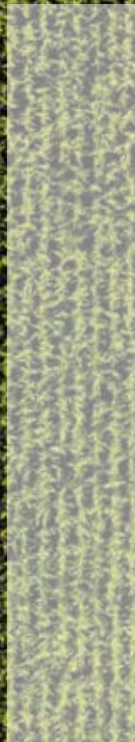




FARM CREDIT EAST



HARVESTING
A PROFIT



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HARVESTING A PROFIT

This guide is designed for those people involved in agriculture that have had limited exposure to agricultural economics, accounting or financial management.

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INTRODUCTION



WHICH ITEMS DO YOU NEED TO RUN A SUCCESSFUL FARMING OPERATION?

- Staff
- Animals, crops or plants
- Land and buildings
- Capital

All of the above are necessary to run a successful farming operation. Most people just think of managing things like the animals or plants, feed, fertilizer, land, barns and staff. This guide will help you understand the importance of financial planning, financial records and financial analysis for your farm. For you to be successful you will need to have production and financial records to use in this business journey.

In farming, financial records are just as important as the livestock, crops, and land. However, financial records are often the most overlooked part of any small business, but without them it is impossible to tell where your business stands financially today, where it is headed or what opportunities you may have. Financial records are tools that measure your success and used to plan your future.

WHO IS WINNING THIS BASKETBALL GAME?

It is hard to tell who is winning because the scoreboard is incomplete.

Having incomplete financial records can be as puzzling as an incomplete scoreboard in a game. Every business needs to keep track of the details. Without complete records there is no way to see how you are doing.

The purpose of this manual is to teach you that knowledge of everyday accounting skills can always benefit you.

SCOREBOARD	
HOME	AWAY
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SOMEONE HAS TO LOOK AT THE PROFITS



- Every Business Needs a CFO
- Financial Statements
- Cash vs. Accrual Accounting

EVERY BUSINESS NEEDS A CFO

Managers in small businesses are expected to be lots of things: coach, technical expert, planner, visionary, spokesperson and leader, to name a few. Often managers forget their role as the **chief financial officer** (CFO), or financial manager. Good financial management is a *must* in today's environment where competition is stiff, margins are thin, labor and input costs rise every year, and markets are volatile.

For a manager, accurate financial and production records are necessary to make the most effective business decisions and arrive at desired outcomes throughout the management process. The five steps to successful management are:

- Identify needs
- Set goals and plan
- Organize
- Direct and execute
- Monitor
- Adjust the plan

How do you get started? A great way to start is with a **goal** that represents a need that can be easily measured. The key to managing a successful business is to be goal oriented and track your progress until your goal is attained.

Need:	Retirement Fund
Set Goal & Plan:	The goal is to have \$500,000 in a retirement account by age 55. Setting aside \$500 per month in a retirement account is the plan.
Organize:	Create a budget that allows for you to save \$500 per month for the retirement account.
Direct & Execute:	Set up recurring automatic electronic transfer from business checking account to retirement account with an investment bank.
Monitor:	Monitor quarterly and annual statements to make sure you are "on track."

Aside from helping with goals, managerial accounting takes accurate financial and production records and uses that information to create specific measurements that can be compared to the company's historical results as well as industry results. For example, **gross sales** is the final number of all the sales transacted in the company in a given period. It can be compared to the number from the year before or ten years before. It can also be compared to gross sales from other companies in the industry.

Managerial accounting ties together financial and production information in order to evaluate performance and productivity. For example, taking gross sales and dividing by full-time employees can track the productivity of your workforce. This number will provide a meaningful look into whether or not your human resource management and organization skills are adequately productive or need improvement.

The foundation of managerial accounting is a useful record-keeping system. The system can be computerized (recommended for time-saving features) or manual, hand-written records. Accurate records are essential. Remember the phrase "Garbage in, garbage out" when it comes to recordkeeping. *Garbage in*- if the records you are using to make crucial or even minor decisions are poor, *garbage out*- chances are the decision will be poor as well.

Chief Financial Officer (CFO):

The person responsible for financial analysis and planning, managing assets efficiently and arranging financing for the business. The CFO can be the owner of the company or a paid employee.

Goal:

The desired outcome to fulfill some stated need. Goals should be timed, specific, measurable and attainable.

Gross Sales:

The total dollar value of all sales during a specified period of time.

Managerial Accounting:

Accounting that provides information to help managers make decisions leading to the completion of the company's goals.

Balance Sheet:

A financial statement that shows a business' assets, liabilities and its net worth at a specific point in time.

Income Statement:

A financial statement that shows a business' income and expenses for a specific time period.

Assets - Liabilities = Net Worth

can be rearranged to read: Assets = Liabilities + Net Worth.

Assets:

The things your company owns that have a positive value. There are three main types of assets—current, intermediate and fixed.

Liabilities:

Any debts the business owes. Liabilities represent credit extended in the form of outstanding bills, credit cards, and loans. There are three types of liabilities—current, intermediate and long term.

FINANCIAL STATEMENTS

Once you feel you have accurate records, there are different ways to interpret the data using financial statements. The **balance sheet** and **income statement** are the most commonly used statements. Other reports that are less commonly used are statement of cash flows, net worth reconciliation statement, statement of owner's equity, cash to accrual statement and a trial balance.

The balance sheet is a listing of assets and liabilities. It is a snapshot of the financial health of your personal accounts and/or your business at a specific point in time. The accounting equation that must always be in balance is on the balance sheet:

Assets - Liabilities = Net Worth

Assets are items that you own; liabilities are debts that you owe. Net worth is a measure of what you have left if you use your assets to pay off your liabilities. Net worth can rise and fall due to many factors. Common reasons for net worth increases are appreciation of assets or from the impact of profits from the farm. Some reasons causing a decrease in net worth are losses from the farm, a withdrawal of money or the selling of farm assets.

ASSETS	LIABILITIES
Cash	Operating Loan
Accounts Receivable	Accounts Payable
Inventory	Accrued Expenses
Prepaid Expenses	Equipment/Vehicle Loan
Machinery/Equipment	Capital Lease
Livestock	Real Estate Loan
Vehicles	
Real Estate	

A young person's balance sheet might look like this:

ASSETS		LIABILITIES	
Checking Account	\$ 50	Credit Card	\$ 1,000
Savings Account	200	Car Loan	5,700
Vehicle	8,500	Total Liabilities	6,700
		Net Worth:	\$ 2,050
Total Assets	\$ 8,750	Liabilities & Net Worth	\$ 8,750

Generally on a balance sheet, assets are broken down by the length of their lives and liabilities are broken down by when they are due. Inventory is usually easy to liquidate into cash, (less than a year), and is considered a short-term, or current, asset.

Vehicles are intermediate assets because they require some time to sell and turn into cash. Real estate requires even more time to market and is usually held longer, thus it is a long-term asset. Liabilities are similar to assets; for example, the operating loan is usually paid within a year, therefore is a short-term liability. The vehicle loan is an intermediate liability, and you guessed it, the real estate loan is a long-term liability.

The income statement is a statement that has many different names such as earnings statement, profit and loss statement or profit statement. It sums up all the sales or money taken in by a company and all the expenses paid by the company. The basic equation for the income statement is:

Income - Expenses = Net Income

Net income is positive when the business has more income than expense. Net income can also be negative if expenses are greater than income. A college student's income statement might look like this for a month during the school year:

Income:	
Part-time job	\$ 400
Cash from parents	50
Total Income	450
Expenses:	
Snacks	\$ 50
Gas	80
Supplies	100
Entertainment	300
Total Expenses	530
Net Income (Loss)	\$ (80)

Although an income statement can tell you how much a company is making or losing, net income is often not an accurate representation of how much money is available to the business. A **cash flow statement** can explain more about how much money is available; more specifically how much money is coming into the business and how much money is being paid out. A cash flow statement shows activities that do not show up on the net income statement such as loan repayment on the principal, withdrawals from savings, and money received from loans. A college student's cash flow statement might look like this:

Cash flow from operating activity	\$ (80)
Cash flow from borrowing on credit card	100
Cash paid on credit card	(10)
Increase in cash on hand:	\$ 10

As you can see the bottom line of these two statements are different. The net income statement says the student has lost \$80 while the cash flow statement says that cash on hand increased by \$10. Both are true and in actuality, the student also increased debt by \$90, funding both the losses and the increase in cash.



A single Hornworm can eat an entire tomato plant by itself in one day!

Cash Flow Statement:
A financial statement that shows all the money going into and out of the business from all sources (operations, financing, and investments) for a period of time.

Cash Accounting:

Expenses and income are recorded when money is paid out or is received.

Accrual Accounting:

Expenses and income are recorded when incurred and earned.

Accounts Receivable:

Any income earned but not yet received.

Accounts Payable:

Any expenses you have incurred but not yet paid.

Cwt. or Hundredweight:

A measurement of one hundred pounds. Milk is usually sold from the farm in terms of hundredweights (cwt.).

CASH VS. ACCRUAL ACCOUNTING

Most agricultural businesses’ accounting is on a cash basis. This means that income is recorded when money is received and expenses are recorded when money is paid out. In **cash accounting**, you would not record an expense when you buy feed on store credit but rather when you pay the bill. On the other hand, **accrual accounting** is when you record income as it is earned and expenses as they are incurred. For example, if you have a lawn mowing business, you would record the \$100 you earned mowing lawns after doing the work even if you don’t get paid for another month. In cash accounting, you record the \$100 only when you receive it.

So, why do many agribusinesses use the cash accounting method to keep track of their finances? Because record entries are made when you are receiving or paying out cash, many simply find it easier. Additionally, farm businesses are allowed by the Internal Revenue Service to report income on a cash basis, which may have some tax advantages. However, cash accounting is not recommended for management purposes.

What a manager should realize when using cash accounting is that this method fails to recognize the income not yet received and expenses not yet paid. For this reason, when trying to find the most accurate information about the business, a manager should look at accrual accounting statements. Converting a cash statement into an accrual statement is relatively easy — you simply add changes in **accounts receivable** and changes in **accounts payable** to the cash statement. The following are examples of how accrual statements give a better picture of the profits in a business:

- The amount of cash received seems to be low so it is assumed that sales are low too. But, accounts receivable is high, so overall sales are actually high. By looking only at the cash basis sales seemed low. They are “stuck” in accounts receivable, waiting for payments to be received.
- Feed expense may appear to be low, making it seem like you found a way to save expenses. After looking at accounts payable, however, you notice that you owe the grain company a lot of money. This means that your total feed expense is actually high, in turn meaning that profit is lower than you originally thought by just looking at cash accounting statements. Feed expense is “stuck” in accounts payable, waiting for payments to be made.

Example on a 200 cow dairy:

SHIPPED 5,000,000 LBS OF MILK IN A YEAR

Feed bills paid during year	\$250,000
Change in Feed bills outstanding at year end	+ 50,000
Accrual feed expense	\$300,000
Feed costs	\$6.00/cwt.
Benchmarks average	\$4.75/cwt.
Higher by 1.25/cwt.	\$62,500

CHAPTER SUMMARY

1. Five steps of successful management are identifying needs, setting goals and planning, organizing, directing and executing, monitoring and adjusting the plan.
2. A good manager must look at financial information to manage assets well.
3. The balance sheet is a financial statement that shows the financial equation: assets – liabilities = net worth.
4. The income statement shows the financial equation: income – expenses = net income.
5. Cash flow statements explain how much cash is available in the business. Generally the cash available to a business is lower than net income shown on an income statement.
6. Cash accounting is an accounting system in which you record income when money is received and you record expenses as they are paid.
7. Accrual accounting records income and expenses at the time they are earned or incurred regardless of the time money exchanges hands.
8. It is important to know whether or not you are looking at an accrual or cash statement because accounts payable and accounts receivable can greatly alter the profit or loss of a business.

STUDY QUESTIONS

1. What is a goal and how does it fit into successful management of a business?
2. How do you determine net income?
3. What are the three main financial statements mentioned in this chapter and what do they show?
4. Which accounting method is generally more accurate when it comes to showing actual profitability?
5. If a business shows a net income of \$50,000 on the cash income statement, but there is an increase of \$5,000 in accounts receivable, what would net income be on an accrual income statement?

