Personal Finance

Preface

This text has an attitude: that in addition to providing sources of practical information, it should introduce you to a way of thinking about your personal financial decisions. This should lead you to thinking harder and farther about the larger and longer consequences of your decisions. Many of the more practical aspects of personal finance will change over time, as practices, technologies, intermediaries, customs, and laws change, but a fundamental awareness of ways to think well about solving financial questions can always be useful. Some of the more practical ideas may be obviously and immediately relevant—and some not—but decision-making and research skills are lasting.

You may be enrolled in a traditional two- or four-year degree program or may just be taking the course for personal growth. You may be of any age and may have already done more or less academic and experiential learning. You may be a business major, with some prerequisite knowledge of economics or level of accounting or math skills, or you may be filling in an elective and have no such skills. In fact, although they enhance personal finance decisions, such skills are not necessary. Software, downloadable applications, and calculators perform ever more sophisticated functions with ever more approachable interfaces. The emphasis in this text is on understanding the fundamental relationships behind the math and being able to use that understanding to make better decisions about your personal finances.

Entire tomes, both academic texts and trade books, have been and will be written about any of the subjects featured in each chapter of this text. The idea here is to introduce you to the practical and conceptual framework for making personal financial decisions in the larger context of your life, and in the even larger context of your individual life as part of a greater economy of financial participants.

Structure

The text may be divided into five sections:

1. Learning Basic Skills, Knowledge, and Context (Chapter 1 "Personal Financial Planning"–Chapter 6 "Taxes and Tax Planning")
2. Getting What You Want (Chapter 7 "Financial Management"–Chapter 9 "Buying a Home")
3. Protecting What You've Got (Chapter 10 "Personal Risk Management: Insurance"–Chapter 11 "Personal Risk Management: Retirement and Estate Planning")
4. Building Wealth (Chapter 12 "Investing"–Chapter 17 "Investing in Mutual Funds, Commodities, Real Estate, and Collectibles")
5. How to Get Started (Chapter 18 "Career Planning")

This structure is based on the typical life cycle of personal financial decisions, which in turn is based on the premise that in a market economy, an individual participates by trading something of value: labor or capital. Most of us start with nothing to trade but labor. We hope to sustain our desired lifestyle on the earnings from labor and to gradually (or quickly) amass capital that will then provide additional earnings.

Learning Basic Skills, Knowledge, and Context (Chapter 1 "Personal Financial Planning"–Chapter 6 "Taxes and Tax Planning")

Chapter 1 "Personal Financial Planning" introduces four of its major themes:

- Financial decisions are individual-specific (Section 1.1 "Individual or “Micro” Factors That Affect Financial Thinking").
- Financial decisions are economic decisions (Section 1.2 "Systemic or “Macro” Factors That Affect Financial Thinking").
- Financial decision making is a continuous process (Section 1.3 "The Planning Process").
- Professional advisors work for financial decision makers (Section 1.4 "Financial Planning Professionals").

These themes emphasize the idiosyncratic, systemic, and continuous nature of personal finance, putting decisions within the larger contexts of an entire lifetime and an economy.

Chapter 2 "Basic Ideas of Finance" introduces the basic financial and accounting categories of revenues, expenses, assets, liabilities, and net worth as tools to understand the relationships between them as a way, in turn, of organizing financial thinking. It also introduces the concepts of opportunity costs and sunk costs as implicit but critical considerations in financial thinking.

Chapter 3 "Financial Statements" continues with the discussion of organizing financial data to help in decision making and introduces basic analytical tools that can be used to clarify the situation portrayed in financial statements.

Chapter 4 "Evaluating Choices: Time, Risk, and Value" introduces the critical relationships of time and risk to value. It demonstrates the math but focuses on the role that those relationships play in financial thinking, especially in comparing and evaluating choices in making financial decisions.

Chapter 5 "Financial Plans: Budgets" demonstrates how organized financial data can be used to create a plan, monitor progress, and adjust goals.

Chapter 6 "Taxes and Tax Planning" discusses the role of taxation in personal finance and its effects on earnings and on accumulating wealth. The chapter emphasizes the

types, purposes, and impacts of taxes; the organization of resources for information; and the areas of controversy that lead to changes in the tax rules.

Getting What You Want (Chapter 7 "Financial Management"–Chapter 9 "Buying a Home")

Chapter 7 "Financial Management" focuses on financing consumption using current earnings and/or credit, and financing longer-term assets with debt.

Chapter 8 "Consumer Strategies" discusses purchasing decisions, starting with recurring consumption, and then goes into detail on the purchase of a car, a more significant and longer-term purchase both in terms of its use and financing.

Chapter 9 "Buying a Home" applies the ideas developed in the previous chapter to what, for most people, will be the major purchase: a home. The chapter discusses its role both as a living expense and an investment, as well as the financing and financial consequences of the purchase.

Protecting What You've Got (Chapter 10 "Personal Risk Management: Insurance"–Chapter 11 "Personal Risk Management: Retirement and Estate Planning")

Chapter 10 "Personal Risk Management: Insurance" introduces the idea of incorporating risk management into financial planning. An awareness of the need for risk management often comes with age and experience. This chapter focuses on planning for the unexpected. It progresses from the more obvious risks to property to the less obvious risks, such as the possible inability to earn due to temporary ill health, permanent disability, or death.

Chapter 11 "Personal Risk Management: Retirement and Estate Planning" focuses on planning for the expected: retirement, loss of income from wages, and the subsequent distribution of assets after death. Retirement planning discusses ways to develop alternative sources of income from capital that can eventually substitute for wages. Estate planning also touches on the considerations and mechanics of distributing accumulated wealth.

Building Wealth (Chapter 12 "Investing"–Chapter 17 "Investing in Mutual Funds, Commodities, Real Estate, and Collectibles")

Chapter 12 "Investing" presents basic information about investment instruments and markets and explains the classic relationships of risk and return developed in modern portfolio theory.

Chapter 13 "Behavioral Finance and Market Behavior" then digresses from classical theory to take a look at how both personal and market behavior can deviate from the classic risk-return relationships and the consequences for personal financial planning and thinking.

Chapter 14 "The Practice of Investment" looks at the mechanics of the investment process, discussing issues of technology, the investor-broker relationship, and the differences between domestic and international investing.

Chapter 15 "Owning Stocks", Chapter 16 "Owning Bonds", and Chapter 17 "Investing in Mutual Funds, Commodities, Real Estate, and Collectibles" look at investments commonly made by individual investors and their use in and risks for building wealth as part of a diverse investment strategy.

How to Get Started (Chapter 18 "Career Planning")

Chapter 18 "Career Planning" brings the planning process full circle with a discussion on how to think about getting started, that is, deciding how to approach the process of selling your labor. The chapter introduces the idea of selling labor as a consumable commodity to employers in the labor market and explores how to search and apply for a job in light of its strategic as well as immediate potential.

Chapter 1

Personal Financial Planning

Introduction

Bryon and Tomika are just one semester shy of graduating from a state college. Bryon is getting a degree in protective services and is thinking of going for certification as a fire protection engineer, which would cost an additional $4,500. With his protective services degree many other fields will be open to him as well—from first responder to game warden or correctional officer. Bryon will have to specialize immediately and wants a job in his state that comes with some occupational safety and a lot of job security.

Tomika is getting a Bachelor of Science degree in medical technology and hopes to parlay that into a job as a lab technician. She has interviews lined up at a nearby regional hospital and a local pharmaceutical firm. She hopes she gets the hospital job because it pays a little better and offers additional training on site. Both Bryon and Tomika will need additional training to have the jobs they want, and they are already in debt for their educations.

Tomika qualified for a Stafford loan, and the federal government subsidizes her loan by paying the interest on it until six months after she graduates. She will owe about $40,000 of principal plus interest at a fixed annual rate of 6.8 percent. Tomika plans to start working immediately on graduation and to take classes on the job or at night for as long as it takes to get the extra certification she needs. Unsubsidized, the extra training would cost about $3,500. She presently earns about $5,000 a year working weekends as a home health aide and could easily double that after she graduates. Tomika also qualified for a Pell grant of around $5,000 each year she was a full-time student, which has paid for her rooms in an off-campus student co-op housing unit. Bryon also lives there, and that's how they met.

Bryon would like to get to a point in his life where he can propose marriage to Tomika and looks forward to being a family man one day. He was awarded a service scholarship from his hometown and received windfall money from his grandmother's estate after she died in his sophomore year. He also borrowed $30,000 for five years at only 2.25 percent interest from his local bank through a family circle savings plan. He has been attending classes part-time year-round so he can work to earn money for college and living expenses. He earns about $19,000 a year working for catering services. Bryon feels very strongly about repaying his relatives who have helped finance his education and also is willing to help Tomika pay off her Stafford loan after they marry.

Tomika has $3,000 in U.S. Treasury Series EE savings bonds, which mature in two years, and has managed to put aside $600 in a savings account earmarked for clothes and gifts. Bryon has sunk all his savings into tuition and books, and his only other asset

is his trusty old pickup truck, which has no liens and a trade-in value of $3,900. For both Tomika and Bryon, having reliable transportation to their jobs is a concern. Tomika hopes to continue using public transportation to get to a new job after graduation. Both Bryon and Tomika are smart enough about money to have avoided getting into credit card debt. Each keeps only one major credit card and a debit card and with rare exceptions pays statements in full each month.

Bryon and Tomika will have to find new housing after they graduate. They could look for another cooperative housing opportunity or rent apartments, or they could get married now instead of waiting. Bryon also has a rent-free option of moving in temporarily with his brother. Tomika feels very strongly about saving money to buy a home and wants to wait until her career is well established before having a child. Tomika is concerned about getting good job benefits, especially medical insurance and family leave. Although still young, Bryon is concerned about being able to retire, the sooner the better, but he has no idea how that would be possible. He thinks he would enjoy running his own catering firm as a retirement business some day.

Tomika's starting salary as a lab technician will be about $30,000, and as a fire protection engineer, Bryon would have a starting salary of about $38,000. Both have the potential to double their salaries after fifteen years on the job, but they are worried about the economy. Their graduations are coinciding with a downturn. Aside from Tomika's savings bonds, she and Bryon are not in the investment market, although as soon as he can Bryon wants to invest in a diversified portfolio of money market funds that include corporate stocks and municipal bonds. Nevertheless, the state of the economy affects their situation. Money is tight and loans are hard to get, jobs are scarce and highly competitive, purchasing power and interest rates are rising, and pension plans and retirement funds are at risk of losing value. It's uncertain how long it will be before the trend reverses, so for the short term, they need to play it safe. What if they can't land the jobs they're preparing for?

Tomika and Bryon certainly have a lot of decisions to make, and some of those decisions have high-stakes consequences for their lives. In making those decisions, they will have to answer some questions, such as the following:

1. What individual or personal factors will affect Tomika's and Bryon's financial thinking and decision making?
2. What are Bryon's best options for job specializations in protective services? What are Tomika's best options for job placement in the field of medical technology?
3. When should Bryon and Tomika invest in the additional job training each will need, and how can they finance that training?
4. How will Tomika pay off her college loan, and how much will it cost? How soon can she get out of debt?
5. How will Bryon repay his loan reflecting his family's investment in his education?
6. What are Tomika's short-term and long-term goals? What are Bryon's? If they marry, how well will their goals mesh or need to adjust?
7. What should they do about medical insurance and retirement needs?
8. What should they do about saving and investing?

9. What should they do about getting married and starting a family?
10. What should they do about buying a home and a car?
11. What is Bryon's present and projected income from all sources? What is Tomika's?
12. What is the tax liability on their present incomes as singles? What would their tax liability be on their future incomes if they filed jointly as a married couple?
13. What budget categories would you create for Tomika's and Bryon's expenses and expenditures over time?
14. How could Tomika and Bryon adjust their budgets to meet their short-term and long-term goals?
15. On the basis of your analysis and investigations, what five-year financial plan would you develop for Tomika and Bryon?
16. How will larger economic factors affect the decisions Bryon and Tomika make and the outcomes of those decisions?

You will make financial decisions all your life. Sometimes you can see those decisions coming and plan deliberately; sometimes, well, stuff happens, and you are faced with a more sudden decision. Personal financial planning is about making deliberate decisions that allow you to get closer to your goals or sudden decisions that allow you to stay on track, even when things take an unexpected turn.

The idea of personal financial planning is really no different from the idea of planning most anything: you figure out where you'd like to be, where you are, and how to go from here to there. The process is complicated by the number of factors to consider, by their complex relationships to each other, and by the profound nature of these decisions, because how you finance your life will, to a large extent, determine the life that you live. The process is also, often enormously, complicated by risk: you are often making decisions with plenty of information, but little certainty or even predictability.

Personal financial planning is a lifelong process. Your time horizon is as long as can be—until the very end of your life—and during that time your circumstances will change in predictable and unpredictable ways. A financial plan has to be re-evaluated, adjusted, and re-adjusted. It has to be flexible enough to be responsive to unanticipated needs and desires, robust enough to advance toward goals, and all the while be able to protect from unimagined risks.

One of the most critical resources in the planning process is information. We live in a world awash in information—and no shortage of advice—but to use that information well you have to understand what it is telling you, why it matters, where it comes from, and how to use it in the planning process. You need to be able to put that information in context, before you can use it wisely. That context includes factors in your individual situation that affect your financial thinking, and factors in the wider economy that affect your financial decision making.

1.1 Individual or "Micro" Factors That Affect Financial Thinking

LEARNING OBJECTIVES

1. List individual factors that strongly influence financial thinking.
2. Discuss how income, income needs, risk tolerance, and wealth are affected by individual factors.
3. Explain how life stages affect financial decision making.
4. Summarize the basis of sound financial planning.

The circumstances or characteristics of your life influence your financial concerns and plans. What you want and need—and how and to what extent you want to protect the satisfaction of your wants and needs—all depend on how you live and how you'd like to live in the future. While everyone is different, there are common circumstances of life that affect personal financial concerns and thus affect everyone's financial planning. Factors that affect personal financial concerns are family structure, health, career choices, and age.

Family Structure

Marital status and dependents, such as children, parents, or siblings, determine whether you are planning only for yourself or for others as well. If you have a spouse or dependents, you have a financial responsibility to someone else, and that includes a responsibility to include them in your financial thinking. You may expect the dependence of a family member to end at some point, as with children or elderly parents, or you may have lifelong responsibilities to and for another person.

Partners and dependents affect your financial planning as you seek to provide for them, such as paying for children's education. Parents typically want to protect or improve the quality of life for their children and may choose to limit their own fulfillment to achieve that end.

Providing for others increases income needs. Being responsible for others also affects your attitudes toward and tolerance of risk. Typically, both the willingness and ability to assume risk diminishes with dependents, and a desire for more financial protection grows. People often seek protection for their income or assets even past their own lifetimes to ensure the continued well-being of partners and dependents. An example is a life insurance policy naming a spouse or dependents as beneficiaries.

Health

Your health is another defining circumstance that will affect your expected income needs and risk tolerance and thus your personal financial planning. Personal financial planning should include some protection against the risk of chronic illness, accident, or long-term disability and some provision for short-term events, such as pregnancy and birth. If your health limits your earnings or ability to work or adds significantly to your expenditures, your income needs may increase. The need to protect yourself against further limitations or increased costs may also increase. At the same time your tolerance for risk may decrease, further affecting your financial decisions.

Career Choice

Your career choices affect your financial planning, especially through educational requirements, income potential, and characteristics of the occupation or profession you choose. Careers have different hours, pay, benefits, risk factors, and patterns of advancement over time. Thus, your financial planning will reflect the realities of being a postal worker, professional athlete, commissioned sales representative, corporate lawyer, freelance photographer, librarian, building contractor, tax preparer, professor, Web site designer, and so on. For example, the careers of most athletes end before middle age, have higher risk of injury, and command steady, higher-than-average incomes, while the careers of most sales representatives last longer with greater risk of unpredictable income fluctuations. Figure 1.1 "Median Salary Comparisons by Profession" compares the median salaries of certain careers.

Figure 1.1 Median Salary Comparisons by Profession[1]

Profession	Median Salary
Accountant	54,600
Personal Financial Advisor	66,100
Sports Competitor	41,100
Interior Designer	42,300
Substance Abuse Social Worker	35,400
Computer Programmer	65,500
Elementary School Teacher	45,600
Cafeteria Cook	20,400
Dentist	132,000
Pharmacist	94,500
Lawyer	102,500
Sales Manager	91,600
Fire Fighter	41,200
Lab Technician	32,800

Most people begin their independent financial lives by selling their labor to create an income by working. Over time they may choose to change careers, develop additional sources of concurrent income, move between employment and self-employment, or become unemployed or reemployed. Along with career choices, all these changes affect personal financial management and planning.

Age

Needs, desires, values, and priorities all change over a lifetime, and financial concerns change accordingly. Ideally, personal finance is a process of management and planning that anticipates or keeps abreast with changes. Although everyone is different, some financial concerns are common to or typical of the different stages of adult life. Analysis of **life stages** is part of financial planning.

At the beginning of your adult life, you are more likely to have no dependents, little if any accumulated wealth, and few **assets**. (Assets are resources that can be used to create income, decrease expenses, or store wealth as an investment.) As a young adult you also are likely to have comparatively small income needs, especially if you are providing only for yourself. Your employment income is probably your primary or sole source of income. Having no one and almost nothing to protect, your willingness to assume risk is usually high. At this point in your life, you are focused on developing your career and increasing your earned income. Any investments you may have are geared toward growth.

As your career progresses, income increases but so does spending. Lifestyle expectations increase. If you now have a spouse and dependents and elderly parents to look after, you have additional needs to manage. In middle adulthood you may also be acquiring more assets, such as a house, a retirement account, or an inheritance.

As income, spending, and asset base grow, ability to assume risk grows, but willingness to do so typically decreases. Now you have things that need protection: dependents and assets. As you age, you realize that *you* require more protection. You may want to stop working one day, or you may suffer a decline in health. As an older adult you may want to create alternative sources of income, perhaps a retirement fund, as insurance against a loss of employment or income. Figure 1.3 "Financial Decisions Related to Life Stages" suggests the effects of life stages on financial decision making.

Figure 1.3 Financial Decisions Related to Life Stages

	Young Adulthood	Middle Adulthood	Older Adulthood	Retirement
Source of Income	Wages	Wages/ Investment	Wages/ Investment	Investment
Asset Base	None	Accumulating	Growing	Using up
Expenses	Low	Growing	Growing	Low
Risk: Ability	Low	Higher	Higher	High
Risk: Willingness	High	Lower	Lower	Low

Early and middle adulthoods are periods of building up: building a family, building a career, increasing earned income, and accumulating assets. Spending needs increase, but so do investments and alternative sources of income.

Later adulthood is a period of spending down. There is less reliance on earned income and more on the accumulated wealth of assets and investments. You are likely to be without dependents, as your children have grown up or your parents passed on, and so without the responsibility of providing for them, your expenses are lower. You are likely to have more leisure time, especially after retirement.

Without dependents, spending needs decrease. On the other hand, you may feel free to finally indulge in those things that you've "always wanted." There are no longer dependents to protect, but assets demand even more protection as, without employment, they are your only source of income. Typically, your ability to assume risk is high because of your accumulated assets, but your willingness to assume risk is low, as you are now dependent on those assets for income. As a result, risk tolerance decreases: you are less concerned with increasing wealth than you are with protecting it.

Effective financial planning depends largely on an awareness of how your current and future stages in life may influence your financial decisions.

KEY TAKEAWAYS

- Personal circumstances that influence financial thinking include family structure, health, career choice, and age.
- Family structure and health affect income needs and risk tolerance.
- Career choice affects income and wealth or asset accumulation.

- Age and stage of life affect sources of income, asset accumulation, spending needs, and risk tolerance.
- Sound personal financial planning is based on a thorough understanding of your personal circumstances and goals.

EXERCISES

1. You may be surprised at what you discover. In the process, consider how information in this text specifically relates to your observations and insights. Reading this chapter, for example, identify and describe your current life stage. How does your current age or life stage affect your financial thinking and behavior? To what extent and in what ways does your financial thinking anticipate your next stage of life? What financial goals are you aware of that you have set? How are your current experiences informing your financial planning for the future?
2. Continue your personal financial journal by describing how other micro factors, such as your present family structure, health, career choices, and other individual factors, are affecting your financial planning. The My Notes feature allows you to share given entries or to keep them private. You can save your notes. You also can highlight and right click on your notes to copy and paste them into a word document on your computer.
3. Find the age range for your stage of life and read the advice at http://financialplan.about.com/od/moneybyageorlifestage/Money_and_Personal_Finance_by_Age_Life_Stage.htm. According to the articles on this page, what should be your top priorities in financial planning right now? Read the articles on the next life stage. How are your financial planning priorities likely to change?

[1] Based on data from http://www.careeroverview.com/salary-benefits.html (accessed November 21, 2009).

1.2 Systemic or "Macro" Factors That Affect Financial Thinking

LEARNING OBJECTIVES

1. Identify the systemic or macro factors that affect personal financial planning.
2. Describe the impact of inflation or deflation on disposable income.
3. Describe the effect of rising unemployment on disposable income.
4. Explain how economic indicators can have an impact on personal finances.

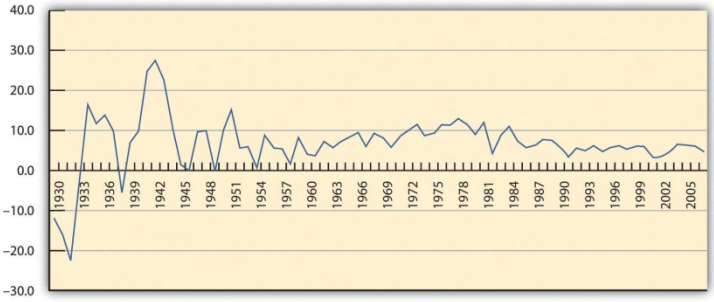
Financial planning has to take into account conditions in the wider economy and in the markets that make up the economy. The **labor market**, for example, is where labor is traded through hiring or employment. Workers compete for jobs and employers compete for workers. In the **capital market**, capital (cash or assets) is traded, most commonly in the form of stocks and bonds (along with other ways to package capital). In the **credit market**, a part of the capital market, capital is loaned and borrowed rather than bought and sold. These and other markets exist in a dynamic economic environment, and those environmental realities are part of sound financial planning.

In the long term, history has proven that an economy can grow over time, that investments can earn returns, and that the value of currency can remain relatively stable. In the short term, however, that is not continuously true. Contrary or unsettled periods can upset financial plans, especially if they last long enough or happen at just the wrong time in your life. Understanding large-scale economic patterns and factors that indicate the health of an economy can help you make better financial decisions. These systemic factors include, for example, business cycles and employment rates.

Business Cycles

An economy tends to be productive enough to provide for the wants of its members. Normally, economic output increases as population increases or as people's expectations grow. An economy's output or productivity is measured by its **gross domestic product** or GDP, the value of what is produced in a period. When the GDP is increasing, the economy is in an expansion, and when it is decreasing, the economy is in a contraction. An economy that contracts for half a year is said to be in **recession**; a prolonged recession is a **depression**. The GDP is a closely watched barometer of the economy (see Figure 1.4 "GDP Percent Change (Based on Current Dollars)").

Figure 1.4 GDP Percent Change (Based on Current Dollars)[1]



Over time, the economy tends to be cyclical, usually expanding but sometimes contracting. This is called the **business cycle**. Periods of contraction are generally seen as market corrections, or the market regaining its equilibrium, after periods of growth. Growth is never perfectly smooth, so sometimes certain markets become unbalanced and need to correct themselves. Over time, the periods of contraction seem to have become less frequent, as you can see in Figure 1.4 "GDP Percent Change (Based on Current Dollars)". The business cycles still occur nevertheless.

There are many metaphors to describe the cyclical nature of market economies: “peaks and troughs,” “boom and bust,” “growth and contraction,” “expansion and correction,” and so on. While each cycle is born in a unique combination of circumstances, cycles occur because things change and upset economic equilibrium. That is, events change the balance between supply and demand in the economy overall. Sometimes demand grows too fast and supply can’t keep up, and sometimes supply grows too fast for demand. There are many reasons that this could happen, but whatever the reasons, buyers and sellers react to this imbalance, which then creates a change.

Employment Rate

An economy produces not just goods and services to satisfy its members but also jobs, because most people participate in the market economy by trading their labor, and most rely on wages as their primary source of income. The economy therefore must provide opportunity to earn wages so more people can participate in the economy through the market. Otherwise, more people must be provided for in some other way, such as a private or public subsidy (charity or welfare).

The **unemployment rate** is a measure of an economy’s shortcomings, because it shows the proportion of people who want to work but don’t because the economy cannot provide them jobs. There is always some so-called natural rate of unemployment as people move in and out of the workforce as the circumstances of their lives change—for example, as they retrain for a new career or take time out for family. But natural unemployment should be consistently low and not affect the productivity of the economy.

Unemployment also shows that the economy is not efficient, because it is not able to put all its productive human resources to work.

The **employment rate**, or the participation rate of the labor force, shows how successful an economy is at creating opportunities to sell labor and efficiently using its human resources. A healthy market economy uses its labor productively, is productive, and provides employment opportunities as well as consumer satisfaction through its markets. Figure 1.6 "Cyclical Economic Effects" shows the relationship between GDP and unemployment and each stage of the business cycle.

Figure 1.6 Cyclical Economic Effects

	Boom	Expansion	Recession	Depression
Rate of GDP Increase	Unsustainably High	Positive	Negative	Unsustainably Low
Rate of Unemployment	Unsustainably Low	"Natural" or Minimal	Higher	Unsustainably High

At either end of this scale of growth, the economy is in an unsustainable position: either growing too fast, with too much demand for labor, or shrinking, with too little demand for labor.

If there is too much demand for labor—more jobs than workers to fill them—then wages will rise, pushing up the cost of everything and causing prices to rise. Prices usually rise faster than wages, for many reasons, which would discourage consumption that would eventually discourage production and cause the economy to slow down from its "boom" condition into a more manageable rate of growth.

If there is too little demand for labor—more workers than jobs—then wages will fall or, more typically, there will be people without jobs, or unemployment. If wages become low enough, employers theoretically will be encouraged to hire more labor, which would bring employment levels back up. However, it doesn't always work that way, because people have job mobility—they are willing and able to move between economies to seek employment.

If unemployment is high and prolonged, then too many people are without wages for too long, and they are not able to participate in the economy because they have nothing to trade. In that case, the market economy is just not working for too many people, and they will eventually demand a change (which is how most revolutions have started).

Other Indicators of Economic Health

Other economic indicators give us clues as to how "successful" our economy is, how well it is growing, or how well positioned it is for future growth. These indicators include statistics, such as the number of houses being built or existing home sales, orders for

durable goods (e.g., appliances and automobiles), consumer confidence, producer prices, and so on. However, GDP growth and unemployment are the two most closely watched indicators, because they get at the heart of what our economy is supposed to accomplish: to provide diverse opportunities for the most people to participate in the economy, to create jobs, and to satisfy the consumption needs of the most people by enabling them to get what they want.

An expanding and healthy economy will offer more choices to participants: more choices for trading labor and for trading capital. It offers more opportunities to earn a return or an income and therefore also offers more diversification and less risk.

Naturally, everyone would rather operate in a healthier economy at all times, but this is not always possible. Financial planning must include planning for the risk that economic factors will affect financial realities. A recession may increase unemployment, lowering the return on labor—wages—or making it harder to anticipate an increase in income. Wage income could be lost altogether. Such temporary involuntary loss of wage income probably will happen to you during your lifetime, as you inevitably will endure economic cycles.

A hedge against lost wages is investment to create other forms of income. In a period of economic contraction, however, the usefulness of capital, and thus its value, may decline as well. Some businesses and industries are considered immune to economic cycles (e.g., public education and health care), but overall, investment returns may suffer. Thus, during your lifetime business cycles will likely affect your participation in the capital markets as well.

Currency Value

Stable currency value is another important indicator of a healthy economy and a critical element in financial planning. Like anything else, the value of a currency is based on its usefulness. We use currency as a medium of exchange, so the value of a currency is based on how it can be used in trade, which in turn is based on what is produced in the economy. If an economy produces little that anyone wants, then its currency has little value relative to other currencies, because there is little use for it in trade. So a currency's value is an indicator of how productive an economy is.

A currency's usefulness is based on what it can buy, or its **purchasing power**. The more a currency can buy, the more useful and valuable it is. When prices rise or when things cost more, purchasing power decreases; the currency buys less and its value decreases.

When the value of a currency decreases, an economy has **inflation**. Its currency has less value because it is less useful; that is, less can be bought with it. Prices are rising. It takes more units of currency to buy the same amount of goods. When the value of a currency increases, on the other hand, an economy has **deflation**. Prices are falling; the currency is worth more and buys more.

For example, say you can buy five video games for $20. Each game is worth $4, or each dollar buys ¼ of a game. Then we have inflation, and prices—including the price of video games—rise. A year later you want to buy games, but now your $20 only buys two games. Each one costs $10, or each dollar only buys one-tenth of a game. Rising prices have eroded the purchasing power of your dollars.

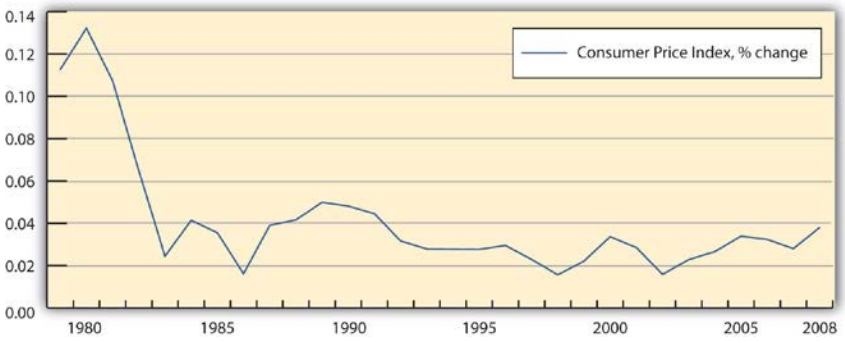
If there is deflation, prices fall, so maybe a year later you could buy ten video games with your same $20. Now each game costs only $2, and each dollar buys half a game. The same amount of currency buys more games: its purchasing power has increased, as has its usefulness and its value (Figure 1.7 "Dynamics of Currency Value").

Figure 1.7 Dynamics of Currency Value

	Inflation	Deflation
Prices	Rise	Fall
Purchasing Power	Decreases	Increases
Currency Value	Falls	Rises

Inflation is most commonly measured by the consumer price indexA measure of inflation or deflation based on a national average of prices for a “basket” of common goods and services purchased by the average consumer. (CPI), an index created and tracked by the federal government. It measures the average nationwide prices of a “basket” of goods and services purchased by the average consumer. It is an accepted way of tracking rising or falling price levels, indicative of inflation or deflation. Figure 1.9 "Inflation, 1979–2008" shows the percent change in the consumer price index as a measure of inflation during the period from 1979 to 2008.

Figure 1.9 Inflation, 1979–2008[2]



Currency instabilities can also affect investment values, because the dollars that investments return don't have the same value as the dollars that the investment was expected to return. Say you lend $100 to your sister, who is supposed to pay you back one year from now. There is inflation, so over the next year, the value of the dollar decreases (it buys less as prices rise). Your sister does indeed pay you back on time, but now the $100 that she gives back to you is worth less (because it buys less) than the $100 you gave her. Your investment, although nominally returned, has lost value: you have your $100 back, but you can't do as much with it; it is less useful.

If the value of currency—the units in which wealth is measured and stored—is unstable, then investment returns are harder to predict. In those circumstances, investment involves more risk. Both inflation and deflation are currency instabilities that are troublesome for an economy and also for the financial planning process. An unstable currency affects the value or purchasing power of income. Price changes affect consumption decisions, and changes in currency value affect investing decisions.

It is human nature to assume that things will stay the same, but financial planning must include the assumption that over a lifetime you will encounter and endure economic cycles. You should try to anticipate the risks of an economic downturn and the possible loss of wage income and/or investment income. At the same time, you should not assume or rely on the windfalls of an economic expansion.

KEY TAKEAWAYS

- Business cycles include periods of expansion and contraction (including recessions), as measured by the economy's productivity (gross domestic product).
- An economy is in an unsustainable situation when it grows too fast or too slowly, as each situation causes too much stress in the economy's markets.

- In addition to GDP, measures of the health of an economy include
  - the rates of employment and unemployment,
  - the value of currency (the consumer price index).
- Financial planning should take into account the fact that periods of inflation or deflation change the value of currency, affecting purchasing power and investment values.

- Thus, personal financial planning should take into account
  - business cycles,
  - changes in the economy's productivity,
  - changes in the currency value,
  - changes in other economic indicators.

EXERCISES

1. Go to http://www.nber.org/cycles.html to see a chart published by the National Bureau of Economic Research. The chart shows business cycles in the United States and their durations between 1854 and 2001. What patterns and trends do you see in these historical data? Which years saw the longest recessions? How can you tell that the U.S. economy has tended to become more stable over the decades?
2. Record in your personal financial journal or in My Notes the macroeconomic factors that are influencing your financial thinking and behavior today. What are some specific examples? How have large-scale economic changes or cycles, such as the economic recession of 2008–2009, affected your financial planning and decision making?
3. How does the health of the economy affect your financial health? How healthy is the U.S. economy right now? On what measures do you base your judgments? How will your appreciation of the big picture help you in planning for your future?
4. How do business cycles and the health of the economy affect the value of your labor? In terms of supply and demand, what are the optimal conditions in which to sell your labor? How might further education increase your mobility in the labor market (the value of your labor)?
5. Brainstorm with others taking this course on effective personal financial strategies for
   a. protecting against recession,
   b. hedging against inflation,
   c. mitigating the effects of deflation,
   d. taking realistic advantage of periods of expansion.

[1] Based on data from the Bureau of Economic Analysis, U.S. Department of Commerce, http://www.bea.gov/national/ (accessed November 21, 2009).

[2] Based on data from the Bureau of Labor Statistics, U.S. Department of Labor, http://www.bls.gov (accessed November 21, 2009).

1.3 The Planning Process

LEARNING OBJECTIVES

1. Trace the steps of the financial planning process and explain why that process needs to be repeated over time.
2. Characterize effective goals and differentiate goals in terms of timing.
3. Explain and illustrate the relationships among costs, benefits, and risks.
4. Analyze cases of financial decision making by applying the planning process.

A financial planning process involves figuring out where you'd like to be, where you are, and how to go from here to there. More formally, a financial planning process means the following:

- Defining goals
- Assessing the current situation
- Identifying choices
- Evaluating choices
- Choosing
- Assessing the resulting situation
- Redefining goals
- Identifying new choices
- Evaluating new choices
- Choosing
- Assessing the resulting situation over and over again

Personal circumstances change, and the economy changes, so your plans must be flexible enough to adapt to those changes, yet be steady enough to eventually achieve long-term goals. You must be constantly alert to those changes but "have a strong foundation when the winds of changes shift."[1]

Defining Goals

Figuring out where you want to go is a process of defining goals. You have shorter-term (1–2 years), intermediate (2–10 years), and longer-term goals that are quite realistic and goals that are more wishful. Setting goals is a skill that usually improves with experience. According to a popular model, to be truly useful goals must be Specific, Measurable, Attainable, Realistic, and Timely (S.M.A.R.T.). Goals change over time, and certainly over a lifetime. Whatever your goals, however, life is complicated and risky, and having a plan and a method to reach your goals increases the odds of doing so.

For example, after graduating from college, Alice has an immediate focus on earning income to provide for living expenses and debt (student loan) obligations. Within the

next decade, she foresees having a family; if so, she will want to purchase a house and perhaps start saving for her children's educations. Her income will have to provide for her increased expenses and also generate a surplus that can be saved to accumulate these assets.

In the long term, she will want to be able to retire and derive all her income from her accumulated assets, and perhaps travel around the world in a sailboat. She will have to have accumulated enough assets to provide for her retirement income and for the travel. Figure 1.10 "Timing, Goals, and Income" shows the relationship between timing, goals, and sources of income.

Figure 1.10 Timing, Goals, and Income

Timing	Goals	Income Source
Short-Term	Reduce Debt	Wages/Salary
Intermediate	Accumulate Assets	Wages/Salary
Long-Term	Create Retirement Income	Investment Returns

Alice's income will be used to meet her goals, so it's important for her to understand where her income will be coming from and how it will help in achieving her goals. She needs to assess her current situation.

Assessing the Current Situation

Figuring out where you are or assessing the current situation involves understanding what your present situation is and the choices that it creates. There may be many choices, but you want to identify those that will be most useful in reaching your goals.

Assessing the current situation is a matter of organizing personal financial information into summaries that can clearly show different and important aspects of financial life—your assets, debts, incomes, and expenses. These numbers are expressed in financial statements—in an income statement, balance sheet, and cash flow statement (topics discussed in Chapter 3 "Financial Statements"). Businesses also use these three types of statements in their financial planning.

For now, we can assess Alice's simple situation by identifying her assets and debts and by listing her annual incomes and expenses. That will show if she can expect a budget surplus or deficit, but more important, it will show how possible her goals are and

whether she is making progress toward them. Even a ballpark assessment of the current situation can be illuminating.

Alice's assets may be a car worth about $5,000 and a savings account with a balance of $250. Debts include a student loan with a balance of $53,000 and a car loan with a balance of $2,700; these are shown in Figure 1.11 "Alice's Financial Situation".

Figure 1.11 Alice's Financial Situation

Assets		Debts	
Car	5,000	Car Loan	2,700
Savings	250	Student Loan	53,000
Total	5,250	Total	55,700

Her annual disposable income (after-tax income or take-home pay) may be $35,720, and annual expenses are expected to be $10,800 for rent and $14,400 for living expenses—food, gas, entertainment, clothing, and so on. Her annual loan payments are $2,400 for the car loan and $7,720 for the student loan, as shown in Figure 1.12 "Alice's Income and Expenses".

Figure 1.12 Alice's Income and Expenses

After tax income	35,720
Rent	10,800
Living expenses	14,400
Remaining for debt reduction and savings	10,520
Student loan payments	7,720
Car loan payments	2,400
Remaining for savings	400

Alice will have an annual budget surplus of just $400 (income = $35,720 − $35,320 [total expenses + loan repayments]). She will be achieving her short-term goal of reducing debt, but with a small annual budget surplus, it will be difficult for her to begin to achieve her goal of accumulating assets.

To reach that intermediate goal, she will have to increase income or decrease expenses to create more of an annual surplus. When her car loan is paid off next year, she hopes to buy another car, but she will have at most only $650 (250 + 400) in savings for a down payment for the car, and that assumes she can save all her surplus. When her student loans are paid off in about five years, she will no longer have student loan payments, and that will increase her surplus significantly (by $7,720 per year) and allow her to put that money toward asset accumulation.

Alice's long-term goals also depend on her ability to accumulate productive assets, as she wants to be able to quit working and live on the income from her assets in retirement. Alice is making progress toward meeting her short-term goals of reducing debt, which she must do before being able to work toward her intermediate and long-term goals. Until she reduces her debt, which would reduce her expenses and increase her income, she will not make progress toward her intermediate and long-term goals.

Assessing her current situation allows Alice to see that she has to delay accumulating assets until she can reduce expenses by reducing debt (and thus her student loan payments). She is now reducing debt, and as she continues to do so, her financial situation will begin to look different, and new choices will be available to her.

Alice learned about her current situation from two simple lists: one of her assets and debts and the other of her income and expenses. Even in this simple example it is clear that the process of articulating the current situation can put information into a very useful context. It can reveal the critical paths to achieving goals.

Evaluating Alternatives and Making Choices

Figuring out how to go from here to there is a process of identifying immediate choices and longer-term strategies or series of choices. To do this, you have to be realistic and yet imaginative about your current situation to see the choices it presents and the future choices that current choices may create. The characteristics of your living situation—family structure, age, career choice, health—and the larger context of the economic environment will affect or define the relative value of your choices.

