (Profit)

Fixed expenses are expected costs incurred even if a crop is not planted for the current crop season. Fixed expenses are items such as implements and equipment, power units and equipment used in irrigation, as well as buildings such as a shed or shop. It's important to note that fixed expenses could be cash (taxes, insurance, interest payments) or non-cash (depreciation and interest on invested money). Any expenditures involved in building and maintaining a shed, shop, etc. are not currently incorporated into enterprise budgets for Arkansas. However, many producers utilize these buildings, and it is likely to be a fixed expense to consider. Any expenses incurred by users can be added to the budget under direct expenses. In the 2024 crop enterprise budget for conventional soybeans, fixed expenses totaled \$94.97/acre (See Figure 4). The fixed expense portion of farm machinery and equipment utilizes formulas standard for agricultural engineers to estimate the total cash needed to replace equipment used each season. The budget assumes producers would be setting aside, or saving, this cash to replace equipment as needed at the end of its life usage. Most equipment has a life of 8 years for depreciation purposes. The depreciation is set at 7 years with only partial depreciation in the first and last year making it 8 total depreciation years (IRS, 2023).

Figure 3. 2024 Arkansas Conventional Soybean, Operating Expenses.

DIRECT EXPENSES							
LAND EXPENSE							
Cash Land Rent	acre			\$ -			\$ -
SEED/PLANTS							
Soybean Seed	thous	\$0.38	150	\$57.00	0.0%	\$ -	\$57.00
CUSTOM SPRAY AND FERTILIZER							
Ground App ^{1,2,3,4,5}	appl	\$8.00	6	\$48.00	0.0%	\$ -	\$48.00
Aerial App Chem ⁶	appl	\$8.50	2	\$17.00	0.0%	\$ -	\$17.00
Aerial App Fert ⁷	lbs	\$0.085	0	\$ -	0.0%	\$ -	\$ -
FERTILIZERS							
Phosphate (0-46-0) ²	lbs	\$0.35	90	\$31.50	0.0%	\$ -	\$31.50
Potash (0-0-60) ²	lbs	\$0.25	100	\$25.00	0.0%	\$ -	\$25.00
Urea (46-0-0) ^{2,4,7}	lbs	\$0.25	0	\$ -	0.0%	\$ -	\$ -
HERBICIDES							
Glyphosate ¹	oz	\$0.34	32	\$10.88	0.0%	\$ -	\$10.88
2,4-D ¹	oz	\$0.21	32	\$6.72	0.0%	\$ -	\$6.72
Boundary ³	qt	\$23.50	1	\$23.50	0.0%	\$ -	\$23.50
Select Max ⁵	pt	\$13.86	1	\$13.86	0.0%	\$ -	\$13.86
Zidua SC ⁵	oz	\$6.20	3.5	\$21.70	0.0%	\$ -	\$21.70
Flexstar ⁵	oz	\$0.62	1.5	\$0.93	0.0%	\$ -	\$0.93
Outlook ⁵	oz	\$0.92	12.8	\$11.78	0.0%	\$ -	\$11.78
Gramoxone ⁵	oz	\$0.37	32	\$11.84	0.0%	\$ -	\$11.84
First Rate ⁵	oz	\$37.79	0.3	\$11.34	0.0%	\$ -	\$11.34
Python ⁵	oz	\$20.47	0.5	\$10.24	0.0%	\$ -	\$10.24
INSECTICIDES							
Besiege ⁶	oz	\$2.75	9	\$24.75	0.0%	\$ -	\$24.75
FUNGICIDES ADJUVANTS HAULING							
Haul Soybean	bu	\$0.27	60	\$16.20	0.0%	\$ -	\$16.20
DRYING SUPPLIES							
Polypipe	acre	\$3.88	1	\$3.88	0.0%	\$ -	\$3.88
CROP CONSULTANT/SCOUTING FEE							
Soybean Consultant	acre	\$6.50	1	\$6.50	0.0%	\$ -	\$6.50
CROP INSURANCE							
Soybean Crop Insurance	acre	\$4.80	1	\$4.80	0.0%	\$ -	\$4.80
OPERATOR LABOR							
Tractors	hour	\$16.54	0.3601	\$5.96	0.0%	\$ -	\$5.96
Harvesters	hour	\$16.54	0.0851	\$1.41	0.0%	\$ -	\$1.41
IRRIGATE LABOR							
Special Labor	hour	\$13.50	0.3625	\$4.89	0.0%	\$ -	\$4.89
DIESEL FUEL							
Tractors	gal	\$3.65	3.488	\$12.73	0.0%	\$ -	\$12.73
Harvesters	gal	\$3.65	2.027	\$7.40	0.0%	\$ -	\$7.40
Furrow Irr.	Ac-In	\$5.32	12	\$63.84	0.0%	\$ -	\$63.84
REPAIR & MAINTENANCE							
Tractors/Implements**	acre	\$7.65	1	\$7.65	0.0%	\$ -	\$7.65
Harvesters	acre	\$7.76	1	\$7.76	0.0%	\$ -	\$7.76
Furrow Irr.	acre	\$0.24	12	\$2.88	0.0%	\$ -	\$2.88
INTEREST ON OP. CAP.	acre	\$19.79	1	\$19.79	0.0%	\$ -	\$19.79
TOTAL DIRECT EXPENSES				\$491.73		\$ -	\$491.73
RETURNS ABOVE DIRECT EXPENSES				\$288.27		\$ -	\$288.27