HOW TO MAKE A PROFIT



- Farm Profitability
- Economic Concepts
- 5 Key Factors
- Management is the Key

FARM PROFITABILITY - OPERATIONS MANAGEMENT

Checking a business's profitability is like getting a report card. Once you know how you performed (income statement) and where you stand (balance sheet), then you can make the right adjustments to do better in the future. If the business is doing well, you are doing something right. If profitability isn't as high as wished, you need to study the business more to see how it can be improved. Making adjustments to the business plan to reach the business's goals is a never-ending task, but it will reap continuing rewards and satisfaction.

As alluded to in the first chapter, profit is more than what is left in the farm's checking account at the end of the year. In fact, most farmers will tell you there is not much in their checking account. When they earn a profit, they usually invest it back into the business or pay down debt. So if profit is not in the bank account, how can profitability be measured and analyzed?

First, profit can be measured in many different ways. In farm businesses, the fundamental measures you should know are:

- Net income
- Return on assets

Net income is the farm's income minus expenses. In many businesses, especially publicly traded corporations, profit is paid out in dividends and the company's stock has a quoted value. For agricultural businesses (privately held family operations), the profit is usually invested in the business for growth or saved for difficult times. Accrual Net income can give a good idea of the dollar amount the farm is profiting.

Return on assets (ROA) is an excellent profit measure that compares the business' profit and the size of its asset base. This formula is used in most economic analyses and is simply net income plus interest expense divided by average total assets. For example:

$$\frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}} = \frac{\$75,000}{\$1,500,000} = 5\%$$

That says, for every \$1 the business has in assets, it is generating \$.05 in income. In agriculture, it takes a lot of resources to make a successful farming operation. To name a few, you may need land, buildings, equipment, cattle, trees and technology. All of these require capital (money) to acquire and maintain. Because agricultural businesses need many expensive assets to operate, you can expect a typical farm to have a 5 to 10% ROA when assets are based on fair market value.

Analyzing a farm's ROA tells you how the operations of the business are using assets to generate revenue and profit. For example, if a farm's ROA is negative or low you need to will need to figure out why and adjust. A good place to look may be the farm's variable expenses because they are immediately controllable as opposed to fixed expenses, which are often longer-term and tied to fixed assets. Variable and fixed expenses will be explained later in this chapter.

On the other hand, if the ROA is 15%, which is over the industry standard, you know this farm is making a higher return on assets than most others. They may also have a smaller asset base, making them more efficient as well. Therefore, this farm is using its assets well to generate profits.

If the ROA is near the industry standard (in agriculture 5-10%) the farm may want to look at new opportunities. While they are doing well, they also have the potential to be doing better. There are hundreds of combinations of resources that will generate a profit and no one way is always right. Some new opportunities that may be pursued are niche products, organic growing, selling retail instead of wholesale, or expanding your core business and becoming more efficient.

Net Income:

The farm's income minus the farm's expenses for a period of time. Net income is found on the Income Statement.

Return on Assets (ROA):

The ratio of (net income + interest expense) divided by average total assets. The higher the ROA, the better the business is doing.

Supply:

The total amount of good or service available for purchase. The relationship between price and the quantity producers are willing to supply says basically if supply is low, the price will be high and if the supply is high, the price will be low.

Demand:

The amount of a particular good or service that consumers are willing to buy. The relationship between price and the quantity consumers are willing to buy basically says when there is high demand, consumers are willing to pay high prices; but when there is low demand, consumers are only willing to pay low prices.

Law of Diminishing Returns:

As you increase inputs, the value of additional output produced decreases.

Marginal Benefit:

The additional output gained from each additional unit of input.

ECONOMIC CONCEPTS

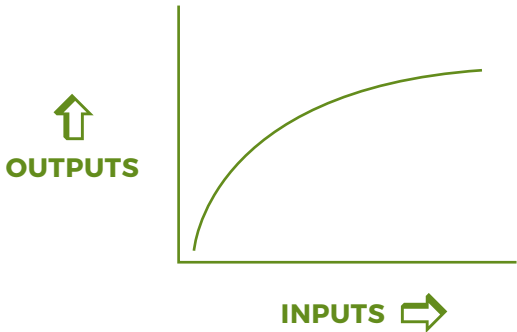
There are three important economic concepts to keep in mind when running an agricultural business. Knowing the market forces of supply and demand, the law of diminishing returns and financial risk signals will help run an agricultural business smoothly and profitably.

Understanding the market forces of how supply and demand work is critical when deciding how much to produce. Each farmer is able to decide individually how much product to produce. If farmers as a whole produce too much, the price received for the product will go down greatly. If farmers produce too little, the price will rise. This situation creates high and low profitability cycles. Managing these cycles is important for long-term survival.

When you know the market forces and their outcomes, you can better predict the price you receive for your product, and thus, will be more likely to be profitable. Some examples of market forces and expected outcomes are:

INCREASE IN PRICE RECEIVED	DECREASE IN PRICE RECEIVED
Demand for the product increases	Demand for the product decreases
Preference for product increases	Preference for product decreases
Supply of the product decreases	Supply of product increases
Less competition	Increase in competition
Price of substitute goods increases	Price of substitute goods decreases
Price of complimentary goods decreases	Price of complimentary goods increases

You must also understand the law of diminishing returns when deciding how many inputs to use, and thus, how many expenses you will have affecting your profit. The law of diminishing returns indicates that as an input is added to production, a point is reached where beyond it, the additional output from each additional input begins to decrease.



For example, a farmer might get a significant increase in yield by putting 100 pounds of fertilizer on the field. Then with the next 100 pounds the farmer produces more but the increase isn't as large. The next time he adds 100 pounds, he only produces a small additional amount, perhaps an amount worth less than the cost of the fertilizer. Thus, the law of diminishing returns states that the marginal benefit of each additional unit of input decreases as the amount of input is increased. This is often true with many different inputs, not just fertilizer, but labor, capital, and others.

You must also know your financial risk signals when in an agricultural business. Managing your money is critical. In most commodities, it takes a lot of investment in inputs to grow a crop but you may not be paid for months or even for a two-year period, as in cranberries or tobacco. New orchards can take five years before you get your first money return. As a result, you need to be prepared to face this cash flow scenario. Sufficient working capital is indeed an important financial management tool.

Professor Emeritus David Kohl from Virginia Tech put all these risk signals into a financial model. His standards are the traffic lights of our agricultural industry. These standards are part of the discussion on financial ratios (page 47).

FIVE KEY FACTORS TO MAKE A PROFIT

There are five key factors that contribute to the ability to make a profit. The first key is operating at the correct capacity. Otherwise stated, are you utilizing all of the resources you have available? For example, planting two acres of a five-acre field would only be utilizing 40% of the field's production capacity. So although you still have to pay for the unused part of the field, you are not getting any output from it, thus increasing your cost per unit of production.

You should always try to use the full capacity of your operation. This is especially true if you have a greenhouse, barn or horse stable where you cannot pay to heat only part of the facility, thus you are losing money for every inch you don't use. Although operating at full capacity is important, you must also be careful. If your operation is too big, you may find it difficult to manage. Therefore, the bigger your business, the greater the focus needs to be on your management ability.

The second key factor is productivity. Higher yields will quickly lower your costs per unit. For example, No. 1 grade McIntosh apples get a premium price, whereas utility grade apples go for cider making and get a lower price. Getting 500 bushels to the acre with higher grade is much better than 300 bushels of low-grade apples. A combination of a high yield and high quality can triple your profit.

Efficiency, which is closely tied to profit, is the third key. The more efficient you are, the greater your profit potential. There are many kinds of efficiency. Efficiency of labor is measured by gross sales per worker; efficiency in production is measured in output produced per unit of input. Agricultural businesses that are organized and use modern growing practices can combine efficiency and productivity to create profit.

The fourth key factor is cost control. In fact, most economists can prove statistically that of these five factors, cost control has the greatest effect on a business' bottom line. Simply put, you don't want to spend more than you make.

Understanding your costs is a key component of managing your business. It has been said, "To be successful worry about the big three and the rest will fall in line." The big three are simply the three highest expenses in the business. When raising animals, the largest costs are generally feed, labor and livestock expenses. When growing fruit, labor, equipment costs and interest are often the biggest expenses. In the green industry they may be labor, supplies and plants.

Financial Risk Signals:

Established standards that act as warning signals showing when a business is in trouble.

Working capital:

The amount of money a company needs to cover its current liabilities and provide a cash reserve.



DID YOU KNOW?

It is possible to lead a cow upstairs but not downstairs because their knees do not bend properly to walk down.

Capacity:

How effectively and completely assets are being used in the production of your product.

Productivity:

How productive your assets are. Productivity includes both the quantity and the quality of the product.

Efficiency:

How effectively raw materials are being converted into finished products.

Cost Control:

To look for opportunities to save money without sacrificing income or quality.

Variable Expenses:
Expenses that are directly related to the production of a product, generally these expenses increase as production increases.

Fixed Expenses:
Expenses a business incurs regardless of production such as insurance, loan interest payments, rent and taxes.

Industry Skills:
Any skills exclusive to your industry that are needed to be successful in your particular business.

There is also an important relationship regarding expenses to keep in mind. These are the differences between **variable expenses** and **fixed expenses** and the ratios of each to total expenses. Why? Because you need to react differently depending on how high or low your variable and fixed expenses are. In general, variable expenses fluctuate with the level of production while fixed expenses are those expenses you incur regardless of production levels.

VARIABLE EXPENSES	FIXED EXPENSES
Crop inputs	Interest
Feed	Depreciation
Fertilizer	Insurance
Direct labor	Property taxes
Supplies	Rent
Fuel	Family Labor
Utilities	
Repairs	

In order to make a profit, your expenses must be paid for by the income you are receiving for your product. In order for production to be worth continuing, the income you are receiving should at least cover your variable expenses.

The last key and perhaps one of the most focused on is **industry skills**. Industry skills include any knowledge necessary in your field — animal husbandry for livestock farmers, a green thumb for greenhouse growers, knowledge of trees for arborists, etc. Knowledge of industry skills is very important. How are you supposed to produce a profit on a dairy farm if you don't know anything about how to take care of a cow?

MANAGEMENT IS THE KEY

Finally, farm profitability depends on your own ability to put everything in order. Like the old proverb says, "If it is to be, it is up to me."

To run a successful farm, or any business for that matter, it takes a very strong commitment and you need to be full of drive. Yes, hard work and long hours help but today's agriculture requires a multi-talented manager — one that combines hands-on work with special skills of growing plants or caring for animals and time for overseeing all the resources needed, including financial management.

Entrepreneurship is a strong trait in America. You can do anything if you set your mind to it. Yes, you can go farming but just take your head with you!

CHAPTER SUMMARY

1. Profit is not the money left in the bank account at the end of the year.
2. Net income measures profit by indicating how much income was generated over and above the expenses incurred.
3. Return on assets shows how much money is being earned compared to the business' asset base. The higher the ROA, the more efficient the business is in production.
4. Supply and demand play a crucial role on how much is produced and what price is paid.
5. The law of diminishing returns states that for each additional input added to the production process, the amount of additional output decreases.
6. The five key factors to making a profit are capacity, productivity, efficiency, cost control and industry skills.
7. Variable expenses are those expenses that vary with the level of production.
8. Fixed expenses are those expenses that are incurred regardless of the level of production.
9. Management is the key to running a successful business.

STUDY QUESTIONS

1. What are the two measures of profitability discussed in this chapter and what factors are being measured to determine profitability?
2. Name four factors that can change the price for a product.
3. You added a unit of fertilizer to your garden, and got ten more tomatoes. So you added another unit of fertilizer, and another five tomatoes grew. You decide to add one more unit of fertilizer and no additional tomatoes grew. Will another unit of fertilizer make another tomato grow in your garden? Why or why not?
4. What are three variable expenses and what are three fixed expenses?