After you have identified alternatives, you evaluate each one. The obvious things to look for and assess are its costs and benefits, but you also want to think about its risks, where it will leave you, and how well positioned it will leave you to make the next decision. You want to have as many choices as you can at any point in the process, and you want your choices to be well diversified. That way, you can choose with an understanding of how this choice will affect the next choices and the next. The further along in the process you can think, the better you can plan.

In her current situation, Alice is reducing debt, so one choice would be to continue. She could begin to accumulate assets sooner, and thus perhaps more of them, if she could reduce expenses to create more of a budget surplus. Alice looks over her expenses and decides she really can't cut them back much. She decides that the alternative of reducing expenses is not feasible. She could increase income, however. She has two choices: work a second job or go to Las Vegas to play poker.

Alice could work a second, part-time job that would increase her after-tax income but leave her more tired and with less time for other interests. The economy is in a bit of a slump too—unemployment is up a bit—so her second job probably wouldn't pay much. She could go to Vegas and win big, with the cost of the trip as her only expense. To evaluate her alternatives, Alice needs to calculate the benefits and costs of each (Figure 1.13 "Alice's Choices: Benefits and Costs").

Figure 1.13 Alice's Choices: Benefits and Costs

Choices	Benefit	Explicit Cost	Implicit Cost
Continue	Reduce debt	None	None
Second Job	Reduce debt and increase surplus a little (more income)	None	Give up leisure pursuits
Vegas	Eliminate debt and increase surplus a lot (no debt payments)	Airfare and hotel in Vegas	Risk of increased deficit and debt

Laying out Alice's choices in this way shows their consequences more clearly. The alternative with the biggest benefit is the trip to Vegas, but that also has the biggest cost because it has the biggest risk: if she loses, she could have even more debt. That would put her further from her goal of beginning to accumulate assets, which would have to be postponed until she could eliminate that new debt as well as her existing debt.

Thus, she would have to increase her income and decrease her expenses. Simply continuing as she does now would no longer be an option because the new debt increases her expenses and creates a budget deficit. Her only remaining alternative to increase income would be to take the second job that she had initially rejected because of its implicit cost. She would probably have to reduce expenses as well, an idea she initially rejected as not even being a reasonable choice. Thus, the risk of the Vegas option is that it could force her to "choose" alternatives that she had initially rejected as too costly.

Figure 1.15 Considering Risk in Alice's Choice

The Vegas option becomes least desirable when its risk is included in the calculations of its costs, especially as they compare with its benefits.

Its obvious risk is that Alice will lose wealth, but its even costlier risk is that it will limit her future choices. Without including risk as a cost, the Vegas option looks attractive, which is, of course, why Vegas exists. But when risk is included, and when the decision involves thinking strategically not only about immediate consequences but also about the choices it will preserve or eliminate, that option can be seen in a very different light (Figure 1.16 "Alice's Choices: Benefits and More Costs").

Figure 1.16 Alice's Choices: Benefits and More Costs

Choices	Benefit	Explicit Cost	Implicit Cost	Strategic Cost
Continue	Reduce debt	None	None	Preserves alternatives
Second Job	Reduce debt and increase surplus a little (more income)	None	Give up leisure pursuits	Preserves alternatives
Vegas	Eliminate debt and increase surplus a lot (no debt payments)	Airfare and hotel in Vegas	Risk of increased deficit and debt	Eliminates alternatives

You may sometimes choose an alternative with less apparent benefit than another but also with less risk. You may sometimes choose an alternative that provides less

immediate benefit but more choices later. Risk itself is a cost, and choice a benefit, and they should be included in your assessment.

KEY TAKEAWAYS

- Financial planning is a recursive process that involves
  - defining goals,
  - assessing the current situation,
  - identifying choices,
  - evaluating choices,
  - choosing.
- Choosing further involves assessing the resulting situation, redefining goals, identifying new choices, evaluating new choices, and so on.
- Goals are shaped by current and expected circumstances, family structure, career, health, and larger economic forces.
- Depending on the factors shaping them, goals are short-term, intermediate, and long-term.
- Choices will allow faster or slower progress toward goals and may digress or regress from goals; goals can be eliminated.
- You should evaluate your feasible choices by calculating the benefits, explicit costs, implicit costs, and the strategic costs of each one.

EXERCISES

1. Assess and summarize your current financial situation. What measures are you using to describe where you are? Your assessment should include an appreciation of your financial assets, debts, incomes, and expenses.

2. Use the S.M.A.R.T. planning model and information in this section to evaluate Alice's goals. Write your answers in your financial planning journal or My Notes and discuss your evaluations with classmates.
   a. Pay off student loan
   b. Buy a house and save for children's education
   c. Accumulate assets

d. Retire

e. Travel around the world in a sailboat

Identify and prioritize your immediate, short-term, and long-term goals at this time in your life. Why will you need different strategies to achieve these goals? For each goal identify a range of alternatives for achieving it. How will you evaluate each alternative before making a decision?

4. In your personal financial journal or My Notes record specific examples of your use of the following kinds of strategies in making financial decisions:
   a. Weigh costs and benefits
   b. Respond to incentives
   c. Learn from experience
   d. Avoid a feared consequence or loss
   e. Avoid risk
   f. Throw caution to the wind

On average, would you rate yourself as more of a rational than nonrational financial decision maker?

[1] "Forever Young," music and lyrics by Bob Dylan.

1.4 Financial Planning Professionals

LEARNING OBJECTIVES

1. Identify the professions of financial advisors.
2. Discuss how training and compensation may affect your choice of advisor.
3. Describe the differences between objective and subjective advice and how that may affect your choice of advisor.
4. Discuss how the kind of advice you need may affect your choice of advisor.

Even after reading this book, or perhaps especially after reading this book, you may want some help from a professional who specializes in financial planning. As with any professional that you go to for advice, you want expertise to help make your decisions, but in the end, you are the one who will certainly have to live with the consequences of your decisions, and you should make your own decisions.

There are a multitude of **financial advisors** to help with financial planning, such as accountants, investment advisors, tax advisors, estate planners, or insurance agents. They have different kinds of training and qualifications, different educations and backgrounds, and different approaches to financial planning. To have a set of initials after their name, all have met educational and professional experience requirements and have passed exams administered by professional organizations, testing their knowledge in the field. Figure 1.17 "Professional Classifications" provides a perspective on the industry classifications of financial planning professionals.

Figure 1.17 Professional Classifications

CPA	Certified Public Accountant	• Qualified to audit publicly traded corporations • Often does accounting for individuals, especially tax accounting • Often helps with financial planning and advising, especially tax planning	• Certified by the American Institute of Certified Public Accountants (AICPA)
CA (Canada)	Chartered Accountant	• Canadian equivalent of a U.S. CPA	• Certified by the Canadian Institute of Chartered Accountants (CICA)
CCA (UK; recognized globally)	Chartered Certified Accountant	• UK equivalent of U.S. CPA	• Certified by the Association of Chartered Certified Accountants (ACCA)
CFA (recognized globally)	Chartered Financial Analyst	• Works in the investment professions or banking • Focuses on financial analysis • Often advises on personal strategies for building and managing wealth through an investment portfolio	• Chartered by the Chartered Financial Analyst Institute
CFP (recognized globally)	Certified Financial Planner	• Trained to assist with all aspects of the financial planning process	• Certified by the Certified Financial Planner Board of Standards, Inc.
ChFC	Chartered Financial Consultant	• Trained to assist with aspects of the personal financial planning process relating to life insurance	• Chartered by The American College
CLU	Chartered Life Underwriter	• Trained to structure and sell life insurance	• Chartered by The American College
AFC	Accredited Financial Counselor	• Assists with financial planning	• Certified by the Association for Financial Counseling and Planning Education (AFCPE)
AEC	Accredited Estate Counselor	• Specializes in the disposal of assets and wealth after someone's death	• Certified by the National Association of Estate Planners and Councils
RIA	Registered Investment Adviser	• Advises on investment management	• Registered with the Securities and Exchange Commission (U.S. government agency)
EA	Enrolled Agent	• Advises on tax issues	• Certified by the Internal Revenue Service (of the U.S.)

Certifications are useful because they indicate training and experience in a particular aspect of financial planning. When looking for advice, however, it is important to

understand where the advisor's interests lie (as well as your own). It is always important to know where your information and advice come from and what that means for the quality of that information and advice. Specifically, how is the advisor compensated?

Some advisors just give, and get paid for, advice; some are selling a product, such as a particular investment or mutual fund or life insurance policy, and get paid when it gets sold. Others are selling a service, such as brokerage or mortgage servicing, and get paid when the service is used. All may be highly ethical and well intentioned, but when choosing a financial planning advisor, it is important to be able to distinguish among them.

Sometimes a friend or family member who knows you well and has your personal interests in mind may be a great resource for information and advice, but perhaps not as objective or knowledgeable as a disinterested professional. It is good to diversify your sources of information and advice, using professional and "amateur," subjective and objective advisors. As always, diversification decreases risk.

Now you know a bit about the planning process, the personal factors that affect it, the larger economic contexts, and the business of financial advising. The next steps in financial planning get down to details, especially how to organize your financial information to see your current situation and how to begin to evaluate your alternatives.

References to Professional Organizations

The references that follow provide information for further research on the professionals and professional organizations mentioned in the chapter.

- American Institute of Certified Public Accountants (AICPA):http://www.aicpa.org.
- Canadian Institute of Chartered Accountants (CICA):http://www.cica.ca.
- Association of Chartered Certified Accountants (ACCA):http://www.accaglobal.com.
- Chartered Financial Analyst Institute: http://www.cfainstitute.org.
- Certified Financial Planner Board of Standards: http://www.cfp.net.
- Financial Planners Standards Council of Canada:http://www.fpsccanada.org.
- The American College: http://www.theamericancollege.edu.
- The Association for Financial Counseling and Planning Education:http://www.afcpe.org.
- The National Association of Estate Planners and Councils:http://www.naepc.org.
- U.S. Securities and Exchange Commission: http://www.sec.gov.
- Internal Revenue Service, U.S. Treasury Department:http://www.irs.gov.

KEY TAKEAWAYS

- Financial advisors may be working as accountants, investment advisors, tax advisors, estate planners, or insurance agents.
- You should always understand how your advisor is trained and how that may be related to the kind of advice that you receive.
- You should always understand how your advisor is compensated and how that may be related to the kind of advice that you receive.
- You should diversify your sources of information and advice by using subjective advisors—friends and family—as well as objective, professional advisors. Diversification, as always, reduces risk.

EXERCISES

1. Where do you get your financial advice? Identify all the sources. In what circumstances might you seek a professional financial advisor?
2. View the video "Choosing a Financial Planner" at http://videos.howstuffworks.com/marketplace/4105-choosing-a-financial-planner-video.htm. Which advice about getting financial advice do you find most valuable? Share your views with classmates. Also view the MSN Money video on when people should consider getting a financial advisor: http://video.msn.com/?mkt=en-us&brand=money&vid=6f22019c-db6e-45de-984b-a447f52dc4db&playlist=videoByTag:tag:money_top_investing:ns:MSNmoney_Gallery:mk:us:vs:1&from=MSNmoney_8ThinsYourFinanical PlannerWontTellYou&tab=s216. According to the featured speaker, is financial planning advice for everyone? How do you know when you need a financial planner?
3. Explore the following links for more information on financial advisors:
   a. National Association of Personal Financial Advisors (http://www.napfa.org)
   b. U.S. Department of Labor Bureau of Labor Statistics on the job descriptions, training requirements, and earnings of financial analysts and personal financial advisors (http://www.bls.gov/oco/ocos259.htm)
   c. The Motley Fool's guidelines for choosing a financial advisor (http://www.fool.com/fa/finadvice.htm)

Chapter 2

Basic Ideas of Finance

Introduction

Money, says the proverb, makes money. When you have got a little, it is often easy to get more. The great difficulty is to get that little.

Adam Smith, *The Wealth of Nations*[1]

Personal finance addresses the "great difficulty" of getting a little money. It is about learning to manage income and wealth to satisfy desires in life or to create more income and more wealth. It is about creating productive assetsResources that can be used to create future economic benefit, such as increasing income, decreasing expenses, or storing wealth, as an investment. and about protecting existing and expected value in those assets. In other words, personal finance is about learning how to get what you want and how to protect what you've got.

There is no trick to managing personal finances. Making good financial decisions is largely a matter of understanding how the economy works, how money flows through it, and how people make financial decisions. The better your understanding, the better your ability to plan, take advantage of opportunities, and avoid disappointments. Life can never be planned entirely, of course, and the best-laid plans do go awry, but anticipating risks and protecting against them can minimize exposure to the inevitable mistakes and "the hazards and vicissitudes"[2] of life.

[1] Adam Smith, *The Wealth of Nations* (New York: The Modern Library, 2000), Book I, Chapter ix. Originally published in 1776.

[2] Franklin D. Roosevelt, remarks when signing the Social Security Act, August 14, 1935. Retrieved from the Social Security Administration archives, http://www.socialsecurity.gov/history/fdrstmts.html#signing (accessed November 23, 2009).

2.1 Income and Expenses

LEARNING OBJECTIVES

1. Identify and compare the sources and uses of income.
2. Define and illustrate the budget balances that result from the uses of income.
3. Outline the remedies for budget deficits and surpluses.

4. Define opportunity and sunk costs and discuss their effects on financial decision making.

Personal finance is the process of paying for or financing a life and a way of living. Just as a business must be financed—its buildings, equipment, use of labor and materials, and operating costs must be paid for—so must a person's possessions and living expenses. Just as a business relies on its revenues from selling goods or services to finance its costs, so a person relies on income earned from selling labor or capital to finance costs. You need to understand this financing process and the terms used to describe it. In the next chapter, you'll look at how to account for it.

Where Does Income Come From?

Income is what is earned or received in a given period. There are various terms for income because there are various ways of earning income. Income from employment or self-employment is wages or salary. Deposit accounts, like savings accounts, earn interest, which could also come from lending. Owning stock entitles the shareholder to a dividend, if there is one. Owning a piece of a partnership or a privately held corporation entitles one to a draw.

The two fundamental ways of earning income in a market-based economy are by selling labor or selling capital. Selling labor means working, either for someone else or for yourself. Income comes in the form of a paycheck. Total compensation may include other benefits, such as retirement contributions, health insurance, or life insurance. Labor is sold in the labor market.

Selling capital means investing: taking excess cash and selling it or renting it to someone who needs **liquidity** (access to cash). Lending is renting out capital; the interest is the rent. You can lend privately by direct arrangement with a borrower, or you can lend through a public debt exchange by buying corporate, government, or government agency bonds. Investing in or buying corporate stock is an example of selling capital in exchange for a share of the company's future value.

You can invest in many other kinds of assets, like antiques, art, coins, land, or commodities such as soybeans, live cattle, platinum, or light crude oil. The principle is the same: investing is renting capital or selling it for an asset that can be resold later, or that can create future income, or both. Capital is sold in the capital market and lent in the credit market—a specific part of the capital market (just like the dairy section is a specific part of the supermarket). Figure 2.2 "Sources of Income" shows the sources of income.

Figure 2.2 Sources of Income

	Work	Invest	Lend
Trade	Sell Labor	Sell Capital	Rent Capital
Return/ Income	Wages or Salary	Profit or Dividend Capital Gain (Loss)	Interest
Market	Labor Market	Capital Market	Credit Market

In the labor market, the price of labor is the wage that an employer (buyer of labor) is willing to pay to the employee (seller of labor). For any given job, that price is determined by many factors. The nature of the work defines the education and skills required, and the price may reflect other factors as well, such as the status or desirability of the job.

In turn, the skills needed and the attractiveness of the work determine the supply of labor for that particular job—the number of people who could and would want to do the job. If the supply of labor is greater than the demand, if there are more people to work at a job than are needed, then employers will have more hiring choices. That labor market is a buyers' market, and the buyers can hire labor at lower prices. If there are fewer people willing and able to do a job than there are jobs, then that labor market is a sellers' market, and workers can sell their labor at higher prices.

Similarly, the fewer skills required for the job, the more people there will be who are able to do it, creating a buyers' market. The more skills required for a job, the fewer people there will be to do it, and the more leverage or advantage the seller has in negotiating a price. People pursue education to make themselves more highly skilled and therefore able to compete in a sellers' labor market.

When you are starting your career, you are usually in a buyers' market (unless you have some unusual gift or talent), if only because of your lack of experience. As your career progresses, you have more, and perhaps more varied, experience and presumably more skills, and so can sell your labor in more of a sellers' market. You may change careers or jobs more than once, but you would hope to be doing so to your advantage, that is, always to be gaining bargaining power in the labor market.

Many people love their work for many reasons other than the pay, however, and choose it for those rewards. Labor is more than a source of income; it is also a source of many intellectual, social, and other personal gratifications. Your labor nevertheless is also a tradable commodity and has a market value. The personal rewards of your work may ultimately determine your choices, but you should be aware of the market value of those choices as you make them.

Your ability to sell labor and earn income reflects your situation in your labor market. Earlier in your career, you can expect to earn less than you will as your career progresses. Most people would like to reach a point where they don't have to sell labor at all. They hope to retire someday and pursue other hobbies or interests. They can retire if they have alternative sources of income—if they can earn income from savings and from selling capital.

Capital markets exist so that buyers can buy capital. Businesses always need capital and have limited ways of raising it. Sellers and lenders (investors), on the other hand, have many more choices of how to invest their excess cash in the capital and credit markets, so those markets are much more like sellers' markets. The following are examples of ways to invest in the capital and credit markets:

- Buying stocks
- Buying government or corporate bonds
- Lending a mortgage

The market for any particular investment or asset may be a sellers' or buyers' market at any particular time, depending on economic conditions. For example, the market for real estate, modern art, sports memorabilia, or vintage cars can be a buyers' market if there are more sellers than buyers. Typically, however, there is as much or more demand for capital as there is supply. The more capital you have to sell, the more ways you can sell it to more kinds of buyers, and the more those buyers may be willing to pay. At first, however, for most people, selling labor is their only practical source of income.

Where Does Income Go?

Expenses are costs for items or resources that are used up or consumed in the course of daily living. Expenses recur (i.e., they happen over and over again) because food, housing, clothing, energy, and so on are used up on a daily basis.

When income is less than expenses, you have a **budget deficit** too little cash to provide for your wants or needs. A budget deficit is not sustainable; it is not financially viable. The only choices are to eliminate the deficit by (1) increasing income, (2) reducing expenses, or (3) borrowing to make up the difference. Borrowing may seem like the easiest and quickest solution, but borrowing also increases expenses, because it creates an additional expense: interest. Unless income can also be increased, borrowing to cover a deficit will only increase it.

Better, although usually harder, choices are to increase income or decrease expenses. Figure 2.3 "Budget Deficit" shows the choices created by a budget deficit.

Figure 2.3 Budget Deficit

Income Less Than Expenses = Budget Deficit		
1. Reduce Expenses	= consume less	= reduce budget deficit
2. Increase Income	= sell more labor or capital	= reduce budget deficit
3. Borrow	= increase (interest) expenses	= increase budget deficit

When income for a period is greater than expenses, there is a **budget surplus**. That situation is sustainable and remains financially viable. You could choose to decrease income by, say, working less. More likely, you would use the surplus in one of two ways: consume more or save it. If consumed, the income is gone, although presumably you enjoyed it.

If saved, however, the income can be stored, perhaps in a piggy bank or cookie jar, and used later. A more profitable way to save is to invest it in some way—deposit in a bank account, lend it with interest, or trade it for an asset, such as a stock or a bond or real estate. Those ways of saving are ways of selling your excess capital in the capital markets to increase your wealth. The following are examples of savings:

1. Depositing into a statement savings account at a bank
2. Contributing to a retirement account
3. Purchasing a certificate of deposit (CD)
4. Purchasing a government savings bond
5. Depositing into a money market account

Figure 2.5 "Budget Surplus" shows the choices created by a budget surplus.

Figure 2.5 Budget Surplus

Income Greater Than Expenses = Budget Surplus		
1. Increase Expenses	= consume more	= reduce budget surplus
2. Reduce Income	= sell less labor or capital	= reduce budget surplus
3. Save and Invest	= increase income	= increase budget surplus

Opportunity Costs and Sunk Costs

There are two other important kinds of costs aside from expenses that affect your financial life. Suppose you can afford a new jacket or new boots, but not both, because your resources—the income you can use to buy clothing—are limited. If you buy the jacket, you cannot also buy the boots. Not getting the boots is an **opportunity cost** of buying the jacket; it is cost of sacrificing your next best choice.

In personal finance, there is always an opportunity cost. You always want to make a choice that will create more value than cost, and so you always want the opportunity cost to be less than the benefit from trade. You bought the jacket instead of the boots because you decided that having the jacket would bring more benefit than the cost of not having the boots. You believed your benefit would be greater than your opportunity cost.

In personal finance, opportunity costs affect not only consumption decisions but also financing decisions, such as whether to borrow or to pay cash. Borrowing has obvious costs, whereas paying with your own cash or savings seems costless. Using your cash does have an opportunity cost, however. You lose whatever interest you may have had on your savings, and you lose liquidity—that is, if you need cash for something else, like a better choice or an emergency, you no longer have it and may even have to borrow it at a higher cost.

When buyers and sellers make choices, they weigh opportunity costs, and sometimes regret them, especially when the benefits from trade are disappointing. Regret can color future choices. Sometimes regret can keep us from recognizing **sunk costs**.

Sunk costs are costs that have already been spent; that is, whatever resources you traded are gone, and there is no way to recover them. Decisions, by definition, can be made only about the future, not about the past. A trade, when it's over, is over and done, so recognizing that sunk costs are truly sunk can help you make better decisions.

For example, the money you spent on your jacket is a sunk cost. If it snows next week and you decide you really do need boots, too, that money is gone, and you cannot use it to buy boots. If you really want the boots, you will have to find another way to pay for them.

Unlike a price tag, opportunity cost is not obvious. You tend to focus on what you are getting in the trade, not on what you are *not* getting. This tendency is a cheerful aspect of human nature, but it can be a weakness in the kind of strategic decision making that is so essential in financial planning. Human nature also may make you focus too much on sunk costs, but all the relish or regret in the world cannot change past decisions. Learning to recognize sunk costs is important in making good financial decisions.

KEY TAKEAWAYS

- It is important to understand the sources (incomes) and uses (expenses) of funds, and the budget deficit or budget surplus that may result.

- Wages or salary is income from employment or self-employment; interest is earned by lending; a dividend is the income from owning corporate stock; and a draw is income from a partnership.
- Deficits or surpluses need to be addressed, and that means making decisions about what to do with them.
- Increasing income, reducing expenses, and borrowing are three ways to deal with budget deficits.
- Spending more, saving, and investing are three ways to deal with budget surpluses.
- Opportunity costs and sunk costs are hidden expenses that affect financial decision making.

EXERCISES

1. Where does your income come from, and where does it go? Analyze your inflows of income from all sources and outgoes of income through expenditures in a month, quarter, or year. After analyzing your numbers and converting them to percentages, show your results in two figures, using proportions of a dollar bill to show where your income comes from and proportions of another dollar bill to show how you spend your income. How would you like your income to change? How would you like your distribution of expenses to change? Use your investigation to develop a rough personal budget.
2. Examine your budget and distinguish between wants and needs. How do you define a financial need? What are your fixed expenses, or costs you must pay regularly each week, month, or year? Which of your budget categories must you provide for first before satisfying others? To what extent is each of your expenses discretionary—under your control in terms of spending more or less for that item or resource? Which of your expenses could you reduce if you had to or wanted to for any reason?
3. If you had a budget deficit, what could you do about it? What would be the best solution for the long term? If you had a budget surplus, what could you do about it? What would be your best choice, and why?
4. You need a jacket, boots, and gloves, but the jacket you want will use up all the money you have available for outerwear. What is your opportunity cost if you buy the jacket? What is your sunk cost if you buy the jacket? How could you modify your consumption to reduce opportunity cost? If you buy the jacket but find that you need the boots and gloves, how could you modify your budget to compensate for your sunk cost?

2.2 Assets

LEARNING OBJECTIVES

1. Identify the purposes and uses of assets.
2. Identify the types of assets.
3. Explain the role of assets in personal finance.
4. Explain how a capital gain or loss is created.

As defined earlier in this chapter, an asset is any item with economic value that can be converted to cash. Assets are resources that can be used to create income or reduce expenses and to store value. The following are examples of tangible (material) assets:

- Car
- Savings account
- Wind-up toy collection
- Money market account
- Shares of stock
- Forty acres of farmland
- Home

When you sell excess capital in the capital markets in exchange for an asset, it is a way of storing wealth, and hopefully of generating income as well. The asset is your investment—a use of your liquidity. Some assets are more liquid than others. For example, you can probably sell your car more quickly than you can sell your house. As an investor, you assume that when you want your liquidity back, you can sell the asset. This assumes that it has some liquidity and market value (some use and value to someone else) and that it trades in a reasonably efficient market. Otherwise, the asset is not an investment, but merely a possession, which may bring great happiness but will not serve as a store of wealth.

Assets may be used to store wealth, create income, and reduce future expenses.

Assets Store Wealth

If the asset is worth more when it is resold than it was when it was bought, then you have earned a **capital gain**: the investment has not only stored wealth but also increased it. Of course, things can go the other way too: the investment can decrease in value while owned and be worth less when resold than it was when bought. In that case, you have a **capital loss**. The investment not only did not store wealth, it lost some. Figure 2.7 "Gains and Losses" shows how capital gains and losses are created.

Figure 2.7 Gains and Losses

The better investment asset is the one that increases in value—creates a capital gain—during the time you are storing it.

Assets Create Income

Some assets not only store wealth but also create income. An investment in an apartment house stores wealth and creates rental income, for example. An investment in a share of stock stores wealth and also perhaps creates dividend income. A deposit in a savings account stores wealth and creates interest income.

Some investors care more about increasing asset value than about income. For example, an investment in a share of corporate stock may produce a dividend, which is a share of the corporation's profit, or the company may keep all its profit rather than pay dividends to shareholders. Reinvesting that profit in the company may help the company to increase in value. If the company increases in value, the stock increases in value, increasing investors' wealth. Further, increases in wealth through capital gains are taxed differently than income, making capital gains more valuable than an increase in income for some investors.

On the other hand, other investors care more about receiving income from their investments. For example, retirees who no longer have employment income may be relying on investments to provide income for living expenses. Being older and having a shorter horizon, retirees may be less concerned with growing wealth than with creating income.

Assets Reduce Expenses

Some assets are used to reduce living expenses. Purchasing an asset and using it may be cheaper than arranging for an alternative. For example, buying a car to drive to work may be cheaper, in the long run, than renting one or using public transportation. The car typically will not increase in value, so it cannot be expected to be a store of wealth; its only role is to reduce future expenses.

Sometimes an asset may be expected to both store wealth and reduce future expenses. For example, buying a house to live in may be cheaper, in the long run, than renting one. In addition, real estate may appreciate in value, allowing you to realize a gain when you sell the asset. In this case, the house has effectively stored wealth. Appreciation in value depends on the real estate market and demand for housing when the asset is sold,

however, so you cannot count on it. Still, a house usually can reduce living expenses and be a potential store of wealth.

Figure 2.8 "Assets and the Roles of Assets" shows the roles of assets in reducing expenses, increasing income, and storing wealth.

Figure 2.8 Assets and the Roles of Assets

Asset	Reduce Expenses	Increase Income	Store Wealth
Car	Yes	No	No
Savings Account	No	Yes	Yes
Money Market Account	No	Yes	Yes
Home	Yes	No	Yes
Rental Property	No	Yes	Yes
Investment in Bonds	No	Yes	Yes
Investment in Stocks	No	Yes	Yes

The choice of investment asset, then, depends on your belief in its ability to store and increase wealth, create income, or reduce expenses. Ideally, your assets will store and increase wealth while increasing income or reducing expenses. Otherwise, acquiring the asset will not be a productive use of liquidity. Also, in that case the opportunity cost will be greater than the benefit from the investment, since there are many assets to choose from.

KEY TAKEAWAYS

- Assets are items with economic value that can be converted to cash. You use excess liquidity or surplus cash to buy an asset and store wealth until you resell the asset.
- An asset can create income, reduce expenses, and store wealth.
- To have value as an investment, an asset must either store wealth or create income (reduce expenses); ideally, an asset can do both.

- Whatever the type of asset you choose, investing in assets or selling capital can be more profitable than selling labor.
- Selling an asset can result in a capital gain or capital loss.
- Selling capital means trading in the capital markets, which is a sellers' market. You can do this only if you have a budget surplus, or an excess of income over expenses.

EXERCISES

1. Record your answers to the following questions in your personal finance journal or My Notes. What are your assets? How do your assets store your wealth? How do your assets make income for you? How do your assets help you reduce your expenses?
2. List your assets in the order of their cash or market value (most valuable to least valuable). Then list them in terms of their degree of liquidity. Which assets do you think you might sell in the next ten years? Why? What new assets do you think you would like to acquire and why? How could you reorganize your budget to make it possible to invest in new assets?

2.3 Debt and Equity

LEARNING OBJECTIVES

1. Define equity and debt.
2. Compare and contrast the benefits and costs of debt and equity.
3. Illustrate the uses of debt and equity.
4. Analyze the costs of debt and of equity.

Buying capital, that is, borrowing enables you to invest without first owning capital. By using other people's money to finance the investment, you get to use an asset before actually owning it, free and clear, assuming you can repay out of future earnings.

Borrowing capital has costs, however, so the asset will have to increase wealth, increase earnings, or decrease expenses enough to compensate for its costs. In other words, the asset will have to be more productive to earn enough to cover its financing costs—the cost of buying or borrowing capital to buy the asset.

Buying capital gives you equity, borrowing capital gives you debt, and both kinds of financing have costs and benefits. When you buy or borrow liquidity or cash, you become a buyer in the capital market.

The Costs of Debt and Equity

You can buy capital from other investors in exchange for an ownership share or **equity**, which represents your claim on any future gains or future income. If the asset is productive in storing wealth, generating income, or reducing expenses, the equity holder or shareholder or owner enjoys that benefit in proportion to the share of the asset owned. If the asset actually loses value, the owner bears a portion of the loss in proportion to the share of the asset owned. The **cost of equity** is in having to share the benefits from the investment.

For example, in 2004 Google, a company that produced a very successful Internet search engine, decided to buy capital by selling shares of the company (shares of stock or equity securities) in exchange for cash. Google sold over 19 million shares for a total of $1.67 billion. Those who bought the shares were then owners or shareholders of Google, Inc. Each shareholder has equity in Google, and as long as they own the shares they will share in the profits and value of Google, Inc. The original founders and owners of Google, Larry Page and Sergey Brin, have since had to share their company's gains (or income) or losses with all those shareholders. In this case, the cost of equity is the minimum rate of return Google must offer its shareholders to compensate them for waiting for their returns and for bearing some **risk** that the company might not do as well in the future.

Borrowing is renting someone else's money for a period of time, and the result is **debt**. During that period of time, rent or **interest** be paid, which is a cost of **debt**. When that period of time expires, all the capital (the **principal** amount borrowed) must be given back. The investment's earnings must be enough to cover the interest, and its growth in value must be enough to return the principal. Thus, debt is a liability, an obligation for which the borrower is liable.

In contrast, the cost of equity may need to be paid only if there is an increase in income or wealth, and even then can be deferred. So, from the buyer's point of view, purchasing liquidity by borrowing (debt) has a more immediate effect on income and expenses. Interest must be added as an expense, and repayment must be anticipated.

Figure 2.9 "Sources of Capital" shows the implications of equity and debt as the sources of capital.

Figure 2.9 Sources of Capital

	Equity	Debt
Trade	Buy Capital	Borrow Capital
Cost/ Expense	Share Profits and Gains	Pay Interest
Market	Capital Market	Credit Market

The Uses of Debt and Equity

Debt is a way to make an investment that could not otherwise be made, to buy an asset (e.g., house, car, corporate stock) that you couldn't buy without borrowing. If that asset is expected to provide enough benefit (i.e., increase value or create income or reduce expense) to compensate for its additional costs, then the debt is worth it. However, if debt creates additional expense without enough additional benefit, then it is not worth it. The trouble is, while the costs are usually known up front, the benefits are not. That adds a dimension of risk to debt, which is another factor in assessing whether it's desirable.

For example, after the housing boom began to go bust in 2008, homeowners began losing value in their homes as housing prices dropped. Some homeowners are in the unfortunate position of owing more on their mortgage than their house is currently worth. The costs of their debt were knowable upfront, but the consequences—the house losing value and becoming worth less than the debt—were not.

Debt may also be used to cover a budget deficit, or the excess of expenses over income. As mentioned previously, however, in the long run the cost of the debt will increase expenses that are already too big, which is what created the deficit in the first place. Unless income can also be increased, debt can only aggravate a deficit.

The Value of Debt

The value of debt includes the benefits of having the asset sooner rather than later, something that debt financing enables. For example, many people want to buy a house when they have children, perhaps because they want bedrooms and bathrooms and maybe a yard for their children. Not far into adulthood, would-be homebuyers may not have had enough time to save enough to buy the house outright, so they borrow to make up the difference. Over the length of their mortgage (real estate loan), they pay the interest.

The alternative would be to rent a living space. If the rent on a comparable home were more than the mortgage interest (which it often is, because a landlord usually wants the

rent to cover the mortgage *and* create a profit), it would make more sense, if possible, to borrow and buy a home and be able to live in it. And, extra bedrooms and bathrooms and a yard are valuable while children are young and live at home. If you wait until you have saved enough to buy a home, you may be much older, and your children may be off on their own.

Another example of the value of debt is using debt to finance an education. Education is valuable because it has many benefits that can be enjoyed over a lifetime. One benefit is an increase in potential earnings in wages and salaries. Demand for the educated or more skilled employee is generally greater than for the uneducated or less-skilled employee. So education creates a more valuable and thus higher-priced employee.

It makes sense to be able to maximize value by becoming educated as soon as possible so that you have as long as possible to benefit from increased income. It even makes sense to invest in an education before you sell your labor because your opportunity cost of going to school—in this case, the "lost" wages of not working—is lowest. Without income or savings (or very little) to finance your education, typically, you borrow. Debt enables you to use the value of the education to enhance your income, out of which you can pay back the debt.

The alternative would be to work and save and then get an education, but you would be earning income less efficiently until you completed your education, and then you would have less time to earn your return. Waiting decreases the value of your education, that is, its usefulness, over your lifetime.

In these examples (Figure 2.11 "Debt: Uses, Value, and Cost"), debt creates a cost, but it reduces expenses or increases income to offset that cost. Debt allows this to happen sooner than it otherwise could, which allows you to realize the maximum benefit for the investment. In such cases, debt is "worth" it.

Figure 2.11 Debt: Uses, Value, and Cost

Debt	Debt Used to Finance	Value	Cost Paid from
Credit Cards	Living Expenses	Convenience	Income
Auto Loan	Car	Reduce Expenses	Income
Mortgage	Home	Reduce Expenses	Income
College Loan	Education	Increase (Future) Income	Future Income

KEY TAKEAWAYS

- Financing assets through equity means sharing ownership and whatever gains or losses that brings.
- Financing assets through borrowing and creating debt means taking on a financial obligation that must be repaid.
- Both equity and debt have costs and value.
- Both equity and debt enable you to use an asset sooner than you otherwise could and therefore to reap more of its rewards.

EXERCISES

1. Research the founding of Google online—for example, at http://www.ubergizmo.com/15/archives/2008/09/googles_first_steps.html and http://www.ted.com/index.php/speakers/sergey_brin_and_larry_page.html. How did the young entrepreneurs Larry Page and Sergey Brin use equity and debt to make their business successful and increase their personal wealth? Discuss your findings with classmates.
2. Record your answers to the following questions in your personal finance journal or My Notes. What equity do you own? What debt do you owe? In each case what do your equity and debt finance? What do they cost you? How do they benefit you?
3. View the video "Paying Off Student Loans": http://videos.howstuffworks.com/marketplace/4099-paying-off-student-loans-video.htm. Students fear going into debt for their education or later have difficulty paying off student loans. This video presents personal financial planning strategies for addressing this issue.
   a. What are four practical financial planning tips to take advantage of debt financing of your education?
   b. If payments on student loans become overwhelming, what should you do to avoid default?

2.4 Income and Risk

LEARNING OBJECTIVES

1. Describe how sources of income may be diversified.
2. Describe how investments in assets may be diversified.
3. Explain the use of diversification as a risk management strategy.

Personal finance is not just about getting what you want; it is also about protecting what you have. Since the way to accumulate assets is to create surplus capital by having an income larger than expenses, and since you rely on income to provide for living expenses, you also need to think about protecting your income. One way to do so is through **diversification**, or spreading the risk.

You already know not to put all your eggs in one basket, because if something happens to that basket, all the eggs are gone. If the eggs are in many baskets, on the other hand, the loss of any one basket would mean the loss of just a fraction of the eggs. The more baskets, the smaller your proportional loss would be. Then if you put many different baskets in many different places, your eggs are diversified even more effectively, because all the baskets aren't exposed to the same environmental or systematic risks.

Diversification is more often discussed in terms of investment decisions, but diversification of sources of income works the same way and makes the same kind of sense for the same reasons. If sources of income are diverse—in number and kind—and one source of income ceases to be productive, then you still have others to rely on.

If you sell your labor to only one buyer, then you are exposed to more risk than if you can generate income by selling your labor to more than one buyer. You have only so much time you can devote to working, however. Having more than one employer could be exhausting and perhaps impossible. Selling your labor to more than one buyer also means that you are still dependent on the labor market, which could suffer from an economic cycle such as a recession affecting many buyers (employers).

Mark, for example, works as a school counselor, tutors on the side, paints houses in the summers, and buys and sells sports memorabilia on the Internet. If he got laid off from his counseling job, he would lose his paycheck but still be able to create income by tutoring, painting, and trading memorabilia.

Similarly, if you sell your capital to only one buyer—invest in only one asset—then you are exposed to more risk than if you generate income by investing in a variety of assets. Diversifying investments means you are dependent on trade in the capital markets, however, which likewise could suffer from unfavorable economic conditions.

Mark has a checking account, an online money market account, and a balanced portfolio of stocks. If his stock portfolio lost value, he would still have the value in his money market account.

A better way to diversify sources of income is to sell both labor *and* capital. Then you are trading in different markets, and are not totally exposed to risks in either one. In Mark's case, if all his incomes dried up, he would still have his investments, and if all his investments lost value, he would still have his paycheck and other incomes. To diversify to that extent, you need surplus capital to trade. This brings us full circle to Adam Smith, quoted at the beginning of this chapter, who said, essentially, "It takes money to make money."

KEY TAKEAWAY

Diversifying sources of income in both the labor market and the capital markets is the best hedge against risks in any one market.

EXERCISE

Record your answers to the following questions in your personal finance journal or My Notes. How can you diversify your sources of income to spread the risk of losing income? How can you diversify your investments to spread the risk of losing return on investment?

Chapter 3

Financial Statements

Introduction

Man is the measure of all things; of that which is, that it is; of that which is not, that it is not.

Protagoras (ca. 490–421 BC), in Plato's *Protagoras*

Man is also the measurer of all things. Measuring by counting, by adding it all up, by taking stock, is probably as old as any human activity. In recorded history, there are "accounts" on clay tablets from ancient Sumeria dating from ca. 3,700 BC.[1]

Since the first shepherd counted his sheep, there has been accounting.

In financial planning, assessing the current situation, or figuring out where you are at present, is crucial to determining any sort of financial plan. This assessment becomes the point of departure for any strategy. It becomes the mark from which any progress is measured, the principal from which any return is calculated. It can determine the practical or realistic goals to have and the strategies to achieve them. Eventually, the current situation becomes a time forgotten with the pride of success, or remembered with the regret of failure.

Understanding the current situation is not just a matter of measuring it, but also of putting it in perspective and in context, relative to your own past performance and future goals, and relative to the realities in the economic world around you. Tools for understanding your current situation are your accounting and financial statements.