Figure 4. 2024 Conventional Soybeans, Fixed Expenses and Profit.

FIXED EXPENSES								
Tractors/Implements	acre	\$ 44.44	1	\$	44.44	0.0%	\$ -	\$ 44.44
Harvesters	acre	\$ 29.36	1	\$	29.36	0.0%	\$ -	\$ 29.36
Furrow Irr.	acre	\$ 21.17	1	\$	21.17	0.0%	\$ -	\$ 21.17
TOTAL FIXED EXPENSES				\$	94.97		\$ -	\$ 94.97
TOTAL SPECIFIED EXPENSES				\$	586.70		\$ -	\$ 586.70
RETURNS ABOVE TOTAL SPECIFIED EXPENSES				\$	193.30		\$ -	\$ 193.30

Profit per acre can then be calculated for conventional soybeans using revenue, operating, and fixed expenses. Total profit per acre of \$193.30 (assuming no crop share) is calculated as total revenue – total expenses (operating + fixed) or $\$193.30 = \$780 - \$586.70$ (See Figure 4).

Breakeven Analysis as a Tool

Breakeven analysis weighs your income relative to costs (Roach and Milhollin, 2020). Put another way, breakeven analysis is the price (or yield) point in which income = expenses. In breakeven analysis, expenses refer to operating expenses used in the production of commodities (i.e., not including fixed costs). Fixed costs are not considered since, in the short run, these expenses are already paid or incurred regardless of production level, and, in line with economic theory, if operating expenses are not covered then fixed expenses cannot be covered either. A producer may choose to include fixed costs in breakeven calculations depending on their personal risk preferences. However, this fact sheet only considers operating expenses. The following examples were derived from the 2024 conventional soybean furrow-irrigated budget for Arkansas but can be applied to any crop.

Breakeven Price

Calculating a breakeven price allows for improved crop marketing. For example, a producer may expect a certain yield per acre based on data from their farm. Using this data, they can estimate the minimum price needed to cover operating expenses on that acre. While the producer may not be certain about expected yield per acre, the analysis provides a good estimate of what to expect as they begin marketing plans. For this example, assume a producer has an

expected yield of 55 bushels per acre and incurs \$492 in operating cost per acre:

Recall that breakeven pertains to the following equation:

$$(\text{Price} \times \text{Yield}) = \text{Operating Cost}$$

To calculate a breakeven price, we're interested in solving for the unknown variable, price:

$$(\text{Price}_{\text{Breakeven}} \times 55 \text{ bu}) = \$492$$

Restructuring this equation gives us:

$$\frac{\text{Operating Cost}}{\text{Yield}} = \text{Price}_{\text{Breakeven}} \rightarrow$$

$$\frac{\$492}{55 \text{ bu}} = \$8.95$$

Operating costs per acre divided by yield per acre derives our expected breakeven price per acre of \$8.95 per bushel. This is the minimum expected dollar amount needed to cover operating expenses of their soybean enterprise. Again, a producer may choose to include fixed costs in addition to operating costs if they are more risk averse. This can be done simply by adding a fixed cost per acre to existing operating costs per acre in the above equation.

Breakeven Yield

Breakeven yield is the number of bushels (or pounds) a producer must receive to cover operating costs at a given price. For example, consider a producer who forward contracts their crop production and is committed to delivering bushels at a certain price. Breakeven analysis can help determine the minimum number of bushels per acre needed to cover expected operating expenses at that price.

Producers can also use this analysis to determine how price fluctuations will impact their operation. They can assume an expected price and calculate the necessary yield per acre to earn a profit.

¹Last sold has become a more recent pricing issue in production agriculture wherein various crop protectants are not readily available for purchase and for pricing items no longer sought after by producers.

For risk-averse producers, it is best to assume a lower-than-average price to avoid underestimating the bushels per acre requirement. In the event of a price increase, a producer will benefit from having additional, unexpected profit.