BENCHMARKING YOUR BUSINESS



- How Do You Measure Up?
- Historical Comparison
- Business Standards
- Comparison to Peers
- Goals
- Competition in the Market

HOW DO YOU MEASURE UP?

Benchmark analysis helps you compare where you are with a set standard. The standards will vary among situations depending on the purpose. You probably use a form of benchmarking already, just by a different name. In this chapter there are different types of benchmarking as they relate to your day-to-day activities and how they would be used in a business.

First and most importantly, you need to have good benchmark data to compare. This is obtained from accurate financial information; so again, you can see the need for good recordkeeping!

Secondly, the sample of information gathered for the benchmark must be large enough so one farm's unique management system does not drastically skew the results. For example, how would you expect the labor costs on a farm with a robotic milker to compare to the average farm? With only two farms, labor costs will be driven down significantly on the farm with robotic milker, so averaging two farms is not appropriate. Once the sample has at least ten farms, though, an individual farm's impact is lessened significantly.

Finally, you need to be comparing apples to apples. Comparing the milk production of a Holstein with the milk production of a Jersey won't incorporate the difference in each breed's size, milk components or genetic production capacity. Many farm benchmarks are compiled yearly and adjusted in order to take into account similar management years, business entities, assets or geographic area.

HISTORICAL COMPARISON

Based on your personal goals you most likely have personal benchmarks. Benchmarks for physical health may include weight, blood pressure, cholesterol levels or activity. Benchmarks for financial health may include savings, retirement or net worth. As an example let's tackle weight on which we all know our personal history and many have a goal. In any case, you make some changes, you track your calories and exercise, and check your progress regularly on a scale or with a tape measure.

These are great examples of benchmarking from a personal standpoint, and businesses do the same thing. As the business develops, having good records enables you to compare your progress from one year to the next. For instance, charting sales growth or net profitability over time shows how the business has changed. Hopefully, you will see progress!

The same goes for the general economy: it is expected to have an 6% to 8% return on investments over a 10-year period in the stock market. If only a 4% return is realized, you can surmise those investments must not have been as good as others.

BUSINESS STANDARDS

Most financial planners recommend that we build personal emergency savings to cover major expenses for six to nine months. In the same vein, industries set standards for business performance. For instance, a benchmark of the nut and bolt manufacturing industry shows the average return on assets is 5%. Obviously, if your company in the same industry has a lower return on assets, you have the opportunity to do better in that industry, or to take your capital and go somewhere else where you might make a better return.

COMPARISON TO PEERS

In the first 10 years of your working career, you choose to save \$200 monthly in a retirement account and at a 6% average return you now have \$32,777 toward retirement. When talking to your friend whom you went to school with you learned that she chose to save \$250 per month and at the same 6% average return she has \$40,972 towards retirement. Compared to your friend you are a bit behind but you still have \$32,777 and may be on track to meet your retirement goals.

Benchmark Analysis:

A comparison of a business with a set standard to evaluate the business' performance.



Pigs, like humans, can get sunburned if they're outside too long!



DID YOU KNOW?

New York dairy farms produce more than 4 million gallons of milk per day!



DID YOU KNOW?

A typical, full grown Holstein cow weighs 1,500 pounds and produces about 65 pounds of milk a day.

Farm businesses are no different and dairy farms across the Northeast participate in Farm Credit's "Blue Book" benchmark program to determine where they rate compared to their peers. Sure, everyone wants to be number one, but as the saying goes, "you can't win 'em all." A good comparison goal for your business would be to be with the top 25% of the farms in the benchmark.

GOALS

For the average young person, getting a "great job" and a "big salary" may be one of the biggest goals they have. After a few years in the "real world" many decide that purchasing a home is their next goal. To reach this goal, a portion of the purchase price will need to be saved as a down payment. Adjusting their personal budget and planning on how and when to reach this goal is important. Assuming minimal earnings from the investment, it will take five years at \$500 per month to save \$30,000. Around year three, the individual opens the bank statement and only has \$15,000 saved because of the summer trip Europe last year. Ouch that is \$3,000 short of the three-year goal. Now a few quick calculations can determine if the savings rate needs to be adjusted in order to still meet the five-year goal.

Farmers need to plan for capital expenditures in the same manner. A few good reasons for a farmer to plan are upgrading machinery, expanding facilities or saving for retirement. For example, if you need to have \$1 million in a savings fund by the age 55 in order to support the lifestyle you desire in retirement, you have to set a goal. What if you only have \$600,000 in savings when you are 54? Or what if you have \$1.5 million? Compared to your goal, you're either in great shape or you have a lot of work to do.

One of the most important aspects to completing a goal is setting the right goal in the first place. The best goals are "SMART" goals: **S**pecific, **M**easurable, **A**ttainable, **R**ealistic and **T**imed.

Specific – The goal must be specific enough to be identifiable. Vague goals are impossible to measure. If, for example, input costs are high, then set the goal to reduce by 10% or to \$1.30/output.

Measurable – In order to determine if the goal is obtained, a system for measuring progress must be established. For example, if feed costs are too high on the farm, then tracking feed cost per cwt. of milk or milk income over feed expense are measures that can be used to track progress.

Attainable – Be sure the goals are attainable. Benchmarks help determine if goals are attainable because using the "Top 25%" of the industry as a milestone to strive for is not impossible but realistic. Setting several smaller checkpoints for the achievement of a goal may help make it seem attainable.

Realistic – This ensures that the goals established are focused on successfully and realistically accomplishing the objectives of the farm owner. Goals that focus on objectives that others consider important may not be "rewarding" or "realistic" for you.

Timed – Set a date by when the goal is to be accomplished. A goal without a date is just a dream!

Once you set a goal, you must come up with an action plan, as seen in the examples above. The action plan describes "what, where, why, how, and by who" for the activities that will help achieve your goal. When developing an action plan, a manager should consider:

- The client's objectives,
- Your knowledge and experience of the industry,
- Per unit analysis,
- Benchmark comparisons,
- Ratio analysis, and
- "SWOT" analysis (Chapter 4).

COMPETITION IN THE MARKET

Given the high cost of fuel these days, prices for many different products have risen significantly. Not only are the freight charges higher, but also anything that requires the use of petroleum as an input has higher prices, including fertilizer, grain, plastics, etc. If this additional cost is not passed on to the consumers, it comes out of a business's profits. Customers aren't always willing to pay more for an item, even if they understand why the price has risen. What can a business do to combat this?

This is the place where evaluating costs on a per-unit basis becomes a very useful tool. If a 250-cow dairy with a herd average of 23,000 lbs./cow spends \$390,000 on feed per year, and a 700-cow dairy with a herd average of 22,000 spends \$1,001,000 on feed, who is better off? At first glance not only does the smaller farm spend less overall but the cows also produce more milk. However, putting this in terms of dollars spent per head will tell you the smaller farm spends \$1,560 per cow on feed, while the larger spends \$1,430. But what are the differences in production between the two herds? The smaller farm spends \$6.78 per cwt. on feed, where the larger one spends \$6.50. So, despite the lower production, the larger farm is more efficient with feed on both a per cow and per cwt. basis.



DID YOU KNOW?

Apples are made up of 25% air which enables them to float.

The following table shows how different management styles all have different results on a dairy farm. No one style is the only right way, but using your particular style to your advantage can make you more competitive.

	GREAT WITH COWS	LABOR EFFICIENT	BETTER MILK PRICE	TIGHT WITH A BUCK	BALANCED
Number of Farms	27	24	23	31	24
Average Number of Cows	407	593	290	272	185
Milk Sold per Cow (lbs.)	27,193	25,658	21,263	22,699	21,648
Milk Sold per Worker (lbs.)	1,071,008	1,581,269	838,540	996,885	898,686
Net Cost of Production per Cwt.	\$17.74	\$17.16	\$20.96	\$15.41	\$19.58
Milk Price per Cwt.	\$21.13	\$21.50	\$22.12	\$20.75	\$20.79
Net Earnings:					
Per Cow	\$988	\$1,021	\$722	\$1,021	\$788
Per Cwt.	\$3.63	\$3.98	\$3.40	\$4.50	\$3.64
Return on Assets (%)	6.6%	7.7%	4.7%	5.6%	5.3%
Percent Net Worth (%)	81%	75%	81%	74%	72%

**Table from Farm Credit's Northeast Dairy Farm Summary*

The table below shows data from Farm Credit East's *Benchmark Solutions* program. It illustrates the typical expenses and earnings for four farm types during one recent year.

	AG RETAIL - FARM MARKET	VEGETABLE	SMALL GREENHOUSE	ORCHARD
Total Income	100%	100%	100%	100%
Cost of Goods Sold	25%	2%	17%	9%
Labor	19%	24%	17%	19%
Supplies	8%	10%	12%	3%
Seeds and Plants	2%	5%	11%	1%
Other Variable Costs	15%	34%	9%	17%
Gross Margin	31%	30%	34%	52%
Owner Draw	6%	5%	10%	5%
Repairs	3%	5%	2%	3%
Rent	3%	5%	2%	2%
Other Fixed Costs	8%	8%	14%	7%
Total Fixed Costs	20%	23%	28%	17%
Net Farm Earnings	11%	7%	6%	35%

**From Farm Credit East Benchmark Solutions*

CHAPTER SUMMARY

1. Benchmark analysis allows for the comparison of a business against a set standard for purposes of evaluating the business's performance.
2. Historical comparison is a type of benchmarking in which the business is compared to the historical data from the company.
3. Business standards are good for comparisons to an entire industry but comparison to peers such as the "Blue Book" for dairy farmers can give a better picture of the local industry and how you are doing.
4. Planning is important—setting SMART goals would be the right type of goal for the business.
5. Different management styles may get different results in the same market.

STUDY QUESTIONS

1. Benchmark analysis covers many things; briefly explain what historical comparison and business standards are.
2. What are SMART goals?

AGRIBUSINESS ANALYSIS



- Calculating the Gross Margin Percentage
- Looking at Fixed Costs
- Measuring Production Efficiency
- Five-Year Averages
- Marketing Results
- “SWOT” Analysis

Farm analysis involves looking at all aspects of the business, including financial statements, to arrive at conclusions about the profitability and opportunities for improvement for the business. In this section we will review a simple earnings statement (aka income statement), and how to analyze it in order to draw conclusions about the business.

When analyzing a farm, it is important to ask if the earnings statement you are looking at is cash or accrual. Whenever analyzing a business for profitability it is again important to use accrual earnings since cash earnings may not be as reflective of true profitability.

Please refer to the following annual earnings statement for a retail turkey farm that produces 2,500 birds that average 20 pounds each to help illustrate some farm analysis methods:

	TOTAL	% OF SALES	PER BIRD	PER POUND
Gross Sales	\$ 100,000	100%	\$ 40.00	\$ 2.00
COGS	60,000	60%	24.00	1.20
Gross Margin*	\$ 40,000	40%	\$ 16.00	\$.80
Fixed Costs	20,000	20%	8.00	.40
Net Profit**	\$ 20,000	20%	\$ 8.00	\$.40

* Gross Sales – Cost of Goods Sold (COGS) = Gross Margin

** Gross Margin – Fixed Costs = Net Profit

CALCULATING THE GROSS MARGIN PERCENTAGE

To calculate gross margin, you take gross sales and subtract all of the variable costs or the **cost of goods sold (COGS)**. COGS includes expenses such as the cost of flowers (including freight, if applicable) for resale at a retail stand, supplies and materials used in the direct sale of products such as hanging baskets, fertilizers, feed, or even baking ingredients for pies. Additionally any direct labor costs are included in the cost of goods sold.

In order to put the dollar value of the gross margin into a percentage, you take the value of the **gross margin** and divide by the dollar value of gross sales. The gross margin as a percent of sales measures how effectively you are converting your raw materials into finished product. In general, industry standards for percent gross margin are 40% or more for retail businesses and 30% for wholesale businesses.

One or more of the following may cause a low gross margin percentage:

- Pricing of your product is low. Is this due to excessive competition, low product quality or inadequate market exposure?
- Your COGS is high. This may be due to inefficient use of labor, the high cost of raw materials or other variable expenses.
- Your **shrink** is high. This could be in the form of crop losses, theft, over-production or poor quality that cannot be marketed (toss outs).