[1] Gary Giroux, http://acct.tamu.edu/giroux/AncientWorld.html (accessed January 19, 2009).

3.1 Accounting and Financial Statements

LEARNING OBJECTIVES

1. Distinguish accrual and cash accounting.
2. Compare and contrast the three common financial statements.
3. Identify the results shown on the income statement, balance sheet, and cash flow statement.
4. Explain the calculation and meaning of net worth.

5. Trace how a bankruptcy can occur.

Clay tablets interested Sumerian traders because the records gave them a way to see their financial situation and to use that insight to measure progress and plan for the future. The method of accounting universally used in business today is known as **accrual accounting**, in which events are accounted for even if cash does not change hands. That is, transactions are recorded at the time they occur rather than when payment is actually made or received. Anticipated or preceding payments and receipts (cash flows) are recorded as accrued or deferred. Accrual accounting is the opposite of **cash accounting**, in which transactions are recognized only when cash is exchanged.

Accrual accounting defines earning as an economic event signified by an exchange of goods rather than by an exchange of cash. In this way, accrual accounting allows for the separation in time of the exchange of goods and the exchange of cash. A transaction can be completed over time and distance, which allows for extended—and extensive—trade. Another advantage of accrual accounting is that it gives a business a more accurate picture of its present situation in reality.

Modern accounting techniques developed during the European Age of Discovery, which was motivated by ever-expanding trade. Both the principles and the methods of modern accrual accounting were first published in a text by Luca Pacioli in 1494,[1] although they were probably developed even before that. These methods of "keeping the books" can be applied to personal finance today as they were to trading in the age of long voyages for pepper and cloves, and with equally valuable results.

Nevertheless, in personal finance it almost always makes more sense to use cash accounting, to define and account for events when the cash changes hands. So in personal finance, incomes and expenses are noted when the cash is received or paid, or when the cash flows.

The Accounting Process

Financial decisions result in transactions, actual trades that buy or sell, invest or borrow. In the market economy, something is given up in order to get something, so each trade involves at least one thing given up and one thing gotten—two things flowing in at least two directions. The process of accounting records these transactions and records what has been gotten and what has been given up to get it, what flows in and what flows out.

In business, accounting journals and ledgers are set up to record transactions as they happen. In personal finance, a checkbook records most transactions, with statements from banks or investment accounts providing records of the rest. Periodically, the transaction information is summarized in financial statements so it can be read most efficiently.

Bookkeeping—the process of recording what and how and by how much a transaction affects the financial situation—is how events are recorded. Since the advent of accounting software, bookkeeping, like long division and spelling, has become somewhat obsolete, although human judgment is still required. What is more interesting and useful are the summary reports that can be produced once all this information is recorded: the income statement, cash flow statement, and balance sheet.

Income Statement

The **income statement** summarizes incomes and expenses for a period of time. In business, income is the value of whatever is sold, expenses are the costs of earning that income, and the difference is profit. In personal finance, income is what is earned as wages or salary and as interest or dividends, and expenses are the costs of things consumed in the course of daily living: the costs of sustaining *you* while you earn income. Thus, the income statement is a measure of what you have earned and what your cost of living was while earning it. The difference is personal profit, which, if accumulated as investment, becomes your wealth.

The income statement clearly shows the relative size of your income and expenses. If income is greater than expenses, there is a surplus, and that surplus can be used to save or to spend more (and create more expenses). If income is less than expenses, then there is a deficit that must be addressed. If the deficit continues, it creates debts—unpaid bills—that must eventually be paid. Over the long term, a deficit is not a viable scenario.

The income statement can be useful for its level of detail too. You can see which of your expenses consumes the greatest portion of your income or which expense has the greatest or least effect on your bottom line. If you want to reduce expenses, you can see which would have the greatest impact or would free up more income if you reduced it. If you want to increase income, you can see how much more that would buy you in terms of your expenses (Figure 3.3 "Alice's Situation (in Dollars)"). For example, consider Alice's situation per year.

Figure 3.3 Alice's Situation (in Dollars)

Gross wages	44,650
Income taxes and deductions	8,930
Rent expense	10,800
Living expenses	14,400

She also had car payments of $2,400 and student loan payments of $7,720. Each loan payment actually covers the interest expense and partial repayment of the loan. The interest is an expense representing the cost of borrowing, and thus of having, the car and the education. The repayment of the loan is not an expense, however, but is just giving back something that was borrowed. In this case, the loan payments break down as follows (Figure 3.4 "Alice's Loan Payments (Annually)").

Figure 3.4 Alice's Loan Payments (Annually)

	Interest	Debt Repayment
Car Loan	240	2,160
Student Loan	4,240	3,480

Breaking down Alice's living expenses in more detail and adding in her interest expenses, Alice's income statement would look like this (Figure 3.5 "Alice's Income Statement for the Year 2009").

Figure 3.5 Alice's Income Statement for the Year 2009

Gross wages		**44,650**
Income taxes and deductions	8,930	
Disposable income		35,720
Rent expense	10,800	
Food	3,900	
Car expenses	3,600	
Clothing	1,800	
Cell phone	1,200	
Internet and cable TV	1,200	
Entertainment, travel, etc.	2,700	
Total living expenses		25,200
Car loan interest	240	
Student loan interest	4,240	
Total interest expenses		4,480
Net income		6,040

Alice's **disposable income**, or income to meet expenses after taxes have been accounted for, is $35,720. Alice's net income, or net earnings or personal profit, is the remaining income after all other expenses have been deducted, in this case $6,040.

Now Alice has a much clearer view of what's going on in her financial life. She can see, for example, that living expenses take the biggest bite out of her income and that rent is the biggest single expense. If she wanted to decrease expenses, finding a place to live with a cheaper rent will make the most impact on her bottom line. Or perhaps it would make more sense to make many small changes rather than one large change, to cut back on several other expenses. She could begin by cutting back on the expense items that she feels are least necessary or that she could most easily live without. Perhaps she could do with less entertainment or clothing or travel, for example. Whatever choices she subsequently made would be reflected in her income statement. The value of the income statement is in presenting income and expenses in detail for a particular period of time.

Cash Flow Statement

The **cash flow statement** shows how much cash came in and where it came from, and how much cash went out and where it went over a period of time. This differs from the income statement because it may include cash flows that are not from income and expenses. Examples of such cash flows would be receiving repayment of money that you loaned, repaying money that you borrowed, or using money in exchanges such as buying or selling an asset.

The cash flow statement is important because it can show how well you do at creating liquidity, as well as your net income. Liquidity is nearness to cash, and liquidity has value. An excess of liquidity can be sold or lent, creating additional income. A lack of liquidity must be addressed by buying it or borrowing, creating additional expense.

Looking at Alice's situation, she has two loan repayments that are not expenses and so are not included on her income statement. These payments reduce her liquidity, however, making it harder for her to create excess cash. Her cash flow statement looks like this (Figure 3.6 "Alice's Cash Flow Statement for the Year 2009").

Figure 3.6 Alice's Cash Flow Statement for the Year 2009

Cash from gross wages	44,650
Cash paid for:	
Income taxes and deductions	(8,930)
Rent expense	(10,800)
Food	(3,900)
Car expenses	(3,600)
Clothing	(1,800)
Cell phone	(1,200)
Internet and cable TV	(1,200)
Entertainment, travel, etc.	(2,700)
Car loan interest	(240)
Student loan interest	(4,240)
Cash for repayment of car loan	(2,160)
Cash for repayment of student loan	(3,480)
Net cash flow	400

Note: On a cash flow statement, negative and positive numbers indicate direction of flow. A negative number is cash flowing out, and a positive number is cash flowing in. Conventionally, negative numbers are in parentheses.

As with the income statement, the cash flow statement is more useful if there are subtotals for the different kinds of cash flows, as defined by their sources and uses. The cash flows from income and expenses are **operating cash flows**, or cash flows that are a consequence of earning income or paying for the costs of earning income. The loan repayments are cash flows from **financing** assets or investments that will increase income. In this case, cash flows from financing include repayments on the car and the education. Although Alice doesn't have any in this example, there could also be cash flows from **investing**, from buying or selling assets. **Free cash flow** is the cash available to make investments or financing decisions after taking care of operations and debt obligations. It is calculated as cash flow from operations less debt repayments.

The most significant difference between the three categories of cash flows—operating, investing, or financing—is whether or not the cash flows may be expected to recur regularly. Operating cash flows recur regularly; they are the cash flows that result from

income and expenses or consumption and therefore can be expected to occur in every year. Operating cash flows may be different amounts in different periods, but they will happen in every period. Investing and financing cash flows, on the other hand, may or may not recur and often are unusual events. Typically, for example, you would not borrow or lend or buy or sell assets in every year. Here is how Alice's cash flows would be classified (Figure 3.7 "Alice's Cash Flow Statement for the Year 2009").

Figure 3.7 Alice's Cash Flow Statement for the Year 2009

Cash from gross wages	**44,650**	
Cash paid for:		
Income taxes and deductions	(8,930)	
Rent expense	(10,800)	
Food	(3,900)	
Car expenses	(3,600)	
Clothing	(1,800)	
Cell phone	(1,200)	
Internet and cable TV	(1,200)	
Entertainment, travel, etc.	(2,700)	
Car loan interest	(240)	
Student loan interest	(4,240)	
Operating cash flows		6,040
Cash for repayment of car loan	(2,160)	
Cash for repayment of student loan	(3,480)	
Financing cash flows		(5,640)
Net cash flow		400

This cash flow statement more clearly shows how liquidity is created and where liquidity could be increased. If Alice wanted to create more liquidity, it is obvious that eliminating those loan payments would be a big help: without them, her net cash flow would increase by more than 3,900 percent.

Balance Sheet

In business or in personal finance, a critical piece in assessing the current situation is the balance sheet. Often referred to as the "statement of financial condition," the

balance sheet is a snapshot of what you have and what you owe at a given point in time. Unlike the income or cash flow statements, it is not a record of performance over a period of time, but simply a statement of where things stand at a certain moment.

The balance sheet is a list of assets, debts or liabilities, and equity or net worth, with their values. In business, assets are resources that can be used to create income, while debt and equity are the capital that financed those assets. Thus, the value of the assets must equal the value of the debt and the equity. In other words, the value of the business's resources must equal the value of the capital it borrowed or bought in order to get those resources.

assets = liabilities + equity

In business, the **accounting equation** is as absolute as the law of gravity. It simply must always be true, because if there are assets, they must have been financed somehow—either through debt or equity. The value of that debt and equity financing must equal or balance the value of the assets it bought. Thus, it is called the "balance" sheet because it *always* balances the debt and equity with the value of the assets.

In personal finance, assets are also things that can be sold to create liquidity. Liquidity is needed to satisfy or repay debts. Because your assets are what you use to satisfy your debts when they become due, the assets' value should be greater than the value of your debts. That is, you should have more to work with to meet your obligations than you owe.

The difference between what you have and what you owe is your **net worth**. Literally, net worth is the share that you own of everything that you have. It is the value of what you have *net of* (less) what you owe to others. Whatever asset value is left over after you meet your debt obligations is your own worth. It is the value of what you have that you can claim free and clear.

assets – debt = net worth

Your net worth is really your equity or financial ownership in your own life. Here, too, the personal balance sheet must balance, because if

assets – debts = net worth,

then it should also be

assets = debts + net worth.

Alice could write a simple balance sheet to see her current financial condition. She has two assets (her car and her savings account), and she has two debts (her car and student loans) (Figure 3.8 "Alice's Balance Sheet, December 31, 2009").

Figure 3.8 Alice's Balance Sheet, December 31, 2009

Assets		Liabilities	
Car	5,000	Car Loan	2,700
Savings	250	Student Loan	53,000
Total	5,250	Total	55,700
		Net Worth	(50,450)

Alice's balance sheet presents her with a much clearer picture of her financial situation, but also with a dismaying prospect: she seems to have negative net worth.
Negative net worth results whenever the value of debts or liabilities is actually greater than the assets' value. If

liabilities<assets then assets – liabilities>0; net worth>0 (net worth is positive) If liabilities>assets then assets – liabilities<0; net worth<0 (net worth is negative)

Negative net worth implies that the assets don't have enough value to satisfy the debts. Since debts are obligations, this would cause some concern.

Net Worth and Bankruptcy

In business, when liabilities are greater than the assets to meet them, the business has negative equity and is literally bankrupt. In that case, it may go out of business, selling all its assets and giving whatever it can to its **creditors** or lenders, who will have to settle for less than what they are owed. More usually, the business continues to operate in bankruptcy, if possible, and must still repay its creditors, although perhaps under somewhat easier terms. Creditors (and the laws) allow these terms because creditors would rather get paid in full later than get paid less now or not at all.

In personal finance, personal **bankruptcy** may occur when debts are greater than the value of assets. But because creditors would rather be paid eventually than never, the bankrupt is usually allowed to continue to earn income in the hopes of repaying the debt later or with easier terms. Often, the bankrupt is forced to liquidate (sell) some or all of its assets.

Because debt is a legal as well as an economic obligation, there are laws governing bankruptcies that differ from state to state in the United States and from country to country. Although debt forgiveness was discussed in the Old Testament, throughout

history it was not uncommon for bankrupts in many cultures to be put to death, maimed, enslaved, or imprisoned.[2]

The use of another's property or wealth is a serious responsibility, so debt is a serious obligation.

However, Alice's case is actually not as dismal as it looks, because Alice has an "asset" that is not listed on her balance sheet, that is, her education. It is not listed on her balance sheet because the value of her education, like the value of any asset, comes from how useful it is, and its usefulness has not happened yet, but will happen over her lifetime. It will happen in her future, based on how she chooses to use her education to increase her income and wealth. It is difficult to assign a monetary value to her education now. Alice knows what she paid for her education, but, sensibly, its real value is not its cost but its potential return, or what it can earn for her as she puts it to use in the future.

Current studies show that a college education has economic value, because a college graduate earns more over a lifetime than a high school graduate. Recent estimates put that difference at about $1,000,000.[3]

So, if Alice assumes that her education will be worth $1,000,000 in extra income over her lifetime, and she includes that asset value on her balance sheet, then it would look more like this (Figure 3.10 "Alice's Balance Sheet (revised), December 31, 2009"):

Figure 3.10 Alice's Balance Sheet (revised), December 31, 2009

Assets		Liabilities	
Car	5,000	Car Loan	2,700
Savings	250	Student Loan	53,000
Education	1,000,000	Total	55,700
Total	1,005,250	Net Worth	949,550

This looks much better, but it's not sound accounting practice to include an asset—and its value—on the balance sheet before it really exists. After all, education generally pays off, but until it does, it hasn't yet and there is a chance, however slim, that it won't for Alice. A balance sheet is a snapshot of one's financial situation at one particular time. At this particular time, Alice's education has value, but its amount is unknown.

It is easy to see, however, that the only thing that creates negative net worth for Alice is her student loan. The student loan causes her liabilities to be greater than her assets—and if that were paid off, her net worth would be positive. Given that Alice is just starting her adult earning years, her situation seems quite reasonable.

KEY TAKEAWAYS

- Three commonly used financial statements are the income statement, the cash flow statement, and the balance sheet.
- Results for a period are shown on the income statement and the cash flow statement. Current conditions are shown on the balance sheet.
- The income statement lists income and expenses.
- The cash flow statement lists three kinds of cash flows: operating (recurring), financing (nonrecurring), and investing (nonrecurring).
- The balance sheet lists assets, liabilities (debts), and net worth.
- Net worth = assets – debts.
- Bankruptcy occurs when there is negative net worth, or when debts are greater than assets.

EXERCISES

1. Prepare a personal income statement for the past year, using the same format as Alice's income statement in this chapter. Include all relevant categories of income and expenses. What does your income statement tell you about your current financial situation? For example, where does your income come from, and where does it go? Do you have a surplus of income over expenses? If, so what are you doing with the surplus? Do you have a deficit? What can you do about that? Which of your expenses has the greatest effect on your bottom line? What is the biggest expense? Which expenses would be easiest to reduce or eliminate? How else could you reduce expenses? Realistically, how could you increase your income? How would you like your income statement for the next year to look?
2. Using the format for Alice's cash flow statement, prepare your cash flow statement for the same one-year period. Include your cash flows from all sources in addition to your operating cash flows—the income and expenses that appear on your income statement. What, if any, were the cash flows from financing and the cash flows from investing? Which of your cash flows are recurring, and which are nonrecurring? What does your cash flow statement tell you about your current financial situation? If you wanted to increase your liquidity, what would you try to change about your cash flows?

3. Now prepare a balance sheet, again based on Alice's form. List all your assets, liabilities and debts, and your equity from all sources. What does the balance sheet show about your financial situation at this moment in time? What is your net worth? Do you have positive or negative net worth at this time, and what does that mean? To increase your liquidity, how would your balance sheet need to change? What would be the relationship between your cash flow statement and your budget?
4. Read the CNNMoney.com article "How Much Are You Worth?" (October 3, 2003, by Les Christie, athttp://money.cnn.com/2003/09/30/pf/millionaire/networth/), and use the data and calculator to determine your net worth. How does you net worth compare to that of other Americans in your age and income brackets?
5. The Small Business Administration's Personal Financial Statement combines features of an income statement and a balance sheet. You would fill out a similar form if you were applying for a personal or business loan at bank or mortgage lender. Go to http://www.sba.gov/sbaforms/sba413.pdf and compare and contrast the SBA form with the statements you have already created for this chapter's exercises.

[1] Luca Pacioli, *Summa de arithmetica, geometria, proportioni et proportionalita* (Venice: Luca Pacioli, 1494). For more information on Pacioli, see http://en.wikipedia.org/wiki/Luca_Pacioli (accessed November 23, 2009).

[2] BankruptcyData.com, http://www.bankruptcydata.com/Ch11History.htm (accessed January 19, 2009).

[3] Sandy Baum and Jennifer Ma, "Education Pays: The Benefits of Higher Education for Individuals and Society" (Princeton, NJ: The College Board, 2007).

3.2 Comparing and Analyzing Financial Statements

LEARNING OBJECTIVES

1. Explain the use of common-size statements in financial analysis.
2. Discuss the design of each common-size statement.

3. Demonstrate how changes in the balance sheet may be explained by changes on the income and cash flow statements.
4. Identify the purposes and uses of ratio analysis.
5. Describe the uses of comparing financial statements over time.

Financial statements are valuable summaries of financial activities because they can organize information and make it easier and clearer to see and therefore to understand. Each one—the income statement, cash flow statement, and balance sheet—conveys a different aspect of the financial picture; put together, the picture is pretty complete. The three provide a summary of earning and expenses, of cash flows, and of assets and debts.

Since the three statements offer three different kinds of information, sometimes it is useful to look at each in the context of the others, and to look at specific items in the larger context. This is the purpose of financial statement analysis: creating comparisons and contexts to gain a better understanding of the financial picture.

Common-Size Statements

On **common-size statements**, each item's value is listed as a percentage of another. This compares items, showing their relative size and their relative significance (see Figure 3.11 "Common Common-Size Statements"). On the income statement, each income and expense may be listed as a percentage of the total income. This shows the contribution of each kind of income to the total, and thus the diversification of income. It shows the burden of each expense on total income or how much income is needed to support each expense.

On the cash flow statement, each cash flow can be listed as a percentage of total positive cash flows, again showing the relative significance and diversification of the sources of cash, and the relative size of the burden of each use of cash.

On the balance sheet, each item is listed as a percentage of total assets, showing the relative significance and diversification of assets, and highlighting the use of debt as financing for the assets.

Figure 3.11 Common Common-Size Statements

	Income Statement	Cash Flow Statement	Balance Sheet
Items as a % of	Total Income	Total Positive Cash Flows	Total Assets

Common-Size Income Statement

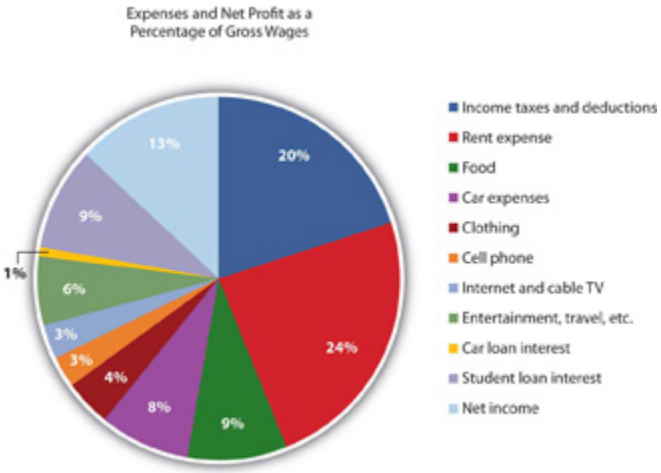
Alice can look at a **common-size income statement** by looking at her expenses as a percentage of her income and comparing the size of each expense to a common denominator: her income. This shows her how much of her income, proportionately, is used up for each expense (Figure 3.12 "Alice's Common-Size Income Statement for the Year 2009").

Figure 3.12 Alice's Common-Size Income Statement for the Year 2009

Gross wages		**44,650**		**100.00%**
Income taxes and deductions	8,930		20.00%	
Disposable income		35,720		80.00%
Rent expense	10,800		24.19%	
Food	3,900		8.73%	
Car expenses	3,600		8.06%	
Clothing	1,800		4.03%	
Cell phone	1,200		2.69%	
Internet and cable TV	1,200		2.69%	
Entertainment, travel, etc.	2,700		6.05%	
Total living expenses		25,200		56.44%
Car loan interest	240		0.54%	
Student loan interest	4,240		9.50%	
Total interest expense		4,480		10.03%
Net income		6,040		13.53%

Seeing the common-size statement as a pie chart makes the relative size of the slices even clearer (Figure 3.13 "Pie Chart of Alice's Common-Size Income Statement for the Year 2009").

Figure 3.13 Pie Chart of Alice's Common-Size Income Statement for the Year 2009



The biggest discretionary use of Alice's wages is her rent expense, followed by food, car expenses, and entertainment. Her income tax expense is a big use of her wages, but it is unavoidable or nondiscretionary. As Supreme Court Justice Oliver Wendell Holmes, Jr., said, "Taxes are what we pay for a civilized society."[1]

Ranking expenses by size offers interesting insight into lifestyle choices. It is also valuable in framing financial decisions, pointing out which expenses have the largest impact on income and thus on the resources for making financial decisions. If Alice wanted more discretionary income to make more or different choices, she can easily see that reducing rent expense would have the most impact on freeing up some of her wages for another use.

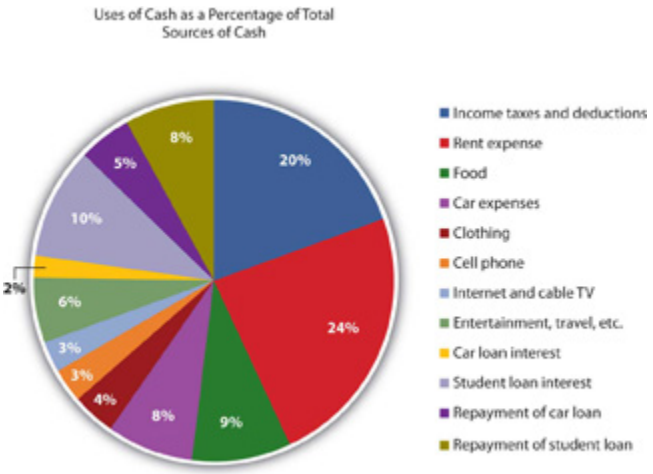
Common-Size Cash Flow Statement

Looking at Alice's negative cash flows as percentages of her positive cash flow (on the cash flow statement), or the uses of cash as percentages of the sources of cash, creates the **common-size cash flows**. As with the income statement, this gives Alice a clearer and more immediate view of the largest uses of her cash (Figure 3.14 "Alice's Common-Size Cash Flow Statement for the Year 2009" and Figure 3.15 "Pie Chart of Alice's Common-Size Cash Flow Statement").

Figure 3.14 Alice's Common-Size Cash Flow Statement for the Year 2009

Cash from gross wages	**44,650**		**100.00%**
Cash paid for:			
Income taxes and deductions	(8,930)		–20.00%
Rent expense	(10,800)		–24.19%
Food	(3,900)		–8.73%
Car expenses	(3,600)		–8.06%
Clothing	(1,800)		–4.03%
Cell phone	(1,200)		–2.69%
Internet and cable TV	(1,200)		–2.69%
Entertainment, travel, etc.	(2,700)		–6.05%
Car loan interest	(240)		–0.54%
Student loan interest	(4,240)		–9.50%
Operating cash flows		6,040	13.53%
Cash for repayment of car loan	(2,160)		–4.84%
Cash for repayment of student loan	(3,480)		–7.79%
Financing cash flows		(5,640)	–12.63%
Net cash flow		400	0.00%

Figure 3.15 Pie Chart of Alice's Common-Size Cash Flow Statement



Again, rent is the biggest discretionary use of cash for living expenses, but debts demand the most significant portion of cash flows. Repayments and interest together are 30 percent of Alice's cash—as much as she pays for rent and food. Eliminating those debt payments would create substantial liquidity for Alice.

Common-Size Balance Sheet

On the balance sheet, looking at each item as a percentage of total assets allows for measuring how much of the assets' value is obligated to cover each debt, or how much of the assets' value is claimed by each debt (Figure 3.16 "Alice's Common-Size Balance Sheet, December 31, 2009").

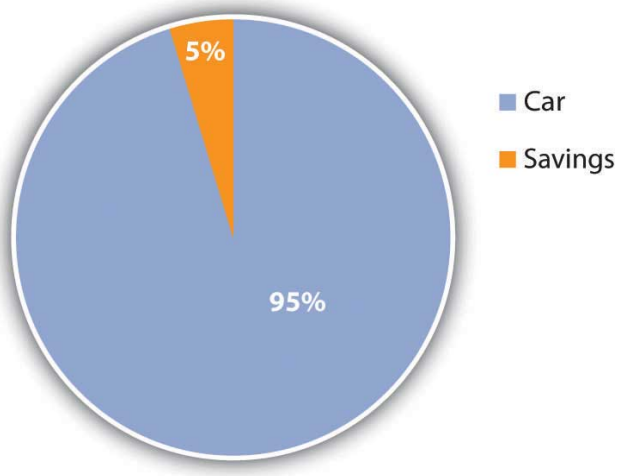
Figure 3.16 Alice's Common-Size Balance Sheet, December 31, 2009

Assets			Liabilities		
Car	5,000	95%	Car Loan	2,700	51%
Savings	250	5%	Student Loan	53,000	1,010%
Total	5,250	100%	Total	55,700	1,061%
			Net Worth	(50,450)	(961%)

This **common-size balance sheet** allows "over-sized" items to be more obvious. For example, it is immediately obvious that Alice's student loan dwarfs her assets' value and creates her negative net worth.

Common-size statements allow you to look at the size of each item relative to a common denominator: total income on the income statement, total positive cash flow on the cash flow statement, or total assets on the balance sheet. The relative size of the items helps you spot anything that seems disproportionately large or small. The common-size analysis is also useful for comparing the diversification of items on the financial statement—the diversification of incomes on the income statement, cash flows on the cash flow statement, and assets and liabilities on the balance sheet. Diversification reduces risk, so you want to diversify the sources of income and assets you can use to create value (Figure 3.17 "Pie Chart of Alice's Common-Size Balance Sheet: The Assets").

Figure 3.17 Pie Chart of Alice's Common-Size Balance Sheet: The Assets



For example, Alice has only two assets, and one—her car—provides 95 percent of her assets' value. If something happened to her car, her assets would lose 95 percent of their value. Her asset value would be less exposed to risk if she had asset value from other assets to diversify the value invested in her car.

Likewise, both her income and her positive cash flows come from only one source, her paycheck. Because her positive net earnings and positive net cash flows depend on this one source, she is exposed to risk, which she could decrease by diversifying her sources of income. She could diversify by adding earned income—taking on a second job, for example—or by creating investment income. In order to create investment income, however, she needs to have a surplus of liquidity, or cash, to invest. Alice has run head first into Adam Smith's "great difficulty"[2]

(that it takes some money to make money; see Chapter 2 "Basic Ideas of Finance").

Relating the Financial Statements

Common-size statements put the details of the financial statements in clear relief relative to a common factor for each statement, but each financial statement is also

related to the others. Each is a piece of a larger picture, and as important as it is to see each piece, it is also important to see that larger picture. To make sound financial decisions, you need to be able to foresee the consequences of a decision, to understand how a decision may affect the different aspects of the bigger picture.

For example, what happens in the income statement and cash flow statements is reflected on the balance sheet because the earnings and expenses and the other cash flows affect the asset values, and the values of debts, and thus the net worth. Cash may be used to purchase assets, so a negative cash flow may increase assets. Cash may be used to pay off debt, so a negative cash flow may decrease liabilities. Cash may be received when an asset is sold, so a decrease to assets may create positive cash flow. Cash may be received when money is borrowed, so an increase in liabilities may create a positive cash flow.

There are many other possible scenarios and transactions, but you can begin to see that the balance sheet at the end of a period is changed from what it was at the beginning of the period by what happens during the period, and what happens during the period is shown on the income statement and the cash flow statement. So, as shown in the figure, the income statement and cash flow information, related to each other, also relate the balance sheet at the end of the period to the balance sheet at the beginning of the period (Figure 3.18 "Relationships Among Financial Statements").

Figure 3.18 Relationships Among Financial Statements

The significance of these relationships becomes even more important when evaluating alternatives for financial decisions. When you understand how the statements are related, you can use that understanding to project the effects of your choices on different aspects of your financial reality and see the consequences of your decisions.

Ratio Analysis

Creating ratios is another way to see the numbers in relation to each other. Any ratio shows the relative size of the two items compared, just as a fraction compares the numerator to the denominator or a percentage compares a part to the whole. The percentages on the common-size statements are ratios, although they only compare

items within a financial statement. Ratio analysis is used to make comparisons across statements. For example, you can see how much debt you have just by looking at your total liabilities, but how can you tell if you can afford the debt you have? That depends on the income you have to meet your interest and repayment obligations, or the assets you could use (sell) to meet those obligations. **Ratio analysis** can give you the answer.

The **financial ratios** you use depend on the perspective you need or the question(s) you need answered. Some of the more common ratios (and questions) are presented in the following chart (Figure 3.19 "Common Personal Financial Ratios").

Figure 3.19 Common Personal Financial Ratios

Ratio	Calculation	Question it helps to answer
Net income margin	Net income ÷ Total income	How much income is used up by expenses?
Return on assets	Net income ÷ Total assets	How big is the income supporting the assets?
Return on net worth	Net income ÷ Net worth	How big is income relative to net worth?
Debt to assets	Total debt ÷ Total assets	How much asset value is financed by debt? Or how much asset value is there to satisfy debt?
Total debt	Total debt ÷ Net worth	How large is debt relative to net worth?
Interest coverage	Income before interest ÷ Interest expense	How well does income cover interest expenses?
Cash flow to income	Net cash flow ÷ Net income	How much do payments for investments and financing take from income?
Cash flow to assets	Net cash flow ÷ Total assets	How much cash flow supports assets?
Free cash flow	Free cash flow ÷ Net cash flow	How much cash is left to invest after covering living expenses and debt repayments?

These ratios all get “better” or show improvement as they get bigger, with two exceptions: debt to assets and total debt. Those two ratios measure levels of debt, and the smaller the ratio, the less the debt. Ideally, the two debt ratios would be less than one. If your debt-to-assets ratio is greater than one, then debt is greater than assets, and you are bankrupt. If the total debt ratio is greater than one, then debt is greater than net worth, and you “own” less of your assets’ value than your creditors do.

Some ratios will naturally be less than one, but the bigger they are, the better. For example, net income margin will always be less than one because net income will always be less than total income (net income = total income – expenses). The larger that ratio is and the fewer expenses that are taken away from the total income, the better.

Some ratios should be greater than one, and the bigger they are, the better. For example, the interest coverage ratio should be greater than one, because you should have more income to cover interest expenses than you have interest expenses, and the more you have, the better. Figure 3.20 "Results of Ratio Analysis" suggests what to look for in the results of your ratio analyses.

Figure 3.20 Results of Ratio Analysis

Ratio	Calculation	Question it helps to answer	Better as it gets…
Net income margin	Net income ÷ Total income	How much income is used up by expenses?	Bigger Will be <1
Return on assets	Net income ÷ Total assets	How big is the income supporting the assets?	Bigger
Return on net worth	Net income ÷ Net worth	How big is income relative to net worth?	Bigger
Debt to assets	Total debt ÷ Total assets	How much asset value is financed by debt? Or how much asset value is there to satisfy debt?	Smaller Should be <1
Total debt	Total debt ÷ Net worth	How large is debt relative to net worth?	Smaller Should be <1
Interest coverage	Income before interest ÷ Interest expense	How well does income cover interest expenses?	Bigger Should be >1
Cash flow to income	Net cash flow ÷ Net income	How much do payments for investments and financing take from income?	Bigger
Cash flow to assets	Net cash flow ÷ Total assets	How much cash flow supports assets?	Bigger
Free cash flow	Free cash flow ÷ Net cash flow	How much cash is left to invest after covering living expenses and debt repayments?	Bigger

While you may have a pretty good “feel” for your situation just by paying the bills and living your life, it so often helps to have the numbers in front of you. Here is Alice’s ratio analysis for 2009 (Figure 3.21 "Alice’s Ratio Analysis, 2009").

Figure 3.21 Alice's Ratio Analysis, 2009

Ratio	Calculation	Result
Net income margin	Net income ÷ Total assets	0.1353
Return on assets	Net income ÷ Net worth	1.1505
Return on net worth	Total debt ÷ Total assets	(0.1197)
Debt to assets	Total debt ÷ Net worth	10.6095
Interest coverage	Income before interest ÷ Interest expense	2.3482
Cash flow to income	Net cash flow ÷ Net income	0.0662
Cash flow to assets	Net cash flow ÷ Total assets	0.0762
Free cash flow	Free cash flow ÷ Net cash flow	1.0000

The ratios that involve net worth—return-on-net-worth and total debt—are negative for Alice, because she has negative net worth, as her debts are larger than her assets. She can see how much larger her debt is than her assets by looking at her debt-to-assets ratio. Although she has a lot of debt (relative to assets and to net worth), she can earn enough income to cover its cost or interest expense, as shown by the interest coverage ratio.

Alice is earning well. Her income is larger than her assets. She is able to live efficiently. Her net income is a healthy 13.53 percent of her total income (net income margin), which means that her expenses are only 86.47 percent of it, but her cash flows are much less (cash flow to income), meaning that a significant portion of earnings is used up in making investments or, in Alice's case, debt repayments. In fact, her debt repayments don't leave her with much free cash flow; that is, cash flow not used up on living expenses or debts.

Looking at the ratios, it is even more apparent how much—and how subtle—a burden Alice's debt is. In addition to giving her negative net worth, it keeps her from increasing her assets and creating positive net worth—and potentially more income—by obligating her to use up her cash flows. Debt repayment keeps her from being able to invest.

Currently, Alice can afford the interest and the repayments. Her debt does not keep her from living her life, but it does limit her choices, which in turn restricts her decisions and future possibilities.

Comparisons over Time

Another useful way to compare financial statements is to look at how the situation has changed over time. Comparisons over time provide insights into the effects of past financial decisions and changes in circumstance. That insight can guide you in making future financial decisions, particularly in foreseeing the potential costs or benefits of a choice. Looking backward can be very helpful in looking forward.

Fast-forward ten years: Alice is now in her early thirties. Her career has progressed, and her income has grown. She has paid off her student loan and has begun to save for retirement and perhaps a down payment on a house.

A comparison of Alice's financial statements shows the change over the decade, both in absolute dollar amounts and as a percentage (see Figure 3.22 "Alice's Income Statements: Comparison Over Time", Figure 3.23 "Alice's Cash Flow Statements: Comparison Over Time", and Figure 3.24 "Alice's Balance Sheets: Comparison Over Time"). For the sake of simplicity, this example assumes that neither inflation nor deflation have significantly affected currency values during this period.

Figure 3.22 Alice's Income Statements: Comparison Over Time

For the Year Ending	12/31/09	12/31/19	Change	% Change
Gross wages	**44,650**	**74,000**	**29,350**	**65.73%**
Income taxes and deductions	8,930	18,500	9,570	107.17%
Disposable income	35,720	55,500	19,780	55.38%
Rent expense	10,800	18,000	7,200	66.67%
Food	3,900	3,900	0	0.00%
Car expenses	3,600	3,600	0	0.00%
Clothing	1,800	1,800	0	0.00%
Cell phone	1,200	1,200	0	0.00%
Internet and cable TV	1,200	1,200	0	0.00%
Entertainment, travel, etc.	2,700	5,200	2,500	92.59%
Total living expenses	25,200	34,900	9,700	38.49%
Car loan interest	240	757	517	215.42%
Student loan interest	4,240	0	(4,240)	−100.00%
Total interest expenses	4,480	757	(3,723)	−83.10%
Net income	6,040	19,843	13,803	228.53%

Figure 3.23 Alice's Cash Flow Statements: Comparison Over Time

For the Year Ending	12/31/09	12/31/19	Change	% Change
Cash from gross wages	**44,650**	**74,000**	**29,350**	**65.73%**
Cash paid for:				
Income taxes and deductions	(8,930)	(18,500)	(9,570)	107.17%
Rent expense	(10,800)	(18,000)	(7,200)	66.67%
Food	(3,900)	(3,900)	0	0.00%
Car expenses	(3,600)	(3,600)	0	0.00%
Clothing	(1,800)	(1,800)	0	0.00%
Cell phone	(1,200)	(1,200)	0	0.00%
Internet and cable TV	(1,200)	(1,200)	0	0.00%
Entertainment, travel, etc.	(2,700)	(5,200)	(2,500)	92.59%
Car loan interest	(240)	(757)	(517)	215.42%
Student loan interest	(4,240)	0	4,240	-100.00%
Operating cash flows	6,040	19,843	13,803	228.53%
Cash invested in 401k	0	(3,000)	(3,000)	100.00%
Cash invested in car	0	(6,300)	(6,300)	100.00%
Investing cash flows	0	(9,300)	(9,300)	100.00%
Cash for repayment of car loan	(2,160)	(4,610)	(2,450)	113.43%
Cash for repayment of student loan	(3,480)	-		-100.00%
Financing cash flows	(5,640)	(4,610)	1,030	-18.26%
Net cash flow	400	5,933	5,533	1383.25%

Figure 3.24 Alice's Balance Sheets: Comparison Over Time

As of	12/31/09	12/31/19	Change	% Change
Assets				
Cash/checking	0	5,000	5,000	100.00%
Savings	250	250	0	0.00%
Money market	0	2,600	2,600	100.00%
Retirement 401k	0	13,000	13,000	100.00%
Retirement IRA	0	7,400	7,400	100.00%
Car	5,000	15,000	10,000	200.00%
Total assets	5,250	43,250	38,000	723.81%
Liabilities				
Car loan	2,700	4,610	1,910	70.74%
Student loan	53,000	0	(53,000)	-100.00%
Total liabilities	55,700	4,610	(51,090)	-91.72%
Net worth	(50,450)	38,640	89,090	

Starting with the income statement, Alice's income has increased. Her income tax withholding and deductions have also increased, but she still has higher disposable income (take-home pay). Many of her living expenses have remained consistent; rent and entertainment have increased. Interest expense on her car loan has increased, but since she has paid off her student loan, that interest expense has been eliminated, so her

total interest expense has decreased. Overall, her net income, or personal profit, what she clears after covering her living expenses, has almost doubled.

Her cash flows have also improved. Operating cash flows, like net income, have almost doubled—due primarily to eliminating the student loan interest payment. The improved cash flow allowed her to make a down payment on a new car, invest in her 401(k), make the payments on her car loan, and still increase her net cash flow by a factor of ten.

Alice's balance sheet is most telling about the changes in her life, especially her now positive net worth. She has more assets. She has begun saving for retirement and has more liquidity, distributed in her checking, savings, and money market accounts. Since she has less debt, having paid off her student loan, she now has positive net worth.