The example below assumes a price of \$11.84 per bushel, as projected by USDA-RMA's Price Discovery tool for conventional soybeans in Arkansas. The operating cost of \$492 from the previous example is used again here.

Before, we solved for the unknown variable, price, but this time we solve for yield:

$$(\text{Yield}_{\text{Breakeven}} \times \$11.84/\text{bu}) = \$492$$

By restructuring the equation again, we find the breakeven yield:

$$\frac{\text{Operating Cost}}{\text{Price}} = \text{Yield}_{\text{Breakeven}} \rightarrow$$
$$\frac{\$492}{\$11.84} = 42 \text{ bu/acre}$$

If expected operating costs per acre are \$492 and the expected price of soybeans is \$11.84 per bushel, then a producer would need, at minimum, to produce 42 bushels per acre to break even. Including fixed costs will increase the total bushels needed to break even but is beneficial for producers looking to avoid risk.

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Putting it Together: Ratio Analysis of the ‘Big Three’ Financial Statements

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What is Financial Ratio Analysis?

Financial ratio analysis is a valuable tool used to help farmers and ranchers evaluate the financial health of their enterprise. The information needed to calculate these measures comes from the “big three” financial statements: the balance sheet, the income statement, and the statement of cash flows. Financial ratio analysis is also used by lenders to evaluate an enterprise’s financial strength and to determine credit eligibility. Looking at these ratios alongside the financial statements can help producers identify trends, strengths, and weaknesses, improving their ability to make informed on-farm decisions.

Types of Financial Ratios

There are four types of financial ratios we will discuss in this article. The types are liquidity, solvency, profitability, and efficiency ratios. Liquidity ratios measure a farm’s ability to pay its short-term obligations; higher ratios are preferred. Solvency

ratios measure the ability to pay long-term liabilities; in this case, lower ratios represent a farm with less debt and more equity. Profitability ratios measure a company’s ability to generate profit using their revenue, equity, and other assets; higher ratio values are preferred as they show how much profit is generated per dollar of production inputs. Efficiency ratios measure how well a farm uses its assets to generate revenues; higher ratios are preferred and show proper use of assets.

Balance Sheet Ratios

Values from the balance sheet are used to calculate liquidity and solvency ratios. The first solvency ratio we will discuss is the debt-to-assets ratio, which is calculated by dividing total debt by total assets; it measures the amount of assets financed through debt and indicates a farm’s reliance on debt. Another key solvency ratio is the equity-to-assets ratio, which is calculated by dividing total equity by total assets; it measures the amount of assets

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¹For more information, please review [FSA76](#), [FSA95](#), and [FSA113](#)

financed by equity and indicates the portion of equity owners have in their farm. The leverage ratio is another solvency ratio that compares the total debt of a farm to its total equity; it provides a view into the farms' management of capital and its possible financial risks.

Multiple liquidity ratios are derived from the balance sheet. Such as the net capital ratio which is calculated by subtracting current liabilities from current assets (net capital) and dividing the result by total assets; it measures the amount of total assets remaining after paying immediate financial obligations. The current ratio, calculated as current assets divided by current liabilities, measures a farm's ability to pay short term liabilities using short term assets. The next measure we are evaluating is not a ratio but is important in analyzing financial standing. It is net working capital, which equals current assets minus current liabilities, giving us the number of short-term resources available for use after current debts have been repaid. We calculated net working capital to find the next ratio, which is net working capital -to- expense ratio; this ratio compares net working capital to all expenses incurred. It indicates if working capital is being used properly in day-to-day operations. See Table 1 for a summary of ratios and assessment of operational strength of weakness for benchmarking.

Income Statement Ratios

The income statement has the information needed to calculate multiple profitability and operational efficiency ratios. First, net farm income is calculated by total revenue, less cash expenses, accounting for inventory changes and depreciation within the period, representing the total available income after expenses. Net income is similar but is calculated as revenue with fewer total expenses and shows profitability of the farm. The rate of return on assets (ROA) is calculated by dividing net income (excluding interest expenses) by average total assets and measures how well assets are used to generate profits irrespective of how they are financed

(i.e. via debt or equity capital) as in internal measure of success. The rate of return on equity (ROE) is calculated by dividing net income (including interest expense) by equity and indicates how well capital investments generate profit. This profitability measure is considered external as it is compared to investment alternatives outside the farm. The operating profit margin ratio measures operating expenses as a portion of revenue. Depending on what expenditures are included (cash only vs. all expenses), it provides an indication of whether profitable pricing is being used. See Table 2 for a summary of ratios and assessment of operational strengths and weaknesses for benchmarking.