LOOKING AT FIXED COSTS

Fixed costs are those expenses that do not change with each unit of production. They include the “DIRTI 5” (Depreciation, Interest, Repairs, Taxes and Insurance) and others such as manager and office salaries, utilities, rent, office supplies, legal fees and accounting costs.

Cost of Goods Sold (COGS):

The variable costs directly associated with the product being sold.

Gross Margin:

The total dollar value of all sales during a specified period of time minus the cost of goods sold.

Shrink:

Any crops raised but unable to sell for whatever reason—thrift, poor quality, etc.



DID YOU KNOW?

Eggs age more in one day at room temperature than in one week in the refrigerator.

Production Efficiency:

Getting the highest output using the least amount of input, money and time.

Variability:

The changes and unpredictability of something.

High fixed costs:

- Can indicate that the production facility is too large for the size of the business.
- Often occurs after a facility expansion as you “grow into” full capacity.
- Can result from overbuilding relative to the economic sales potential from your location.

Fixed costs are less manageable once implemented, so the best time to manage them is when the decision is being made (i.e., when you are signing the lease or committing to a major purchase or construction plan). Always be sure that the production or sales potential from the facility is in balance for the facilities you are planning.

MEASURING PRODUCTION EFFICIENCY

You can measure **production efficiency** in many ways. Look at input and the resulting output for your major commodity and compare it to your historical trends to give you a good idea of how you are doing compared to past years. Then it will be easy to determine the areas that improve your profit or sales goals. Lastly, you can compare yourself to industry benchmarks as mentioned in the last chapter. For example you can measure:

- Cost per cwt. of milk
- Cost per ton of corn silage
- Cost per barrel of cranberries
- Cost per bushel of apples
- Sales per customer
- Cost per pound of turkey
- Units of production per worker
- Gross sales per worker
- Sales per square foot of greenhouse

Also, don’t forget to track major costs because focusing on those large expenses will have the greatest effect on your bottom line. You should also calculate your labor costs per worker, as this is a manageable resource.

FIVE-YEAR AVERAGES

Farm analysis is enhanced using multi-year averages rather than using only the current year’s results from the farm. Results from any one year may vary greatly because of short-term changes in supply or demand. Some events that may cause dramatic swings in supply or demand in the short-term include:

- Weather locally and globally
 - ♦ Bad weather globally may increase commodity prices for some farmers.
 - ♦ Good weather locally may increase retail sales for greenhouses.
- Government laws and regulations
 - ♦ A change in environmental rules may increase the cost of compliance.
- Political unrest or change in governments may increase or decrease the global supply of goods or demand for goods
 - ♦ Turmoil in the Middle East could increase the cost of oil.

Farm analysis using multi-year averages takes **variability** out of the measurement and provides you with a general cost structure for your farm analysis. A five-year average provides you with an economically sound reading on the viability of your farm. This is invaluable information in developing a proactive strategic plan for your farm.

MARKETING RESULTS

Are my prices better than average? This requires you to research your competition to survey what prices they are receiving for products similar to or the same as your own. What is the range in prices being received and what is the average? How do you compare? How are my products **differentiated** from my competition? How does my quality compare? How does the service at my farm stand compare?

Don’t be afraid to charge enough for your product. But how much is enough? Just having good quality and service is not enough today. You must have a superb level of quality and service that differentiates you from your competition. If you are not hearing any complaints about price or if you seem to have unlimited demand for your product, you are probably not charging enough.

Consider the following when comparing your farm to others:

- Listen to your customers.
- Who are your customers? How many are there?
- Is your product different from your competitors’ product?
- Are your prices better than average?
- Are your prices higher but do you still sell out?

SWOT ANALYSIS

A good way to approach an agribusiness analysis is to gather as complete an understanding of the business objectives as you possibly can. A “SWOT Analysis” is an organized approach to take when looking at a business. It looks at strengths, weaknesses, opportunities and threats.

Strengths – It is always a good idea to determine the strengths of the business. By looking at strengths, you can develop ideas that will help the farm accomplish their objectives through areas of strength. These ideas often include ways to improve the profitability and/or overall performance of the business. All businesses have areas which need improvement, however all businesses also have areas where they do well. Improvement often comes most effectively from building on one’s strengths rather than working to correct all weaknesses.

Weaknesses – Once you have noted your strengths, it is important to begin to identify weaknesses within the business. Prioritize those weaknesses that offer the most opportunity for improvement.

Remember the five keys to farm profitability identified in chapter two—productivity, efficiency, capacity, cost control and industry skills—when looking for the business’s weaknesses. Also, you should look at regeneration of the farm. **Regeneration** is the ability to replace assets through biological processes such as livestock giving birth or propagating plants.

Opportunities - Once strengths and weaknesses are identified, begin to look for opportunities to advance the objectives of the business. Remember to keep the opportunities within the context of the business’s objectives. Focusing on the opportunity offered by building a new barn to alleviate overcrowding is not appropriate if you are planning to retire within a few years and you will not be able to recover the “**lost capital**” in the new barn.

Remember to look for opportunities to build on your strengths as well as solutions that address weaknesses. For example, consider that you are an excellent animal manager, but do a poor job with cropping. Rather than focusing on getting better at growing crops, maybe you should look for opportunities to sub-contract that portion of the business out to a cropping specialist while building on what you do best.

Differentiate:

To make your product different from your competitors’ product.

Regeneration:

The ability to replace assets through biological processes.

Lost Capital:

Capital invested in a project that may not add to the overall value of the property.



DID YOU KNOW?

The first vegetable to be grown in space was the potato.

Threats – Identifying threats is the process of developing a risk management plan for the farm. For example, what would happen if:

- Milk price drops by \$4.00/cwt.?
- One of the key owners died tomorrow?
- Severe weather destroys this year’s vegetable crop?
- Another farm stand opens up across the street?

Farming is a very risky business. Being proactive about a risk management plan is a key to successfully accomplishing objectives. Always take into account possible threats when completing an analysis on your business.

CHAPTER SUMMARY

1. Gross margin is gross sales minus the cost of goods sold.
2. Fixed costs may lower profit margins and are harder to reduce than variable costs, so plan wisely.
3. Measuring production efficiency helps when comparing your farm to benchmarks or peers.
4. Five-year averages remove the variability of supply and demand to give a more accurate picture of trends in your business.
5. Differentiating your product and other marketing techniques lead to increased sales.
6. SWOT analysis is very useful when determining the current state of the business.

STUDY QUESTIONS

1. A farm has gross sales of \$105,000 and cost of goods sold is \$75,000. What is the gross margin percentage?
2. The “DIRTI 5” are included in what type of expenses? What expenses are included in the “DIRTI 5”?
3. Why would you want to look at five-year averages instead of the results from a single year?
4. Explain what SWOT analysis is and each of the four components of SWOT analysis.

FINANCING



- Financing Your Business
- What is the Lender Looking For?
- Sources of Financing
- Other Considerations

FINANCING YOUR BUSINESS

Most businesses eventually need **financing** - whether it is start-up capital, an operating loan or funds for expansion. While getting financing may seem like a daunting process the key to getting this financing can be simplified: lenders consider each applicant on the merits of his or her financial condition, business capacity and financial plan. Remember, you and the banker have mutual interests. You want financing and they want to make the loan. The surest way to make this happen is to position yourself so as to make a “yes” decision an easy one. In short, before you head to the bank, do your homework.

WHAT IS THE LENDER LOOKING FOR?

Each institution will have different criterion for financing, but the “5 Cs of Credit” generally apply throughout the lending world from sole proprietors to multi-billion dollar corporations.

Character

Character describes the borrower and his/her track record: do they have a history of paying their loans on time? Do they have a history of making money? Is there an experienced management team in place?

This is where credit history plays an important role. All of your actions — good, bad, or ugly, typically remain on your report for at least 7 years. Once information is listed, if accurate, it is difficult to remove.

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This is where credit history plays an important role. All of your actions — good, bad, or ugly, typically remain on your report for at least 7 years. Once information is listed, if accurate, it is difficult to remove.

Credit scores range from 350 to 850 and a higher score is better. Scores of 720 or better will usually get you the best rates and terms on loans. These scores are tabulated by three main credit bureaus: Experian, Equifax and TransUnion. Most lenders look at all three reports either separately or in one overall report. It is also important to know the contents of reports from all three reports so that you can correct mistakes and explain any derogatory information. You are entitled to one free credit report from each bureau each year, so take advantage of this by visiting www.AnnualCreditReport.com.

Capital

Your statement of financial condition, possibly including both you personally and the business, gives the lender a picture of how much you own versus how much you owe. **Solvency** refers to the fact that an individual owns more assets than his/her creditors have claim to. Therefore, in a pinch, if everything had to be sold immediately and the debts paid off, a solvent person or business would still have cash left over. Of course, more equity is better, since **leverage** can create stress on a business and with leverage comes risk. Building a strong capital position is important as it gives the business owner something to fall back on in case of a bad year. (And these do happen to the best of us!)

Financing:

The act of obtaining or furnishing money or capital for an enterprise.

Solvency:

When assets are greater than liabilities.

Leverage:

The percentage of assets financed by creditors shown by the debt to equity ratio. If your returns on the assets acquired through debt are less than the interest rate on the loan, the business is losing money on those assets.

Book Value:

The original cost of an asset less depreciation, if any. For example, if you bought two acres of land for \$20,000 five years ago but today they are worth \$50,000, the book value would be \$20,000 and the fair market value would be \$50,000.

Fair Market Value (FMV):

The most probable price an asset should bring during a sale occurring under normal market conditions.

Net Recovery Value (NRV):

The amount of money that would be recovered if the asset was foreclosed upon and sold.

Capacity

The capacity of your business describes its ability to cover operating costs as well as what is left over to make debt payments and for ongoing capital investment. Thus, the past history of debt repayment is considered here as well – if you have been making all of your payments on time, it is probably a sign that the business makes enough money to handle the loan payments. Or is there another reason that cash is coming in? Though an inheritance or the sale of a used tractor may provide cash now, these are not sustainable ways to do business. A successful company will generate sufficient income from operations to meet its needs, and will post a trend of profits over several years.

Collateral

In addition to looking for a business to be profitable and to use those profits for loan repayment, lenders also often require a back-up plan or a “secondary repayment source.” Collateral, or items you pledge to secure the loan, serves just that purpose.

When pledging collateral, you need to think about the **fair market value (FMV)** of the property as well as the **net recovery value (NRV)**. If a piece of real estate is “worth” \$100,000, can the bank expect to receive that amount if they foreclose on the property and then sell it outright?

The answer is no. Think about how the following impact the selling price of any item, not just real estate:

- *Time* – if a sale has to occur quickly, the price is often lower or discounted to encourage the deal.
- *Assistance* – banks are not in the real estate or auction business. They will hire professionals to conduct the sale and these expenses will be recouped.
- *Situation* – when a prospective buyer learns that a bank will sell an acquired property, they know the bank wants to get out of the deal as soon as possible. Buyers use this information to negotiate a better deal.

The bottom line is, the bank certainly does not want to lose any money on their investment in your business. By valuing your collateral and not lending every last dollar against it, the bank protects their risk in the case of liquidation.

Conditions

Conditions are the terms under which the loan will be written. Very few deals are black and white, and they may need some additional requirements before the bank is willing to invest in your business. These may include:

- *Loan terms* - If you request a 7-year loan to buy a car for your salesman, what will the bank’s position be in year 5? You will still owe them money on a vehicle that has a lot of miles on it. And if you sell it at that time, there is a good chance the car will be worth less than your remaining loan balance. It is a good idea to keep loan terms shorter than the useful life of the asset to be purchased.
- *Insurance requirements* - Accidents do happen, and your floral delivery business is not much good without the delivery van that was rear-ended last week. You are still required to make loan payments even if accidents happen, and it is not good for the business to be left with a loan and no productive asset to make the money to repay the loan. The same would go for life insurance. If you are the brains of the operation and the one that really makes it work, the bank will want to be covered in case something happens to you.