Comparing the relative results of the common-size statements provides an even deeper view of the relative changes in Alice's situation (Figure 3.25 "Comparing Alice's Common-Size Statements for 2009 and 2019: Income Statements", Figure 3.26 "Comparing Alice's Common-Size Statements for 2009 and 2019: Cash Flow Statements", and Figure 3.27 "Comparing Alice's Common-Size Statements for 2009 and 2019: Balance Sheets").

Figure 3.25 Comparing Alice's Common-Size Statements for 2009 and 2019: Income Statements

For the Year Ending	12/31/09	12/31/19
Gross wages	**100.00%**	**100.00%**
Income taxes and deductions	20.00%	25.00%
Disposable income	80.00%	75.00%
Rent expense	24.19%	24.32%
Food	8.73%	5.27%
Car expenses	8.06%	4.86%
Clothing	4.03%	2.43%
Cell phone	2.69%	1.62%
Internet and cable TV	2.69%	1.62%
Entertainment, travel, etc.	6.05%	7.03%
Total living expenses	56.44%	47.16%
Car loan interest	0.54%	1.02%
Student loan interest	9.50%	0.00%
Total interest expenses	10.03%	1.02%
Net income	13.53%	26.81%

Figure 3.26 Comparing Alice's Common-Size Statements for 2009 and 2019: Cash Flow Statements

For the Year Ending	12/31/09	12/31/19
Cash from gross wages	**100.00%**	**100.00%**
Cash paid for:		
Income taxes and deductions	–20.00%	–25.00%
Rent expense	–24.19%	–24.32%
Food	–8.73%	–5.27%
Car expenses	–8.06%	–4.86%
Clothing	–4.03%	–2.43%
Cell phone	–2.69%	–1.62%
Internet and cable TV	–2.69%	–1.62%
Entertainment, travel, etc.	–6.05%	–7.03%
Car loan interest	–0.54%	–1.02%
Student loan interest	–9.50%	0.00%
Operating cash flows	13.53%	26.81%
Cash invested in 401k	0.00%	–4.05%
Cash invested in car	0.00%	–8.51%
Investing cash flows	0.00%	–12.57%
Repayment of car loan	–4.84%	–6.23%
Repayment of student loan	–7.79%	0.00%
Financing cash flows	–12.63%	–6.23%
Net cash flow	0.90%	8.02%

Figure 3.27 Comparing Alice's Common-Size Statements for 2009 and 2019: Balance Sheets

As of	12/31/09	12/31/19
Assets		
Cash/checking	0.00%	11.56%
Savings	4.76%	0.58%
Money market	0.00%	6.01%
Retirement 401k	0.00%	30.06%
Retirement IRA	0.00%	17.11%
Car	95.24%	34.68%
Total Assets	100.00%	100.00%
Liabilities	0.00%	0.00%
Car loan	51.43%	10.66%
Student loan	1009.52%	0.00%
Total Liabilities	1060.95%	10.66%
Net worth	–960.95%	89.34%

Although income taxes and rent have increased as a percentage of income, living expenses have declined, showing real progress for Alice in raising her standard of living: it now costs her less of her income to sustain herself. Interest expense has decreased substantially as a portion of income, resulting in a net income or personal profit that is not only larger, but is larger relative to income. More of her income is profit, left for other discretionary uses.

The change in operating cash flows confirms this. Although her investing activities now represent a significant use of cash, her need to use cash in financing activities—debt repayment—is so much less that her net cash flow has increased substantially. The cash that used to have to go toward supporting debt obligations now goes toward building an asset base, some of which (the 401(k)) may provide income in the future.

Changes in the balance sheet show a much more diversified and therefore much less risky asset base. Although almost half of Alice's assets are restricted for a specific purpose, such as her 401(k) and Individual Retirement Account (IRA) accounts, she still has significantly more liquidity and more liquid assets. Debt has fallen from ten times the assets' value to one-tenth of it, creating some ownership for Alice.

Finally, Alice can compare her ratios over time (Figure 3.28 "Ratio Analysis Comparison").

Figure 3.28 Ratio Analysis Comparison

Ratio Analysis	12/31/09	12/31/19
Net income margin	0.1353	0.2681
Return on assets	1.1505	0.4588
Return on net worth	–0.1197	0.5135
Debt to assets	10.6095	0.1066
Interest coverage	1.3482	26.2127
Cash flow to income	0.0662	0.2990
Cash flow to assets	0.0762	0.1372
Free cash flow	1.0000	2.5675

Most immediately, her net worth is now positive, and so are the return-on-net-worth and the total debt ratios. As her debt has become less significant, her ability to afford it has improved (to pay for its interest and repayment). Both her interest coverage and free cash flow ratios show large increases. Since her net income margin (and income) has grown, the only reason her return-on-asset ratio has decreased is because her assets have grown even faster than her income.

By analyzing over time, you can spot trends that may be happening too slowly or too subtly for you to notice in daily living, but which may become significant over time. You would want to keep a closer eye on your finances than Alice does, however, and review your situation at least every year.

KEY TAKEAWAYS

- Each financial statement shows a piece of the larger picture. Financial statement analysis puts the financial statement information in context and so in sharper focus.
- Common-size statements show the size of each item relative to a common denominator.
- On the income statement, each income and expense is shown as a percentage of total income.
- On the cash flow statement, each cash flow is shown as a percentage of total positive cash flow.
- On the balance sheet, each asset, liability, and net worth is shown as a percentage of total assets.
- The income and cash flow statements explain the changes in the balance sheet over time.
- Ratio analysis is a way of creating a context by comparing items from different statements.

- Comparisons made over time can demonstrate the effects of past decisions to better understand the significance of future decisions.
- Financial statements should be compared at least annually.

EXERCISES

1. Prepare common-size statements for your income statement, cash flow statement, and balance sheet. What do your common-size statements reveal about your financial situation? How will your common-size statements influence your personal financial planning?
2. Calculate your debt-to-income ratio and other ratios using the financial tools at Biztech (http://www.usnews.com/usnews/biztech/tools/modebtratio.htm). According to the calculation, are you carrying a healthy debt load? Why, or why not? If not, what can you do to improve your situation?
3. Read a PDF document of a 2006 article by Charles Farrell in the *Financial Planning Association Journal* on "Personal Financial Ratios: An Elegant Roadmap to Financial Health and Retirement" athttp://www.slideshare.net/Ellena98/fpa-journal-personal-financial-ratios-an-elegant-road-map. Farrell focuses on three ratios: savings to income, debt to income, and savings rate to income. Where, how, and why might these ratios appear on the chart of Common Personal Financial Ratios in this chapter?
4. If you increased your income and assets and reduced your expenses and debt, your personal wealth and liquidity would grow. In My Notes or in your personal financial journal, outline a general plan for how you would use or allocate your growing wealth to further reduce your expenses and debt, to acquire more assets or improve your standard of living, and to further increase your real or potential income.

[1] U.S. Department of the Treasury, http://www.treas.gov/education/faq/taxes/taxes-society.shtml (accessed January 19, 2009).

[2] Adam Smith, *The Wealth of Nations* (New York: The Modern Library, 2000), Book I, Chapter ix.

3.3 Accounting Software: An Overview

LEARNING OBJECTIVES

1. Identify the uses of personal finance software.
2. List the common features of personal financial software.
3. Demonstrate how actual financial calculations may be accomplished using personal financial software.
4. Discuss how personal financial software can assist in your personal financial decisions.

Many software products are available to help you organize your financial information to be more useful in making financial decisions. They are designed to make the record-keeping aspects of personal finance—the collection, classification, and sorting of financial data—as easy as possible. The programs also are designed to produce summary reports (e.g., income statements, cash flow statements, and balance sheets) as well as many calculations that may be useful for various aspects of financial planning. For example, financial planning software exists for managing education and retirement savings, debt and mortgage repayment, and income and expense budgeting.

Collecting the Data

Most programs have designed their data input to look like a checkbook, which is what most people use to keep personal financial records. This type of user interface is intended to be recognizable and familiar, similar to the manual record keeping that you already do.

When you input your checkbook data into the program, the software does the bookkeeping—creating the journals, ledgers, adjustments, and trial balances that generations of people have done, albeit more tediously, with parchment and quill or with ledger paper and pencil. Most personal financial transactions happen as cash flows through a checking account, so the checkbook becomes the primary source of data.

More and more, personal transactions are done by electronic transfer; that is, no paper changes hands, but cash still flows to and from an account, usually a checking account.

Data for other transactions, such as income from investments or changes in investment value, are usually received from periodic statements issued by investment managers, such as banks where you have savings accounts; brokers or mutual fund companies that manage investments; or employers' retirement account statements.

Most versions of personal financial software allow you to download account information directly from the source—your bank, broker, or employer—which saves you from manually entering the data into the program. Aside from providing convenience, downloading directly should eliminate human error in transferring the data.

Reporting Results and Planning Ahead

All personal financial software produces the essential summary reports—the income statement, cash flow statement, and balance sheet—that show the results of financial activity for the period. Most will also report more specific aspects of activities, such as listing all transactions for a particular income or expense.

Most will provide separate reports on activities that have some tax consequence, since users always need to be aware of tax obligations and the tax consequences of financial decisions. Some programs, especially those produced by companies that also sell tax software, allow you to export data from your financial software to your tax program, which makes tax preparation—or at least tax record keeping—easier. In some programs, you need to know which activities are taxable and flag them as such. Some programs recognize that information already, while others may still prompt you for tax information.

All programs allow you to play “what if”: a marvelous feature of computing power and the virtual world in general and certainly helpful when it comes to making financial decisions. All programs include a budgeting feature that allows you to foresee or project possible scenarios and gauge your ability to live with them. This feature is particularly useful when budgeting for income and living expenses. (Budgeting is discussed more thoroughly in Chapter 5 "Financial Plans: Budgets".) Most programs have features that allow you to project the results of savings plans for education or retirement. None can dictate the future, or allow you to, but they can certainly help you to have a better view.

Security, Benefits, and Costs

All programs are designed to be installed on a personal computer or a handheld device such as a Personal Digital Assistant (PDA) or smart phone, but some can also be run from a Web site and therefore do not require a download. Product and service providers are very concerned with security.

As with all Internet transactions, you should be aware that the more your data is transferred, downloaded, or exported over the Internet, the more exposed it is to theft. Personal financial data theft is a serious and growing problem worldwide, and security systems are hard pressed to keep up with the ingenuity of hackers. The convenience gained by having your bank, brokerage, tax preparer, and so on accessible to you (and your data accessible to them) or your data accessible to you wherever you are must be weighed against the increased exposure to data theft. As always, the potential benefit should be considered against the costs.

Keeping digital records of your finances may be more secure than keeping them scattered in shoeboxes or files, exposed to risks such as fire, flood, and theft. Digital records are often easily retrievable because the software organizes them systematically for you. Space is not a practical issue with digital storage, so records may be kept longer. As with anything digital, however, you must be diligent about backing up your data, although many programs will do that automatically or regularly prompt you to do so. Hard copy records must be disposed of periodically, and judging how long to keep them

is always difficult. Throwing them in the trash may be risky because of "dumpster diving," a well-known method of identity theft, so documents with financial information should always be shredded before disposal.

Personal financial software is usually quite reasonably priced, with many programs selling for less than $50, and most for less than $100. Buying the software usually costs less than buying an hour of accounting expertise from an accountant or financial planner. While software cannot replace financial planning professionals who provide valuable judgment, it can allow you to hire them only for their judgment and not have to pay them to collect, classify, sort, and report your financial data.

Software will not improve your financial situation, but it can improve the organization of your financial data monthly and yearly, allowing you a much clearer view and almost certainly a much better understanding of your situation.

Software References

About.com offers general information

http://financialsoft.about.com/od/softwaretitle1/u/Get_Started_Financial_Software.htm

Helpful software reviews

- http://financialsoft.about.com/od/reviewsfinancesoftware/2_Financial_Software_Reviews.htm
- http://personal-finance-software-review.toptenreviews.com/
- http://blogs.zdnet.com/gadgetreviews/?p=432
- http://linux.com/feature/49400
- http://financialsoft.about.com/b/2008/04/09/updated-top-personal-finance-software-for-mac-os.htm

Personal financial software favorites priced under $50 include

(as listed on http://personal-finance-software-review.toptenreviews.com/)

- Quicken
- Moneydance
- AceMoney
- BankTree Personal
- Rich Or Poor
- Budget Express
- Account Xpress
- iCash

- Homebookkeeping
- 3click Budget

KEY TAKEAWAYS

- Personal finance software provides convenience and skill for collecting, classifying, sorting, reporting, and securing financial data to better assess you current situation.
- To help you better evaluate your choices, personal finance software provides calculations for projecting information such as the following:
    - Education savings
    - Retirement savings
    - Debt repayment
    - Mortgage repayment
    - Income and expense budgeting

EXERCISES

1. Explore free online resources for developing and comparing baseline personal financial statements. One good resource is a blog from Money Musings called "It's Your Money" (http://www.mdmproofing.com/iym/networth.shtml). This site also explains how and where to find the figures you need for accurate and complete income statements and balance sheets.
2. Compare and contrast the features of popular personal financial planning software at the following Web sites: Mint.com, Quicken.intuit.com,Moneydance.com, and Microsoft.com/Money. In My Notes or your personal finance journal, record your findings. Which software, if any, would be your first choice, and why? Share your experience and views with others taking this course.
3. View these videos online and discuss with classmates your answers to the questions that follow.
    a. "Three Principles of Personal Finance" by the founder of Mint:http://video.google.com/videoplay?docid=6863995600686009715&ei=Ic1bSdyeF4rkqQLtzIzrBg&q=personal+finance. What are the three principles of personal finance

described in this video? How is each principle relevant to you and your personal financial situation? What will be the outcome of observing the three principles?

b. A financial planner explains what goes into a financial plan in "How to Create a Financial Plan":http://www.youtube.com/watch?v=Wmhif6hmPTQ. According to this video, what goes into a financial plan? What aspects of financial planning do you already have in place? What aspects of financial planning should you consider next?

c. Certified Financial Planner (CFP) Board's Financial Planning Clinic, Washington, DC, October 2008:http://www.youtube.com/watch?v=eJS5FMF_CFA. Each year the Certified Financial Planner Board conducts a clinic in which people can get free advice about all areas of financial planning. This video is about the 2008 Financial Planning Clinic in Washington, DC. What reasons or benefits did people express about attending this event?

Chapter 4 Evaluating Choices: Time, Risk, and Value

Introduction

The land may vary more;

But wherever the truth may be—

The water comes ashore,

And the people look at the sea.

Robert Frost, “Neither Out Far Nor In Deep”[1]

Financial decisions can only be made about the future. As much as analysis may tell us about the outcomes of past decisions, the past is “sunk”: it can be known but not decided upon. Decisions are made about the future, which cannot be known with certainty, so evaluating alternatives for financial decisions always involves speculation on both the kind of result and the value of the result that will occur. It also involves understanding and measuring the risks or uncertainties that time presents and the opportunities—and opportunity costs—that time creates.

[1] Robert Frost, “Neither Out Far Nor In Deep,” *Selected Poems of Robert Frost* (New York: Holt, Rinehart and Winston, Inc., 1963).

4.1 The Time Value of Money

LEARNING OBJECTIVES

1. Explain the value of liquidity.
2. Demonstrate how time creates distance, risk, and opportunity cost.
3. Demonstrate how time affects liquidity.
4. Analyze how time affects value.

Part of the planning process is evaluating the possible future results of a decision. Since those results will occur some time from now (i.e., in the future), it is critical to understand how time passing may affect those benefits and costs—not only the probability of their occurrence, but also their value when they do. Time affects value because time affects liquidity.

Liquidity is valuable, and the liquidity of an asset affects its value: all things being equal, the more liquid an asset is, the better. This relationship—how the passage of time affects the liquidity of money and thus its value—is commonly referred to as the **time value of money**, which can actually be calculated concretely as well as understood abstractly.

Suppose you went to Mexico, where the currency is the peso. Coming from the United States, you have a fistful of dollars. When you get there, you are hungry. You see and smell a taco stand and decide to have a taco. Before you can buy the taco, however, you have to get some pesos so that you can pay for it because the right currency is needed to trade in that market. You have wealth (your fistful of dollars), but you don't have wealth that is liquid. In order to change your dollars into pesos and acquire liquidity, you need to exchange currency. There is a fee to exchange your currency: a **transaction cost**, which is the cost of simply making the trade. It also takes a bit of time, and you could be doing other things, so it creates an opportunity cost (see Chapter 2 "Basic Ideas of Finance"). There is also the chance that you won't be able to make the exchange for some reason, or that it will cost more than you thought, so there is a bit of risk involved. Obtaining liquidity for your wealth creates transaction costs, opportunity costs, and risk.

In general, transforming not-so-liquid wealth into liquid wealth creates transaction costs, opportunity costs, and risk, all of which take away from the value of wealth. Liquidity has value because it can be used without any additional costs.

One dimension of difference between not-so-liquid wealth and liquidity is time. Cash flows (CF) in the past are sunk, cash flows in the present are liquid, and cash flows in the future are not yet liquid. You can only make choices with liquid wealth, not with cash that you don't have yet or that has already been spent. Separated from your liquidity and your choices by time, there is an opportunity cost: if you had liquidity now, you could use it for consumption or investment and benefit from it now. There is also risk, as there is always some uncertainty about the future: whether or not you will actually get your cash flows and just how much they'll be worth when you do.

The further in the future cash flows are, the farther away you are from your liquidity, the more opportunity cost and risk you have, and the more that takes away from the present value (PV) of your wealth, which is not yet liquid. In other words, time puts distance between you and your liquidity, and that creates costs that take away from value. The more time there is, the larger its effect on the value of wealth.

Financial plans are expected to happen in the future, so financial decisions are based on values some distance away in time. You could be trying to project an amount at some point in the future—perhaps an investment payout or college tuition payment. Or perhaps you are thinking about a series of cash flows that happen over time—for example, annual deposits into and then withdrawals from a retirement account. To really understand the time value of those cash flows, or to compare them in any reasonable way, you have to understand the relationships between the nominal or face values in the future and their equivalent, present values (i.e., what their values would be if they were liquid today). The equivalent present values today will be less than the

nominal or face values in the future because that distance over time, that separation from liquidity, costs us by discounting those values.

KEY TAKEAWAYS

- Liquidity has value because it enables choice.
- Time creates distance or delay from liquidity.
- Distance or delay creates risk and opportunity costs.
- Time affects value by creating distance, risk, and opportunity costs.
- Time discounts value.

EXERCISES

1. How does the expression "a bird in the hand is worth two in the bush" relate to the concept of the time value of money?
2. In what four ways can "delay to liquidity" affect the value of your wealth?

4.2 Calculating the Relationship of Time and Value

LEARNING OBJECTIVES

1. Identify the factors you need to know to relate a present value to a future value.
2. Write the algebraic expression for the relationship between present and future value.
3. Discuss the use of the algebraic expression in evaluating the relationship between present and future values.
4. Explain the importance of understanding the relationships among the factors that affect future value.

Financial calculation is not often a necessary skill since it is easier to use calculators, spreadsheets, and software. However, understanding the calculations is important in understanding the relationships between time, risk, opportunity cost, and value.

To do the math, you need to know

- what the future cash flows (CF) will be,
- when the future cash flows will be,
- the rate at which time affects value (e.g., the costs per time period, or the magnitude [the size or amount] of the effect of time on value).

It is usually not difficult to forecast the timing and amounts of future cash flows. Although there may be some uncertainty about them, gauging the rate at which time affects money can require some judgment. That rate, commonly called the **discount rate** because time discounts value, is the opportunity cost of not having liquidity. Opportunity cost derives from forgone choices or sacrificed alternatives, and sometimes it is not clear what those might have been (see Chapter 2 "Basic Ideas of Finance"). It is an important judgment call to make, though, because the rate will directly affect the valuation process.

At times, the alternatives are clear: you could be putting the liquidity in an account earning 3 percent, so that's your opportunity cost of not having it. Or you are paying 6.5 percent on a loan, which you wouldn't be paying if you had enough liquidity to avoid having to borrow; so that's your opportunity cost. Sometimes, however, your opportunity cost is not so clear.

Say that today is your twentieth birthday. Your grandparents have promised to give you $1,000 for your twenty-first birthday, one year from today. If you had the money today, what would it be worth? That is, how much would $1,000 worth of liquidity one year from now be worth today?

That depends on the cost of its not being liquid today, or on the opportunity costs and risks created by not having liquidity today. If you had $1,000 today, you could buy things and enjoy them, or you could deposit it in an interest-bearing account. So on your twenty-first birthday, you would have more than $1,000. You would have the $1,000 plus whatever interest it had earned. If your bank pays 4 percent per year (interest rates are always stated as annual rates) on your account, then you would earn $40 of interest in the next year, or $1,000 × .04. So on your twenty-first birthday you would have $1,040.

$$\$1{,}000+(1{,}000\times0.04)=\$1{,}000\times(1+0.04)=\$1{,}040$$

Figure 4.4

Today	Interest Rate	Time (years)	One Year from Now
1,000	0.04	1	$1{,}040 = 1{,}000 \times (1 + 0.04)$

If you left that amount in the bank until your twenty-second birthday, you would have

$$1{,}040+(1{,}040\times0.04)=1{,}040\times(1+0.04)=[1{,}000\times(1+0.04)]\times(1+0.04)=1{,}000\times(1+0.04)^2=1{,}081.60.$$

To generalize the computation, if your **present value**, or PV, is your value today, *r* is the rate at which time affects value or discount rate (in this case, your interest rate), and

if *t* is the number of time periods between you and your liquidity, then the **future value**, or FV, of your wealth would be

Figure 4.5

Today	Interest Rate	Time (years)	One Year from Now
1,000	0.04	1	$1{,}040 = 1{,}000 \times (1 + 0.04)^1$
1,000	0.04	2	$1{,}081.60 = 1{,}000 \times (1 + 0.04)^2$
PV	r	t	$FV = PV \times (1 + r)^t$

PV× (1+r) t =FV.

In this case,

1,000× (1.04) 1 =1,040 and 1,000× (1.04) 2 =1,081.60.

Assuming there is little chance that your grandparents will not be able to give this gift, there is negligible risk. Your only cost of not having liquidity now is the opportunity cost of having to delay consumption or not earning the interest you could have earned.

The cost of delayed consumption is largely derived from a subjective valuation of whatever is consumed, or its **utility** or satisfaction. The more value you place on having something, the more it "costs" you not to have it, and the more the time that you are without it affects its value.

Assuming that if you had the money today you would save it (as it's much harder to quantify your joy from consumption), by having to wait to get it until your twenty-first birthday—and *not* having it today—you miss out on $40 it could have earned.

So, what would that nominal $1,000 (that future value that you get one year from now) actually be worth today? The rate at which time affects your value is 4 percent because that's what having a choice (spend it or invest it) could earn for you if only you had received the $1,000. That's your opportunity cost. That's what it costs you to not have liquidity. Since

PV× (1+r) t =FV, then PV=FV/[(1+r) t], so PV=1,000/(1.04 1)=961.5385.

Your gift is worth $961.5385 today (its present value). If your grandparents offered to give you your twenty-first birthday gift on your twentieth birthday, they could give you $961.5385 today, which would be the equivalent value to you of getting $1,000 one year from now.

It is important to understand the relationships between time, risk, opportunity cost, and value. This equation describes that relationship:

PV× (1+r) t =FV.

The “r” is more formally called the “discount rate” because it is the rate at which your liquidity is discounted by time, and it includes not only opportunity costs but also risk. (On some financial calculators, “r” is displayed as “I” or “i.”)

The “t” is how far away you are from your liquidity over time.

Studying this equation yields valuable insights into the relationship it describes. Looking at the equation, you can observe the following relationships.

The more time (t) separating you from your liquidity, the more time affects value. The less time separating you from your liquidity, the less time affects value (as *t* decreases, PV increases).

As *t* increases the PV of your FV liquidity decreases
As *t* decreasesthe PV of your FV liquidity increases

The greater the rate at which time affects value (r), or the greater the opportunity cost and risk, the more time affects value. The less your opportunity cost or risk, the less your value is affected.

As *r* increases the PV of your FV liquidity decreases
As *r* decreasesthe PV of your FV liquidity increases

Figure 4.6 "Present Values, Interest Rates, Time, and Future Values" presents examples of these relationships.

Figure 4.6 Present Values, Interest Rates, Time, and Future Values

	Today	Interest Rate	Time (years)	Future Value
Example A	1,000	0.04	1	1,040 = PV × 104%
Greater effect r increases	1,000	0.10	1	1,100 = PV × 110%
More time t increases	1,000	0.04	3	1,124.86 = PV × 104^3%
Less effect r decreases	1,000	0.01	1	1,010 = PV × 101%
Less time t decreases	1,000	0.04	0.5	1,019.80 = PV × $104^{0.5}$%
Example B	961.54 = FV ÷ 104%	0.04	1	1,000
Greater effect r increases	909.09 = FV ÷ 110%	0.10	1	1,000
More time t increases	889.00 = FV ÷ 104^3%	0.04	3	1,000
Less effect r decreases	990.10 = FV ÷ 101%	0.01	1	1,000
Less time t decreases	980.58 = FV ÷ $104^{.05}$%	0.04	0.5	1,000

The strategy implications of this understanding are simple, yet critical. All things being equal, it is more valuable to have liquidity (get paid, or have positive cash flow) *sooner* rather than later and give up liquidity (pay out, or have negative cash flow) *later* rather than sooner.

If possible, accelerate incoming cash flows and decelerate outgoing cash flows: get paid sooner, but pay out later. Or, as Popeye's pal Wimpy used to say, "I'll give you 50 cents tomorrow for a hamburger today."

KEY TAKEAWAYS

- To relate a present (liquid) value to a future value, you need to know
  - what the present value is or the future value will be,
  - when the future value will be,
  - the rate at which time affects value: the costs per time period, or the magnitude of the effect of time on value.
- The relationship of
  - present value (PV),
  - future value (FV),
  - risk and opportunity cost (the discount rate, r), and
  - time (t), may be expressed as
  - $PV \times (1 + r)^t = FV$.
- The above equation yields valuable insights into these relationships:
  - The more time (t) creates distance from liquidity, the more time affects value.
  - The greater the rate at which time affects value (r), or the greater the opportunity cost and risk, the more time affects value.
  - The closer the liquidity, the less time affects value.
  - The less the opportunity cost or risk, the less value is affected.
- To maximize value, get paid sooner and pay later.

EXERCISES

1. In My Notes or your financial planning journal, identify a future cash flow. Calculate its present value and then calculate its future value based on the discount rate and time to liquidity. Repeat

the process for other future cash flows you identify. What pattern of relationships do you observe between time and value?

2. Try the Time Value of Money calculator at http://www.money-zine.com/Calculators/Investment-Calculators/Time-Value-of-Money-Calculator/. How do the results compare with your calculations in Exercise 1?
3. View the TeachMeFinance.com animated audio slide show on "The Time Value of Money" at http://teachmefinance.com/timevalueofmoney.html. This slide show will walk you through an example of how to calculate the present and future values of money. How is each part of the formula used in that lesson equivalent to the formula presented in this text?
4. To have liquidity, when should you increase positive cash flows and decrease negative cash flows, and why?

4.3 Valuing a Series of Cash Flows

LEARNING OBJECTIVES

1. Discuss the importance of the idea of the time value of money in financial decisions.
2. Define the present value of a series of cash flows.
3. Define an annuity.
4. Identify the factors you need to know to calculate the value of an annuity.
5. Discuss the relationships of those factors to the annuity's value.
6. Define a perpetuity.

It is quite common in finance to value a series of future cash flows (CF), perhaps a series of withdrawals from a retirement account, interest payments from a bond, or deposits for a savings account. The present value (PV) of the series of cash flows is equal to the sum of the present value of each cash flow, so valuation is straightforward: find the present value of each cash flow and then add them up.

Often, the series of cash flows is such that each cash flow has the same future value. When there are regular payments at regular intervals and each payment is the same amount, that series of cash flows is an **annuity**. Most consumer loan repayments are annuities, as are, typically, installment purchases, mortgages, retirement investments, savings plans, and retirement plan payouts. Fixed-rate bond interest payments are an annuity, as are stable stock dividends over long periods of time. You could think of your

paycheck as an annuity, as are many living expenses, such as groceries and utilities, for which you pay roughly the same amount regularly.

To calculate the present value of an annuity, you need to know

- the amount of the future cash flows (the same for each),
- the frequency of the cash flows,
- the number of cash flows (t),
- the rate at which time affects value (r).

Almost any calculator and the many readily available software applications can do the math for you, but it is important for you to understand the relationships between time, risk, opportunity cost, and value.

If you win the lottery, for example, you are typically offered a choice of payouts for your winnings: a lump sum or an annual payment over twenty years.

The lottery agency would prefer that you took the annual payment because it would not have to give up as much liquidity all at once; it could hold on to its liquidity longer. To make the annual payment more attractive for you—it isn't, because you would want to have more liquidity sooner—the lump-sum option is discounted to reflect the present value of the payment annuity. The discount rate, which determines that present value, is chosen at the discretion of the lottery agency.

Say you win $10 million. The lottery agency offers you a choice: take $500,000 per year over 20 years or take a one-time lump-sum payout of $6,700,000. You would choose the alternative with the greatest value. The present value of the lump-sum payout is $6,700,000. The value of the annuity is not simply $10 million, or $500,000 × 20, because those $500,000 payments are received over time and time affects liquidity and thus value. So the question is, What is the annuity worth to you?

Your discount rate or opportunity cost will determine the annuity's value to you, as Figure 4.8 "Lottery Present Value with Different Discount Rates" shows.

Figure 4.8 Lottery Present Value with Different Discount Rates

CF	Rate (*r*) in Percent	Time (*t*) in Years	PV
500,000	0.0200	20	8,175,717
500,000	0.0400	20	6,795,163
500,000	0.0600	20	5,734,961
500,000	0.0800	20	4,909,074
500,000	0.1000	20	4,256,782
500,000	0.1200	20	3,734,722
500,000	0.1400	20	3,311,565
500,000	0.0416	20	6,700,000

As expected, the present value of the annuity is less if your discount rate—or opportunity cost or next best choice—is more. The annuity would be worth the same to you as the lump-sum payout if your discount rate were 4.16 percent.

In other words, if your discount rate is about 4 percent or less—if you don't have more lucrative choices than earning 4 percent with that liquidity—then the annuity is worth more to you than the immediate payout. You can afford to wait for that liquidity and collect it over twenty years because you have no better choice. On the other hand, if your discount rate is higher than 4 percent, or if you feel that your use of that liquidity would earn you more than 4 percent, then you have more lucrative things to do with that money and you want it now: the annuity is worth less to you than the payout.

For an annuity, as when relating one cash flow's present and future value, the greater the rate at which time affects value, the greater the effect on the present value. When opportunity cost or risk is low, waiting for liquidity doesn't matter as much as when opportunity costs or risks are higher. When opportunity costs are low, you have nothing better to do with your liquidity, but when opportunity costs are higher, you may sacrifice more by having no liquidity. Liquidity is valuable because it allows you to make choices. After all, if there are no more valuable choices to make, you lose little by giving up liquidity. The higher the rate at which time affects value, the more it costs to wait for liquidity, and the more choices pass you by while you wait for liquidity.

When risk is low, it is not really important to have your liquidity firmly in hand any sooner because you'll have it sooner or later anyhow. But when risk is high, getting liquidity sooner becomes more important because it lessens the chance of not getting it at all. The higher the rate at which time affects value, the more risk there is in waiting for liquidity and the more chance that you won't get it at all.

As *r* increases the PV of the annuity decreases
As *r* decreasesthe PV of the annuity increases

You can also look at the relationship of time and cash flow to annuity value. Suppose your payout was more (or less) each year, or suppose your payout happened over more (or fewer) years (Figure 4.9 "Lottery Payout Present Values").

Figure 4.9 Lottery Payout Present Values

CF	Rate	Time	PV
500,000	0.0400	20	6,795,163
500,000	0.0200	20	8,175,717
500,000	0.0600	20	5,734,961
750,000	0.0400	20	10,192,745
250,000	0.0400	20	3,397,582
500,000	0.0400	30	8,646,017
500,000	0.0400	10	4,055,448

As seen in Figure 4.9 "Lottery Payout Present Values", the amount of each payment or cash flow affects the value of the annuity because more cash means more liquidity and greater value.

As CF increases the PV of the annuity increases
As CF decreasesthe PV of the annuity decreases

Although time increases the distance from liquidity, with an annuity, it also increases the number of payments because payments occur periodically. The more periods in the annuity, the more cash flows and the more liquidity there are, thus increasing the value of the annuity.

As *t* increases the PV of the annuity increases
As *t* decreasesthe PV of the annuity decreases

It is common in financial planning to calculate the FV of a series of cash flows. This calculation is useful when saving for a goal where a specific amount will be required at a specific point in the future (e.g., saving for college, a wedding, or retirement).

It turns out that the relationships between time, risk, opportunity cost, and value are predictable going forward as well. Say you decide to take the $500,000 annual lottery payout for twenty years. If you deposit that payout in a bank account earning 4 percent, how much would you have in twenty years? What if the account earned more interest? Less interest? What if you won more (or less) so the payout was more (or less) each year?

What if you won $15 million and the payout was $500,000 per year for thirty years, how much would you have then? Or if you won $5 million and the payout was only for ten years? Figure 4.10 "Lottery Payout Future Values" shows how future values would change.

Figure 4.10 Lottery Payout Future Values

CF	Rate	Time	PV	FV
500,000	0.0400	20	6,795,163	14,889,039
500,000	0.0200	20	8,175,717	12,148,685
500,000	0.0600	20	5,734,961	18,392,796
750,000	0.0400	20	10,192,745	22,333,559
250,000	0.0400	20	3,397,582	7,444,520
500,000	0.0400	30	8,646,017	28,042,469
500,000	0.0400	10	4,055,448	6,003,054

Going forward, the rate at which time affects value (r) is the rate at which value grows, or the rate at which your value compounds. It is also called the **rate of compounding**. The bigger the effect of time on value, the more value you will end up with because more time has affected the value of your money while it was growing as it waited for you. So, looking forward at the future value of an annuity:

As *r* increases the FV of the annuity increases
As *r* decreasesthe FV of the annuity decreases

The amount of each payment or cash flow affects the value of the annuity because more cash means more liquidity and greater value. If you were getting more cash each year and depositing it into your account, you'd end up with more value.

As CF increases the FV of the annuity increases
As CF decreasesthe FV of the annuity decreases

The more time there is, the more time can affect value. As payments occur periodically, the more cash flows there are, the more liquidity there is. The more periods in the annuity, the more cash flows, and the greater the effect of time, thus increasing the future value of the annuity.

As *t* increases the FV of the annuity increases
As *t* decreasesthe FV of the annuity decreases

There is also a special kind of annuity called a **perpetuity**, which is an annuity that goes on forever (i.e., a series of cash flows of equal amounts occurring at regular

intervals that never ends). It is hard to imagine a stream of cash flows that never ends, but it is actually not so rare as it sounds. The dividends from a share of corporate stock are a perpetuity, because in theory, a corporation has an infinite life (as a separate legal entity from its shareholders or owners) and because, for many reasons, corporations like to maintain a steady dividend for their shareholders.

The perpetuity represents the maximum value of the annuity, or the value of the annuity with the most cash flows and therefore the most liquidity and therefore the most value.

Life Is a Series of Cash Flows

Once you understand the idea of the time value of money, and of its use for valuing a series of cash flows and of annuities in particular, you can't believe how you ever got through life without it. These are the fundamental relationships that structure so many financial decisions, most of which involve a series of cash inflows or outflows. Understanding these relationships can be a tool to help you answer some of the most common financial questions about buying and selling liquidity, because loans and investments are so often structured as annuities and certainly take place over time.

Loans are usually designed as annuities, with regular periodic payments that include interest expense and principal repayment. Using these relationships, you can see the effect of a different amount borrowed ($PV_{annuity}$), interest rate (r), or term of the loan (t) on the periodic payment (CF).

For example, if you get a $250,000 (PV), thirty-year (t), 6.5 percent (r) mortgage, the monthly payment will be $1,577 (CF). If the same mortgage had an interest rate of only 5.5 percent (r), your monthly payment would decrease to $1,423 (CF). If it were a fifteen-year (t) mortgage, still at 6.5 percent (r), the monthly payment would be $2,175 (CF). If you can make a larger down payment and borrow less, say $200,000 (PV), then with a thirty-year (t), 6.5 percent (r) mortgage you monthly payment would be only $1,262 (CF) (Figure 4.11 "Mortgage Calculations").

Figure 4.11 Mortgage Calculations

CF	Rate (r)	Time (t)	PV
1,577	0.0054	360	250,000
1,423	0.0046	360	250,000
2,175	0.0054	180	250,000
1,262	0.0054	360	200,000

Note that in Figure 4.11 "Mortgage Calculations", the mortgage rate is the monthly rate, that is, the annual rate divided by twelve (months in the year) or $r \div 12$, and that t is stated as the number of months, or the number of years × 12 (months in the year). That is because the mortgage requires monthly payments, so all the variables must be expressed in units of months. In general, the periodic unit used is defined by the

frequency of the cash flows and must agree for all variables. In this example, because you have monthly cash flows, you must calculate using the monthly discount rate (r) and the number of months (t).

Saving to reach a goal—to provide a down payment on a house, or a child's education, or retirement income—is often accomplished by a plan of regular deposits to an account for that purpose. The savings plan is an annuity, so these relationships can be used to calculate how much would have to be saved each period to reach the goal (CF), or given how much can be saved each period, how long it will take to reach the goal (t), or how a better investment return (r) would affect the periodic savings, or the time needed (t), or the goal (FV).

For example, if you want to have $1,000,000 (FV) in the bank when you retire, and your bank pays 3 percent (r) interest per year, and you can save $10,000 per year (CF) toward retirement, can you afford to retire at age sixty-five? You could if you start saving at age eighteen, because with that annual saving at that rate of return, it will take forty-seven years (t) to have $1,000,000 (FV). If you could save $20,000 per year (CF), it would only take thirty-one years (t) to save $1,000,000 (FV). If you are already forty years old, you could do it if you save $27,428 per year (CF) or if you can earn a return of at least 5.34 percent (r) (Figure 4.12 "Retirement Savings Calculations").

Figure 4.12 Retirement Savings Calculations

CF	Rate (*r*)	Time (*t*)	PV	FV
10,000	0.0300	47	250,000	1,000,000
20,000	0.0300	31	400,000	1,000,000
27,428	0.0300	25	477,606	1,000,000
20,000	0.0534	25	272,621	1,000,000

As you can see, the relationships between time, risk, opportunity cost, and value are some of the most important relationships you will ever encounter in life, and understanding them is critical to making sound financial decisions.

Financial Calculations

Modern tools make it much easier to do the math. Calculators, spreadsheets, and software have been developed to be very user friendly and widely available.

Financial calculators are designed for financial calculations and have the equations relating the present and future values, cash flows, the discount rate, and time embedded, for single amounts or for a series of cash flows, so that you can calculate any one of those variables if you know all the others.

Personal finance software packages usually come with a planning calculator, which is nothing more than a formula with these equations embedded, so that you can find any one variable if you know the others. These tools are usually presented as a "mortgage calculator" or a "loan calculator" or a "retirement planner" and are set up to answer common planning questions such as "How much do I have to save every year for retirement?" or "What will my monthly loan payment be?"

Spreadsheets also have the equations already designed and readily accessible, as functions or as macros. There are also stand-alone software applications that may be downloaded to a mobile device, such as a smartphone or Personal Digital Assistant (PDA). They are useful in answering planning questions but lack the ability to store and track your situation in the way that a more complete software package can.

The calculations are discussed here not so that you can perform them, as you have many tools to choose from that can do that more efficiently, but so that you can understand them, and most importantly, so that you can understand the relationships that they describe.