Cash Flow Statement Ratios

Cash flow statements provide information that can be used to measure liquidity through cash and cash equivalents. The cash flow coverage ratio is calculated by dividing net cash from operations by total debt (including principal and interest payments). It measures whether operating cash flow is sufficient to cover scheduled debt obligations. The cash flow margin ratio is calculated by dividing net cash from operations by net cash farm sales. It measures the amount of operating cash flow generated per dollar of cash farm sales and gauges the cash efficiency of production. These ratios provide insight into a farm's ability to generate and manage cash. See Table 3 for a summary of ratios and assessment of operational strengths and weaknesses for benchmarking.

Financial ratio analysis does not replace analysis of the financial statements, but it provides context and helps producers better understand the information within them. When used regularly, financial ratios can aid in identifying problems before they worsen. By monitoring liquidity, solvency, profitability, and efficiency measures over time, farmers and ranchers can improve their knowledge of their farm's financial health and the long-term success of their business.

Financial Ratio Quick Reference

Table 1. Balance Sheet Ratios

Financial Ratio	Formula	Measure	Benchmark
Debt-to-Asset Ratio	Total Debt (Liabilities) ÷ Total Assets	Proportion of assets financed by debt	< 0.30 strong; 0.30–0.60 caution; > 0.60 vulnerable
Equity-to-Asset Ratio	Total Equity ÷ Total Assets	Proportion of assets financed by the owner's equity	> 0.70 strong; 0.40–0.70 caution; < 0.40 vulnerable
Leverage Ratio	Total Debt ÷ Total Equity	Amount of debt carried for every dollar of equity; indicates reliance on borrowed capital	< 0.43 strong; 0.43–1.5 caution; > 1.5 vulnerable
Net Capital Ratio	Net Capital ÷ Total Assets	Cushion of assets available to cover debt; values above 1.0 indicate positive net worth	> 2.0 strong; 1.5–2.0 caution; < 1.5 vulnerable
Current Ratio	Total Current Assets ÷ Total Current Liabilities	Ability to cover short-term (within 12 months) obligations with short-term assets	> 2.0 strong; 1.3–2.0 caution; < 1.3 vulnerable
Net Working Capital	Total Current Assets — Total Current Liabilities	Dollar amount of short-term assets remaining after covering short-term liabilities	Positive and growing is favorable; no fixed dollar threshold — scale to farm size
NWC-to-Expense Ratio	Net Working Capital ÷ Total Farm Operating Expenses	Working capital available relative to a year's operating expenses; gauges cushion against income shortfalls	> 0.30 strong; 0.15–0.30 caution; < 0.15 vulnerable

Table 2. Income Statement Ratios

Financial Ratio	Formula	Measure	Benchmark
Net Farm Income	Gross Farm Revenue — Total Farm Expenses (incl. depreciation) ± Accrual Adjustments	Farm-generated profit after all operating and fixed expenses; key indicator of production-level profitability	Positive and stable or growing year-over-year is favorable
Net Income	Net Farm Income + Off-Farm Income — Income Taxes — Owner Withdrawals	Total profit to the operator after off-farm earnings, taxes, and family living are factored in	Positive is favorable; should be sufficient to build equity over time
Rate of Return on Assets (ROA)	(Net Farm Income from Operations + Farm Interest Expense — Value of Operator Labor & Management) ÷ Average Total Farm Assets	Return generated on every dollar of assets invested in the farm, regardless of how those assets are financed	> 8% strong; 3–8% caution; < 3% vulnerable
Rate of Return on Equity (ROE)	(Net Farm Income from Operations — Value of Operator Labor & Management) ÷ Average Total Farm Equity	Return generated on the owner's invested equity in the farm	> 8% strong; 3–8% caution; < 3% vulnerable
Operating Profit Margin Ratio	(Net Farm Income from Operations + Farm Interest Expense — Value of Operator Labor & Management) ÷ Gross Farm Revenue	Share of gross farm revenue retained as profit after operating costs; reflects production efficiency	> 25% strong; 15–25% caution; < 15% vulnerable
Asset Turnover Ratio	Gross Farm Revenue ÷ Average Total Farm Assets	Efficiency of using farm assets to generate revenue; how many dollars of revenue each dollar of assets produces	> 45% strong; 30–45% caution; < 30% vulnerable

Table 3. Cash Flow Statement Ratios

Financial Ratio	Formula	Measure	Benchmark
Cash Flow Coverage Ratio	Net Cash from Operations ÷ Total Debt Service (Principal + Interest)	Sufficiency of operating cash flow to cover scheduled principal and interest payments on debt	> 1.75 strong; 1.25–1.75 caution; < 1.25 vulnerable
Cash Flow Margin Ratio	Net Cash from Operations ÷ Net Cash Farm Sales	Cents of operating cash flow generated per dollar of cash farm sales; gauges cash efficiency of production	> 15% strong; 5–15% caution; < 5% vulnerable

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