- *Financial covenants* - These are limits the lender puts on the business to help maintain a positive financial picture. They can be positive and negative. Here are some examples:

POSITIVE COVENANTS

Borrower will maintain working capital of \$100,000.

Borrower will provide a market-value balance sheet and tax return annually as of calendar year end.

NEGATIVE COVENANTS

Borrower will not further mortgage or pledge collateral.

Borrower will limit their draw from the business to \$50,000 per year.

In addition to examining these factors, the lender will want to know what you plan to do with the money and about your plans to handle adversity. For instance, if you run a pick-your-own apple orchard and it rains every weekend in September and October, (your sales season), how will you sell the crop?

It is important that you have considered the potential challenges your business faces because you are taking a risk by investing your time, efforts and money. Though you cannot foresee every disaster, planning for the things that would significantly impact your business will help you lower that risk.



DID YOU KNOW?

In the United States, farmers raise about one hundred million beef cattle a year.

SOURCES OF FINANCING

Once you have prepared for the request, how do you choose a lender? Several sources of financing are outlined below, with a few key points to remember.

	FEATURES	OTHER CONSIDERATIONS
Farm Credit East or other Farm Credit institutions	• Leading choice for most farmers, farmer-owned • Specializes in agriculture, relationship-oriented • Competitive rates, patronage dividends • Other financial services available • Special programs for young, beginning and small farmers	• Will want a business plan and good financial information • Bases lending decisions primarily on character and repayment capacity • Usually requires collateral
Farm Services Agency of USDA	• Focused on farmers unable to obtain credit from commercial lenders • Many programs, including reduced interest rates • Special programs for young, beginning, small and minority farmers • Guarantee programs for loans obtained through other lenders	• Generally must be turned down by a commercial lender before FSA can consider • Substantial paperwork to gain approval • Sometimes runs out of funding allocation, especially at fiscal year-end
Seller	• May be willing to finance sale of land, machinery or livestock until such time as buyer gains credit track record and additional equity • Might be financially advantageous to seller	• Check income tax consequences • Depending on seller, may create a dependency versus clean break • Good tool to use with other lenders
Commercial Banks	• Some banks have farm lending programs with skilled professionals • Local branch presence • Provides traditional commercial banking services, i.e., checking accounts, etc.	• Some banks not interested in farm loans • Tend to be transactional. This varies by bank. • May want to put the loan into consumer or small business lending program
Angel Investor	• Can be family friend, benefactor in the community, etc. • Willing to lend for a person or a project that they think has lots of potential • Willing to be flexible on rates and terms	• May not have a long-term timeframe • Possibility of a “falling out”

OTHER CONSIDERATIONS

Don't borrow your last dollar. If the bank is only willing to finance \$150,000 of a \$200,000 construction project and you have unforeseen costs totaling an additional \$75,000, where is that money going to come from? A half-built house isn't very useful and the bank is not required to approve any more financing for you.

Look for the lender's commitment to the Ag industry. Commercial banks have been in and out of agriculture over the years. They see an opportunity to profit and start making loans. Then when the industry faces challenges, they pull back and sell loans leaving you to suddenly deal with a brand-new lender in the midst of an already-stressful situation. Institutions like Farm Credit East are owned by their borrower-members and are committed to agriculture (it's all we do!). Farm Credit East stands by its members through good times and bad. However, since we don't give up on your business in tough times, we expect that you won't either!

Don't shop on rate alone. Though a lower interest rate will save you some money, it should not be the only factor in your decision. Flexibility and a lender's willingness to work through a situation are worth more than saving \$500 a year on interest, (which is a deductible expense for tax purposes anyway).

Be realistic and know your industry. Consider the pricing of your product or service. If you plan to charge \$1,200 per month for horse boarding at your facility, look at what other farms in the area charge. If the average is \$750 per month for a facility similar to yours, chances are your income forecast is too optimistic. Perhaps you feel you have some advantage over the competition that may allow you to get a premium price — but is that realistic?

You also need to pay careful attention to what is actually possible in the current business environment. For example, if your 30-stall horse farm gets \$750 per month per stall for board, projecting annual income is not as simple as multiplying 30 stalls by the board rate of \$750 per month for 12 months for a total of \$270,000. No stable's stalls are completely full all of the time — horses move out mid month, owners buy and sell horses, kids leave for college, all creating vacancies. Rarely is there someone waiting to move their horse into a stall where an old boarder is moving out. This leaves you with empty stalls while looking for a replacement. Projected income should use effective board or rather the potential board minus the vacancy rate. If your stalls are vacant 15% of the time, you can only expect \$637.50 (\$750 – 15%) a month per stall, bringing yearly income to \$229,500 (\$637.50 x 30 x 12).

Now that you've got some background, you are ready to do some research and give it a try! Do your homework before you make a loan request. Be organized and have a plan. Remember, you are trying to impress the lender and convince them to invest in your business! Make sure you understand the 5 C's and how you measure up. And finally, choose the best financing source for your circumstance. You may want to look at multiple sources to see what's best for you.



DID YOU KNOW?

Americans eat an average of 29 lbs. of cheese each year. That is more than one ton of cheese over a lifetime.



CHAPTER SUMMARY

1. The Cs of credit are character, capital, capacity, collateral and conditions.
2. Aside from credit worthiness, the bank may have some other conditions before issuing a loan such as insurance requirements.
3. There are many sources of financing—Farm Credit (Farm Credit East or sister organizations), Farm Service Agency, sellers, commercial banks, and angel investors.
4. You should make sure you have enough financing before starting a project; a lender is not required to loan you any additional money even if it means the project will not be completed.
5. Don't shop on interest rates alone—there are many other factors out there such as loan conditions, and familiarity with agriculture.

STUDY QUESTIONS

1. List and briefly explain the 5 Cs of credit.
2. What is the difference between Fair Market Value and Net Recovery Value?
3. Explain the concept of not borrowing your last dollar. Why is this so important?
4. Why should the interest rate on a loan not be your only consideration when choosing a lender?



CASE STUDIES



- Agriculture Retail Case Study
- Dairy Farm Case Study

AGRICULTURE RETAIL CASE STUDY

AGRICULTURE RETAIL ANALYSIS

Financial records for retail management accounting should include a retail analysis formula for sales and profit, tracking of customers and their purchases, and lastly a detailed inventory list.

The retail analysis formula will give you net profit. First you must use the formula for gross sales that was discussed in chapter four (Gross sales minus COGS is equal to the gross margin). Once you have gross margin you can subtract fixed costs to get the net profit of the business.

Each department such as the bakery, deli, food, plants and gifts should also use the formula above to check profitability. You can also get the net income and gross margins for individual products to see which product is making the business the most money.

Finding the net profits and gross margins per department or product can show you your markup. It can also show you the differences between markups for various products, and what products have proportionally higher markups than others.

Another important part of retail management accounting is the tracking of customers and their purchases by day. When you take the value of the total sales and divide by the number of sales, you get the average sales per customer. The average sales per customer can be found per day, week, season or year and then compared to historical data.

By tracking sales per customer, you can determine if sales have increased or decreased from a change in marketing. An example would be to see if sales have increased after putting a \$2 coupon in the newspaper.

Lastly, retail management accounting should contain a purchase order system and thus a detailed inventory list. By keeping a detailed inventory list, you not only can keep track of what products are selling quickly or not selling well, but you can also track the disappearance or theft of items.

For example, if you bought 100 Christmas trees, and sold 80 in the first week and there are only 15 Christmas trees on your lot, you can assume that Christmas trees are selling very well and you may want to order more, depending on timing. Additionally, five Christmas trees have gone missing and may have been stolen.

AGRICULTURE RETAIL MARKET STANDARDS

In order to compare your business to other businesses using retail market standards, you should adjust your income and expenses so that it looks as though there was only a single owner in the business. To do this correctly, corporations owned by two people should adjust by taking one owner's salary and benefits out of payroll costs. On the other hand, in two owner partnerships and LLCs, one owner's salary and benefits should be put back into the payroll costs.



What exactly is included in gross sales?

- Cash register sales
- Pick-your-own sales
- Ag entertainment sales
- Retail sales
- Wholesale sales
- Money earned from services



It takes approximately 1.4 gallons of milk to make 1 gallon of ice cream.



DID YOU KNOW?
Blueberries are the second most popular berry in the U.S.

Once you have your income and expenses adjusted, you can compare yourself to the retail financial standard measures shown below.

RETAIL MARKET STANDARDS

Financial Measures	
Gross Margin Percentage	30-40%
Net Margin Percentage	10-15%
Return on Assets	5-10%
[Net Margin + Interest] / FMV of Assets	
Debt Payments / Sales	<10%
Cost Control	
Fixed Expenses	20 - 30% of sales
Direct Labor Costs	20 - 25% of sales
Marketing Expenses	2 - 4% of sales
Efficiency	
Sales/Customer	\$5 - \$10/customer
Gross Sales/Owner	\$200,000 – \$400,000
Growth	
Sales Increase/Year	5 - 15%
Customers Increase/Year	5 - 10%
New Products/Year	3 - 10

ROADSIDE FARM STAND CASE STUDY

Mr. and Mrs. John and Jane Grower operate a short season retail market, (May-September). They grow vegetables, mostly sweet corn, tomatoes and peppers. They have a few acres of pick-your-own strawberries, blueberries and raspberries.

Their stand is located on a well-traveled road but in a rural area. They open in May with plants. John does the growing and processing and Jane does accounting and stand management. They have seasonal help of college students. During winter both Mr. and Mrs. Grower have part-time jobs. They are concerned about making the business generate more profit.



ROADSIDE FARM STAND INCOME STATEMENT

		% of Sales
Gross Sales		
Farm Stand	\$ 200,000	
Holiday Baskets	10,000	
Farmer's Markets	35,000	
Wholesale Vegetables	75,000	
Pick-Your-Own	<u>30,000</u>	
Total	<u>\$ 350,000</u>	100.0%
Cost of Goods Sold		
Purchases for Resale	\$ 75,000	
Inventory Adjustment	2,000	
Crop Expenses	20,000	
Direct Payroll	108,000	31.0%
Supplies	17,000	
Other	<u>8,000</u>	
Total	<u>\$ 230,000</u>	65.7%
Gross Margin	120,000	34.0%
Fixed Costs		
Depreciation	\$ 20,000	
Maintenance	15,000	
Marketing	7,500	2.1%
Interest on Debt	9,800	
Office Supplies	1,200	
Fuel	7,000	
Electricity	6,300	
Telephone	1,000	
Insurance	2,200	
Taxes	10,000	
Accounting Fees	1,000	
Manager's Salary	22,000	
Other	<u>2,000</u>	
Total	<u>\$ 105,000</u>	30.0%
Net income	<u>\$ 15,000</u>	4.3%



DID YOU KNOW?
As bell peppers mature, their color changes from green to red and they become sweeter.



DID YOU KNOW?

There are about 600 kernels on each ear of corn.

To find the gross margin percentage you take gross sales, \$350,000, and subtract COGS, (\$230,000), to get the gross margin of \$120,000. Next, make that a percentage and divide the gross margin by gross sales to equal 34%, ($\$120,000 \div \$350,000$). To find the net income percentage, take net income and divide by total sales, giving 4.3%, ($\$15,000 \div \$350,000$).

When looking at the Growers' Farm, you notice:

1. The gross margin percentage is within the standard, (page 35) at 34%.
2. The net margin percentage is low, only 4.3% while the standard is 10-15%.
3. Direct labor costs are very high, at 31% while the goal is 20-25%.
4. Marketing costs as % of sales at 2.1% is low.
5. Fixed expenses are within the high standard range at 30%.

Given these facts, we would assume that in order to increase profitability, Mr. and Mrs. Grower should look to reduce direct labor costs and fixed expenses. Additionally, they may want to look to increase sales so that the fixed expenses are spread over a larger production base.