KEY TAKEAWAYS

- The idea of the time value of money is fundamental to financial decisions.
- The present value of the series of cash flows is equal to the sum of the present value of each cash flow.
- A series of cash flows is an annuity when there are regular payments at regular intervals and each payment is the same amount.

- To calculate the present value of an annuity, you need to know
  - the amount of the identical cash flows (CF),
  - the frequency of the cash flows,
  - the number of cash flows (t),
  - the discount rate (r) or the rate at which time affects value.

- The calculation for the present value of an annuity yields valuable insights.
  - The more time (t), the more periods and the more periodic payments, that is, the more cash flows, and so the more liquidity and the more value.
  - The greater the cash flows, the more liquidity and the more value.
  - The greater the rate at which time affects value (r) or the greater the opportunity cost and risk or the greater the rate of discounting, the more time affects value.

- The calculation for the future value of an annuity yields valuable insights.
  - The more time (t), the more periods and the more periodic payments, that is, the more cash flows, and so the more liquidity and the more value.
  - The greater the cash flows, the more liquidity and the more value.
  - The greater the rate at which time affects value (r) or the greater the rate of compounding, the more time affects value.
- A perpetuity is an infinite annuity.

EXERCISES

1. In My Notes or in your financial planning journal, identify and record all your cash flows. Which cash flows function as annuities or perpetuities? Calculate the present value of each. Then calculate the future value. Which cash flows give you the greatest liquidity or value?
2. How can you determine if a lump-sum payment or an annuity will have greater value for you?
3. Survey and sample financial calculators listed at http://www.dinkytown.net/,http://www.helpmefinancial.com/, and http://www.financialcalculators.com. Which ones might prove especially useful to you? What do you identify as the chief strengths and weaknesses of using financial calculators?

4.4 Using Financial Statements to Evaluate Financial Choices

LEARNING OBJECTIVE

1. Define pro forma financial statements.
2. Explain how pro forma financial statements can be used to project future scenarios for the planning process.

Now that you understand the relationship of time and value, especially looking forward, you can begin to think about how your ideas and plans will look as they happen. More specifically, you can begin to see how your future will look in the mirror of your financial statements. Projected or **pro forma financial statements** can show the consequences of choices. To project future financial statements, you need to be able to envision the expected results of all the items on them. This can be difficult, for there can be many variables that may affect your income and expenses or cash flows (CF), and some of them may be unpredictable. Predictions always contain uncertainty, so

projections are always, at best, educated guesses. Still, they can be useful in helping you to see how the future may look.

We can glimpse Alice's projected cash flow statements and balance sheets for each of her choices, for example, and their possible outcomes. Alice can actually project how her financial statements will look after each choice is followed.

When making financial decisions, it is helpful to be able to think in terms of their consequences on the financial statements, which provide an order to our summary of financial results. For example, in previous chapters, Alice was deciding how to decrease her debt. Her choices were to continue to pay it down gradually as she does now; to get a second job to pay it off faster; or to go to Vegas, hit it big (or lose big), and eliminate her debt altogether (or wind up with even more). Alice can look at the effects of each choice on her financial statements (Figure 4.14 "Potential Effects on Alice's Financial Statements")

Figure 4.14 Potential Effects on Alice's Financial Statements

Choices	Income Statement	Cash Flow Statement	Balance Sheet
Continue	No new effects	No new effects	↓Debt ↑Net worth
Second Job	↑Income	No net effect (increased cash flow from wages is used to pay debt)	↓Debt faster ↑Net worth faster
Vegas: Win	↑Expenses (for the trip)	No net effect (increased cash flow from winnings is used to pay debt)	Eliminate debt ↑Net worth
Vegas: Lose	↑Expenses (for the trip)	↓Net cash flow	↑Debt ↓Net worth

Looking more closely at the actual numbers on each statement gives a much clearer look at Alice's situation. Beginning with the income statement, income will increase if she works a second job or goes to Vegas and wins, while expenses will increase (travel expense) if she goes to Vegas at all. Assume that her second job would bring in an extra $20,000 income and that she could win or lose $100,000 in Vegas. Any change in gross wages or winnings (losses) would have a tax consequence; if she loses in Vegas, she will still have income taxes on her salary. Figure 4.15 "Alice's Pro Forma Income Statements" begins with Alice's pro forma income statements.

Figure 4.15 Alice's Pro Forma Income Statements

	Continue	Second Job	Vegas: Win	Vegas: Lose
For the Year Ending	*12/31/10*	*12/31/10*	*12/31/10*	*12/31/10*
Gross wages	**44,650**	**64,650**	**144,650**	**(55,350)**
Income taxes and deduction	8,930	12,930	28,930	
Disposable income	35,720	51,720	115,720	(55,350)
Rent expense	10,800	10,800	10,800	10,800
Food	3,900	3,900	3,900	3,900
Car expenses	3,600	3,600	3,600	3,600
Clothing	1,800	1,800	1,800	1,800
Cell phone	1,200	1,200	1,200	1,200
Internet and cable TV	1,200	1,200	1,200	1,200
Entertainment, travel, etc.	2,700	2,700	3,700	3,700
Total living expense	25,200	25,200	26,200	26,200
Car loan interest	240	240	240	240
Student loan interest	4,240	4,240	4,240	4,240
Total interest expenses	4,480	4,480	4,480	4,480
Net income	6,040	22,040	85,040	(86,030)

While Vegas yields the largest increase in net income or personal profit if she wins, it creates the largest decrease if she loses; it is clearly the riskiest option. The pro forma cash flow statements (Figure 4.16 "Alice's Pro Forma Cash Flow Statements") reinforce this observation.

Figure 4.16 Alice's Pro Forma Cash Flow Statements

	Continue	Second Job	Vegas: Win	Vegas: Lose
For the Year Ending	*12/31/10*	*12/31/10*	*12/31/10*	*12/31/10*
Cash from gross wages	**44,650**	**64,650**	**44,650**	**44,650**
Cash paid for:				
Income taxes and deductions	(8,930)	(12,930)	(8,930)	(8,930)
Rent expense	(10,800)	(10,800)	(10,800)	(10,800)
Food	(3,900)	(3,900)	(3,900)	(3,900)
Car expenses	(3,600)	(3,600)	(3,600)	(3,600)
Clothing	(1,800)	(1,800)	(1,800)	(1,800)
Cell phone	(1,200)	(1,200)	(1,200)	(1,200)
Internet and cable TV	(1,200)	(1,200)	(1,200)	(1,200)
Entertainment, travel, etc.	(2,700)	(2,700)	(3,700)	(3,700)
Car loan interest	(240)	(240)	(240)	(240)
Student loan interest	(4,240)	(4,240)	(4,240)	(4,240)
Operating cash flow	6,040	22,040	5,040	5,040
Cash from gambling	–	–	100,000	(100,000)
Cash for repayment of car loan	(2,160)	(2,160)	(2,700)	(2,160)
Cash for repayment of student loan	(3,480)	(19,000)	(53,000)	(7,760)
Proceeds from new loan	–	–	–	104,880
Financing cash flows	(5,640)	(21,160)	44,300	(5,040)
Net cash flow	400	880	49,340	0

If Alice has a second job, she will use the extra cash flow, after taxes, to pay down her student loan, leaving her with a bit more free cash flow than she would have had without the second job. If she wins in Vegas, she can pay off both her car loan and her student loan and still have an increased free cash flow. However, if she loses in Vegas, she will have to secure more debt to cover her losses. Assuming she borrows as much as she loses, she will have a small negative net cash flow and no free cash flow, and her other assets will have to make up for this loss of cash value.

So, how will Alice's financial condition look in one year? That depends on how she proceeds, but the pro forma balance sheets (Figure 4.17 "Alice's Pro Forma Balance Sheets") can give a glimpse.

Figure 4.17 Alice's Pro Forma Balance Sheets

	Continue	Second Job	Vegas: Win	Vegas: Lose
	12/31/10	*12/31/10*	*12/31/10*	*12/31/10*
Assets				
Car	5,000	5,000	5,000	5,000
Savings	650	1,130	49,590	0
Total assets	5,650	6,130	54,590	5,000
Liabilities				
Car loan	540	540	–	540
Student loan	45,240	34,000	–	45,240
New loan	–	–	–	104,880
Total liabilities	45,780	34,540	0	150,660
Net worth	(40,130)	(28,410)	54,590	(145,660)

If Alice has a second job, her net worth increases but is still negative, as she has paid down more of her student loan than she otherwise would have, but it is still larger than her asset value. If she wins in Vegas, her net worth can be positive; with her loan paid off entirely, her asset value will equal her net worth. However, if she loses in Vegas, she will have to borrow more, her new debt quadrupling her liabilities and decreasing her net worth by that much more.

A summary of the critical "bottom lines" from each pro forma statement (Figure 4.18 "Alice's Pro Forma Bottom Lines") most clearly shows Alice's complete picture for each alternative.

Figure 4.18 Alice's Pro Forma Bottom Lines

Alice's Choices	Continue	Second Job	Vegas: Win	Vegas: Lose
	12/31/10	*12/31/10*	*12/31/10*	*12/31/10*
Net income	6,040	22,040	85,040	(86,030)
Net cash flow	400	880	49,340	(4,880)
Net worth	(40,130)	(28,410)	54,590	(145,660)

Going to Vegas creates the best and the worst scenarios for Alice, depending on whether she wins or loses. While the outcomes for continuing or getting a second job are fairly certain, the outcome in Vegas is not; there are two possible outcomes in Vegas. The Vegas choice has the most risk or the least certainty.

The Vegas alternative also has strategic costs: if she loses, her increased debt and its obligations—more interest and principal payments on more debt—will further delay her goal of building an asset base from which to generate new sources of income. In the near future, or until her new debt is repaid, she will have even fewer financial choices.

The strategic benefit of the Vegas alternative is that if she wins, she can eliminate debt, begin to build her asset base, and have even more choices (by eliminating debt and freeing cash flow).

The next step for Alice would be to try to assess the probabilities of winning or of losing in Vegas. Once she has determined the risk involved—given the consequences now illuminated on the pro forma financial statements—she would have to decide if she can tolerate that risk, or if she should reject that alternative because of its risk.

KEY TAKEAWAY

Pro forma financial statements show the consequences of financial choices in the context of the financial statements.

EXERCISES

1. What do pro forma financial statements show?
2. What are pro forma financial statements based on?
3. What are the strategic benefits of making financial projections on pro forma statements?

4.5 Evaluating Risk

LEARNING OBJECTIVES

1. Explain the basic dynamics of probabilities.
2. Discuss how probabilities can be used to measure expected value.
3. Describe how probabilities can be used in financial projections.
4. Analyze expected outcomes of financial choices.

Risk affects financial decision making in mysterious ways, many of which are the subject of an entire area of scholarship now known as behavioral finance. The study of risk and the interpretation of probabilities are complex. In making financial decisions, a grasp of

their basic dynamics is useful. One of the most important to understand is the idea of independence.

An **independent event** is one that happens by chance. It cannot be willed or decided upon. The probability or likelihood of an independent event can be measured, based on its frequency in the past, and that probability can be used to predict whether it will recur. Independent events can be the result of complex situations. They can be studied to see which confluence of circumstances or conditions make them more or less likely or affect their probability. But an independent event is, in the end, no matter how skillfully analyzed, a matter of some chance or uncertainty or risk; it cannot be determined or chosen.

Alice can choose whether or not to go to Vegas, but she cannot choose whether or not to win. Winning—or losing—is an independent event. She can predict her chances, the probability, that she'll win based on her past experiences, her apparent skill and knowledge, and the known odds of casino gambling (about which many studies have been done and there is much knowledge available). But she cannot choose to win; there is always some uncertainty or risk that she will not.

The probability of any one outcome for an event is always stated as a percentage of the total outcomes possible. An independent or risky event has at least two possible outcomes: it happens or it does not happen. There may be more outcomes possible, but there are at least two; if there were only one outcome possible, there would be no uncertainty or risk about the outcome.

For example, you have a "50-50 chance" of "heads" when you flip a coin, or a 50 percent probability. On average "heads" comes up half the time. That probability is based on historic frequency; that is, "on average" means that for all the times that coins have been flipped, half the time "heads" is the result. There are only two possible outcomes when you flip a coin, and there is a 50 percent chance of each. The probabilities of each possible outcome add up to 100 percent, because there is 100 percent probability that something will happen. In this case, half the time it is one result, and half the time it is the other. In general, the probabilities of each possible outcome—and there may be many—add to 100 percent.

Probabilities can be used in financial decisions to measure the expected result of an independent event. That expectation is based on the probabilities of each outcome and its result if it does occur. Suppose you have a little wager going on the coin flip; you will win a dollar if it come up "heads" and you will lose a dollar if it does not ("tails"). You have a 50 percent chance of $1.00 and a 50 percent chance of −$1.00. Half the time you can expect to gain a dollar, and half the time you can expect to lose a dollar. Your expectation of the average result, based on the historic frequency or probability of each outcome and its actual result, is

$(0.50 \times 1.00) + (0.50 \times -1.00) = 0.50 + -0.50 = 0$, or (probability heads × result heads)+(probability tails × result tails)

—note that the probability$_{heads}$ + the probability$_{tails}$ = 1 or 100%—because those are all the possible outcomes. The expected result for each outcome is its probability or likelihood multiplied by its result. The expected result or **expected value** for the action, for flipping a coin, is its weighted average outcome, with the "weights" being the probabilities of each of its outcomes.

If you get $1.00 every time the coin flips "heads" and it does so half the time, then half the time you get a dollar, or you can expect overall to realize half a dollar or $0.50 from flipping "heads." The other half of the time, you can expect to lose a dollar, so your expectation has to include the possibility of flipping "tails" with an overall or average result of losing $0.50 or −$0.50. So you can expect 0.50 from one outcome and −0.50 from the other: altogether, you can expect 0.50 + −0.50 or 0 (which is why "flipping coins" is not a popular casino game.)

The expected value (E(V)) of an event is the sum of each possible outcome's probability multiplied by its result, or

$$E(V)=\Sigma(p_n \times r_n),$$

where Σ means summation, *p* is the probability of an outcome, *r* is its result, and *n* is the number of outcomes possible.

When faced with the uncertainty of an alternative that involves an independent event, it is often quite helpful to be able to at least calculate its expected value. Then, when making a decision, that expectation can be weighed against or compared to those of other choices.

For example, Alice has projected four possible outcomes for her finances depending on whether she continues, gets a second job, wins in Vegas, or loses in Vegas, but there are really only three choices: continue, second job, or go to Vegas—since winning or losing are outcomes of the one decision to go to Vegas. She knows, with little or no uncertainty, how her financial situation will look if she continues or gets a second job. To compare the Vegas choice with the other two, she needs to predict what she can expect from going to Vegas, given that she may win or lose once there.

Alice can calculate the expected result of going to Vegas if she knows the probabilities of its two outcomes, winning and losing. Alice does a bit of research and has a friend show her a few tricks and decides that for her the probability of winning is 30 percent, which makes the probability of losing 70 percent. (As there are only two possible outcomes in this case, their probabilities must add to 100 percent.) Her expected result in Vegas, then, is

$$(0.30\times100{,}000)+(0.70\times-100{,}000)=30{,}000+-70{,}000=-40{,}000.$$

Using the same calculations, she can project the expected result of going to Vegas on her pro forma financial statements (Figure 4.21 "Alice's Expected Outcomes with a 30 Percent Chance of Winning in Vegas"). Look at the effect on her bottom lines:

Figure 4.21 Alice's Expected Outcomes with a 30 Percent Chance of Winning in Vegas

Alice's Choices	Continue	Second Job	Go to Vegas
			$P_{win} = 30\%$
	12/31/2010	*12/31/2010*	*12/31/2010*
Net income	6,040	22,040	(34,709)
Net cash flow	400	880	11,386
Net worth	(40,130)	(28,410)	(100,632)

If she only has a 30 percent chance of winning in Vegas, then going there at all is the worst choice for her in terms of her net income and net worth. Her net cash flow (CF) actually seems best with the Vegas option, but that assumes she can borrow to pay her gambling losses, so her losses don't create net negative cash flow. She does, however, create debt.

Alice can also calculate what the probability of winning would have to be to make it a worthwhile choice at all, that is, to give her at least as good a result as either of her other choices (Figure 4.22 "Alice's Expected Outcomes to Make Vegas a Competitive Choice").

Figure 4.22 Alice's Expected Outcomes to Make Vegas a Competitive Choice

Alice's Choices	Continue	Second Job	Go to Vegas
			$P_{win} = 78\%$
	12/31/2010	*12/31/2010*	*12/31/2010*
Net income	6,040	22,040	47,404
Net cash flow	400	880	37,412
Net worth	(40,130)	(28,130)	(28,130)

To be the best choice in terms of all three bottom lines, Alice would have to have a 78 percent chance of winning at Vegas.

Her net worth would still be negative, but all three bottom lines would be at least as good or better than they would be with her other two choices. If Alice thought she had at least a 78 percent chance of winning and could tolerate the risk that she might not, Vegas would be a viable choice for her.

Those are two very big "ifs," but by being able to project an expected value or result for each of her choices, using the probabilities of each outcome for the choice with uncertainty, Alice can at least measure and compare the choices.

Using probabilities to derive the expected value of a choice provides a way to evaluate an alternative with uncertainty. It requires projecting the probabilities and results of each possible outcome or independent event. It cannot remove the uncertainty or the risk

that independence presents, but it can at least provide a way to measure and then compare with other measurable, certain or uncertain, choices.

KEY TAKEAWAYS

- Probabilities can be used in financial decisions to measure the expected result of an independent event.
- The expected value for a choice may be figured as $E(V) = \Sigma (p_n \times r_n)$.
- Expected value can be weighed against or compared to the values of other choices.

EXERCISES

1. How are probabilities used in financial decisions?
2. How can you calculate the expected values of financial alternatives?
3. Compared to her other two choices and her financial goals, should Alice go to Vegas? Why, or why not?
4. Read the explanation of expected value and its application to poker playing at CardsChat: The Worldwide Poker Community (http://www.cardschat.com/poker-odds-expected-value.php). Alice might have used similar information to calculate her chances of winning at Vegas.

Chapter 5 Financial Plans: Budgets

Introduction

Seeing the value of reaching a goal is often much easier than seeing a way to reach that goal. People often resolve to somehow improve themselves or their lives. But while they are not lacking sincerity, determination, or effort, they nevertheless fall short for want of a plan, a map, a picture of why and how to get from here to there.

Pro forma financial statements provide a look at the potential results of financial decisions. They can also be used as a tool to plan for certain results. When projected in the form of a budgetA projection of the financial requirements and consequences of a plan., figures become not only an estimated result but also an actual strategy or plan, a map illustrating a path to achieve a goal. Later, when you compare actual results to the original plan, you can see how shortfalls or successes can point to future strategies.

Budgets are usually created with a specific goal in mind: to cut living expenses, to increase savings, or to save for a specific purpose such as education or retirement. While the need to do such things may be brought into sharper focus by the financial statements, the budget provides an actual plan for doing so. It is more a document of action than of reflection.

As an action statement, a budget is meant to be dynamic, a reconciliation of "facts on the ground" and "castles in the air." While financial statements are summaries of historic reality, that is, of all that has already happened and is "sunk," budgets reflect the current realities that define the next choices. A budget should never be merely followed but should constantly be revised to reflect new information.

5.1 The Budget Process

LEARNING OBJECTIVES

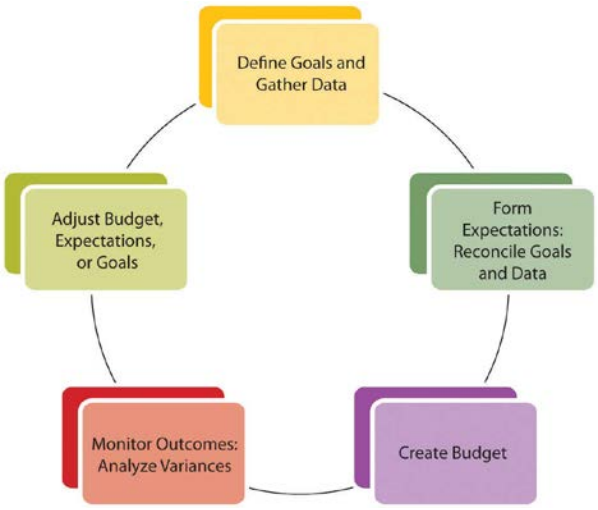
1. Trace the budget process.
2. Discuss the relationships of goals and behaviors.
3. Demonstrate the importance of conservatism in the budget process.
4. Show the importance of timing in the budget process.

The budget process is an infinite loop similar to the larger financial planning process. It involves

- defining goals and gathering data;
- forming expectations and reconciling goals and data;
- creating the budget;

- monitoring actual outcomes and analyzing variances;
- adjusting budget, expectations, or goals;
- redefining goals.

Figure 5.2 The Budget Process



A review of your financial statements or your current financial condition—as well as your own ideas about how you are and could be living—should indicate immediate and longer-term goals. It may also point out new choices. For example, an immediate goal may be to lower housing expense. In the short-term you could look for an apartment with lower rent, but in the long run, it may be more advantageous to own a home. This long-term goal may indicate a need to start a savings plan for a down payment.

The process of creating a budget can be instructive. Creating a budget involves projecting realistic behavior. Your assumptions may come from your actual past behavior based on accurate records that you have gathered. If you have been using personal finance software, it has been keeping those records for you; if not, a thorough review of your checkbook and investment statements will reveal that information. Financial statements are useful summaries of the information you need to create a budget.

After formulating realistic expectations based on past behavior and current circumstances, you still must reconcile your future behavior with your original expectations. For example, you may recognize that greater sacrifices need to be made, or that you must change your behavior, or even that your goals are unattainable and should be more realistic—perhaps based on less desirable choices. On the other hand, this can be a process of happy discovery: goals may be closer or require less sacrifice than you may have thought.

Whether it results in sobering dismay or ambitious joy, the budget process is one of reconciling your financial realities to your financial dreams. How you finance your life determines how you can live your life, so budgeting is really a process of mapping out a

life strategy. You may find it difficult to separate the emotional and financial aspects of your goals, but the more successfully you can do so, the more successfully you will reach your goals.

A budget is a projection of how things should work out, but there is always some uncertainty. If the actual results are better than expected, if incomes are more or expenses less, expectations can be adjusted upward as a welcome accommodation to good fortune. On the other hand, if actual results are worse than expected, if incomes are less or expenses more, not only the next budget but also current living choices may have to be adjusted to accommodate that situation. Those new choices are less than preferred or you would have chosen them in your original plan.

To avoid unwelcome adjustments, you should be **conservative** in your expectations so as to maximize the probability that your actual results will be better than expected. Thus, when estimating, you would always underestimate the income items and potential gains and overestimate the expense items and potential losses.

You will also need to determine a time period and frequency for your budget process: annually, monthly, or weekly. The timing will depend on how much financial activity you have and how much discipline or guidance you want your budget to provide. You should assess your progress at least annually. In general, you want to keep a manageable amount of data for any one period, so the more financial activity you have, the shorter your budget period should be. Since your budget needs to be monitored consistently, you don't want to be flooded with so much data that monitoring becomes too daunting a task. On the other hand, you want to choose an ample period or time frame to show meaningful results. Choose a time period that makes sense for your quantity of data or level of financial activity.

KEY TAKEAWAYS

- A budget is a process that mirrors the financial planning process.
- The process of creating a budget can suggest goals, behaviors, and limitations.
- For the budget to succeed, goals and behaviors must be reconciled.

- Budgets should be prepared conservatively:
  - Overestimate costs.
  - Underestimate earnings.

- The appropriate time period is one that is
  - short enough to limit the amount of data,
  - long enough to capture meaningful data.

EXERCISES

1. In My Notes or your financial planning journal, begin your budgeting process by reviewing your short-term and long-term goals. What will it take to achieve those goals? What limitations and opportunities do you have for meeting them? Then gather your financial data and choose a time period and frequency for checking your progress.
2. View the video "Making a Budget—1" from Expert Village at http://www.youtube.com/watch?v=rd_gGHKz0F0. According to this video, why is a budget so important in personal financial planning? What kinds of problems can you resolve by manipulating your personal budget? What kinds of goals can you attain through changes to your personal budget?

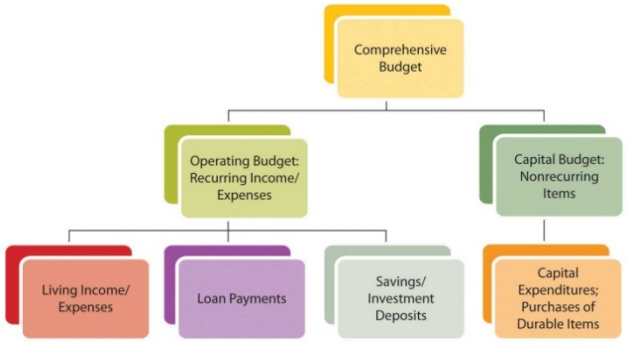
5.2 Creating the Comprehensive Budget

LEARNING OBJECTIVES

1. Describe the components of the comprehensive budget and their purposes.
2. Describe the components of an operating budget.
3. Discuss the sources of recurring income and expenses.
4. Identify the factors in the operating budgeting process.
5. Identify the factors in the capital budgeting process.

Gathering data and creating a budget—with some goals already in mind—are the initial steps in the process. Understanding the format or shape of the budget will help guide you to the kind of information you need. A **comprehensive budget**—that is, a budget covering all aspects of financial life—will include a projection of recurring incomes and expenses and of nonrecurring expenditures. (Nonrecurring income or "windfalls" should not be counted on or "budgeted for," conservatively.) Recurring incomes would be earnings from wages, interest, or dividends. Recurring expenditures may include living expenses, loan repayments, and regular savings or investment deposits. Nonrecurring expenditures may be for capital improvements such as a new roof for your house or for purchases of durable items such as a refrigerator or a car. These are purchases that would not be made each period. A comprehensive budget diagram is shown in Figure 5.4 "Comprehensive Budget Diagram".

Figure 5.4 Comprehensive Budget Diagram



Another distinction in recognizing recurring and nonrecurring items is the time frame for each. Recurring items need to be taken care of repeatedly and are therefore considered in the short term, while the items on the capital budget may allow for long-term planning because they happen less frequently. The different time horizons for planning for recurring and nonrecurring items may allow for different strategies to reach those different goals.

A comprehensive budget is a compilation of an **operating budget** for short-term goals involving recurring items and a **capital budget** for long-term goals involving nonrecurring items.

Operating Budget: Recurring Incomes and Expenditures

Using Financial History

Recurring incomes and expenditures are usually the easiest to determine and project, as they happen consistently and have an immediate effect on your everyday living. An income statement shows incomes and expenses; cash flow statements show actual cash expenditures. Recurring incomes and expenditures are planned in the context of short-term lifestyle goals or preferences.

Look at a time period large enough to capture relevant data. Some incomes and expenditures recur reliably but only periodically or seasonally. For example, you may pay the premium on your auto insurance policy twice per year. It is a recurring expense, but it happens in only two months of the year, so you would have to look at expenditures over enough months to see it. Or your heating or cooling expenses may change seasonally, affecting your utility expenses in some months more than in others.

The time period you choose for a budget should be long enough to show intermittent items as recurring and nonrecurring items as unusual, yet small enough to follow and to manage choices within the period. For personal budgets, a month is the most common budget period to use, since most living expenses are paid at least monthly. However, it is best to use at least one full year's worth of data to get a reasonable monthly average and to see seasonal and periodic items as they occur.

Some items may recur, but not reliably: either their frequency or their amount is uncertain. Taking a conservative approach, you should include the maximum possible amount of uncertain expenses in your budget. If income occurs regularly but the amount is uncertain, conservatively include the minimum amount. If income actually happens irregularly, it may be better just to leave it out of your budget—and your plans—since you can't "count" on it.

Consider the following example: Mark works as a school counselor, tutors on the side, does house painting in the summer, and buys and sells sports memorabilia on the Internet. In 2006, he bought an older house with a $200,000, fixed-rate mortgage at 5.75 percent. Every year, he deposits $1,000 into his retirement account and uses some capital for home improvements. He used a car loan to buy his car. Whatever cash is left over after he has paid his bills is saved in a money market account that earns 3 percent interest. At the end of 2009, Mark is trying to draw up a budget for 2010. Since he bought the house, he has been keeping pretty good financial records, shown in Figure 5.5 "Mark's Financial Data, 2006–2009".

Mark has five sources of income—some more constant, some more reliable, and some more seasonal. His counseling job provides a steady, year-round paycheck. House painting is a seasonal although fairly reliable source of income; in 2008 it was less because Mark fell from a ladder and was unable to paint for two months. Tutoring is a seasonal source of income, and since the school hired an additional counselor in 2008, it has decreased. Memorabilia trading is a year-round but unpredictable source of income. In 2009 he made some very lucrative trades, but in 2007 almost none. Interest income depends on the balance in the money market account. He would include his counseling, painting, and interest incomes in his budget, but should be conservative about including his tutoring or trading incomes.

Mark's expenses are reliable and easily predictable, with a few exceptions. His accident in 2008 increased his medical expenses for that year. Both gas for the car and heating expense vary with the weather and the highly volatile price of oil; in 2008 those expenses were unusually high. Property tax increased in 2009 but is unlikely to do so again for several years.

Figure 5.5 Mark's Financial Data, 2006–2009

	2005	2006 Actual	2007 Actual	2008 Actual	2009 Actual
Incomes					
Wages		32,000	33,500	35,000	36,500
Tutoring		3,000	4,000	5,000	500
Memorabilia Sales		2,500	950	2,650	5,300
House Painting		10,000	11,000	4,500	10,250
Interest Income		180	192	173	146
Total Income		47,680	49,642	47,323	52,696
Payroll/Income Taxes		8,000	8,375	8,750	9,125
Disposable Income		39,680	41,267	38,573	43,571
Living Expenses					
Groceries		3,120	3,120	3,120	3,120
Car—Fuel		1,688	1,875	2,813	1,500
Car—Service, etc.		350	350	350	350
Car—Insurance		800	800	800	800
Electricity		780	780	780	780
Phone/Cable/Internet		1,500	1,188	1,188	1,068
Heat		1,240	1,200	1,990	1,125
Health Insurance		320	335	350	365
Medical		50	50	1,200	50
Dental		200	200	200	200
Travel/Entertainment		3,000	3,000	3,000	3,000
Car Loan Payment		3,600	5,400	5,400	5,400
Mortgage Interest		11,433	11,281	11,120	10,950
Property Tax		3,450	3,450	3,450	4,350
Total Living Expenses		31,530	33,029	35,761	33,058
Income after Living Expenses		8,150	8,238	2,813	10,514
Interest Expense					
Capital Expenditures/ Investment					
Mortgage Principal		2,573	2,725	2,886	3,056
Free Cash Flow		5,577	5,513	(73)	7,458
Retirement Account Deposit		1,000	1,000	1,000	1,000
Home Improvement		4,357	5,327	0	4,146
Savings Deposit (withdrawal)		220	(814)	(1,073)	2,312
Draw on (pay off) Line of Credit					
Net Cash Flow		0	0	0	0
Line of Credit					
Money Market Account Balance	6,000	6,400	5,778	4,878	7,336

Using New Information and "Micro" Factors

Along with your known financial history, you would want to include any new information that may change your expectations. As with any forecast, the more information you can include in your projections, the more accurate it is likely to be.

Mark knows that the hiring of a new counselor has significantly cut into his tutoring income and will likely continue to do so. He will get a modest raise in his wages, but has been notified that the co-pays and deductibles on his medical and dental insurance will increase in 2010. He has just traded in his car and gotten a new loan for a "new" used car.

The personal or micro characteristics of your situation influence your expectations, especially if they are expected to change. Personal factors such as family structure, health, career choice, and age have significant influence on financial choices and goals. If any of those factors is expected to change, your financial situation should be expected to change as well, and that expectation should be included in your budget projections.

For example, if you are expecting to increase or decrease the size of your family or household, that would affect your consumption of goods and services. If you anticipate a change of job or of career, that will affect your income from wages. A change in health may result in working more or less and thus changing income from wages. There are many ways that personal circumstances can change, and they can change your financial expectations, choices, and goals. All these projected changes need to be included in the budget process.

Using Economics and "Macro" Factors

Macro factors affecting your budget come from the context of the wider economy, so understanding how incomes and expenses are created is useful in forming estimates. Incomes are created when labor or capital (liquidity or assets) is sold. The amount of income created depends on the quantity sold and on the price.

The price of labor depends on the relative supply and demand for labor reflected in unemployment rates. The price of liquidity depends on the relative supply and demand for capital reflected in interest rates. Unemployment rates and interest rates in turn depend on the complex, dynamic economy.

The economy tends to behave cyclically. If the economy is in a period of contraction or recession, demand for labor is lower, competition among workers is higher, and wages cannot be expected to rise. As unemployment rises, especially if you are working in an industry that is cyclically contracting with the economy, wages may become unreliable or increasingly risky if there is risk of losing your job. Interest rates are, as a rule, more volatile and thus more difficult to predict, but generally tend to fall during a period of contraction and rise in a period of expansion. A budget period is usually short so that

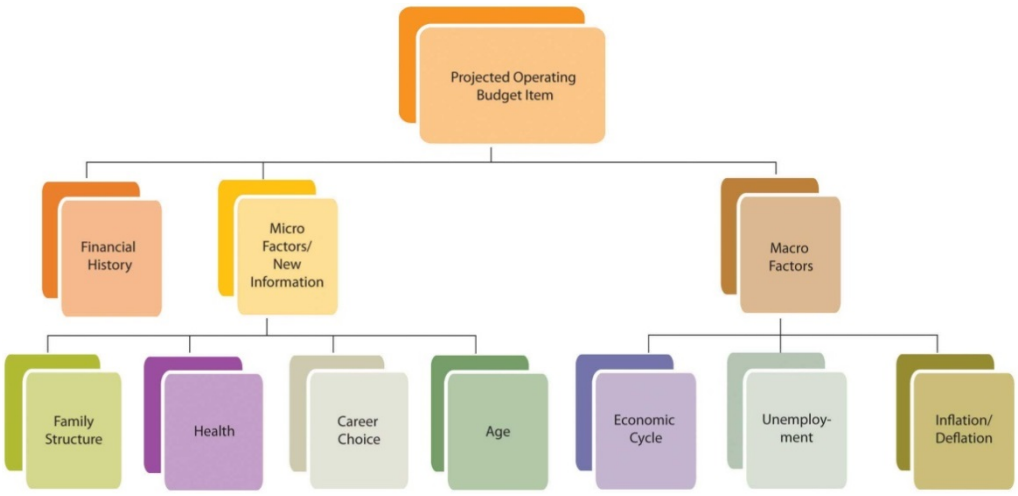
economic factors will not vary widely enough to affect projections over that brief period. Still, those economic factors should inform your estimates of potential income.

Expenses are created when a quantity of goods or services is consumed for a price. That price depends on the relative supply of and demand for those goods and services and also on the larger context of price levels in the economy. If inflation or deflation is decreasing or increasing the value of our currency, then its purchasing power is changing and so is the real cost of expenses. Again, as a rule, the budget period should be short enough so that changes in purchasing power won't affect the budget too much; still, these changes should not be ignored. Price levels are much quicker to change than wage levels, so it is quite possible to have a rise in prices before a rise in wages, which decreases the real purchasing power of your paycheck.

If you have a variable rate loan—that is, a loan for which the interest rate may be adjusted periodically—you are susceptible to interest rate volatility. (This is discussed at length in Chapter 16 "Owning Bonds".) You should be aware of that particular macro factor when creating your budget.

Macroeconomic factors are difficult to predict, as they reflect complex scenarios, but news about current and expected economic conditions is easily available in the media every day. A good financial planner will also be keeping a sharp eye on economic indicators and forecasts. You will have a pretty concrete idea of where the economy is in its cycles and how that affects you just by seeing how your paycheck meets your living expenses (e.g., filling up your car with gas or shopping for groceries). Figure 5.7 "Factors for Determining a Projected Operating Budget Item" suggests how personal history, microeconomic factors, and macroeconomic factors can be used to make projections about items in your budget.

Figure 5.7 Factors for Determining a Projected Operating Budget Item



Using his past history, current information, and understanding of current and expected macroeconomic factors, Mark has put together the budget shown in Figure 5.8 "Mark's 2010 Budget".

To project incomes, Mark relied on his newest information to estimate his wages and tutoring income. He used the minimum income from the past four years for memorabilia sales, which is conservative and reasonable given its volatility. His painting income is less volatile, so his estimate is an average, excluding the unusual year of his accident. Interest income is based on his current money market account balance, which is adjusted for an expected drop in interest rates.

Mark expects his expenses to be what they were in 2009, since his costs and consumption are not expected to change. However, he has adjusted his medical and dental insurance and his car lease payments on the basis of his new knowledge.

The price of gas and heating oil has been extraordinarily volatile during this period (2006–2009), affecting Mark's gas and heating expense, so he bases his estimates on what he knows about his expected consumption and the price. He knows he drives an average of about 15,000 miles per year and that his car gets about 20 miles per gallon. He estimates his gas expense for 2010 by guessing that since oil price levels are about where they were in 2007, gas will cost, on average, what it did then, which was $2.50 per gallon. He will buy, on average, 750 gallons per year (15,000 miles ÷ 20 mpg), so his total expense will be $1,875. Mark also knows that he uses 500 gallons of heating oil each year. Estimating heating oil prices at 2007 levels, his cost will be about the same as it was then, or $1,200.

Mark knows that the more knowledge and information he can bring to bear, the more accurate and useful his estimates are likely to be.

Figure 5.8 Mark's 2010 Budget

	2005	2006 Actual	2007 Actual	2008 Actual	2009 Actual	2009 Budget
Incomes						
Wages		32,000	33,500	35,000	36,500	38,000
Tutoring		3,000	4,000	5,000	500	0
Memorabilia Sales		2,500	950	2,650	5,300	950
House Painting		10,000	11,000	4,500	10,250	10,417
Interest Income		180	192	173	146	49
Total Income		47,680	49,642	47,323	52,696	49,416
Payroll/Income Taxes		8,000	8,375	8,750	9,125	9,500
Disposable Income		39,680	41,267	38,573	43,571	39,916
Living Expenses						
Groceries		3,120	3,120	3,120	3,120	3,120
Car—Fuel		1,688	1,875	2,813	1,500	1,875
Car—Service, etc.		350	350	350	350	350
Car—Insurance		800	800	800	800	800
Electricity		780	780	780	780	780
Phone/Cable/Internet		1,500	1,188	1,188	1,068	1,068
Heat		1,240	1,200	1,990	1,125	1,200
Health Insurance		320	335	350	365	760
Medical		50	50	1,200	50	50
Dental		200	200	200	200	500
Travel/Entertainment		3,000	3,000	3,000	3,000	3,000
Car Loan Payment		3,600	5,400	5,400	5,400	5,988
Mortgage Interest		11,433	11,281	11,120	10,950	10,769
Property Tax		3,450	3,450	3,450	4,350	4,350
Total Living Expenses		31,530	33,029	35,761	33,058	34,610
Income after Living Expenses		8,150	8,238	2,813	10,514	5,305
Interest Expense						321
Capital Expenditures/ Investment						
Mortgage Principal		2,573	2,725	2,886	3,056	3,236
Free Cash Flow		5,577	5,513	–73	7,458	1,748
Retirement Account Deposit		1,000	1,000	1,000	1,000	1,000
Home Improvement		4,357	5,327	0	4,146	15,000
Savings Deposit (withdrawal)		220	–814	–1,073	2,312	–7,385
Draw on (pay off) Line of Credit						6,870
Net Cash Flow		0	0	0	0	3
Line of Credit						6,870
Money Market Account Balance	6,000	6,400	5,778	4,878	7,336	0

Capital Budget: Capital Expenditures and Investments

Income remaining after the deduction of living expenses and debt obligations, or **free cash flow**, is cash available for capital expenditures or investment. Capital expenditures are usually part of a long-term plan of building an asset base. Investment may also be part of a longer-term plan to build an asset base or to achieve a specific goal such as financing education or retirement.