Specific activities to improve bottom line:

1. Lower labor costs by reducing day help on slow retail days. On days of bad weather, tell day help to stay home. Make up hours on good days with a longer more productive day.
2. Be more innovative in marketing efforts; have holiday events – pumpkin painting. Try special coupons. Offer one free if you buy so many.
3. Expand markets; at home, extend pick-your-own season or try going to another farmer's market.

DAIRY FARM CASE STUDY

PROFITABILITY MANAGEMENT USING THE FIVE KEYS

For years we have focused on milk production on dairy farms. While this is an important piece of financial success, it is only one of the five key areas to monitor. Let's briefly consider the five keys to profitability on a dairy farm.

1. *Gross Revenue* – This is a function of production price. **Component pricing** offers us a greater management impact on price. In fact, butterfat and protein payments can make up to 90% of a milk check. Practices that promote higher components and quality can reap lucrative price opportunities. In the past we have been extremely proficient at increasing production in order to increase profits. However, it is important to look at all five keys to profitability.
2. *Efficiency* – How efficiently are you converting your raw materials into finished product? Gross margin as a percentage of the milk check is an excellent way to track and measure production efficiency. It shows how efficiently raw material is converted into finished product. To review, gross margin is defined as gross sales minus the cost of goods sold. Because milk price is volatile, looking at **five-year averages** would be a better measure of efficiency.
3. *Capacity* – How effectively are you using your capital assets, (buildings and equipment)? The percent overcrowding of the dairy herd is a physical measure of how much of your dairy farm's capacity is being used. Also fixed costs as a percentage of the gross sales is a good financial measure to track and measure capacity.

Component Pricing:

Pricing that is based on several factors rather than a set price for fluid milk. Component pricing measures the amount of butterfat and protein in pounds and pays a certain price for each portion. There is also a price given for the fluid milk.

Five-Year Average:

Taking the averages over a five-year period eliminates price volatility so you can make accurate conclusions about the farm.

4. *Industry Skills* – Dairy husbandry skills are critical to the profitability of a dairy farm. How effective and skilled you are when caring for the dairy herd impacts many areas of herd performance such as the cull rate, average age at first calving, calf DOAs (dead on arrival), and youngstock mortality. **Internal herd growth (IHG)** is an excellent measure of animal husbandry skills because it combines all of these areas by measuring your herd's ability to grow by generating more replacements than you need to maintain herd size. Positive internal herd growth is important to dairy farm profitability.
5. *Cost Control* – How effective are you at minimizing costs on your farm? The secret to effective cost control is to minimize costs in ways that do not impact performance by more than what you saved. For example, controlling costs by not trimming your cows' feet is not likely to be effective cost control because it will probably reduce the cows' performance by more than the money you will save by not trimming. Per unit cost analysis and comparing yourself to benchmark standards are good ways to measure and track the effectiveness of your cost control practices.

FIVE-YEAR DAIRY AVERAGES

There are several reasons to look at five-year averages in dairy farm analysis instead of data from a single year. Often, dairy farms do not show similar data year after year due to several factors including milk price volatility, weather differences, yield variability, differences in management, and other problems affecting the farm owner or location. Due to this inconsistency from year to year, five-year averages indicate a more sustainable profit picture on a dairy farm.

The *Northeast Dairy Farm Summary*, ("Blue Book"), is compiled each year and shows summarized five-year average income statements for the Top and Bottom 25% profit groups of the dairy industry in the northeast. There are large differences between the top 25% of the industry and the bottom 25% of the industry.

	TOP 25	BOTTOM 25%
Gross Revenue	100%	100%
COGS	56%	68%
Gross Margin	44%	32%
Fixed Costs	20%	25%
Net Margin	24%	7%

The Top 25% farms had a gross margin advantage of 12% over the bottom profit group. This means the top farms had \$0.12 more left from every milk dollar after paying variable production costs than the bottom farms. Their ability to convert raw inputs into milk was much more efficient. This is the single most significant key to their profitability.

The Top 25% farms spent 5% less of their milk dollar on fixed expenses. This is a measure of how effectively they are using their "plant and equipment" investment on their farms. This suggests that they have invested fewer dollars in facilities and machinery relative to their herd size.

To recap, over the past five years, the Top 25% group averaged \$0.17 more profit from every dollar of milk sales than the bottom group. Of this, \$0.12 came from better production efficiency and \$0.05 came from better capacity or capital investment efficiency.

Tracking production per cow has long been a primary focus in the dairy industry and *Northeast Dairy Farm Summary* data indicates that the biggest opportunity for profitability improvement lies with improving production efficiency.

Internal Herd Growth (IHG):

Measurement of the regeneration of your herd; it shows if your herd is generating more replacements than you need to maintain herd size.

Northeast Dairy Farm Summary:

Commonly referred to as the "Blue Book", it is the annual dairy benchmark published by Farm Credit. Over 500 farms provide information to create the benchmark; a copy is available at all Farm Credit branch offices.



DID YOU KNOW?

The temperature of milk straight from the cow is about 97 degrees Fahrenheit.

Key Areas of Profitability:

- 1. Gross Sales
- 2. Efficiency
- 3. Capacity
- 4. Industry Skills
- 5. Cost Control

 **DID YOU KNOW?**
Cows have 32 teeth, but they do not have any top front teeth.

When monitoring profitability, dairy farmers should consider tracking all of the keys to dairy farm profitability! Here are some good industry goals:

FIVE-YEAR AVERAGES	GOAL
Gross Sales – Components Sold per Cow	Over 1,400 pounds
Efficiency – Gross Margin as % of Milk Sales	Over 50%*
Capacity – Overhead Costs as % of Milk Sales	Under 40%*
Industry Skills – Percent Internal Herd Growth	Over 5%/year
Cost Control – Net Cost of Production	Under industry average

* Efficiency and Capacity goals are based on a 200-cow herd size.

As farm size goes up, production efficiency tends to decline and capacity (capital efficiency) tends to improve. The reverse can occur as herd size goes down. This is due to the increased reliance on hired labor on larger farms and the ability to spread facility and equipment costs over more cows.

DAIRY CASE STUDY PROBLEM

Milk Meister operates a 185-cow dairy operation on a 325-acre farm. His farm has 170 tillable acres. He rents another 180 acres scattered over a ten-mile radius from his farm. His current rolling DHIA herd average is 26,354 pounds of milk per cow. He milks his cows in a double-six herringbone milking parlor and houses them in a 150-stall free stall barn that was built in 1997.

The farm has 148 head of young stock that are raised as herd replacements. Mr. Meister grows all of the forage and replacement heifers. He typically has some surplus forage that he sells for supplemental cash income.

Mr. Meister is very frustrated by the lack of profitability on his dairy farm. He is confident that he is a very proficient dairyman, following progressive management practices and has very good cow care yet he is unable to show a profit. Is it that milk prices are simply too low to make dairy farming feasible anymore? Mr. Meister would like some help in determining what he should do: is there a way to make a profit or should he just get out of farming?

Let’s consider the following five-year average results for Milk Meister’s dairy farm:

	GOAL	MEISTER FARM
Gross Sales	Over 1,400 pounds	1,545 pounds
Efficiency	Over 50%	37% gross margin
Capacity	Under 40%	37% overhead
Industry Skills	Over 5% IHG/year	5% internal herd growth
Cost Control	Below industry average	Above industry average

What strategic conclusions can we draw from looking at this information?

First, from his performance in the area of gross sales and industry skills, it appears that as he claims, Milk Meister is indeed an excellent cow manager. We can see that his components sold per cow are above average and his internal herd growth is at the goal of 5% per year when we compare his farm to the benchmarks mentioned earlier in this chapter. This indicates that he is likely doing a good job caring for his animals seeing as he gets good milk production and performance from them.





DID YOU KNOW?

Lettuce is a member of the sunflower family.

Next we look at cost control and we notice that his costs are very high at \$2.75 per hundredweight above industry average as compared to the goal of below industry average. Initially this indicates that he has poor cost control, but we don't know in what area of his business that his costs are high — it could be capacity or efficiency.

Looking at capacity, we see that his overhead costs are 37% of his milk check. This compares to a goal of being under 40%. This indicates that Mr. Meister is making adequate use of the plant and equipment that he has invested in his dairy farm. In fact, if we look at his level of overcrowding in his dairy barn he is housing 185 cows in a 150-stall barn, or 23% overcrowded. This further supports the strong cow management skills, as he has good performance from his cows even at 23% overcrowding. By keeping the facility at this level, he has been successful at keeping overhead costs in line.

This leaves us with one final area to focus on, efficiency. His gross margin as a percent of his milk check is only 37% as compared to a goal of over 50%. Now we have identified a significant area of opportunity for Mr. Meister to improve the profitability of his farm. He is not converting his raw material inputs, (labor, feed, crop costs, livestock costs, marketing), into finished product, (milk), as efficiently as he needs to be in order to be a viable dairy farm business.

Mr. Meister's challenge is to find ways to improve the production efficiency of his farm. Opportunities to achieve this include:

- Making better use of labor resources.
- Monitoring feed relative to milk production more closely.
- Improve forage quality.
- Monitor crop inputs, (fertilizer, spray, and seed), relative to crop yields.
- Monitor consumption of supplies.
- Look for less expensive sources of supplies.

In conclusion, by looking at measures of the key areas of profitability for Mr. Meister's dairy farm business we were able to isolate the areas of opportunity to help Mr. Meister become more profitable. Using five-year averages, we were able to take the year-to-year milk price volatility out of the equation. Five-year averages also level out unusual occurrences that may happen in any given year. These numbers represent sustainable cost structures for the business and offer a clearer picture of where opportunities exist for improvement.

CHAPTER SUMMARY

1. Retail Management should include the tracking of your gross margin by departments and products.
2. A net margin as a percentage of sales of around ten percent is a typical retail standard.
3. Tracking customer purchases allows you to see how sales per customer is affected by changes.
4. The case study analysis showed that direct payroll costs were high and marketing expenses low compared to benchmark standards.
5. Looking at the five keys of profitability is a good place to begin when analyzing a business. The keys are gross revenue, efficiency, capacity, industry skills and cost control.

STUDY QUESTIONS

1. What can be the cause of a low gross margin?
2. Which of the five keys of profitability indicate the greatest area of opportunity to improve profits on Milk Meister's farm?
3. What expenses would you look at to improve efficiency and which of the two typically offer the most opportunity for improvement?

SAMPLE FINANCIAL STATEMENTS AND REPORTS



- Balance Sheet
- Income Statement
- Cash Flow Statement
- Financial Ratios

BALANCE SHEET - FAIR MARKET VALUE

	1/1/XX Fair Market Value	12/31/XX Fair Market Value
Assets - Current		
Cash	\$ 10,000	\$ 10,000
Accounts Receivable*	75,000	78,000
Supplies	10,000	10,000
Feed Inventory	100,000	100,000
Pre-Paids*	<u>2,000</u>	<u>7,000</u>
	\$ 197,000	\$ 205,000
Assets - Intermediate		
Cattle*	\$ 242,500	\$ 247,500
Equipment & Trucks	200,000	200,000
Co-op Stock	<u>21,400</u>	<u>19,400</u>
	\$ 463,900	\$ 466,900
Assets - Long Term		
Farm Real Estate	\$ 800,000	\$ 800,000
Total Assets	<u>\$ 1,460,900</u>	<u>\$ 1,471,900</u>
Liabilities - Current		
Accounts Payable*	\$ 30,000	\$ 12,000
Current Portion of Capital Line	30,000	30,000
Current Portion of Mortgage	<u>10,000</u>	<u>10,000</u>
	\$ 70,000	\$ 52,000
Liabilities - Intermediate		
Capital Line	\$ 188,000	\$ 158,000
Liabilities - Long Term		
Mortgage	<u>\$ 200,000</u>	<u>\$ 190,000</u>
Total Liabilities	<u>\$ 458,000</u>	<u>\$ 400,000</u>
Net Worth	<u>\$ 1,002,900</u>	<u>\$ 1,071,900</u>
Total Liabilities & Net Worth	<u>\$ 1,460,900</u>	<u>\$ 1,471,900</u>

**Items to adjust on cash basis income and expenses on page 45*



The French fry is the most popular way Americans like to eat potatoes.

ACCRUAL INCOME STATEMENT

	12/31/XX Cash Basis Tax Profits	Balance Sheet Adjustments*	12/31/XX Accrual Profits
Income			
Milk Sales	\$ 900,000	+ \$ 3,000	\$ 903,000
Cattle Sales	37,000	+ 5,000	42,000
Other Income	<u>3,000</u>	<u> </u>	<u>3,000</u>
Total Income	\$ 940,000	<u>8,000</u>	\$ 948,000
Expenses - Variable			
Labor & Payroll	\$ 95,000	+ 2,000	\$ 97,000
Repairs - Buildings	10,000		10,000
Repairs - Equipment	30,000	- 5,000	25,000
Feed Purchased	310,000	- 20,000	290,000
Dairy Supplies	120,000		120,000
Vet & Medicine	20,000		20,000
Breeding	8,000		8,000
Crops	60,000		60,000
Marketing (milk)	<u>75,000</u>	<u> </u>	<u>75,000</u>
	\$ 728,000	<u>-23,000</u>	\$ 705,000
Expenses - Fixed			
Interest	\$ 32,000		\$ 32,000
Rent	10,000		10,000
Property Taxes	15,000		15,000
Insurance	10,000		10,000
Utilities	20,000		20,000
Depreciation	60,000		60,000
Other	<u>10,000</u>	<u> </u>	<u>10,000</u>
	\$ 157,000	<u>0</u>	\$ 157,000
Total Expenses	\$ 885,000	<u>- 23,000</u>	\$ 862,000
Net Farm Income	55,000	<u>+ \$ 31,000</u>	86,000
Owners Draws	<u>-40,000</u>		<u>-40,000</u>
Net Income	\$ 15,000		\$ 46,000

CASH FLOW STATEMENT - DIRECT METHOD

	Year Ended 12/31/XX
Cash Flows From Operating Activities	
Cash Received from Operations	\$ 940,000
Interest Received	0
Cash Paid for Operating Cost and Expenses	(793,000)
Interest Paid	<u>(32,000)</u>
Net Cash Provided by Operating Activities	\$ 115,000
Cash Flows from Investing Activities	
Proceeds from Revolvment of Allocated Patronage	\$ 2,000
Repayment of Note Receivable	0
Proceeds from Sale of Assets	0
Purchase of Machinery and Equipment	(37,000)
Purchase of Land	0
Construction of Building	<u>0</u>
Net Cash Provided (Used) by Investing Activities	\$ (35,000)
Cash Flows from Financing Activities	
(Decrease) Increase in Bank Overdraft	0
Net Increase (Decrease) in Short-Term Debt	0
Proceeds from Long-Term Debt	0
Repayment of Long-Term Debt	(40,000)
Owner Withdrawals	<u>(40,000)</u>
Net Cash Provided (Used) by Financing Activities	(80,000)
Net Increase (Decrease) in Cash	0
Cash at Beginning of Year	<u>10,000</u>
Cash at End of Year	\$ 10,000
Cash and Cash Equivalents Include the Following	
Cash	<u>\$ 10,000</u>



Under 100%
100-150%
Over 150%



Under 1
1-1.5
Over 1.5

FINANCIAL RATIOS

The following financial ratios are based off of the sample statements provided earlier in this chapter. In addition, each ratio presented will include the Traffic Light Levels of Risk which are from Weighing the Variables by Dr. David M. Kohl of the Virginia Polytechnic Institute. Under the traffic light levels of risk, a green position means the business is in a competitive position. A yellow position means that there are some caution signs and a red position means that the business could face some major obstacles.

Reserve Capital:

To measure reserve capital, or how much money is available in the business compared to debt payments being made, many use the term debt coverage ratio:

Term Debt Coverage = Available Funds ÷ Total Debt Payments

Sample Term Debt Coverage:

AVAILABLE FUNDS

Net Farm Income	\$ 86,000
Depreciation Expense	+ 60,000
Interest	+ 32,000
Owner's Draws	- 40,000
Available Funds	\$ 138,000

Total Debt Payments	
Principal (current portion)	\$ 40,000
Interest	+ 32,000
Total Debt Payments	\$ 72,000

$$\text{Available Funds} \div \text{Total Debt Payments} = \text{Term Debt Coverage}$$
$$\text{\$138,000} \div \text{\$72,000} = \text{191.7\%}$$

The sample business has a green position because reserve capital measured by term debt coverage is over 150%, the business is in a competitive position.

Liquidity:

To measure the liquidity of a business, the current ratio is used. The current ratio shows the business's ability to pay its bills during the next accounting period. The current ratio is current assets divided by current liabilities.

Current Assets ÷ Current Liabilities = Current Ratio

$$\text{\$205,000} \div \text{\$52,000} = \text{3.9}$$

This current ratio means the business would be able to pay off its current debts 3.9 times with their current assets meaning that the business is in a competitive situation. The business has a very liquid position.

Financial Leverage:

The debt to equity ratio shows financial leverage in a business. This ratio not only shows how much debt a business has when compared to the owner's equity, but also if the business is able to pay all debts if production stopped.

Sample Debt to Equity Ratio:

Total Debt ÷ Owner's Equity = Debt to Equity Ratio

$$\text{\$400,000} \div \text{\$1,071,900} = \text{37.3\%}$$

Therefore in this example, the debt to equity ratio is 37.3% that places the business in a yellow position; there are some caution signs for this business when it comes to leverage.

A green leverage position would be a debt to equity ratio of less than 30% and a red leverage position would be higher than 70%.

Profit:

Return on assets (ROA) measures profitability by taking net income and dividing it by the average total assets.

Using the sample statements, calculating ROA, would look like this:

NET INCOME

Net Farm Income	\$ 86,000
Interest	+ 32,000
Owner Draws	- 40,000
Net Income	\$ 78,000

Average Total Assets:

Beginning of Year	\$ 1,460,900
End of Year	1,471,900
Total	2,932,800
Average Assets	1,466,400

Net Income ÷ Average Total Assets = Return on Assets

$$\text{\$78,000} \div \text{\$1,466,400} = \text{5.3\%}$$

The return on assets is within the green position for the sample business meaning the business is doing well in this area when compared to the competition.



Above 70%
30%-70%
Under 30%



Under 1%
1%-4%
Above 5%

**EXPENSE TO
REVENUE
RATIO**

Above 80%

65-80%

Under 65%

Operating Efficiency:

The operating efficiency of a business can be measured by using an expense to revenue ratio. This ratio shows how efficiently a business is producing their product. The expense to revenue ratio is calculated dividing total expenses (not including interest expense and depreciation expense) by total income.

Sample Expense to Revenue Ratio:

Total Expenses	\$862,000
Interest Expense	-32,000
Depreciation Expense	-60,000
	\$770,000
Total Income	\$948,000

$$\begin{aligned} & \text{(Total Expenses - Interest - Depreciation)} \div \text{Total Income} = \text{Expense to Revenue} \\ & (\$862,000 - 32,000 - 60,000) \div \$948,000 = \\ & \$770,000 \div \$948,000 = .812 \text{ or } 81.2\% \end{aligned}$$

This means that the business has poor operating efficiency because the red position is 80% and above.

Capital Efficiency:

Capital efficiency can be measured through the asset turnover ratio. The asset turnover ratio measures the amount of sales that are generated from each dollar of assets. The asset turnover ratio is total income ÷ total average assets.

Sample Asset Turnover Ratio:

Total Income	\$ 948,000
Total Average Assets	\$ 1,466,400

(from page 48)

$$\begin{aligned} & \text{Total Income} \div \text{Total Average Assets} = \text{Asset Turnover Ratio} \\ & \$948,000 \div \$1,466,400 = .646 \text{ or } 64.6\% \end{aligned}$$

This means that income generated is worth 64.6% of total assets.

The higher the asset turnover ratio, the higher the profit margin the business will have. For example, if the asset turnover ratio is higher, that means you are getting more income for every dollar worth of assets you own.

**ASSET
TURNOVER
RATIO**

Under 10%

11-15%

Above 16%



APPENDIX



- Glossary
- Answers to Study Questions
- Summary of Key Points

GLOSSARY

Accounts Payable: Any expenses you have incurred but not yet paid — money you owe others.

Accounts Receivable: Any income earned but not yet received — money owed to you.

Accrual Accounting: Expenses and income are recorded when incurred and earned, regardless of when money actually changes hands.

Assets: The things your company owns that have a positive value. There are three main types of assets – current, intermediate, and fixed (or long-term).

Balance Sheet: A financial statement that shows a business' assets, liabilities and its net worth at a point in time.

Benchmark Analysis: The comparison of a business with a set standard to evaluate the business' performance.

Book Value: The original cost of an asset less depreciation, if any. For example, if you bought two acres of land for \$20,000 five years ago but today they are worth \$50,000, the book value would be \$20,000 and the fair market value would be \$50,000.

Cash Accounting: Expenses and income are recorded when money is paid out or is received.

Cash Flow Statement: A financial statement that shows all the money going into and out of the business for a period of time.

Capacity: How effectively and completely assets are being used in the production of your product.

Chief Financial Officer (CFO): The person responsible for financial analysis and planning, managing assets efficiently and arranging financing for the business. The CFO can be the owner of the company or a paid employee.

Cost Control: To look for opportunities to save money without sacrificing income or quality.

Cost of Goods Sold (COGS): The variable costs directly associated with the product being sold.

Demand: The relationship between the price and the quantity consumers are willing to buy. When there is a high demand, consumers are willing to pay high prices; but when there is low demand, consumers are only willing to pay low prices.

Depreciation: An accounting method of allocating the cost of intermediate and fixed assets to expense in a systematic and rational manner over a number of years. The number of years an asset is depreciated for is generally the estimated useful life of the asset.

Differentiate: Characteristics that make your product different and stand out from your competitors' product.

Efficiency: How effectively raw materials are being converted into finished products.

Fair Market Value (FMV): The most probable price an asset should bring during a sale occurring under normal market conditions.

Financial Risk Signals: Established standards that act as warning signals showing when a business is in trouble.

Financing: The act of obtaining or furnishing money or capital for an enterprise.



DID YOU KNOW?

A newborn horse, or foal, can stand up within one hour of being born.

Five-Year Average: Taking the averages over a five-year period eliminates price volatility so you can make accurate conclusions about the farm.

Fixed Expenses: Any expenses that a business incurs regardless of production such as insurance, loan interest payments, rent and property taxes.

Goal: The desired outcome to fulfill some stated need. Goals should be timed, specific, measurable and attainable.

Gross Margin: The total dollar value of all sales during a specified period of time minus the cost of goods sold.

Gross Sales: The total dollar value of all sales during a specified period of time.

Income Statement: A financial statement that shows a business' income and expenses for a specific time period.

Industry Skills: Any skills exclusive to your industry that are needed to be successful in your particular business.

Internal Herd Growth (IHG): A measurement of the regeneration of your herd; it shows if your herd is generating more replacements than you need to maintain herd size.

Law of Diminishing Returns: As you increase inputs, the value of additional output produced decreases.

Leverage: The percentage of assets financed by creditors shown by the debt to equity ratio. If your returns on the assets acquired through debt are less than the interest rate on the loan, the business is losing money on those assets.

Liabilities: Any debts the business owes. Liabilities represent credit extended in the form of outstanding bills, credit cards and loans. There are three types of liabilities — current, intermediate and fixed.

Lost Capital: Capital invested in a project that may not add to the overall value of the property.

Managerial Accounting: Accounting that provides information to help managers make decisions leading to the completion of the company's goals.

Net Income: The farm's income minus the farm's expenses for a period of time. Net income is found on the Income Statement.

Net Recovery Value (NRV): The amount of money that would be recovered if the asset was foreclosed upon and sold.

Northeast Dairy Farm Summary: Commonly referred to as the "Blue Book," it is the annual dairy benchmarks published by Farm Credit. Over 500 farms provide information to create the benchmarks.

Production Efficiency: Getting the highest output using the least amount of input, money and time.