Long-term strategies are based on expected changes to the micro factors that shape goals. For example, you want to save for retirement because you anticipate aging and not being as willing or able to sell labor. Expanding or shrinking the family structure may create new savings goals or a change in housing needs that will indicate a change in asset base (e.g., buying or selling a house).

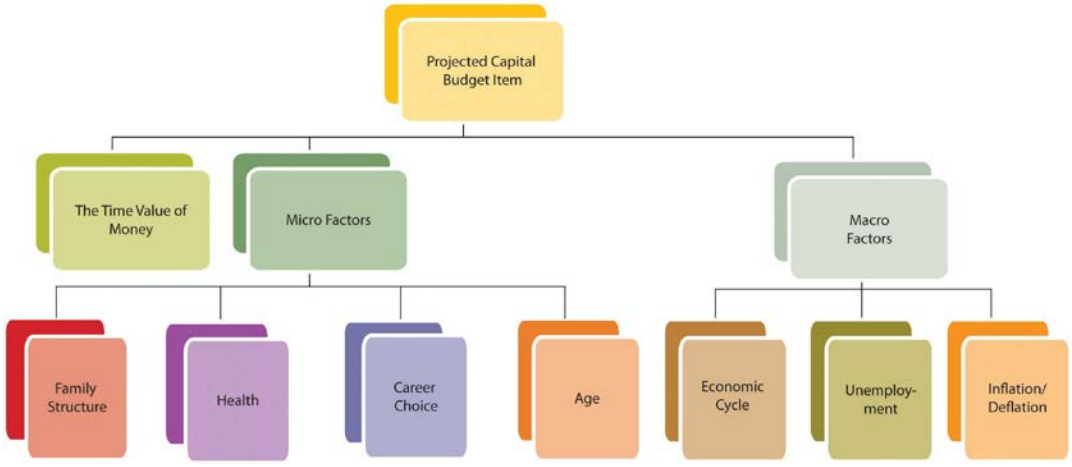
Some changes will eliminate a specific goal. A child finishing college, for example, ends the need for education savings. Some changes will emphasize the necessity of a goal, such as a decline in health underscoring the need to save for retirement. As personal factors change, you should reassess your longer-term goals and the capital expenditure toward those goals because long-term goals and thus capital expenditures may change with them.

While many personal factors are relatively predictable over the long-term (e.g., you will get older, not younger), the macroeconomic factors that will occur simultaneously are much harder to predict. Will the economy be expanding or contracting when you retire? Will there be inflation or deflation? The further (in time) you are from your goals, the harder it is to predict those factors and the less relevant they are to your budgeting concerns. As you get closer to your goals, macro factors become more influential in the assessment of your goals and your progress toward them.

Since long-term strategies happen over time, you should use the relationships between time and value to calculate capital expenditures and progress toward long-term goals. Long-term goals are often best reached by a progression of steady and even steps; for example, a saving goal is often reached by a series of regular and steady deposits. Those regular deposits form an annuity. Knowing how much time there is and how much compounding there can be to turn your account balance (the present value of this annuity) into your savings goal (its future value), you can calculate the amount of the deposits into the account. This can then be compared to your projected free cash flow to see if such a deposit is possible. You can also see if your goal is too modest or too ambitious and should be adjusted in terms of the time to reach a goal or the rate at which you do.

Capital expenditures may be a one-time investment, like a new roof. A capital expenditure may also be a step toward a long-term goal, like an annual savings deposit. That goal should be assessed with each budget, and that “step” or capital expenditure should be reviewed. Figure 5.10 "Factors for Determining the Projected Capital Budget Item" shows the relationship of factors used to determine the capital budget.

Figure 5.10 Factors for Determining the Projected Capital Budget Item



Mark's 2010 budget (shown in Figure 5.8 "Mark's 2010 Budget") projects a drop in income and disposable income, and a rise in living expenses, leaving him with less free cash flow for capital expenditures or investments. He knows that his house needs a new roof (estimated cost = $15,000) and was hoping to have that done in 2010. However, that capital expenditure would create negative net cash flow, even if he also uses the savings from his money market account. Mark's budget shows that both his short-term lifestyle preferences (projected income and expenses) and progress toward his longer-term goals (property improvement and savings) cannot be achieved without some changes and choices. What should those changes and choices be?

KEY TAKEAWAYS

- A comprehensive budget consists of an operating budget and a capital budget.
- The operating budget accounts for recurring incomes and expenses.
- Recurring incomes result from selling labor and/or liquidity.
- Recurring expenses result from consumption of goods and/or services.

- Recurring incomes and expenses
  - satisfy short-term, lifestyle goals,
  - create free cash flow for capital expenditures.
- The capital budget accounts for capital expenditures or nonrecurring items.
- Capital expenditures are usually part of a longer-term plan or goal.

- Projecting recurring incomes and expenses involves using
  - financial history,
  - new information and microeconomic factors,
  - macroeconomic factors.

- Different methods may be used to project different incomes and expenses depending on the probability, volatility, and predictability of quantity and price.

- Projecting capital expenditures involves using the following:
  - New information and microeconomic factors
  - Macroeconomic factors, although these are harder to predict for a longer period, and therefore are less relevant
  - The relationships described by the time value of money

EXERCISES

1. Using Mark's budget sheet as a guide, adapt the budget categories and amounts to reflect your personal financial realities and projections. Develop an operating budget and a capital budget, distinguishing recurring incomes and expenses from nonrecurring capital expenditures. On what bases will you make projections about your future incomes and expenses?
2. How does your budget sheet relate to your income statement, your cash flow statement, and your balance sheet? How will you use this past history to develop a budget to reach your short-term and long-term goals?

5.3 The Cash Budget and Other Specialized Budgets

LEARNING OBJECTIVES

1. Discuss the use of a cash budget as a cash management tool.
2. Explain the cash budget's value in clarifying risks and opportunities.
3. Explain the purpose of a specialized budget, including a tax budget.
4. Demonstrate the importance of including specialized budgets in the comprehensive budget.

The Cash Budget

When cash flows are not periodic, that is, when they are affected by seasonality or a different frequency than the budgetary period, a closer look at cash flow management can be helpful. Although cash flows may be adequate to support expenses for the whole year, there may be timing differences. Cash flows from income may be less frequent than cash flows for expenses, for example, or may be seasonal while expenses are more

regular. Most expenses must be paid on a monthly basis, and if some income cash flows occur less frequently or only seasonally, there is a risk of running out of cash in a specific month. For cash flows, timing is everything.

A good management tool is the cash budget, which is a rearrangement of budget items to show each month in detail. Irregular cash flows can be placed in the specific months when they will occur, allowing you to see the effects of cash flow timing more clearly. Mark's cash budget for 2010 is in the spreadsheet shown in Figure 5.11 "Mark's Cash Budget".

Figure 5.11 Mark's Cash Budget

Incomes	2010 January	2010 February	2010 March	2010 April	2010 May	2010 June	2010 July	2010 August	2010 September	2010 October	2010 November	2010 December
Wages	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167
Tutoring	0	0	0	0	0	0	0	0	0	0	0	0
Memorabilia Sales	79	79	79	79	79	79	79	79	79	79	79	79
House Painting						3,472	3,472	3,472				
Interest Income	4	25	36	45	57	0	0	0	0	0	0	0
Total Income	4,118	3,271	3,281	3,291	3,303	6,718	6,718	6,718	3,246	3,246	3,246	3,246
Payroll/Income Taxes	792	792	792	792	792	792	792	792	792	792	792	792
Disposable Income	4,910	4,062	4,073	4,083	4,094	7,510	7,510	7,510	4,038	4,038	4,038	4,038
Living Expenses												
Groceries	260	260	260	260	260	260	260	260	260	260	260	260
Car—Fuel	156	156	156	156	156	156	156	156	156	156	156	156
Car—Service, etc.	29	29	29	29	29	29	29	29	29	29	29	29
Car—Insurance		(400)						(400)				
Electricity	65	65	65	65	65	65	65	65	65	65	65	65
Phone/Cable/Internet	89	89	89	89	89	89	89	89	89	89	89	89
Heat	100	100	100	100	100	100	100	100	100	100	100	100
Health Insurance	63	63	63	63	63	63	63	63	63	63	63	63
Medical	4	4	4	4	4	4	4	4	4	4	4	4
Dental	42	42	42	42	42	42	42	42	42	42	42	42
Travel/Entertainment	250	250	250	250	250	250	250	250	250	250	250	250
Car Loan Payment	499	499	499	499	499	499	499	499	499	499	499	499
Mortgage Interest	897	897	897	897	897	897	897	897	897	897	897	897
Property Tax										(4,350)		
Total Living Expenses	2,455	2,055	2,455	2,455	2,455	2,455	2,455	2,055	2,455	(1,895)	2,455	2,455
Income after Living Expenses	7,365	6,117	6,528	6,538	6,549	9,965	9,965	9,565	6,493	2,143	6,493	6,493
Interest Expense						(49)	(27)	(7)	(9)	(40)	(43)	(46)
Capital Expenditures/ Investment												
Mortgage Principal	270	270	270	270	270	270	270	270	270	270	270	270
Free Cash Flow	7,634	6,387	5,798	6,808	6,819	10,186	10,208	9,827	6,754	2,372	6,719	6,716
IRA Deposit			(1,000)									
Home Improvement					(15,000)							
Savings Deposit (withdrawal)	7,634	6,387	5,798	6,808	(34,126)							
Draw on (pay off) Line of Credit					10,525	(3,250)	(3,275)	(2,890)	180	4,765	415	417
Net Cash Flow	0	0	0	0	36,470	6,936	6,933	6,937	6,934	7,137	7,134	7,133
Line of Credit			27,216		10,525	7,275	4,000	1,110	1,290	6,055	6,470	6,887
Money Market Account Balance	14,971	21,383		34,069	0	0	0	0	0	0	0	0

Mark's original annual budget (Figure 5.8 "Mark's 2010 Budget") shows that although his income is enough to cover his living expenses, it does not produce enough cash to

support his capital expenditures, specifically, to fix the roof. In fact, his cash flow would fall short by about $6,870, even after he uses the cash from his savings (the money market account). If he must make the capital expenditure this year, he can finance it with a **line of credit**: a loan where money can be borrowed as needed, up to a limit, and paid down as desired, and interest is paid only on the outstanding balance. Using the line of credit, Mark would create an extra $321 of interest expense for the year.

The cash budget (Figure 5.11 "Mark's Cash Budget") shows a more detailed and slightly different story. Because of Mark's seasonal incomes, if he has the roof fixed in May, he will need to borrow $10,525 in May (before he has income from painting). Then he can pay that balance down until October, when he will need to extend it again to pay his property tax. By the end of the year, his outstanding debt will be a bit more than originally shown, with an ending balance of $6,887. But his total interest expense will be a bit less—only $221—as the loan balance (and therefore the interest expense) will be less in some of the months that he has the loan.

The cash (monthly) budget shows a different story than the annual budget because of the seasonal nature of Mark's incomes. Since he is planning the capital expenditures before he begins to earn income from painting, he actually has to borrow more—and assume more risk—than originally indicated.

The cash budget may show risks but also remedies that otherwise may not be apparent. In Mark's case, it is clear that the capital expenditure cannot be financed without some external source of capital, most likely a line of credit. He would have to pay interest on that loan, creating an additional expense. That expense would be in proportion to the amount borrowed and the time it is borrowed for. In his original plan the capital expenditure occurred in May, and Mark would have had to borrow about $10,525, paying interest for the next seven months of the year. Delaying the capital expenditure until October, however, would cost him less, because he would have to borrow less and would be paying interest in fewer months. An alternative cash budget illustrating this scenario is shown in Figure 5.12 "Mark's Alternative Cash Budget".

Figure 5.12 Mark's Alternative Cash Budget

Incomes	2010 January	2010 February	2010 March	2010 April	2010 May	2010 June	2010 July	2010 August	2010 September	2010 October	2010 November	2010 December
Wages	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167
Tutoring	0	0	0	0	0	0	0	0	0	0	0	0
Memorabilia Sales	79	79	79	79	79	79	79	79	79	79	79	79
House Painting								3,472	3,472			
Interest Income	12	12	10	8	8	8	13	19	24	0	0	0
Total Income	3,258	3,257	3,256	3,254	3,254	6,726	6,731	6,737	3,269	3,246	3,246	3,246
Payroll/Income Taxes	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)
Disposable Income	2,466	2,466	2,465	2,462	2,462	5,934	5,940	5,945	2,478	2,454	2,454	2,454
Living Expenses												
Groceries	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)
Car—Fuel	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)
Car—Service, etc.	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)
Car—Insurance		(400)						(400)				
Electricity	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)
Phone\Cable\Internet	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)
Heat	(200)	(200)	(200)						(200)	(200)	(200)	(200)
Health Insurance	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)
Medical	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Dental	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)
Travel\Entertainment	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)
Car Loan Payment	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)
Mortgage Interest	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)
Property Tax									(4,350)			
Total Living Expenses	(2,555)	(2,955)	(2,555)	(2,355)	(2,355)	(2,355)	(2,355)	(2,755)	(2,355)	(6,905)	(2,555)	(2,555)
Income after Living Expenses	89	489	90	102	102	3,579	3,585	3,190	123	(4,451)	(101)	(101)
Interest Expense					0	0	0	0	0	(38)	(41)	(44)
Capital Expenditures\ Investment												
Mortgage Principal	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)
Free Cash Flow	(358)	(759)	(360)	(162)	(163)	3,309	3,315	2,920	(147)	(4,759)	(412)	(414)
IRA Deposit			(1,000)									
Home Improvement										(15,000)		
Savings Deposit (withdrawal)	(358)	(759)	(1,360)	(162)	(163)	3,309	3,315	2,920	(147)	(14,029)		
Draw on (pay off) Line of Credit										5,730	412	415
Net Cash Flow	0	0	0	0	0	0	0	0	0	0	0	1
Line of Credit					0	0	0	0	0	5,730	6,142	6,557
Money Market Account Balance	6,978	6,290	4,881	4,726	4,571	7,886	11,214	14,153	14,029	0	0	0

Delaying the capital expenditure until October would also allow the money market account to build value—Mark's seasonal income would be deposited during the summer—which would finance more of the capital expenditure. He could borrow less, ending the year about $6,557 short, and his interest expense would be only $123, because he has borrowed less and because he can wait until October to borrow, thus paying interest for only three months of the year.

Timing matters for cash flows because you need to get cash before you spend it, but also because time affects value, so it is always better to have liquidity sooner and hang onto it longer. A cash budget provides a much more detailed look at these timing issues, and the risks—and opportunities—of cash management that you may otherwise have missed.

Other Specialized Budgets

A cash flow budget is a budget that projects a specific aspect of your finances, that is, the cash flows. Other kinds of **specialized budgets** focus on one particular financial

aspect or goal. A specialized budget is ultimately included in the comprehensive budget, as it is a part of total financial activity. It usually reflects one particular activity in more detail, such as the effect of owning and maintaining a particular asset or of pursuing a particular activity. You create a budget for that asset or that activity by segregating its incomes and expenses from your comprehensive budget. It is possible to create such a focused budget only if you can identify and separate its financial activity from the rest of your financial life. If so, you may want to track an activity separately that is directly related to a specific goal.

For example, suppose you decide to take up weekend backpacking as a recreational activity. You are going to try it for two years, and then decide if you want to continue. Aside from assessing the enjoyment that it gives you, you want to be able to assess its impact on your finances. Typically, weekend backpacking requires specialized equipment and clothing, travel to a hiking trail access or campground, and perhaps lodging and meals: capital investment (in the equipment) and then recurring expenses. You may want to create a separate budget for your backpacking investment and expenses in order to assess the value of this new recreational activity.

One common type of specialized budget is a **tax budget**, including activities—incomes, expenses, gains, and losses—that have direct tax consequences. A tax budget can be useful in planning for or anticipating an event that will have significant tax consequences—for example, income from self-employment; the sale of a long-term asset such as a stock portfolio, business, or real estate; or a gift of significant wealth or the settling of an estate.

While it can be valuable to isolate and identify the effects of a specific activity or the progress toward a specific goal, that activity or that goal is ultimately just a part of your larger financial picture. Specialized budgets need to remain a part of your comprehensive financial planning.

KEY TAKEAWAYS

- The cash flow budget is an alternative format used as a cash management tool that provides
  - more detailed information about the timing and amounts of cash flows,
  - a clearer view of risks and opportunities.
- Specialized budgets focus on a specific asset or activity.
- A tax budget is commonly used to track taxable activities.
- Eventually, specialized budgets need to be included in the comprehensive budget to have a complete perspective.

EXERCISES

1. When is a cash flow budget a useful alternative to a comprehensive budget?

2. Create a specialized budget and a tax budget from your comprehensive budget.

5.4 Budget Variances

LEARNING OBJECTIVES

1. Define and discuss the uses of budget variances.
2. Identify the importance of budget-monitoring activities.
3. Analyze budget variances to understand their causes, including possible changes in micro or macro factors.
4. Analyze budget variances to see potential remedies and to gauge their feasibility.

A **budget variance** occurs when the actual results of your financial activity differ from your budgeted projections. Since your expectations were based on knowledge from your financial history, micro- and macroeconomic factors, and new information, if there is a variance, it is because your estimate was inaccurate or because one or more of those factors changed unexpectedly. If your estimate was inaccurate—perhaps you had overlooked or ignored a factor—knowing that can help you improve. If one or more of those factors has changed unexpectedly, then identifying the cause of the variance creates new information with which to better assess your situation. At the very least, variances will alert you to the need for adjustments to your budget and to the appropriate choices.

Once you have created a budget, your financial life continues. As actual data replace projections, you must monitor the budget compared to your actual activities so that you will notice any serious variances or deviations from the expected outcomes detailed in the budget. Your analysis and understanding of variances constitute new information for adjusting your current behavior, preparing the next budget, or perhaps realistically reassessing your behavior or original goals.

The sooner you notice a budget variance, the sooner you can analyze it and, if necessary, adjust for it. The sooner you correct the variance, the less it costs. For example, perhaps you have had a little trouble living within your means, so you have created a budget to help you do so. You have worked out a plan so that total expenses are just as much as total income. In your original budget you expected to have a certain expense for putting gas in your car, which you figured by knowing the mileage that you drive and the current price of gas. You are following your budget and going along just fine. Suddenly, the price of gas goes way up. So does your monthly expense. That means you'll have to

- spend less for other expenses in order to keep your total expenses within your budget,
- lower your gas expense by driving less, and/or
- increase your income to accommodate this larger expense.

In the short term, monitoring your gas expense alerts you to a need to change your financial behavior by driving less, spending less on other things, or earning more. In the long run, if you find this increased expense intolerable, you will make other choices as well to avoid it. Perhaps you would buy a more fuel-efficient car, for example, or change your lifestyle to necessitate less driving. The number and feasibility of your choices will depend on your elasticity of demand for that particular budget item. But if you hadn't been paying attention, if you had not been monitoring your budget against the real outcomes that were happening as they were happening, you would not have been aware that any change was needed, and you would have found yourself with a surprising budget deficit.

It bears repeating that once you have discovered a significant budget variance, you need to analyze what caused it so that you can address it properly.

Income results from the sale of labor (wages) or liquidity (interest or dividends). If income deviates from its projection, it is because

- a different quantity of labor or liquidity was sold at the expected price (e.g., you had fewer house painting contracts than usual but kept your rates the same),
- the expected quantity of labor or liquidity was sold at a different price (e.g., you had the usual number of contracts but earned less from them), or
- a different quantity of labor or liquidity was sold at a different price (e.g., you had fewer contracts and charged less to be more competitive).

Expenses result from consuming goods or services at a price. If an expense deviates from its projected outcome, it is because

- a different quantity was consumed at the expected price (e.g., you did not use as much gas),
- the expected quantity was consumed at a different price (e.g., you used as much gas but the price of gas fell), or
- a different quantity was consumed at a different price (e.g., you used less gas and bought it for less).

Isolating the cause of a variance is useful because different causes will dictate different remedies or opportunities. For example, if your gas expense has increased, is it because you are driving more miles or because the price of gas has gone up? You can't control the price of gas, but you can control the miles you drive. Isolating the cause allows you to identify realistic choices. In this case, if the variance is too costly, you will need to address it by somehow driving fewer miles.

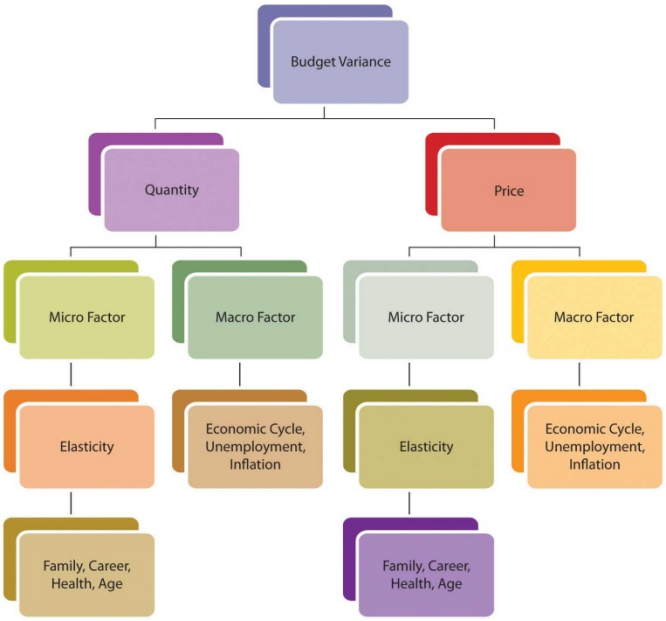
If your income falls, is it because your hourly wage has fallen or because you are working fewer hours? If your wage has fallen, you need to try to increase it either by negotiating with your employer or by seeking a new job at a higher wage. Your success will depend on demand in the labor market and on your usefulness as a supplier of labor.

If you are working fewer hours, it may be because your employer is offering you less work or because you choose to work less. If the problem is with your employer, you may need to renegotiate your position or find a new one. However, if your employer is buying less labor because of decreased demand in the labor market, that may be due to an industry or economic cycle, which may affect your success in making that change.

If it is your choice of hours that has caused the variance, perhaps that is due to personal factors—you are aging or your dependents require more care and attention—that need to be resolved to allow you to work more. Or perhaps you could simply choose to work more.

Identifying why you are going astray from your budget is critical in identifying remedies and choices. Putting those causes in the context of the micro- and macroeconomic factors that affect your situation will make your feasible choices clearer. Figure 5.15 "The Causes of a Budget Variance" shows how these factors can combine to cause a variance.

Figure 5.15 The Causes of a Budget Variance



After three months, Mark decides to look at his budget variances to make sure he's on track. His actual results for January–March 2010 are detailed in Figure 5.16 "Mark's Actual Income and Expenditures, January–March 2010".

Figure 5.16 Mark's Actual Income and Expenditures, January–March 2010

Incomes	2010 January Actual	2010 February Actual	2010 March Actual
Wages	3,167	3,167	3,167
Tutoring	400	400	400
Memorabilia Sales	450	360	1,200
House Painting			
Interest Income	31	34	34
Total Income	4,047	3,960	4,801
Payroll/Income Taxes	–792	–792	–792
Disposable Income	3,256	3,169	4,009
Living Expenses			
Groceries	–260	–260	–260
Car—Fuel	–156	–156	–156
Car—Service, etc.	–29	–29	–29
Car—Insurance		–400	
Electricity	–65	–65	–65
Phone/Cable/Internet	–89	–89	–89
Heat	–200	–200	–200
Health Insurance	–63	–63	–63
Medical	–4	–4	–4
Dental	–42	–42	–42
Travel/Entertainment	0	0	0
Car Loan Payment	–499	–499	–499
Mortgage Interest	–897	–897	–897
Property Tax			
Total Living Expense	–2,305	–2,305	–2,305
Income after Living Expense	951	464	1,704
Interest Expense			
Capital Expenditures/ Investment			
Mortgage Principal	–270	–270	–270
Free Cash Flow	681	194	1,435
Retirement Account Deposit			–1,000
Home Improvement			
Savings Deposit (withdrawal)	681	194	435
Draw on (pay off) Line of Credit			
Net Cash Flow	0	0	0
Line of Credit			
Money Market Account Balance	8,048	8,275	8,774

How will Mark analyze the budget variances he finds? In Mark's case, the income variances are positive. He has picked up a couple of tutoring clients who have

committed to lessons through the end of the school year in June; this new information can be used to adjust income. His memorabilia business has done well; the volume of sales has not increased, but the memorabilia market seems to be up and prices are better than expected. The memorabilia business is cyclical; economic expansion and increases in disposable incomes enhance that market. Given the volatility of prices in that market, however, and the fact that there has been no increase in the volume of sales (Mark is not doing more business, just more lucrative business), Mark will not make any adjustments going forward. Interest rates have risen; Mark can use that macroeconomic news to adjust his expected interest income.

His expenses are as expected. The only variance is the result of Mark's decision to cut his travel and entertainment budget for this year (i.e., giving up his vacation) to offset the costs of the roof. He is planning that capital expenditure for October, which (as seen in Figure 5.12 "Mark's Alternative Cash Budget") will actually make it cheaper to do. His adjusted cash budget is shown in Figure 5.17 "Mark's Adjusted Cash Budget for 2010".

Figure 5.17 Mark's Adjusted Cash Budget for 2010

Incomes	2010 January Actual	2010 February Actual	2010 March Actual	2010 April	2010 May	2010 June	2010 July	2010 August	2010 September	2010 October	2010 November	2010 December
Wages	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167
Tutoring	400	400	400	400	400	400	33	33	33	33	33	33
Memorabilia Sales	450	360	1,200	79	79	79	79	79	79	79	79	79
House Painting						3,472	3,472	3,472				
Interest Income	31	34	34	15	15	16	23	29	34	0	2	2
Total Income	4,047	3,960	4,801	3,660	3,661	7,134	6,741	6,747	3,280	3,246	3,248	3,248
Payroll/Income Taxes	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)	(792)
Disposable Income	3,256	3,169	4,009	2,869	2,870	6,343	5,949	5,955	2,488	2,454,	2,456	2,456
Living Expenses												
Groceries	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)	(260)
Car—Fuel	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)	(156)
Car—Service, etc.	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)	(29)
Car—Insurance		400						(400)				
Electricity	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)
Phone/Cable/Internet	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)
Heat	(200)	(200)	(200)							(200)	(200)	(200)
Health Insurance	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)	(63)
Medical	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Dental	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)
Travel/Entertainment	0	0	0	0	0	0	0	0	0	0	0	0
Car Loan Repayment	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)	(499)
Mortgage Interest	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)	(897)
Property Tax										(4,350)		
Total Living Expenses	(2,305)	(2,705)	(2,305)	(2,105)	(2,105)	(2,105)	(2,105)	(2,505)	(2,105)	(6,655)	(2,305)	(2,305)
Income after Living Expenses	951	464	1,704	764	765	4,238	3,844	3,450	383	(4,201)	151	151
Interest Expense						0	0	0	0	0	0	0
Capital Expenditures/ Investment												
Mortgage Principal	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)	(270)
Free Cash Flow	681	194	1,435	494	495	3,968	3,575	3,181	114	(4,471)	(119)	(119)
IRA Deposit			(1,000)									
Home Improvement										(15,000)		
Savings Deposit (withdrawal)	681	194	435	494	495	3,968	3,575	3,181	114	(19,471)	(119)	(119)
Draw on (pay off) Line of Credit										0		
Net Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0
Line of Credit					0	0	0	0	0	0	0	0
Money Market Account Balance	8,047	8,275	8,744	9,253	9,763	13,747	17,345	20,554	20,702	1,231	1,114	998

With these adjustments, it turns out that Mark can avoid new debt and still support the capital expenditure of the new roof. The increased income that Mark can expect and his decreased expenses (if he can maintain his resolve) can finance the project and still leave him with a bit of savings in his money market account.

This situation bears continued monitoring, however. Some improvements are attributable to Mark's efforts (cutting back on entertainment expenses, giving up his vacation, cultivating new tutoring clients). But Mark has also benefited from macroeconomic factors that have changed to his advantage (rising interest rates, rising memorabilia prices), and those factors could change again to his disadvantage. He has tried to be conservative about making adjustments going forward, but he should continue to keep a close eye on the situation, especially as he gets closer to making the relatively large capital expenditure in October.

Sometimes a variance cannot be "corrected" or is due to a micro- or macroeconomic factor beyond your control. In that case, you must adjust your expectations to reality. You may need to adjust expected outcomes or even your ultimate goals.

Variances are also measures of the accuracy of your projections; what you learn from them can improve your estimates and your budgeting ability. The unexpected can always occur, but the better you can anticipate what to expect, the more accurate—and useful—your budget process can be.

KEY TAKEAWAYS

- Recognizing and analyzing variances between actual results and budget expectations
  - identifies potential problems,
  - identifies potential remedies.
- The more frequently the budget is monitored, generally
  - the sooner adjustments may be made,
  - the less costly adjustments are to make.
- Budget variances for incomes and expenses should be analyzed to see if they are caused by a difference in
  - actual quantity,
  - actual price,
  - both actual quantity and actual price.
- Variances also need to be analyzed in the context of micro and macro factors that may change.

EXERCISE

You are working fewer hours, which is reducing your income from employment and causing a budget variance. If the choice is yours, what are some microeconomic factors that could be causing this outcome? If the choice is your employer's, what are some macroeconomic factors that could be sources of the variance? What are your choices for increasing income? Alternatively, what might you change in your financial behavior, budget, or goals to your improve outcomes?

5.5 Budgets, Financial Statements, and Financial Decisions

LEARNING OBJECTIVES

1. Describe the budget process as a financial planning tool.
2. Discuss the relationships between financial statements and budgets.
3. Demonstrate the use of budgets in assessing choices.
4. Identify factors that affect the value of choices.

Whatever type of budget you create, the budget process is one aspect of personal financial planning, a tool to make better financial decisions. Other tools include financial statements, assessments of risk and the time value of money, macroeconomic indicators, and microeconomic or personal factors. The usefulness of these tools is that they provide a clearer view of "what is" and "what is possible." It puts your current situation and your choices into a larger context, giving you a better way to think about where you are, where you'd like to be, and how to go from here to there.

Mark has to decide whether to go ahead with the new roof. Assuming the house needs a new roof, his decision is really only about his choice of financing. An analysis of Mark's budget variances has shown that he can actually pay for the roof with the savings in his money market account. This means his goal is more attainable (and less costly) than in his original budget. This favorable outcome is due to his efforts to increase income and reduce expenses and to macroeconomic changes that have been to his advantage. So, Mark can make progress toward his long-term goals of building his asset base. He can continue saving for retirement with deposits to his retirement account and can continue improving his property with a new roof on his house.

Because Mark is financing the roof with the savings from his money market account, he can avoid new debt and thus additional interest expense. He will lose the interest income from his money market account (which is insignificant as it represents only 0.09 percent of his total income), but the increases from his tutoring and sales income will offset the loss. Mark's income statement will be virtually unaffected by the roof. His cash flow statement will show unchanged operating cash flow, a large capital expenditure, and use of savings.

Mark can finance this increase of asset value (his new roof) with another asset, his money market account. His balance sheet will not change substantially—value will just shift from one asset to another—but the money market account earns income, which the house does not, although there may be a gain in value when the house is sold in the future.

Right now that interest income is insignificant, but since it seems to be a period of rising interest rates, the opportunity cost of forgone interest income could be significant in the future if that account balance were allowed to grow.

Moreover, Mark will be moving value from a very liquid money market account to a not-so-liquid house, decreasing his overall liquidity. Looking ahead, this loss of liquidity

could create another opportunity cost: it could narrow his options. Mark's liquidity will be pretty much depleted by the roof, so future capital expenditures may have to be financed with debt. If interest rates continue to rise, that will make financing future capital expenditures more expensive and perhaps will cause Mark to delay those expenditures or even cancel them.

However, Mark also has a very reliable source of liquidity in his earnings—his paycheck, which can offset this loss. If he can continue to generate free cash flow to add to his savings, he can restore his money market account and his liquidity. Having no dependents makes Mark more able to assume the risk of depleting his liquidity now and relying on his income to restore it later.

The opportunity cost of losing liquidity and interest income will be less than the cost of new debt and new interest expense. That is because interest rates on loans are always higher than interest rates on savings. Banks always charge more than they pay for liquidity. That **spread**, or difference between those two rates, is the bank's profit, so the bank's cost of buying money will always be less than the price it sells for. The added risk and obligation of new debt could also create opportunity cost and make it more difficult to finance future capital expenditures. So financing the capital expenditure with an asset rather than with a liability is less costly both immediately and in the future because it creates fewer obligations and more opportunities, less opportunity cost, and less risk.

The budget and the financial statements allow Mark to project the effects of this financial decision in the larger context of his current financial situation and ultimate financial goals. His understanding of opportunity costs, liquidity, the time value of money, and of personal and macroeconomic factors also helps him evaluate his choices and their consequences. Mark can use this decision and its results to inform his next decisions and his ultimate horizons.

Financial planning is a continuous process of making financial decisions. Financial statements and budgets are ways of summarizing the current situation and projecting the outcomes of choices. Financial statement analysis and budget variance analysis are ways of assessing the effects of choices. Personal factors, economic factors, and the relationships of time, risk, and value affect choices as their dynamics—how they work and bear on decisions—affect outcomes.

KEY TAKEAWAYS

- Financial planning is a continuous process of making financial decisions.
- Financial statements are ways of summarizing the current situation.
- Budgets are ways of projecting the outcomes of choices.
- Financial statement analysis and budget variance analysis are ways of assessing the effects of choices.

- Personal factors, economic factors, and the relationships of time, risk, and value affect choices, as their dynamics affect outcomes.

EXERCISE

Analyze Mark's budget as a financial planning tool for making decisions in the following situations. In each case, how will other financial planning tools affect Mark's decisions? For each case, create a new budget showing the projected effects of Mark's decisions.

1. Mark injures himself on the cross-trainer, and the doctor recommends a course of physical therapy.
2. A neighbor and coworker suggest that he and Mark commute to work together.
3. The roofers inform Mark that his chimney needs to be repointed and relined.
4. Mark wants to give up tutoring and put more time into his memorabilia business.
5. Mark wants to marry and start a family and needs to know when would be a good time.

Chapter 6 Taxes and Tax Planning

Introduction

All developed and most less-developed economies have a tax system that finances their governments, at least in part. The design of that tax system reflects the society's view of the responsibilities of government and of its citizens for their government.

In the United States there has always been disagreement about the role of government as a producer for and a protector of the economy and its citizens. Even before the United States was a nation, "taxation without representation" was a rallying cry for rebellion against the British colonial authority, and the colonists protested taxes on everything from stamps to tea. The American Revolution was as much about economic democracy—the fundamental right of every individual to participate in the economy and to own the fruits of labor—as it was about political democracy.

It is perhaps no coincidence that Adam Smith's *Wealth of Nations* was published in 1776, the same year that independence was declared in the thirteen colonies. Smith recognized a role for government in a market-based economy, but societies have argued about what that role should be and how it should be paid for ever since. The U.S. tax code is based on the idea that everyone should help finance the government according to one's ability to pay. Changes in how "everyone" is defined and how "ability to pay" is measured have led to tax law changes that keep the system evolving.

In the United States, tax laws are written by Congress and therefore through compromise. As views on government financing have changed, tax laws have been amended and refined, enacted and repealed. The result is a tax code that can seem overly complex and even unreasonable or illogical. However, the system is based on logic and has a purpose. The better you understand the elements of the tax system, the better you will understand how to live with it—and plan for it—to your best advantage.

6.1 Sources of Taxation and Kinds of Taxes

LEARNING OBJECTIVES

1. Identify the levels of government that impose taxes.
2. Define the different kinds of incomes, assets, and transactions that may be taxed.
3. Compare and contrast progressive and regressive taxes.

Any government that needs to raise revenue and has the legal authority to do so may tax. Tax jurisdictions reflect government authorities. In the United States, federal, state, and municipal governments impose taxes. Similarly, in many countries there are

national, provincial or state, county, and municipal taxes. Regional economic alliances, such as the European Union, may also levy taxes.

Jurisdictions may overlap. For example, in the United States, federal, state, and local governments may tax income, which becomes complicated for those earning income in more than one state, or living in one state and working in another. Governments tax income because it is a way to tax broadly based on the ability to pay. Most adults have an income from some source, even if it is a government distribution. Those with higher incomes should be able to pay more taxes, and in theory should be willing to do so, for they have been more successful in or have benefited more from the economy that the government protects.

Income tax is usually a **progressive tax**: the higher the income or the more to be taxed, the greater the tax rate. The percentage of income that is paid in tax increases as income rises. Those income categories are called **tax brackets**

(Figure 6.2 "U.S. Income Tax Brackets in 2008 (Single Filing Status)").

Figure 6.2 U.S. Income Tax Brackets in 2008 (Single Filing Status)

If your taxable income was between			Your tax bracket was
0	and	8,025	10%
8,025	and	32,550	15%
32,550	and	78,850	25%
78,850	and	164,550	28%
164,550	and	357,700	33%
357,700	and	above	38%

Source: http://www.moneychimp.com/features/tax_brackets.htm

Tax is levied on income from many sources:

- Wages (selling labor)
- Interest, dividends, and gains from investment (selling capital)
- Self-employment (operating a business or selling a good or service)
- Property rental
- Royalties (rental of intellectual property)

- "Other" income such as alimony, gambling winnings, or prizes

A ***sales tax*** or **consumption tax** taxes the consumption financed by income. In the United States, sales taxes are imposed by state or local governments; as yet, there is no national sales tax. Sales taxes are said to be more efficient and fair in that consumption reflects income (income determines ability to consume and therefore level of consumption). Consumption also is hard to hide, making sales tax a good way to collect taxes based on the ability to pay. Consumption taxes typically tax all consumption, including nondiscretionary items such as food, clothing, and housing. Opponents of sales tax argue that it is a **regressive tax**, because those with lower incomes must use a higher percentage of their incomes on nondiscretionary purchases than higher-income people do.

The **value-added tax** (VAT) or goods and services tax (GST) is widely used outside the United States. It is a consumption tax, but differs from the sales tax, which is paid only by the consumer as an end user. With a VAT or GST, the value added to the product is taxed at each stage of production. Governments use a VAT or GST instead of a sales tax to spread the tax burden among producers and consumers, and thus to reduce incentive to evade the tax. A consumption tax, like the sales tax, it is a regressive tax. When traveling abroad, you should be aware that a VAT may add substantially to the cost of a purchase (a meal, accommodations, etc.).

Excise taxes are taxes on specific consumption items such as alcohol, cigarettes, motor vehicles, fuel, or highway use. In some states, excise taxes are justified by the discretionary nature of the purchases and may be criticized as exercises in social engineering (i.e., using the tax code to dictate social behaviors). For example, people addicted to nicotine or alcohol tend to purchase cigarettes or liquor even if an excise tax increases their cost—and are therefore a reliable source of tax revenue.

Property taxes are used by more local—state, municipal, provincial, and county—governments, and are most commonly imposed on real property (land and buildings) but also on personal assets such as vehicles and boats. Property values theoretically reflect wealth (accrued income) and thus ability to pay taxes. Property values are also a matter of public record (real property is deeded, boats or automobiles are licensed), which allows more efficient tax collection.

Estate taxes are taxes on the transfer of wealth from the deceased to the living. Estate taxes are usually imposed on the very wealthiest based on their unusual ability to pay. Because death and the subsequent dispersal of property is legally a matter of public record, estate taxes are generally easy to collect. Estate taxes are controversial because they can be seen as a tax on the very idea of ownership and on incomes that have already been taxed and saved or stored as wealth and properties. Still, estate taxes are a substantial source of revenue for the governments that use them, and so they remain.

A summary of the kinds of taxes used by the three different jurisdictions is shown in Figure 6.3 "Taxes and Jurisdictions".