Productivity: How productive your assets are. Productivity includes both the quantity and the quality of the product.

Regeneration: The ability to replace assets through biological processes.

Return on Assets (ROA): The ratio of (net income + interest expense) divided by total assets. The higher the ROA, the better the business is doing.

Return on Equity: The ratio of net income to total equity. This ratio shows how much money is being made or lost on the net assets and liabilities in the business. You can multiply the return on equity percentage by the total equity to determine the income coming into the business. For instance, a 5.63% ROE on \$100,000 worth of equity means you are making \$5,630 on the equity in your farm.

Shrink: The loss of inventory of any product, including crops raised, for any reason — theft, damage, spoilage, seasonality, poor quality, etc.

Solvency: When assets are greater than liabilities.

Supply: The relationship between the price and the quantity producers are willing to supply. In general if supply is low, the price will be high and if the supply is high, the price will be low.

Variable Expenses: Expenses that are directly related to the production of a product, generally these expenses increase as production increases.

Variability: The change and unpredictability of something.

ANSWERS TO STUDY QUESTIONS

Chapter 1:

1. What is a goal and how does it fit into successful management of a business?

A goal is a desired outcome that fulfills the need of the business. Goals should be measurable and attainable. Setting a goal is the first step in successful management.

2. How do you determine net income?

Taking total income and subtracting total expenses gives net income. This formula is also shown on the income statement.

3. What are the three main financial statements mentioned in this chapter and what do they show?

The three main financial statements mentioned in this chapter are the balance sheet, the income statement and the cash flow statement. The balance sheet shows assets, liabilities and net worth. The income statement shows income, expenses and net income. The cash flow statement shows the cash sources and uses of the business.

4. Which accounting system is generally more accurate when it comes to showing actual profitability?

The accrual accounting system is more accurate than the cash accounting system when it comes to measuring a profit. This is because the accrual accounting system includes accounts receivable (money owed to you) and accounts payable (money you owe others) giving a more accurate picture of profit.



DID YOU KNOW?

Chicks use a tooth at the end of their beak to break out of their shell. This tooth falls off after they hatch.

5. If a business shows a net income of \$50,000 on the cash income statement, but there is \$5,000 in accounts receivable, what would net income be on an accrual income statement?

Because a balance in accounts receivable would increase the total income earned, you would add \$5,000 to the net income on the cash statement. Thus, an accrual income statement would show a net income of \$55,000.

Chapter 2:

1. What are the two measures of profitability discussed in this chapter and what factors are being measured to determine profitability?

The first measure of profitability was net income. Net income is the income earned minus the expenses paid. Net income is a dollar value of what the business' profitability was. The other measure of profitability was return on assets (ROA). ROA shows the ratio of net income to total assets. Instead of showing a dollar amount of profitability, this measure gives a percentage that represents the amount of income earned per dollar worth of assets. This is a good measure of profitability to use when comparing businesses that are different sizes or determining efficiency.

2. Name three factors that can change the price for a product.

Three factors that can change a price for a product are; a change in consumer preferences, a change in supply, and a change in complimentary goods. A positive change in consumer preferences would increase price because demand would be higher. An increase in supply would decrease the price and a decrease in price of complimentary goods would increase price received.

3. You added a unit of fertilizer to your garden, and 10 more tomato plants grew. So you added another unit of fertilizer, and another 5 tomato plants grew. So you decided to add another unit of fertilizer and no additional plants grew. Will another unit of fertilizer make another tomato plant grow in your garden? Why or why not?

Another unit of fertilizer will not make another plant grow. This is due to the law of diminishing returns. As the amount of fertilizer increased, the amount of tomatoes also increased, but by less every time. The last unit of fertilizer made no additional tomatoes, so we can assume that the next one will either have no affect on tomato production or will decrease the amount of tomatoes produced.

4. What are three variable expenses and what are three fixed expenses?

Variable expenses are crop inputs, feed, fertilizer, labor, and supplies to name a few. Fixed expenses are manager salaries, interest, rent, taxes, depreciation and insurance.

Chapter 3:

1. Benchmark analysis covers many things – briefly explain what historical comparison and business standards are.

Historical comparison is when the business is compared to itself over time. This gives a good idea of how much a business is improving or not improving. For example; if profit keeps on increasing, the business is doing well compared to its past financial data. Business standards are standards for an entire industry that give an idea of how well a business is performing compared to the rest of the industry. These standards are important because although a business is doing well in comparison to historical data, they may be performing at the bottom 25% of the industry.

2. What are SMART goals?

SMART goals are specific, measurable, attainable, realistic and timed. By making sure you set SMART goals, you can guarantee that any goal for your business will be attainable and progress will be able to be measured. This allows you to know exactly how well you are doing and not be frustrated by a lack of clarity of a goal.

Chapter 4:

1. A farm has gross sales of \$105,000 and cost of goods sold is \$75,000; what is the gross margin percentage?

If gross sales is \$105,000 and COGS is \$75,000, then the gross margin must be \$30,000. In order to put that into a percentage you divide by gross sales, so the gross margin percentage is \$30,000 divided by \$105,000 or 28.5%.

2. The “DIRTI 5” are included in what type of expenses? What expenses are included in the “DIRTI 5”?

The “DIRTI 5” are fixed expenses. DIRTI stands for depreciation, interest, repairs, taxes and insurance; these are the most common fixed expenses. Other fixed expenses include accounting fees, rent, utilities and office supplies.

3. Why would you want to look at five-year averages instead of the results from a single year?

Looking at five-year averages instead of a single year's results minimizes the variability of supply, demand and price. In agriculture, supply, demand and price fluctuate a lot due to factors such as weather and markets, thus it is hard to determine if a business is increasing profitability. Using a five-year average helps to smooth out any extreme prices and gives a better picture of the overall trend of the business.

4. Explain what SWOT analysis is and each of the four components of SWOT analysis.

SWOT analysis is a good way to get an overall feel for the business and its objectives. The four components of SWOT analysis are strengths, weaknesses, opportunities and threats. The company can manage strengths and weaknesses by training employees or hiring employees with characteristics the business owner is lacking in. Opportunities and threats cannot be controlled by the company but are good to identify so that an action plan can be made to maximize opportunities and minimize the risk of threats.

Chapter 5:

1. List and briefly explain the five Cs of credit.

- Character – credit history of the business and business owner. It shows everything in the credit history of a person—whether it is good such the business owner has paid back previous loans or negative like declaring bankruptcy.
- Capital – shows how much you owe versus how much you own. It gives a general idea of how well the business is being managed and how solvent it is.
- Capacity – it shows the business's capacity to pay back the loan. The bank is looking at profitability and projected profitability.
- Collateral – anything that could be sold and is worth the value of the loan if you do not pay the bank back. Banks need some sort of guarantee they will get money back and that is collateral.
- Conditions – any other information that is needed before the bank invests in your business. This includes the terms of the loan such as length, amount and time, insurance requirements, and other financial covenants.



Horses may sleep laying down if they feel safe but most of the time they sleep standing up.



DID YOU KNOW?

Pomology is a branch of botany dealing with the cultivation of fruit.

2. What is the difference between Fair Market Value and Net Recovery Value?

Fair market value is the value of an asset determined by the most probable price an asset should bring during a sale occurring under normal market conditions. The net recovery value is what the bank looks at. The net recovery value is the value of an asset the bank can be guaranteed to receive if selling it in a quick time frame. Net recovery value is usually lower than the fair market value.

3. Explain the concept of not borrowing your last dollar. Why is this so important?

Leverage always brings risk with it and repayment capacity is a very important factor in managing risk. The more you borrow, the more resources must be dedicated to making loan payments. Capital position is another concern; with a substantial net worth, you have something to fall back on. The more leverage you take on the more it erodes your financial position. As leverage increases, there comes a point where either you can't afford to repay the loans or you become insolvent. When you reach that point, there are no alternatives because no one will want to lend to you — you are too much of a risk.

4. Why should the interest rate on a loan not be your only consideration when choosing a lender?

Though interest rate on your loan will impact the size of your payments and the amount of your interest expense, these may be the least of your worries — especially as a start-up business. If a lender is willing to give you interest-only terms for the first year while you wait for your strawberries to produce fruit, that may make all the difference in your cash flow. Some banks may offer great rates but have very strict covenants for instance, limited owner draws to \$10,000 in the first two years, or they may require full payments immediately for a Christmas tree farm that has several years before it sells trees. Unless you can live on the amount specified or have other sources of income, it is worth working with a lender that understands agricultural business cycles and is not as strict. Remember that a .5% difference in the interest rate means only a \$1,250 savings a year on a \$250,000 loan.

Chapter 6:

1. What can be the cause of a low gross margin?

Product shrinkage from spoilage and/or theft can cause shrinkage. Purchases for resale that are too expensive or a markup that is too low may also cause a low gross margin.

2. Which of the five keys of profitability indicate the greatest area of opportunity to improve profits on Milk Meister's Farm?

Efficiency is the key of profitability that indicates the greatest area of opportunity to improve profits. Meister's production efficiency left him with 37 cents left of every milk dollar after paying variable costs compared to the profit goal of 50 cents.

3. What expenses would you look at to improve efficiency and which of the two expenses typically offer the most opportunity for improvement?

The expenses that you would look at to improve efficiency are crop costs, livestock costs, labor and feed. Although modifying all these costs will improve efficiency, the labor and feed costs hold the greatest opportunity for efficiency improvement.

SUMMARY OF KEY POINTS

- Five steps of successful management are identifying needs, setting goals and planning, organizing, directing and executing, and monitoring.
- The balance sheet is a financial statement that shows the financial equation: assets – liabilities = net worth.
- The income statement shows the financial equation: income – expenses = net income.
- Cash flow statements explain how much cash is available in the business. Generally the cash available to a business is lower than net income shown on an income statement.
- Cash accounting is an accounting system in which you record income when money is received and you record expenses as they are paid. Accrual accounting records income and expenses at the time they are earned or incurred regardless of the time money exchanges hands.
- It is important to know whether or not you are looking at an accrual or cash statement because accounts payable and accounts receivable can greatly alter the profit or loss of a business.
- Return on assets shows how much money is being earned compared to the business's asset base. The higher the ROA, the more efficient the business is in production.
- Supply and demand play a crucial role on how much is produced and what price is paid.
- The law of diminishing returns states that for each additional input added into the production process, the amount of additional output decreases.
- The four key factors to making a profit are capacity, productivity, efficiency and cost control.
- Variable expenses are those expenses that vary with the level of production. Fixed expenses are those expenses that are incurred regardless of the level of production.
- Benchmark analysis allows for the comparison of a business against a set standard for purposes of evaluating the business's performance.
- Historical comparison is a type of benchmarking in which the business is compared to the historical data from the company.
- Business standards are good for comparisons to an entire industry but comparison to peers such as the "Blue Book" for dairy farmers can give a better picture of the local industry and how you are doing.
- Planning is important — setting SMART goals would be the right type of goal for the business.
- Gross margin is gross sales minus the cost of goods sold.
- Five-year averages remove the variability of supply and demand to give a more accurate picture of trends in your business.
- SWOT analysis is very useful when determining the current state of the business.
- The 5 Cs of credit are character, capital, capacity, collateral and conditions.
- Aside from credit worthiness, the bank may have some other conditions before issuing a loan such as insurance requirements.



DID YOU KNOW?

36 apples will make one gallon of apple cider.

- There are many sources of financing — Farm Credit (Farm Credit East or sister organizations), Farm Service Agency, sellers, commercial banks and angel investors.
- Retail Management should include the tracking of your gross margin by departments and products.
- A net margin as a percentage of sales of around ten percent is a typical retail standard.
- Tracking customer purchases allows you to see how sales per customer is affected by changes.
- The case study analysis showed that direct payroll costs were high and marketing expenses low compared to benchmark standards.
- Looking at the five keys of profitability is a good place to begin when analyzing a business. The keys are gross revenue, efficiency, capacity, industry skills and cost control.



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FARM CREDIT EAST

HARVESTING A PROFIT

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