Figure 6.3 Taxes and Jurisdictions

Type of Tax	National or Federal	Provincial or State	County or Municipal
Income	✓	✓	✓
Sales		✓	✓
VAT or GST	✓	✓	
Excise	✓	✓	✓
Property		✓	✓
Estate	✓	✓	

KEY TAKEAWAYS

- Governments at all levels use taxes as a source of financing.
- Taxes may be imposed on the following:
  - Incomes from
    - wages,
    - interest, dividends, and gains (losses),
    - rental of real or intellectual property.
  - Consumption of discretionary and nondiscretionary goods and services.
  - Wealth from
    - asset ownership,
    - asset transfer after death.
- Taxes may be
  - progressive, such as the income tax, in which you pay proportionally more taxes the more income you have;
  - regressive, such as a sales tax, in which you pay proportionally more taxes the less income you have.

EXERCISES

1. Examine your state, federal, and other tax returns that you filed last year. Alternatively, estimate based on your present financial situation. On what incomes were you (or would you be) taxed? What tax bracket were you (or would you be) in? How did (or would) your state, federal, and other tax liabilities differ? What other types of taxes did you (or would you) pay and to which government jurisdictions?

2. Match the description to the type of tax. (Write the number of the tax type before its description.)

- Description:

  a. _____ tax on the use of vehicles, gasoline, alcohol, cigarettes, highways, and the like.

  b. _____ tax on the wealth and property of a person upon death.

  c. _____ tax on purchases of both discretionary and nondiscretionary items.

  d. _____ tax on wages, earned interest, capital gain, and the like.

  e. _____ tax on home and land ownership.

  f. _____ tax on purchases of discretionary items.

  g. _____ tax on items during their production as well as upon consumption.

- Type of Tax:

  1.Property tax

  2. Consumption tax

  3. Value-added or goods and services tax

  4. Income tax

  5. Excise tax

  6. Sales tax

  7. Estate tax

3. In My Notes or your financial planning journal, record all the types of taxes you will be paying next year and to whom. How will you plan for paying these taxes? How will your tax liabilities affect your budget?

According to the MSN Money Central article “8 Types of Income the IRS Can’t Touch” (Jeff Schnepper, November 2009, athttp://articles.moneycentral.msn.com/Taxes/CutYourTaxes/8typesOfIncomeTheIRScantTouch.aspx), what are eight sources of income that the federal government cannot tax? Poll classmates on the question of whether they think student income can be taxed. According to the companion article “5 Tax Myths That Can Cost You Money” (Jeff Schnepper, November 2009, athttp://articles.moneycentral.msn.com/Taxes/AvoidAnAudit/5taxMythsThatCanCostYouMoney.aspx), is it true that students often are exempt from income taxes?

6.2 The U.S. Federal Income Tax Process

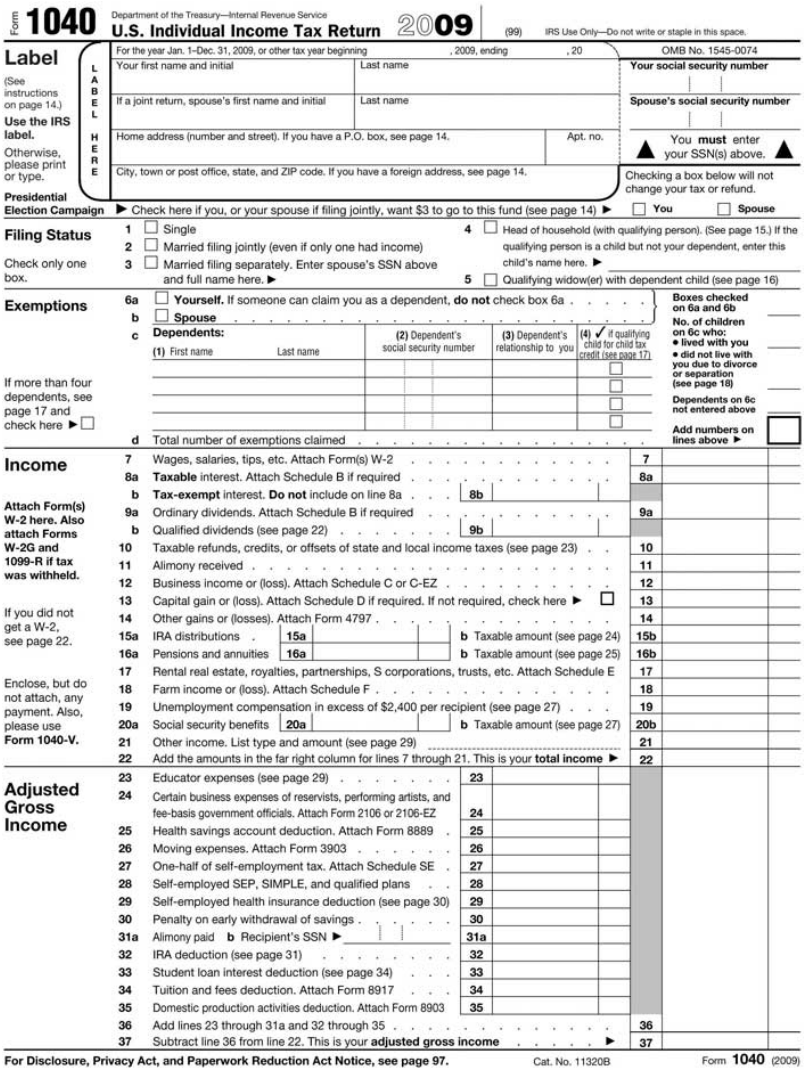
LEARNING OBJECTIVES

1. Identify the taxes most relevant for personal financial planning.
2. Identify taxable incomes and the schedules used to report them.
3. Calculate deductions, exemptions, and credits.
4. Compare methods of tax payment.

The U.S. government relies most on an income tax. The income tax is the most relevant for personal financial planning, as everyone has some sort of income over a lifetime. Most states model their tax systems on the federal model or base their tax rates on federally defined income. While the estate tax may become more of a concern as you age, the federal income tax system will affect you and your financial decisions throughout your life.

Figure 6.4 "U.S. Individual Tax Form 1040, Page 1" shows an individual tax return, U.S. Form 1040.

Figure 6.4 U.S. Individual Tax Form 1040, Page 1



Form **1040** Department of the Treasury—Internal Revenue Service **U.S. Individual Income Tax Return** **2009** (99) IRS Use Only—Do not write or staple in this space.

Label (See instructions on page 14.) **Use the IRS label.** Otherwise, please print or type. LABEL HERE

For the year Jan. 1–Dec. 31, 2009, or other tax year beginning , 2009, ending , 20 — OMB No. 1545-0074

Your first name and initial | Last name | **Your social security number**

If a joint return, spouse's first name and initial | Last name | **Spouse's social security number**

Home address (number and street). If you have a P.O. box, see page 14. | Apt. no. | You **must** enter your SSN(s) above.

City, town or post office, state, and ZIP code. If you have a foreign address, see page 14. | Checking a box below will not change your tax or refund.

Presidential Election Campaign ▶ Check here if you, or your spouse if filing jointly, want $3 to go to this fund (see page 14) ▶ ☐ **You** ☐ **Spouse**

Filing Status Check only one box.

1 ☐ Single
2 ☐ Married filing jointly (even if only one had income)
3 ☐ Married filing separately. Enter spouse's SSN above and full name here. ▶
4 ☐ Head of household (with qualifying person). (See page 15.) If the qualifying person is a child but not your dependent, enter this child's name here. ▶
5 ☐ Qualifying widow(er) with dependent child (see page 16)

Exemptions

6a ☐ **Yourself.** If someone can claim you as a dependent, **do not** check box 6a
b ☐ **Spouse**
c **Dependents:** (1) First name / Last name | (2) Dependent's social security number | (3) Dependent's relationship to you | (4) ✓ if qualifying child for child tax credit (see page 17)

If more than four dependents, see page 17 and check here ▶☐

d Total number of exemptions claimed

Boxes checked on 6a and 6b ____
No. of children on 6c who: ____
• **lived with you** ____
• **did not live with you due to divorce or separation (see page 18)** ____
Dependents on 6c not entered above ____
Add numbers on lines above ▶ ☐

Income

Attach Form(s) W-2 here. Also attach Forms W-2G and 1099-R if tax was withheld.

If you did not get a W-2, see page 22.

Enclose, but do not attach, any payment. Also, please use **Form 1040-V.**

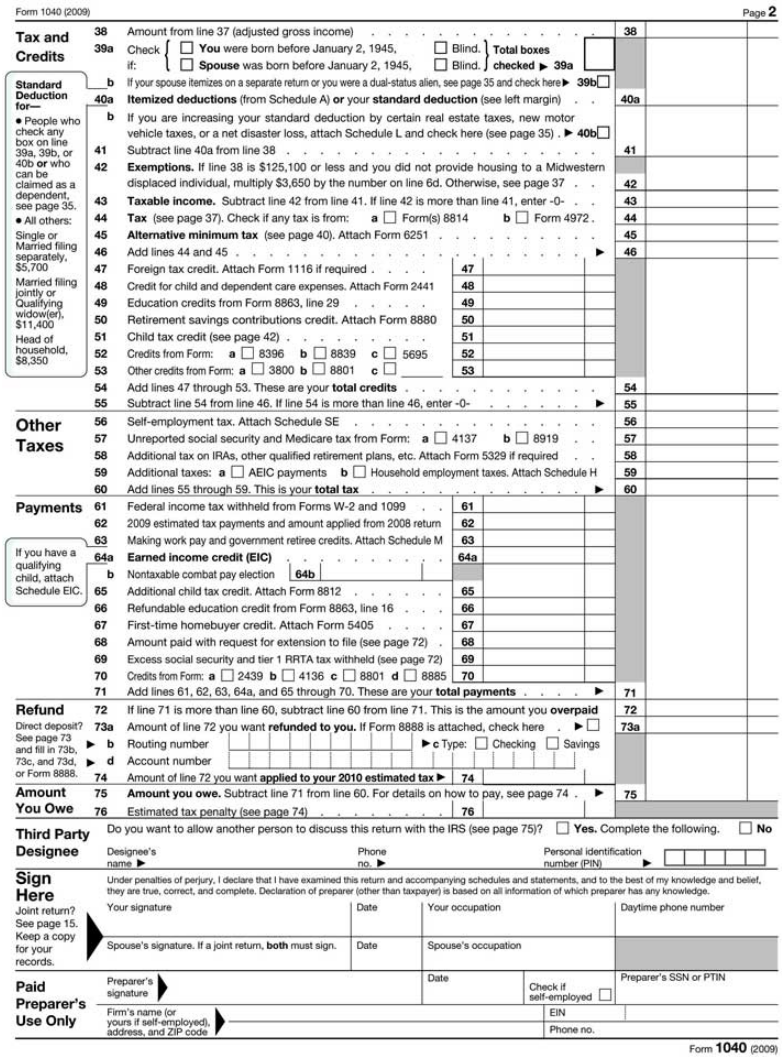
7	Wages, salaries, tips, etc. Attach Form(s) W-2		7
8a	**Taxable** interest. Attach Schedule B if required		8a
b	**Tax-exempt** interest. **Do not** include on line 8a	8b	
9a	Ordinary dividends. Attach Schedule B if required		9a
b	Qualified dividends (see page 22)	9b	
10	Taxable refunds, credits, or offsets of state and local income taxes (see page 23)		10
11	Alimony received		11
12	Business income or (loss). Attach Schedule C or C-EZ		12
13	Capital gain or (loss). Attach Schedule D if required. If not required, check here ▶ ☐		13
14	Other gains or (losses). Attach Form 4797		14
15a	IRA distributions 15a	b Taxable amount (see page 24)	15b
16a	Pensions and annuities 16a	b Taxable amount (see page 25)	16b
17	Rental real estate, royalties, partnerships, S corporations, trusts, etc. Attach Schedule E		17
18	Farm income or (loss). Attach Schedule F		18
19	Unemployment compensation in excess of $2,400 per recipient (see page 27)		19
20a	Social security benefits 20a	b Taxable amount (see page 27)	20b
21	Other income. List type and amount (see page 29)		21
22	Add the amounts in the far right column for lines 7 through 21. This is your **total income** ▶		22

Adjusted Gross Income

23	Educator expenses (see page 29)	23	
24	Certain business expenses of reservists, performing artists, and fee-basis government officials. Attach Form 2106 or 2106-EZ	24	
25	Health savings account deduction. Attach Form 8889	25	
26	Moving expenses. Attach Form 3903	26	
27	One-half of self-employment tax. Attach Schedule SE	27	
28	Self-employed SEP, SIMPLE, and qualified plans	28	
29	Self-employed health insurance deduction (see page 30)	29	
30	Penalty on early withdrawal of savings	30	
31a	Alimony paid b Recipient's SSN ▶	31a	
32	IRA deduction (see page 31)	32	
33	Student loan interest deduction (see page 34)	33	
34	Tuition and fees deduction. Attach Form 8917	34	
35	Domestic production activities deduction. Attach Form 8903	35	
36	Add lines 23 through 31a and 32 through 35		36
37	Subtract line 36 from line 22. This is your **adjusted gross income** ▶		37

For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see page 97. Cat. No. 11320B Form **1040** (2009)

Figure 6.5 U.S. Individual Tax Form 1040, Page 2



Form 1040 (2009) Page 2

Tax and Credits	38	Amount from line 37 (adjusted gross income)			38
	39a	Check if: ☐ You were born before January 2, 1945, ☐ Blind. ☐ Spouse was born before January 2, 1945, ☐ Blind. } Total boxes checked ▶ 39a			
Standard Deduction for— • People who check any box on line 39a, 39b, or 40b or who can be claimed as a dependent, see page 35. • All others: Single or Married filing separately, $5,700 Married filing jointly or Qualifying widow(er), $11,400 Head of household, $8,350	b	If your spouse itemizes on a separate return or you were a dual-status alien, see page 35 and check here ▶ 39b ☐			
	40a	Itemized deductions (from Schedule A) or your standard deduction (see left margin)			40a
	b	If you are increasing your standard deduction by certain real estate taxes, new motor vehicle taxes, or a net disaster loss, attach Schedule L and check here (see page 35) . ▶ 40b ☐			
	41	Subtract line 40a from line 38			41
	42	Exemptions. If line 38 is $125,100 or less and you did not provide housing to a Midwestern displaced individual, multiply $3,650 by the number on line 6d. Otherwise, see page 37			42
	43	Taxable income. Subtract line 42 from line 41. If line 42 is more than line 41, enter -0-			43
	44	Tax (see page 37). Check if any tax is from: a ☐ Form(s) 8814 b ☐ Form 4972			44
	45	Alternative minimum tax (see page 40). Attach Form 6251			45
	46	Add lines 44 and 45 ▶			46
	47	Foreign tax credit. Attach Form 1116 if required	47		
	48	Credit for child and dependent care expenses. Attach Form 2441	48		
	49	Education credits from Form 8863, line 29	49		
	50	Retirement savings contributions credit. Attach Form 8880	50		
	51	Child tax credit (see page 42)	51		
	52	Credits from Form: a ☐ 8396 b ☐ 8839 c ☐ 5695	52		
	53	Other credits from Form: a ☐ 3800 b ☐ 8801 c ☐	53		
	54	Add lines 47 through 53. These are your total credits			54
	55	Subtract line 54 from line 46. If line 54 is more than line 46, enter -0- ▶			55
Other Taxes	56	Self-employment tax. Attach Schedule SE			56
	57	Unreported social security and Medicare tax from Form: a ☐ 4137 b ☐ 8919			57
	58	Additional tax on IRAs, other qualified retirement plans, etc. Attach Form 5329 if required			58
	59	Additional taxes: a ☐ AEIC payments b ☐ Household employment taxes. Attach Schedule H			59
	60	Add lines 55 through 59. This is your total tax ▶			60
Payments	61	Federal income tax withheld from Forms W-2 and 1099	61		
	62	2009 estimated tax payments and amount applied from 2008 return	62		
If you have a qualifying child, attach Schedule EIC.	63	Making work pay and government retiree credits. Attach Schedule M	63		
	64a	Earned income credit (EIC)	64a		
	b	Nontaxable combat pay election 64b			
	65	Additional child tax credit. Attach Form 8812	65		
	66	Refundable education credit from Form 8863, line 16	66		
	67	First-time homebuyer credit. Attach Form 5405	67		
	68	Amount paid with request for extension to file (see page 72)	68		
	69	Excess social security and tier 1 RRTA tax withheld (see page 72)	69		
	70	Credits from Form: a ☐ 2439 b ☐ 4136 c ☐ 8801 d ☐ 8885	70		
	71	Add lines 61, 62, 63, 64a, and 65 through 70. These are your total payments ▶			71
Refund	72	If line 71 is more than line 60, subtract line 60 from line 71. This is the amount you overpaid			72
Direct deposit? See page 73 and fill in 73b, 73c, and 73d, or Form 8888.	73a	Amount of line 72 you want refunded to you. If Form 8888 is attached, check here ▶ ☐			73a
	▶ b	Routing number ▶ c Type: ☐ Checking ☐ Savings			
	▶ d	Account number			
	74	Amount of line 72 you want applied to your 2010 estimated tax ▶	74		
Amount You Owe	75	Amount you owe. Subtract line 71 from line 60. For details on how to pay, see page 74 ▶			75
	76	Estimated tax penalty (see page 74)	76		

Third Party Designee Do you want to allow another person to discuss this return with the IRS (see page 75)? ☐ Yes. Complete the following. ☐ No

Designee's name ▶ | Phone no. ▶ | Personal identification number (PIN) ▶

Sign Here Under penalties of perjury, I declare that I have examined this return and accompanying schedules and statements, and to the best of my knowledge and belief, they are true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Joint return? See page 15. Keep a copy for your records.

Your signature	Date	Your occupation	Daytime phone number
Spouse's signature. If a joint return, both must sign.	Date	Spouse's occupation	

Paid Preparer's Use Only

Preparer's signature	Date	Check if self-employed ☐	Preparer's SSN or PTIN
Firm's name (or yours if self-employed), address, and ZIP code		EIN	
		Phone no.	

Form 1040 (2009)

Taxable Entities

There are four taxable entities in the federal system: the individual or family unit, the corporation, the nonprofit corporation, and the trust. Personal financial planning focuses on your decisions as an individual or family unit, but other tax entities can affect individual income. Corporate profit may be distributed to individuals as a **dividend**, for example, which then becomes the individual's taxable income. Likewise, funds established for a specific purpose may distribute money to an individual that is taxable as individual income. A **trust**, for example, is a legal arrangement whereby control over property is transferred to a person or organization (the trustee) for the benefit of someone else (the beneficiary). If you were a beneficiary and received a distribution, that money would be taxable as individual income.

The definition of the taxable "individual" is determined by filing status:

- Single, never married, widowed, or divorced

- Married, in which case two adults file as one taxable "individual," combining all taxable activities and incomes, deductions, exemptions, and credits
- Married filing separately, in which case two married adults file as two separate taxable individuals, individually declaring and defining incomes, deductions, exemptions, and credits
- Head-of-household, for a family of one adult with dependents

Some taxes are levied differently depending on filing status, following the assumption that family structure affects ability to pay taxes.

All taxable entities have to file a declaration of incomes and pay any tax obligations annually. Not everyone who files a return actually pays taxes, however. Individuals with low incomes and tax exempt, nonprofit corporations typically do not. All potential taxpayers nevertheless must declare income and show their obligations to the government. For the individual, that declaration is filed on Form 1040 (or, if your tax calculations are simple enough, Form 1040EZ).

Income

For individuals, the first step in the process is to calculate total income. Income may come from many sources, and each income must be calculated and declared. Some kinds of income have a separate form or schedule to show their more detailed calculations. The following schedules are the most common for reporting incomes separately by source.

Schedule B: Interest and Dividend Income

Interest income is income from selling liquidity. For example, the interest that your savings account, certificates of deposit, and bonds earn in a year is income. You essentially are earning interest from lending cash to a bank, a money market mutual fund, a government, or a corporation (though not all your interest income may be taxable). Dividend income, on the other hand, is income from investing in the stock market. Dividends are your share of corporate profits as a shareholder, distributed in proportion to the number of shares of corporate stock you own.

Schedule C: Business Income

Business income is income from self-employment or entrepreneurial ventures or business enterprises. For sole proprietors and partners in a partnership, business income is the primary source of income. Many other individuals rely on wages, but have a small business on the side for extra income. Business expenses can be deducted from business income, including, for example, business use of your car and home. If expenses are greater than income, the business is operating at a loss. Business losses can be deducted from total income, just as business income adds to total income.

The tax laws distinguish between a business and a hobby that earns or loses money. You are considered to have a business for tax purposes if you made a profit in three of the past five years including the current year, or if you are operating as a registered business with the intention of making a profit. If you are operating your own business you also must also pay self-employment tax on business income. In addition, the self-employed must pay estimated income taxes in quarterly installments based on expected income.

Tariq is thinking about turning his hobby into a business. He has been successful buying and selling South Asian folk art online. He thinks he has found a large enough market to support a business enterprise. As a business he would be able to deduct the costs of Web site promotion, his annual art buying trip, his home office, and shipping, which would reduce the taxes he would have to pay on his business income. Tariq decides to enroll in online courses on becoming an entrepreneur, how to write a business plan, and how to find capital for a new venture.

Schedule SE: Self-Employment Tax

Self-employment tax is an additional tax on income from self-employment or business income earned by a sole proprietor. It represents the employer's contribution to Social Security, which is a mandatory retirement savings program of the federal government. Both employers and employees are required to contribute to the employee's Social Security account. When you are both the employee and the employer, as in self-employment, you must contribute both shares of the contribution.

Schedule D: Capital Gains (or Losses)

Gains or losses from investments derive from changes in asset value during ownership between the asset's original cost and its market value at the time of sale. If you sell an asset for more than you paid for it, you have a gain. If you sell an asset for less than you paid for it, you have a loss. Recurring gains or losses from investment are from returns on financial instruments such as stocks and bonds. One-time gains or losses, such as the sale of a home, are also reported on Schedule D.

The tax code distinguishes between assets held for a short time—less than one year, and assets held for a long time—one year or more. Short-term capital gains or losses are taxed at a different rate than long-term capital gains or losses (Figure 6.8 "Capital Gains Tax Rates"). When you invest in financial assets, such as stocks, bonds, mutual funds, property, or equipment, be sure to keep good records by noting the date when you bought them and the original price. These records establish the **cost basis** of your investments, which is used to calculate your gain or loss when you sell them.

Figure 6.8 Capital Gains Tax Rates

Type of Capital Asset	Holding Period	Tax Rate
Short-term capital gains (STCG)	One year or less	Ordinary income tax rates up to 35%
Long-term capital gains (LTCG)	More than one year	**5%** for taxpayers in the 10% and 15% tax brackets (**0%** percent starting in 2008 until 2011 and 15% thereafter) **15%** for taxpayers in the 25%, 28%, 33%, and 35% tax brackets

Schedule E: Rental and Royalty Income; Income from Partnerships, S Corporations, and Trusts

Rental or royalty income is income earned from renting an asset, either real property or a creative work such as a book or a song. This can be a primary source of income, although many individuals rely on wages and have some rental or royalty income on the side. Home ownership may be made more affordable, for example, if the second half of a duplex can be rented for extra income. Rental expenses can also be deducted from rental income, which can create a loss from rental activity rather than a gain. Unlike a business, which must become profitable to remain a business for tax purposes, rental activities may generate losses year after year. Such losses are a tax advantage, as they reduce total income.

Partnerships and S corporations are alternative business structures for a business with more than one owner. For example, partnerships and S corporations are commonly used by professional practices, such as accounting firms, law firms, medical practices, and the like, as well as by family businesses.

The partnership or S corporation is not a taxable entity, but the share of its profits distributed to each owner is taxable income for the owner and must be declared on Schedule E.

Schedule F: Farm Income

Farm income is income from growing food, livestock, or livestock products, such as wool, to sell. Farmers have a special status in the tax code, stemming from the original agricultural basis of the U.S. economy and the strategic importance of self-sufficiency in food production. Thus, the tax code applies exemptions specifically to farmers.

Other Taxable and Nontaxable Income

Other taxable income includes alimony, state or local tax refunds, retirement fund distributions from individual retirement accounts (IRAs) and/or pensions, unemployment compensation, and a portion of Social Security benefits.

Your total income is then adjusted for items that the government feels should not be taxed under certain circumstances, such as certain expenses of educators, performing artists, and military reservists; savings in health savings or retirement accounts; moving expenses; a portion of self-employment taxes; student loan interest; tuition and educational fees; and alimony paid. Income that is not taxed by the U.S. government and does not have to be reported as income includes the following:

- Welfare benefits
- Interest from *most* municipal bonds
- *Most* gifts
- *Most* inheritance and bequests
- Workers compensation
- Veteran's benefits
- Federal tax refunds
- *Some* scholarships and fellowships

It's important to read tax filing instructions carefully, however, because not everything you'd think would qualify actually does. The government allows adjustments to be reported (or not reported) as income only under certain circumstances or up to certain income limits, and some adjustments require special forms.

The result of deducting adjustments from your total income is a calculation of your adjusted gross income (AGI). Your AGI is further adjusted by amounts that may be deducted or exempted from your taxable income and by amounts already credited to your tax obligations.

Deductions, Exemptions, and Credits

Deductions and exemptions reduce taxable income, while credits reduce taxes. Deductions are tax breaks for incurring certain expenditures or living in certain circumstances that the government thinks you should not have to include in your taxable income. There are deductions for age and for blindness. For other deductions, there is a standard, lump-sum deduction that you can take, or you may choose to itemize your deductions, that is, detail each one separately and then calculate the total. If your itemized deductions are more than your standard deduction, it makes sense to itemize.

Other deductions involve financial choices that the government encourages by rewarding an extra incentive in the form of a tax break. Home mortgage interest is a deduction to encourage home ownership, for example; investment interest is a deduction to encourage investment, and charitable donations are deductions to encourage charitable giving.

Deductions are also created for expenditures that may be considered nondiscretionary, such as medical and dental expenses, job-related expenses, or state and local income and property taxes. As with income adjustments, you have to read the instructions carefully, however, to know what expenditures qualify as deductions. Some deductions only qualify if they amount to more than a certain percentage of income, while others may be deducted regardless. Some deductions require an additional form to calculate specifics, such as unreimbursed employee or job-related expenses, charitable gifts not given in cash, investment interest, and some mortgage interest.

There are exemptions based on the number of your dependents, who are usually children, but may be elderly parents or disabled siblings, that is, relatives who generally cannot care for themselves financially. Exemptions are made for dependents as nondiscretionary expenditures, but the government also encourages individuals to care for their financially dependent children, parents, and siblings because without such care they might become dependents of a government safety net or a charity.

After deductions and exemptions are subtracted from adjusted gross income, the remainder is your taxable income. Your tax is based on your taxable income, on a progressive scale. You may have additional taxes, such as self-employment tax, and you may be able to apply credits against your taxes, such as the earned income credit for lower-income taxpayers with children.

Deductions, exemptions, and credits are some of the more disputed areas of the tax code. Because of the depth of dispute about them, they tend to change more frequently than other areas of the tax code. For example, in 2009, a credit was added to encourage first-time homebuyers to purchase a home in the hopes of stimulating the residential real estate market. As a taxpayer, you want to stay alert to changes that may be to your advantage or disadvantage. Usually, such changes are phased in and out gradually so you can include them in your financial planning process.

Payments and Refunds

Once you have calculated your tax obligation for the year, you can compare that to any taxes you have paid during the year and calculate the amount still owed or the amount to be refunded to you.

You pay taxes during the tax year by having them withheld from your paycheck if you earn income through wages, or by making quarterly estimated tax payments if you have other kinds of income. When you begin employment, you fill out a form (Form W-4) that determines the taxes to be withheld from your regular pay. You may adjust this amount, within limits, at any time. If you have both wages and other incomes, but your wage income is your primary source of income, you may be able to increase the taxes withheld from your wages to cover the taxes on your other income, and thus avoid having to make estimated payments. However, if your nonwage income is substantial, you will have to make estimated payments to avoid a penalty and/or interest.

The government requires that taxes are withheld or paid quarterly during the tax year because it uses tax revenues to finance its expenditures, so it needs a steady and predictable cash flow. Steady payments also greatly decrease the risk of taxes being uncollectible. State and local income taxes must also be paid during the tax year and are similarly withheld from wages or paid quarterly.

Besides income taxes, other taxes are withheld from your wages: payments for Social Security and Medicare. Social Security or the Federal Insurance Contributions Act (FICA) and Medicare are federal government programs. Social Security is insurance against loss of income due to retirement, disability, or loss of a spouse or parent. Individuals are eligible for benefits based on their own contributions—or their spouse's or parents'—during their working lives, so technically, the Social Security payment withheld from your current wages is not a tax but a contribution to your own deferred income. Medicare finances health care for the elderly. Both programs were designed to provide minimal benefits to those no longer able to sell their labor in exchange for wage income. In fact, both Social Security and Medicare function as "pay-as-you-go" systems, so your contributions pay for benefits that current beneficiaries receive.

If you have paid more during the tax year than your actual obligation, then you are due a refund of the difference. You may have that amount directly deposited to a bank account, or the government will send you a check.

If you have paid less during the tax year than your actual obligation, then you will have to pay the difference (by check or credit card) and you may have to pay a penalty and/or interest, depending on the size of your payment.

The deadline for filing income tax returns and for paying any necessary amounts is April 15, following the end of the tax year on December 31. You may file to request an extension of that deadline to August 15. Should you miss a deadline without filing for an extension, you will owe penalties and interest, even if your actual tax obligation results in a refund. It really pays to get your return in on time.

KEY TAKEAWAYS

- The most relevant tax for financial planning is the income tax, as it affects the taxpayer over an entire lifetime.
- Different kinds of income must be defined and declared on specific income schedules and are subject to tax.
- Deductions and exemptions reduce taxable income.
- Credits reduce tax obligations.
- Payments are made throughout the tax year through withholding from wages or through quarterly payments.

EXERCISES

1. Read the IRS document defining tax liability at http://www.irs.gov/publications/p17/ch01.html#en_US_publink100031858. Do you have to file a tax return for the current year? Why or why not? (Identify all the factors that apply.) Which tax form(s) should you use?

2. Download and study the following schedules or their equivalent for the current year. In what circumstances would you have to file each one? Tentatively fill out any schedules that apply to you for the current year.
   - Schedules A: http://www.irs.gov/pub/irs-pdf/f1040sa.pdf
   - Schedules B: http://www.irs.gov/pub/irs-pdf/f1040sb.pdf
   - Schedule C: http://www.irs.gov/pub/irs-pdf/f1040sc.pdf
   - Schedule D: http://www.irs.gov/pub/irs-pdf/f1040sd.pdf
   - Schedule E: http://www.irs.gov/pub/irs-pdf/f1040se.pdf
   - Schedule F: http://www.irs.gov/pub/irs-pdf/f1040sf.pdf
3. Find answers to the following questions at http://www.finaid.org/scholarships/taxability.phtml.
   1. Is financial aid for college subject to federal income tax?
   2. Can federal and state education grants be taxed as income?
   3. Are student loans taxable?
   4. When is a scholarship tax exempt?
   5. Do you have to be in a degree program to qualify for tax exemption?
   6. When can the cost of textbooks be deducted from gross income for tax reporting purposes?
   7. Can the amount of a scholarship used for tuition be deducted?
   8. Can living expenses while on scholarship be deducted?
   9. Is the income and stipend from a teaching fellowship or research assistantship tax exempt?
   10. Are the tuition, books, and stipends of ROTC students tax exempt?

6.3 Record Keeping, Preparation, and Filing

LEARNING OBJECTIVES

1. Identify sources of tax information.
2. Explain the importance of verifiable records and record keeping.
3. Compare sources of tax preparation assistance.
4. Trace the tax review process and its implications.

The Internal Revenue Code (IRC), the federal tax law, is written by the U.S. Congress and enforced by the Internal Revenue Service (IRS), which is a part of the U.S. Department of Treasury. The IRS is responsible for the collection of tax revenues. To collect revenues, the IRS must inform the public of tax obligations and devise data collection systems that will allow for collection and verification of tax information so that collectible revenues can be verified. In other words, the IRS has to figure out how to inform the public and collect taxes while also collecting enough information to be able to check that those taxes are correct.

To inform the public, the IRS has published over six hundred separate publications covering various aspects of the tax code. There are more than a thousand forms and accompanying instructions to file complete tax information, although most taxpayers actually file about half a dozen forms each year. In addition, the IRS provides a Web site (http://www.irs.gov) and telephone support to answer questions and assist in preparing tax filings.

By far, most income taxes from wages are collected through withholding as earned. For most taxpayers, wages represent the primary form of income, and thus most of their tax payments are withheld or paid as wages are earned. Still, everyone has to file to summarize the details of the year's incomes for the IRS and to calculate the final tax obligation. In 2007, the IRS collected 138,893,908 individual returns representing $1.367 trillion of tax revenue.[1]

Keeping Records

The individual filer must collect and report the information on tax forms and schedules. Fortunately, this is not as difficult as the volume of data would suggest. Employers are required to send Form W-2 to each employee at the end of the year, detailing the total wages earned and taxes and contributions withheld. If you have earned other kinds of income, your clients, customers, retirement fund, or other source of income may have to file a Form 1099 to report that income to you and to the IRS. Interest and dividend income is also reported by the bank or brokerage firm on Form 1099. The W-2 and the Form 1099 are reported to both the IRS and you.

The system for filing tax information has purposeful redundancies. Where possible, information is collected independently from at least two sources, so it can be verified. For example, your wage data is collected both from you and from your employer, your interest and dividend incomes are reported by both you and the bank or brokerage that paid them, and so on. Those redundancies, wherever practical, allow for a system of cross-references so that the IRS can check the validity of the data it receives.

Incomes may be summarized and reported to you, but only you know your expenses. Expenditures are important if they are allowed as deductions, such as charitable gifts, medical and dental expenses, job-related expenses, and so on, so data should be collected throughout the tax year. If you do nothing more than keep a checkbook, then you will have to go through it and identify the deductible expenses for the tax year. Financial software applications will make that task easier; most allow you to flag deductible expenses in your initial setup.

You should also keep receipts of purchases that may be deductible; credit or debit card statements and bank statements provide convenient backup proof of expenditures. Proof is needed in the event the IRS questions the accuracy of your return.

Tax Preparation and Filing

After you have collected the information you need, you fill out the forms. The tax code is based on the idea that citizens should create revenues for the government based on their ability to pay—and the tax forms follow that logic. Most taxpayers need to complete only a few schedules and forms to supplement their Form 1040 (or 1040 EZ). Most taxpayers have the same kinds of taxable events, incomes, and deductions year after year and file the same kinds of schedules and forms.

Many taxpayers prefer to consult a professional tax preparer. Professional help is useful if you have a relatively complicated tax situation: unusual sources of income or expenditures that may be deductible under unusual circumstances. Some taxpayers use a tax preparer simply to protect against making a mistake and having the error, however, innocent, prove costly to fix. Fees for tax preparers depend on how complex your return is, the number of forms that need to be completed, and the type of professional you consult.

Professional tax preparers may be lawyers, accountants, personal financial planners, or tax consultants. You may have an ongoing relationship with your tax preparer who may also be your accountant or financial planner, working with you on other financial decisions. Or you may consult a tax preparer simply on tax issues. You may want your tax preparer to fill out and file the forms for you, or you may be looking for advice about future financial decisions that have tax consequences. Tax preparers may be independent practitioners who work during tax season, or employees of a national chain that provide year-round tax services.

There is no standard certification to be a professional tax preparer. An enrolled agent is someone who has successfully passed training courses from the IRS. A certified public accountant (CPA) has specific training and experience in accounting. When looking for a tax preparer, your lawyer, accountant, or financial planner may be appropriate or may be able to make a recommendation. If your information is fairly straightforward, you may minimize costs by using a preparer who simply does taxes. If your situation involves more complications, especially involving other entities such as businesses or trusts, or unusual circumstances such as a gain, gift, or distribution, you may want to consult a professional with a range of expertise, such as an accountant or a lawyer who specializes in taxes. Many professionals also offer a "guarantee," that is, that they will also help you if the information on your return is later questioned by the IRS.

Whether you prepare your tax return by yourself or with a professional, it is you who must sign the return and assume responsibility for its details. You should be sure to review your return with your tax preparer so that you understand and can explain any of the information found on it. You should question anything that you cannot understand or that seems contrary to your original information. You should also know your tax return because understanding how and why tax obligations are created or avoided can help you plan for tax consequences in future financial decisions.

You may choose to prepare the return yourself using a tax preparation software application. There are many available, and several that are compatible with personal financial software applications, enabling you to download or transfer data from your financial software directly into the tax software. Software applications are usually designed as a series of questions that guide you through Form 1040 and the supplemental schedules, filling in the data from your answers. Once you have been through the "questionnaire," it tells you the forms it has completed for you, and you can simply print them out to submit by mail or "e-file" them directly to the IRS. Most programs also allow you to enter data into the individual forms directly.

Many tax preparation software packages are available, and many are reviewed in the business press or online. Some popular programs include the following (see http://tax-software- review.toptenreviews.com):

- Turbo Tax
- Tax Cut
- Tax
- ACT
- Complete Tax
- TaxSlayer Premium
- TaxBrain 1040 Deluxe
- OLT Online Taxes

Software can be useful in that it automatically calculates unusual circumstances, limitations, or exceptions to rules using your complete data. Some programs even prompt you for additional information based on the data you submit. Overlooking exceptions is a common error that software programs can help you avoid. The programs

have all the forms and schedules, but if you choose to file hard copy versions, you can download them directly from the IRS Web site, or you can call the IRS and request that they be sent to you. Once your return is completed, you must file it with the IRS, either by mail or by e-file, which has become increasingly popular.

Following Up

After you file your tax return it will be processed and reviewed by the IRS. If you are owed a refund, it will be sent; if you paid a payment, it will be deposited. The IRS reviews returns for accuracy, based on redundant reporting and its "sense" of your data. For example, the IRS may investigate any discrepancies between the wages you report and the wages your employer reports. As another example, if your total wages are $23,000 and you show a charitable contribution of $20,000, that contribution seems too high for your income—although there may be an explanation.

The IRS may follow up by mail or by a personal interview. It may just ask for verification of one or two items, or it may conduct a full **audit**—a thorough financial investigation of your return. In any case, you will be asked to produce records or receipts that will verify your reported data. Therefore, it is important to save a copy of your return and the records and receipts that you used to prepare it. The IRS has the following recommendations for the number of years to save your tax data:

1. If you owe additional tax and situations 2, 3, and 4 below do not apply to you, keep records for three years.
2. If you do not report income that you should report, and it is more than 25 percent of the gross income shown on your return, keep records for six years.
3. If you file a fraudulent return, keep records indefinitely.
4. If you do not file a return, keep records indefinitely.
5. If you file a claim for credit or refund after you file your return, keep records for three years from the date you filed your original return or two years from the date you paid the tax, whichever is later.
6. If you file a claim for a loss from worthless securities or bad debt deduction, keep records for seven years.
7. Keep all employment tax records for at least four years after the date that the tax becomes due or is paid, whichever is later.

If you have a personal interview, your tax preparer may accompany you to help explain and verify your return. Ultimately, however, you are responsible for it. If you have made errors, and if those errors result in a larger tax obligation (if you owe more), you may have to pay penalties and interest in addition to the tax you owe. You may be able to negotiate a payment schedule with the IRS.

The IRS randomly chooses a certain number of returns each year for review and possible audit even where no discrepancies or unusual items are noticed. The threat of a random audit may deter taxpayers from cheating or taking shortcuts on their tax

returns. Computerized record keeping has made it easier for both taxpayers and the IRS to collect, report, and verify tax data.

Filing Strategies

Most citizens recognize the need to contribute to the government's revenues but want to avoid paying more than they need to. **Tax avoidance** is the practice of ensuring that you have no excess tax obligations. Strategies for minimizing or avoiding tax obligations are perfectly legal. However, **tax evasion**—fraudulently reporting tax obligations, for example, by understating incomes and gains or overstating expenses and losses—is illegal.

Timing can affect the value of taxable incomes or deductibles expenses. If you anticipate a significant increase in income—and therefore in your tax rate—in the next tax year, you may try to defer a deductible expense. When you have more income and it is taxed at a higher rate, a deductible expense may be worth more as a tax savings to offset your income. For example, if your tax rate is 20 percent and your deductible expense of $100 saves you from paying taxes on $100, then it saves you $20 in taxes. If your tax rate is 35 percent, that same $100 deductible saves you $35. Likewise, if you anticipate a decrease in income that will decrease your tax rate, you may want to defer receipt of income until the next year when it will be taxed at a lower rate. In addition, some kinds of incomes are taxed at different rates than others, so how your income is created may bear on how much tax it creates.

The definition of expenses and the way you claim them can affect the tax they save. You may be able to deduct more expenses if you itemize your deductions than if you do not, or it may not make a difference. Also, there is some discretion in classifying expenses. For example, suppose you are a high school Spanish teacher. You also tutor students privately. You buy Spanish books to improve your own language skills and to keep current with the published literature. Are the costs of those books an unreimbursed employee expense related to your job as a teacher, or are they an expense of your private tutoring business?

They may be both, but you can only claim the expense once or in one place on your tax return. If you claim it as an employment-related expense, your ability to deduct the cost may be limited, but if it is a cost of your tutoring business, you may be able to fully expense it from your business income.

An income that is not taxed or taxed at a lower rate is more valuable than an income that is taxed or taxed at a higher rate. An expense that is fully deductible is more valuable than an expense that is not. Taxes deferred—by delaying income or accelerating expense—create more liquidity and thus more value. However, taxable income is still income, and a deductible expense is still an expense. Tax consequences should not obscure the benefits of enjoying income and the costs of incurring expenses.

There are many ideas about how to avoid an audit or what will trigger one: certain kinds of incomes or expenses, or filing earlier or later, for example. In truth, with the increased sophistication of computerization, the review process is much better at noticing real discrepancies and at choosing audits randomly. Time and effort (and cost) invested in outsmarting a possible audit is usually wasted. The best protection against a possible audit is to have verification—a receipt or a bill or a canceled check—for all the incomes and expenses that you report.

KEY TAKEAWAYS

- Tax code information is available from the Internal Revenue Service.
- Verifiable records must be kept for all taxable incomes and expenses or other taxable events and activities.
- Professional tax assistance and tax preparation software are readily available.
- The Internal Revenue Service reviews tax returns for errors and may follow up through an informal or formal audit process.
- Tax avoidance is the legal practice of minimizing tax obligations.
- Tax evasion is the illegal process of fraudulently presenting information used in calculating tax obligations.
- Tax avoidance strategies can involve the timing of incomes and/or expenses to take advantage of changing tax circumstances.

EXERCISES

1. Read the article "Policy Basics: Where Do Our Federal Tax Dollars Go" (Center on Budget and Policy Priorities, April 13, 2009) at http://www.cbpp.org/cms/index.cfm?fa=view&id=1258. In 2008, what were the federal government's three largest expenditures of tax dollars? According to the IRS.gov article "Tips for Choosing a Tax Preparer" at http://www.irs.gov/newsroom/article/0,,id=251962,00.html, when should you look for in a professional tax preparation service provider, and what fees should you avoid paying?
2. Gather a current sample of the kind of records you will use to calculate your tax liability this year and to verify your tax return. List each type of record and identify exactly what information it will give you, your tax preparer, and the IRS about your tax situation. What additional records will you need that are not yet in your possession?

3. Compare and contrast tax preparation software at sites such ashttp://financialplan.about.com/od/software/tp/TPTaxSoftware.htm andhttp://www.consumerresearch.com/tax-preparation-software/reviews. What are the chief differences among the top three or four programs? Also check out the IRS Free File program at http://www.irs.gov/efile. Would you quality for Free File?
4. Use your spreadsheet program, or download a free one, to develop a document showing monthly cash flows for income and expenses to date for which you have written records. If you continue to develop this document for the remaining months, how will it help you prepare your tax returns?
5. Research how can you reduce your tax liability and/or avoid paying taxes when you file this year. Work with classmates to develop a tip sheet for students on tax avoidance.

[1] Statistics of Income Division and Other Areas of the Internal Revenue Service, http://www.irs.gov/taxstats (accessed January 19, 2009).

6.4 Taxes and Financial Planning

LEARNING OBJECTIVES

1. Trace the tax effects of life stages and life changes.
2. Identify goals and strategies that provide tax advantages.
3. Identify tax advantages that may be useful in pursuing your goals.
4. Discuss the relationship of tax considerations to financial planning.

You may anticipate significant changes in income or expenses based on a change of job or career, or a change of life stage or lifestyle. Not only may the amounts of income or expenses change, but the kinds of incomes or expenses may change as well. Planning for those changes in relation to tax obligations is part of personal financial planning.

Tax Strategies and Life Stages

Tax obligations change more broadly as your stage of life changes. Although everyone is different, there is a typical pattern to aging, earning, and taxes, as shown in Figure 6.15 "Life Stages and Tax Implications".

Figure 6.15 Life Stages and Tax Implications

	Young Adulthood	Middle Adulthood	Older Adulthood	Retirement
Source of income	Wages	Wages/ investment	Wages/ investment	Investment
Asset base	None	Accumulating	Growing	Depleting
Adjusted Gross Income	Low	Higher	Highest	Lower
Deductions, Exemptions	Low	Higher	High	Low

In young adulthood, you rely on income from wages, and you usually have yet to acquire an asset base, so you have little income from interest, dividends, or capital gains. Your family structure does not include dependents, so you have few deductions but also low taxable income.

As you progress in your career, you can expect wages, expenses, and dependents to increase. You are building an asset base by buying a home, possibly saving for your children's education, or saving for retirement. Because those are the kinds of assets encouraged by the government, they not only build wealth but also create tax advantages—the mortgage interest deduction, retirement, or education savings exemption.

In older adulthood, you may begin to build an asset base that can no longer provide those tax advantages that are limited or may create taxable income such as interest, dividends, or rental income. In retirement, most people can anticipate a significant decrease in income from wages and a significant increase in reliance on incomes from investments such as interest, dividends, and gains. Some of those assets may be retirement savings accounts, such as an Individual Retirement Account (IRA) or 401(k) that created tax advantages while growing, but will create tax obligations as income is drawn from them.

Generally, you can expect your income to increase during your middle adult life, but that is when many people typically have dependents and deductions such as mortgage interest and job-related expenses to offset increased tax obligations. As you age, and especially when you retire, you can expect less income and also fewer deductions: any kids have left home, the mortgage in paid off.

The bigger picture is that at the stages of your life when income is increasing, so are your deductions and exemptions, which tend to decrease as your income decreases. Although your incomes change over your lifetime, you tax obligations change proportionally, so they remain relative to your ability to pay.

The tax consequences of such changes should be anticipated and considered as you evaluate choices for financial strategies. Because the tax code is a matter of law it does change, but because it is also a matter of politics, it changes slowly and only after much

public discussion. You can usually be aware of any tax code changes far enough in advance to incorporate them into your planning.

Tax Strategies and Personal Financial Planning

Tax advantages are sometimes created for personal financial strategies as a way of encouraging certain personal goals. In the United States, as in most developed economies, certain goals such as home ownership, retirement savings, and education and health financing are seen as personal goals that benefit society as well as the individual.

In most cases, tax advantages are created to encourage progress toward those goals. For example, most people can buy a home only if they can use debt financing, which creates added costs. So mortgage interest, that added cost, is tax deductible (up to a limit) to make home financing and therefore home ownership more affordable and attractive.

Retirement saving is encouraged, so some savings plans such as an IRA or a **defined contribution** plan such as a 401(k) or a 403b (so named for the sections of the Internal Revenue Code that define them) create tax advantages. The deposits made to those plans may be used to reduce taxable income, although there are limits to the amount of those deposits. There are also retirement savings strategies that do not create tax advantages, such as saving outside of a tax-advantaged account. There are limited tax-advantaged savings accounts for education savings and health care expenses as well.

Where you have a choice, it makes sense to use a strategy that will allow you to make progress toward your goal and realize a tax advantage. Your enthusiasm for the tax advantage should not define your goals, however. Taxes affect the value of your alternatives, so recognizing tax implications should inform your choices without defining your goals.

Unanticipated events such as an inheritance, a gift, lottery winnings, casualty and theft losses, or medical expenses can also have tax consequences. They are often unusual events (and therefore unanticipated) and may be unfamiliar and financially complicated. In those circumstances it may be wise to consult an expert.

Your financial plans should reflect your vision for your life: what you want to have, how you want to get it, how you want to protect it. You will want to be aware of tax advantages or disadvantages, but tax consequences should not drive your vision. You would not buy a house with a mortgage only to get the mortgage interest deduction, for example. However, if you are buying a home, you can plan to do so in the most tax-advantageous way.

As Supreme Court Justice Oliver Wendell Holmes, Jr., said, “Taxes are what we pay for a civilized society.”[1]

Like any costs, you want to minimize your tax costs of living and of life events, but tax avoidance is only a means to an end. You should make your life choices for better reasons than avoiding taxes.

KEY TAKEAWAYS

- Tax strategies may change as life stages and family structure changes.
- Some personal finance goals may be pursued in a more or less tax-advantaged way, so you should evaluate the tax effects on your alternatives.
- Tax strategies are a means to an end, that is, to achieve your personal finance goals with a minimum of cost.

EXERCISES

1. Review your list of personal financial goals. For each goal, how does the U.S. Tax Code help or hinder you in achieving it?
2. Investigate tax strategies that would benefit you in your present life stage. Begin your online research at this comprehensive list of tax links:http://www.el.com/elinks/taxes/. What tax strategies would benefit you in your next life stage? Share your findings and strategies with others in your life stage.
3. What does Benjamin Franklin mean in the following quote about taxation? What advice is implied and how would you apply that advice to your financial planning?

> *"Friends and neighbors complain that taxes are indeed very heavy, and if those laid on by the government were the only ones we had to pay, we might the more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly."*
>
> *Benjamin Franklin* [2]

[1] U.S. Department of the Treasury, http://www.treas.gov/education/faq/taxes/taxes-society.shtml (accessed January 19, 2009).

[2] Benjamin Franklin, "As Certain as Death—Quotations About Taxes," compiled and arranged by Jeffrey Yablon, in *Tax Notes*, January 5, 2004; retrieved from http://www.taxanalysts.com/www/features.nsf/Articles/B613CDAB6D255421852577000064157l?OpenDocument (accessed May 23, 2012).

Chapter 7 Financial Management

Introduction

Financial management is about managing the financing for consumption and investment. You have two sources for money: yourself or someone else. You need to decide when to use whose money and how to do so as efficiently as possible: maximizing benefit and minimizing cost. As with all financial decisions, you also need to think about the strategic consequences for future decisions.

You can use your own money as a source of financing if your income is at least equal to your living expenses. If it is more, you have a budget surplus that can be saved and used as a source of future financing while earning income at the same time. If your own income is less than the expenses, you have a budget deficit that will require another external source of financing—someone else's money—that will add an expense. Ideally, you want to avoid the additional expense of borrowing and instead create the additional income from saving. The budgeting techniques discussed in Chapter 5 "Financial Plans: Budgets" are helpful in seeing this picture more clearly.

Your ability to save will vary over your lifetime, as your family structure, age, career choice, and health will change. Those "micro" factors determine your income and expenses and thus your ability to create a budget surplus and your own internal financing. Likewise, your need to use external financing, such as credit or debt, will vary with your income, expenses, and ability to save.

At times, unexpected change can turn a budget surplus into a budget deficit (e.g., a sudden job loss or increased health expenses), and a saver can reluctantly become a borrower. Being able to recognize that change and understand the choices for financing and managing cash flow will help you create better strategies.

Financing can be used to purchase a long-term asset that will generate income, reduce expense, or create a gain in value, and it may be useful when those benefits outweigh the cost of the debt. The benefit of long-term assets is also influenced by personal factors. For example, a house may be more useful, efficient, and valuable when families are larger.

Macroeconomic factors, such as the economic cycle, employment, and inflation, should bear on your financing decisions as well. Your incomes and expenses are affected by the economy's expansion or contraction, especially as it affects your own employment or earning potential. Inflation or deflation, or an expected devaluation or appreciation of the currency, affects interest rates as both lenders and borrowers anticipate using or returning money that has changed in value.

Financial management decisions become more complicated when the personal and macroeconomic factors become part of the decision process, but the result is a more

realistic evaluation of alternatives and a better strategy that leaves more choices open in the future. Financial management decisions, however, are difficult not because of their complexity, but because the way you can finance your assets and expenses (i.e., lifestyle) determines the life that you live. The stakes are high.

7.1 Your Own Money: Cash

LEARNING OBJECTIVES

1. Identify the cash flows and instruments used to manage income deposits and expense payments.
2. Explain the purpose of check balancing.

Most people use a **checking account** as their primary means of managing cash flows for daily living. Incomes from wages and perhaps from investments are deposited to this account, and expenses are paid from it. The actual deposit of paychecks and writing of checks, however, has been made somewhat obsolete as more cash flow services are provided electronically.

When incoming funds are distributed regularly, such as a paycheck or a government distribution, **direct deposit** is preferred. For employers and government agencies, it offers a more efficient, timely, and secure method of distributing funds. For the recipient, direct deposit is equally timely and secure and can allow for a more efficient dispersal of funds to different accounts. For example, you may have some of your paycheck directly deposited to a savings account, while the rest is directly deposited to your checking account to pay living expenses. Because you never "see" the money that is saved, it never passes through the account that you "use," so you are less likely to spend it.

Withdrawals or payments have many electronic options. **Automatic payments** may be scheduled to take care of a periodic payment (i.e., same payee, same amount) such as a mortgage or car payment. They may also be used for periodic expenses of different amounts—for example, utility or telephone expenses. A **debit card** may be used to directly transfer funds at the time of purchase; money is withdrawn from your account and transferred to the payee's with one quick swipe at checkout. An **ATM (automated teller machine) card** offered by a bank allows for convenient access to the cash in your bank accounts through instant cash withdrawals.

The bank clears these transactions as it manages your account, providing statements of your cash activities, usually monthly and online. When you reconcile your record keeping (i.e., your checkbook or software accounts) with the bank's statement, you are balancing your checking account. This ensures that your records and the bank's records are accurate and that your information and account balance and the bank's are up to date. Banks do make mistakes, and so do you, so it is important to check and be sure that the bank's version of events agrees with yours.

KEY TAKEAWAYS

- A checking account is the primary cash flow management tool for most consumers, providing a way to pay for expenses and store cash until it is needed.
- Balancing your checkbook reconciles your personal records with the bank's records of your checking account activity.

EXERCISES

1. In My Notes or your personal finance journal, inventory in detail all the vehicles you use for managing your cash flows. Include all your accounts that are mediated through banks and finance companies. Also, list your cards issued by banks, such as debit or ATM cards, and identify any direct deposits and automatic payments that are made through your savings and checking accounts. How might you further enhance your cash management through the use of banking tools?
2. Does your bank offer online banking services, such as electronic bill payment? View your bank and others (such as http://www.ingdirect.com) online to learn more about Internet banking. What products and services do online branches and banks offer? Do you (or would you) use those products and services? Why (or why not)? Discuss online banking with classmates. What do they identify as the main benefits and risks of electronic banking?

7.2 Your Own Money: Savings

LEARNING OBJECTIVES

1. Identify the markets and institutions used for saving.
2. Compare and contrast the instruments used for saving.
3. Analyze a savings strategy in terms of its liquidity and risk.

When incomes are larger than expenses, there is a budget surplus, and that surplus can be saved. You could keep it in your possession and store it for future use, but then you have the burden of protecting it from theft or damage. More important, you create an opportunity cost. Because money trades in markets and liquidity has value, your alternative is to lend that liquidity to someone who wants it more than you do at the moment and is willing to pay for its use. Money sitting idle is an opportunity cost.

The price that you can get for your money has to do with supply and demand for liquidity in the market, which in turn has to do with a host of other macroeconomic factors. It also has a lot to do with time, opportunity cost, and risk. If you are willing to lend your liquidity for a long time, then the borrower has more possible uses for it, and increased mobility increases its value. However, while the borrower has more opportunity, you (the seller) have more opportunity cost because you give up more choices over a longer period of time. That also creates more risk for you, since more can happen over a longer period of time. The longer you lend your liquidity, the more compensation you need for your increased opportunity cost and risk.

Savings Markets

The markets for liquidity are referred to as the **money markets** and the **capital markets**. The money markets are used for relatively short-term, low-risk trading of money, whereas the capital markets are used for relatively long-term, higher-risk trading of money. The different time horizons and risk tolerances of the buyers, and especially the sellers, in each market create different ways of trading or packaging liquidity.

When individuals are saving or investing for a long-term goal (e.g., education or retirement) they are more likely to use the capital markets; their longer time horizon allows for greater use of risk to earn return. Saving to finance consumption relies more on trading liquidity in the money markets, because there is usually a shorter horizon for the use of the money. Also, most individuals are less willing to assume opportunity costs and risks when it comes to consumption, thus limiting the time that they are willing to lend liquidity.

When you save, you are the seller or lender of liquidity. When you use someone else's money or when you borrow, you are the buyer of liquidity.

Savings Institutions

For most individuals, access to the money markets is done through a bank. A bank functions as an **intermediary** or "middleman" between the individual lender of money (the saver) and the individual borrower of money.

For the saver or lender, the bank can offer the convenience of finding and screening the borrowers, and of managing the loan repayments. Most important, a bank can guarantee the lender a return: the bank assumes the risk of lending. For the borrowers, the bank can create a steady supply of surplus money for loans (from the lenders), and arrange standard loan terms for the borrowers.

Banks create other advantages for both lenders and borrowers. Intermediation allows for the amounts loaned or borrowed to be flexible and for the maturity of the loans to vary. That is, you don't have to lend exactly the amount someone wants to borrow for exactly the time she or he wants to borrow it. The bank can "disconnect" the lender and

borrower, creating that flexibility. By having many lenders and many borrowers, the bank diversifies the supply of and demand for money, and thus lowers the overall risk in the money market.

The bank can also develop expertise in screening borrowers to minimize risk and in managing and collecting the loan payments. In turn, that reduced risk allows the bank to attract lenders and diversify supply. Through diversification and expertise, banks ultimately lower the cost of lending and borrowing liquidity. Since they create value in the market (by lowering costs), banks remain as intermediaries or middlemen in the money markets.

There are different kinds of banks based on what kind of brokering of money the bank does. Those differences have become less distinct as the banking industry consolidates and strives to offer more universal services. In the last generation, decreasing bank regulation, increasing globalization, and technology have all contributed to that trend. Different kinds of banks are listed below.

- Retail banks have focused on consumer saving and borrowing.
- Commercial banks have focused on operating cash flow management for businesses.
- Investment banks have focused on long-term financing for businesses.

Retail banks are commonly known as thrift institutions, savings banks, savings and loan associations, or mutual savings banks and are usually private or public corporations. **Credit unions** function similarly, but are cooperative membership organizations, with depositors as members.

In addition to banks, other kinds of intermediaries for savers include pension funds, life insurance companies, and investment funds. They focus on saving for a particular long-term goal. To finance consumption, however, most individuals primarily use banks.

Some intermediaries have moved away from the "bricks-and-mortar" branch model and now operate as online banks, either entirely or in part. There are cost advantages for the bank if it can use online technologies in processing saving and lending. Those cost savings can be passed along to savers in the form of higher returns on savings accounts or lower service fees. Most banks offer online and, increasingly, mobile account access, via cell phone or smartphone. Intermediaries operating as finance companies offer similar services.

Because their role as intermediaries is critical to the flow of funds, banks are regulated by federal and state governments. Since the bank failures of the Great Depression, bank deposits are federally insured (up to $250,000) through the FDIC (Federal Deposit Insurance Corporation). Since the financial crisis of 2007–2009, bank money market funds also are insured. Credit union accounts are similarly insured by the National Credit Union Agency or NCUA, also an independent federal agency. In choosing an intermediary, savers should make sure that accounts are FDIC or NCUA insured.

Saving Instruments

Banks offer many different ways to save your money until you use it for consumption. The primary difference among the accounts offered to you is the price that your liquidity earns, or the compensation for your opportunity cost and risk, which in turn depends on the degree of liquidity that you are willing to give up. You give up more liquidity when you agree to commit to a minimum time or amount of money to save or lend.

For the saver, a **demand deposit** (e.g., checking account) typically earns no or very low interest but allows complete liquidity on demand. Checking accounts that do not earn interest are less useful for savings and therefore more useful for cash management. Some checking accounts do earn some interest, but often require a minimum balance. **Time deposits**, or savings accounts, offer minimal interest or a bit more interest with minimum deposit requirements.

If you are willing to give up more liquidity, **certificates of deposit (CDs)** offer a higher price for liquidity but extract a time commitment enforced by a penalty for early withdrawal. They are offered for different maturities, which are typically from six months to five years, and some have minimum deposits as well. Banks also can offer investments in money market mutual funds (MMMFs)A savings instrument invested in the money markets., which offer a higher price for liquidity because your money is put to use in slightly higher-risk investments, such as Treasury bills (short-term government debt) and commercial paper (short-term corporate debt).

Compared to the capital markets, the money markets have very little risk, so MMMFs are considered very low-risk investments. The trade-offs between liquidity and return are seen in Figure 7.3 "Savings Products versus Liquidity and Risk".

Figure 7.3 Savings Products versus Liquidity and Risk

	Less	More
Time Commitment	Checking, savings, MMMFs	CDs
Risk	Checking, savings, CDs	MMMFs
Interest Earned	Checking, savings	MMMFs, CDs

As long as your money remains in your account, including any interest earned while it is there, you earn interest on that money. If you do not withdraw the interest from your account, it is added to your principal balance, and you earn interest on both. This is referred to as earning interest on interest, or compounding. The rate at which your principal compounds is the **annual percentage rate (APR)** that your account earns.

You can calculate the eventual value of your account by using the relationships of time and value that we looked at in Chapter 4 "Evaluating Choices: Time, Risk, and Value"—that is,

$$FV=PV\times (1+r)\ t\ ,$$

where FV = future value, PV = present value, *r* = rate, and *t* = time. The balance in your account today is your present value, PV; the APR is your rate of compounding, r; the time until you will withdraw your funds is t. Your future value depends on the rate at which you can earn a return or the rate of compounding for your present account.

If you are depositing a certain amount each month or with each paycheck, that stream of cash flows is an annuity. You can use the annuity relationships discussed in Chapter 4 "Evaluating Choices: Time, Risk, and Value" to project how much the account will be worth at any point in time, given the rate at which it compounds. Many financial calculators—both online and handheld—can help you make those calculations.

Ideally, you would choose a bank's savings instrument that offers the highest APR and most frequent compounding. However, interest rates change, and banks with savings plans that offer higher yields often require a minimum deposit, minimum balance, and/or a maintenance fee. Also, your interest from savings is taxable, as it is considered income. As you can imagine, however, with monthly automatic deposits into a savings account with compounding interest, you can see your wealth can grow safely.

Savings Strategies

Your choice of savings instrument should reflect your liquidity needs. In the money markets, all such instruments are relatively low risk, so return will be determined by opportunity cost.

You do not want to give up too much liquidity and then risk being caught short, because then you will have to become a borrower to make up that shortfall, which will create additional costs. If you cannot predict your liquidity needs or you know they are immediate, you should choose products that will least restrict your liquidity choices. If your liquidity needs are more predictable or longer term, you can give up liquidity without creating unnecessary risk and can therefore take advantage of products, such as CDs, that will pay a higher price.

Your expectations of interest rates will contribute to your decision to give up liquidity. If you expect interest rates to rise, you will want to invest in shorter-term maturities, so as to regain your liquidity in time to reinvest at higher rates. If you expect interest rates to fall, you would want to invest in longer-term maturities so as to maximize your earnings for as long as possible before having to reinvest at lower rates.

One strategy to maximize liquidity is to diversify your savings in a series of instruments with differing maturities. If you are using CDs, the strategy is called "CD laddering." For

example, suppose you have $12,000 in savings earning 0.50 percent annually. You have no immediate liquidity needs but would like to keep $1,000 easily available for emergencies. If a one-year CD is offering a 1.5 percent return, the more savings you put into the CD, the more return you will earn, but the less liquidity you will have.

A “laddering” strategy allows you to maximize return and liquidity by investing $1,000 per month by buying a one-year CD. After twelve months, all your savings is invested in twelve CDs, each earning 1.5 percent. But because one CD matures each month, you have $1,000 worth of liquidity each month. You can keep the strategy going by reinvesting each CD as it matures. Your choices are shown in Figure 7.4 "CD Laddering Strategy".

Figure 7.4 CD Laddering Strategy

	$ Invested in CDs	Liquid	Earnings	Interest Rate
Savings Strategy	0	12,000	60	0.50%
Savings Strategy	11,000	1,000	165	1.50%
Savings Strategy	12,000	0	180	1.50%
CD Laddering Strategy	12,000	1,000	180	1.50%

A laddering strategy can also reflect expectations of interest rates. If you believe that interest rates or the earnings on your money will increase, then you don’t want to commit to the currently offered rates for too long. Your laddering strategy may involve a series of relatively short-term (less than one year) instruments. On the other hand, if you expect interest rates to fall, you would want to weight your laddering strategy to longer-term CDs, keeping only your minimum liquidity requirement in the shorter-term CDs.

The laddering strategy is an example of how diversifying maturities can maximize both earnings and liquidity. In order to save at all, however, you have to choose to save income that could otherwise be spent, suffering the opportunity cost of everything that you could have had instead. Saving is delayed spending, often seen as a process of self-denial.

One saving strategy is to create regular deposits into a separate account such that you might have a checking account from which you pay living expenses and a savings account in which you save.

This is easier with direct deposit of wages, since you can have a portion of your disposable income go directly into your savings account. Saving becomes effortless, while spending actually requires a more conscious effort.

Some savings accounts need to be "segregated" because of different tax consequences—a retirement or education account, for example. In most cases, however, separating accounts by their intended use has no real financial value, although it can create a psychological benefit. Establishing a savings vehicle has a very low cost, if any, so it is easy to establish as many separate funds for saving as you find useful.

KEY TAKEAWAYS

- Banks serve to provide the consumer with excess cash by having the cash earn money through savings until the consumer needs it.
- Banking institutions include retail, commercial, and investments banks.
- Consumers use retail institutions, including the following:
  - Savings banks
  - Mutual savings banks
  - Savings and loan associations
  - Credit unions
- Savings instruments include the following:
  - Demand deposit accounts
  - Time deposit accounts
  - Certificates of deposit
  - Money market mutual fund accounts
- A savings strategy can maximize your earnings from savings.

EXERCISES

1. Record your experiences with certificates of deposit (CDs) and money market mutual funds (MMMFs). What are the benefits and drawbacks of these instruments for saving? Compared to savings accounts, what are their implications for liquidity and risk? What are their implications for cost and return? What advice would you give to someone who saved by keeping money in a piggy bank?

2. You have $10,000 to deposit. You want to save it, earning interest by loaning its use in the money market to your bank. You anticipate you will need to replace your washing machine within the year, however, so you don't want to surrender all your liquidity all at once. What is the best way to save your money that will give you the greatest increase in wealth without too much risk and while still retaining some liquidity? Explain your reasons for your choice of a solution.
3. View the four videos in Donna Freedman's series for MSN "Living Poor and Loving It," and read her related articles (http://articles.moneycentral.msn.com/SmartSpending/FindDealsOnline/living-poor-and-loving-it-donna-freedman-video.aspx?page=all). The videos track her experiments with living frugally to save enough money to finance her college education as an older student. What four basic strategies does Freeman employ in her quest? Which, if any, of these strategies have you tried or would you try, and why? What are some other strategies you have tried for living frugally to achieve a particular financial goal? Share these strategies with classmates.
4. Donna Freedman's strategies for saving relate more to spending than to saving. Considering that we don't know what instruments for saving she used, what other strategies for saving could you recommend to her, and why? Record your answers in My Notes or your personal finance journal.
5. Go online to experiment with compound interest calculators (e.g., seehttp://www.moneychimp.com/calculator/compound_interest_calculator.htmor http://www.webmath.com/compinterest.html). Use real numbers based on your actual or projected savings. For example, based on what you have in savings now, how much could you have in five years? To see the effects of compounding, compare your results with the same calculation for simple interest (rather than compounded interest), using the calculator athttp://www.webmath.com/simpinterest.html.

7.3 Other People's Money: Credit

LEARNING OBJECTIVES

1. Identify the different kinds of credit used to finance expenses.
2. Analyze the costs of credit and their relationships to risk and liquidity.
3. Describe the credit rating process and identify its criteria.

4. Identify common features of a credit card.
5. Discuss remedies for credit card trouble.
6. Summarize government's role in protecting lenders and borrowers.

"Credit" derives from the Latin verb *credere* (to believe). It has several meanings as a verb in common usage—to recognize with respect, to acknowledge a contribution—but in finance, it generally means to allow delayed payment.

Both credit and debt are forms of borrowing. Credit is distinguished from debt in both its purpose and duration or timing, although in casual conversation the words are used interchangeably. Credit is used to purchase goods and services, to finance living expenses, or to make payments more convenient by delaying them for a relatively short time. Debt, on the other hand, is used to finance the purchase of assets—such as a car or a home—rather than to delay payment of recurring expenses.

The costs of credit and of debt are likewise different, given their different uses and time horizons. Often, people get into some trouble when they cannot distinguish between the two and choose the wrong form of financing at the wrong time. Figure 7.6 "Credit versus Debt" distinguishes credit from debt.

Figure 7.6 Credit versus Debt

	Credit	Debt
Finances	Living expenses	Assets
Maturity	Short-term	Long-term

Kinds of Credit

Credit is issued either as installment credit or as revolving credit. Installment creditA form of credit used to purchase consumer durables, usually issued by one vendor for one item. is typically issued by one vendor, such as a department store, for a specific purchase. The vendor screens the applicant and extends credit, bearing the **default risk**, or risk of nonpayment. Payments are made until that amount is paid for. Payments include a portion of the cost of the purchase and the cost of the credit itself, or interest.

Installment credit is an older form of credit that became popular for the purchase of consumer durables (i.e., furniture, appliances, electronics, or household items) after the First World War. This form of credit expanded as mass production and invention made consumer durables such as radios and refrigerators widely available. (Longer-term installment purchases for bigger-ticket assets, such as a car or property, are considered debt.)

Revolving credit extends the ability to delay payment for different items from different vendors up to a certain limit. Such credit is lent by a bank or finance company, typically through a **charge card** or a **credit card**. The charge card balance must be paid in full in each period or **credit cycle**, while the credit card balance may not be, requiring only a minimum payment.

The credit card is a more recent form of credit, as its use became widely practical only with the development of computing technology. The first charge card was the Diners' Club card, issued in 1950. The first credit card was the Bank Americard (now called Visa), issued by Bank of America in 1958, which was later followed by MasterCard in 1966. Retailers can also issue revolving credit (e.g., a store account or credit card) to encourage purchases.

Credit cards are used for convenience and security. Merchants worldwide accept credit cards as a method of payment because the issuer (the bank or finance company) has assumed the default risk by guaranteeing the merchants' payment. Use of a credit card abroad also allows consumers to incur less transaction cost.

This universal acceptance allows a consumer to rely less on cash, so consumers can carry less cash, which therefore is less likely to be lost or stolen. Credit card payments also create a record of purchases, which is convenient for later record keeping. When banks and finance companies compete to issue credit, they often offer gifts or rewards to encourage purchases.

Credit cards create security against cash theft, but they also create opportunities for credit fraud and even for identity theft. A lost or stolen credit card can be used to extend credit to a fraudulent purchaser. It can also provide personal information that can then be used to assume your financial identity, usually without your knowing it. Therefore, handle your credit cards carefully and be aware of publicized fraud alerts. Check your credit card statements for erroneous or fraudulent charges and notify the issuer immediately of any discrepancies, especially if the card is lost or stolen. Failure to do so may leave you responsible for purchases you did not make—or enjoy.

Costs of Credit

Credit has become a part of modern transactions, largely enabled by technology, and a matter of convenience and security. It is easy to forget that credit is a form of borrowing and thus has costs. Understanding those costs helps you manage them.

Because consumer credit is all relatively short term, its cost is driven more by risk than by opportunity cost, which is the risk of default or the risk that you will fail to repay with the amounts advanced to you. The riskier the borrower seems to be, the fewer the sources of credit. The fewer sources of credit available to a borrower, the more credit will cost.

Measuring Risk: Credit Ratings and Reports

How do lenders know who the riskier borrowers are?

Credit rating agencies specialize in evaluating borrowers' credit risk or default risk for lenders. That evaluation results in a **credit score**, which lenders use to determine their willingness to lend and their price.

If you have ever applied for consumer credit (a revolving, installment, or personal loan) you have been evaluated and given a credit score. The information you write on your credit application form, such as your name, address, income, and employment, is used to research the factors for calculating your credit score, also known as a FICO (Fair Isaac Corporation) score after the company that developed it.

In the United States, there are currently three major credit rating agencies: Experian, Equifax, and TransUnion. Each calculates your score a bit differently, but the process is common. They assign a numerical value to five characteristics of your financial life and then compile a weighted average score. Scores range from 300 to 900; the higher your score, the less risky you appear to be. The five factors that determine your credit score are

1. your payment history,
2. amounts you currently owe,
3. the length of credit history,
4. new credit issued to you,
5. the types of credit you have received.

The rating agencies give your payment history the most weight, because it indicates your risk of future defaults. Do you pay your debts? How often have you defaulted in the past?

The credit available to you is reflected in the amounts you currently owe or the credit limits on your current accounts. These show how dependent you are on credit and whether or not you are able to take on more credit. Generally, your outstanding credit balances should be no more than 25 percent of your available credit.

The length of your credit history shows how long you have been using credit successfully; the longer you have been doing so, the less risky a borrower you are, and the higher your score becomes. Credit rating agencies pay more attention to your more recent credit history and also look at the age and mix of your credit accounts, which show your consistency and diversification as a borrower.

The credit rating process is open to manipulation and misinterpretation. Many people are shocked to discover, for example, that simply canceling a credit card, even for a dormant or unused account, lowers their credit rating by shortening their credit history and decreasing the diversity of their accounts. Yet, it may make sense for a responsible borrower to cancel a card. Credit reports may also contain errors that you should correct by disputing the information.

You should know your credit score. Even if you haven't applied for new credit, you should check on it annually. Each of the three agencies is required to provide your score once a year for free and to correct any errors that appear—and they do—in a timely way. If you should find an error in your report, you should contact the agency immediately and follow up until the report is corrected.

Order your free annual credit report from the three credit reporting agencies at https://www.annualcreditreport.com/cra/index.jsp. (Beware of any other Web sites called "annual credit report" as these may be impostors.) It is important to check your score regularly to check for those errors. Knowing your score can help you to make financing decisions because it can help you to determine your potential costs of credit. It can also alert you to any credit or identity theft of which you otherwise are unaware.

Identity theft is a growing problem. Financial identity theft occurs when someone poses as you based on having personal information such as your Social Security number, driver's license number, bank account number, or credit card numbers. The impostor uses your identity to either access your existing accounts (withdrawing funds from your checking account or buying things with your credit card) or establish new accounts in your name and use those.

The best protection is to be careful how you give out public information. Convenience encourages more and more transactions by telephone and Internet, but you still need to be sure of whom you are talking to before giving out identifying data.

As careful as you are, you cannot protect yourself completely. However, checking your credit report regularly can flag any unfamiliar or unusual activity carried out in your name. If you suspect that your personal information has been breached, you can ask the credit reporting agencies to issue a fraud alert. Fraud alert messages notify potential credit grantors to verify your identification by contacting you before extending credit in your name in case someone is using your information without your consent. That way, if a thief is using your credit to establish new accounts (or buy a home, a car, or a boat) you will know it. If a stronger measure is needed, you can order a credit freeze that will prevent anyone other than yourself from accessing your credit file.

Using a Credit Card

Credit cards issued by a bank or financing company are the most common form of revolving credit. This often has costs only after a repayment deadline has passed. For example, many credit cards offer a **grace period** between the time of the credit purchase or "charge" and the time of payment, assuming your beginning balance is zero. If you pay before interest is applied, you are using someone else's money to make your purchases at no additional cost. In that case, you are using the credit simply as a cash management tool.

Credit cards are effective as a cash management tool. They can be safer to use than cash, especially for purchasing pricier items. Payment for many items can be consolidated and

made monthly, with the credit card statement providing a detailed record of purchases. If you carry more than one card, you might use them for different purposes. For example, you might use one card for personal purchases and another for work-related expenses. Credit cards also make it convenient to buy on impulse, which may cause problems.

Problems arise if you go beyond using your card as a cash management tool and use it to extend credit or to finance your purchases past the payment deadline. At that point, interest charges begin to accrue. Typically, that interest is expensive—perhaps only a few percentage points per month, but compounding to a large annual percentage rate (APR).

Credit card APRs today may start with 0 percent for introductory offers and range from 8.75 percent to more than 20 percent. These rates may be fixed or variable, but in any case, when you carry a balance from month to month, this high interest is added to what you owe.

As an example, if your credit card charges interest of 1.5 percent per month, that may not sound like much, but it is an annual percentage rate of 18 percent (1.5% per month × 12 months per year). To put that in perspective, remember that your savings account is probably earning only around 1 to 3 percent *per year*. Consumer credit thus is an expensive way to finance consumption. Consumers tend to rely on their cards when they need things and lack the cash, and this can quickly lead to credit card debt.

According to recent surveys, 41 percent of college students have a credit card, and of those, about 65 percent pay their bills in full every month. This is higher than the general adult population, and fewer than half of U.S. families carry credit card debt.[1]

Among the 35 percent of college students with credit cards who do not pay their balances in full every month, the average balance is $452.[2]

Choosing a Credit Card

You should shop around for credit just as you would shop around for anything that you might purchase with it: compare the features and the costs of each credit card.

Features of the credit include the credit limit (or how much credit will be extended), the grace period, purchase guarantees, liability limits, and consumer rewards. Some cards offer a guarantee for purchases; if you purchase a defective item, you can have the charge “stopped” and removed from your credit card bill. Liability limits involve your responsibilities should your card be lost or stolen.

Consumer rewards may be offered by some credit cards, usually by rewarding “points” for dollars of credit. The points may then be cashed in for various products. Sometimes the credit card is sponsored by a certain retailer and offers rewards redeemable only through that store. A big sponsor of rewards has been the airline industry, commonly offering “frequent flyer miles” through credit cards as well as actual flying. Be aware,

however, that many rewards offers have limitations or conditions on redemption. In the end, many people never redeem their rewards.

Creditors charge fees for extending credit. There is the APR on your actual credit, which may be a fixed or adjustable rate. It may be adjustable based on the age of your balance—that is, the rate may rise if your balance is over sixty days or ninety days. There may also be a late fee charged in addition to the actual interest. The APR may also adjust as your balance increases, so that even if you stay within your credit limit, you are paying a higher rate of interest on a larger balance.

There are also fees on cash advances and on balance transfers (i.e., having other credit balances transferred to this creditor). These can be higher than the APR and can add a lot to the cost of those services. You should be aware of those costs when making choices. For example, it can be much cheaper to withdraw cash from an ATM using your bank account's debit card than using a cash advance from your credit card.

Many credit cards charge an annual fee just for having the credit card, regardless of how much it is used. Many do not, however, and it is worth looking for a card that offers the features that you want with no annual fee.

How you will use the credit card will determine which features are important to you and what costs you will have to pay to get them. If you plan to use the credit card as a cash management tool and pay your balance every month, then you are less concerned with the APR and more concerned about the annual fee, or the cash advance charges. If you sometimes carry a balance, then you are more concerned with the APR.

It is important to understand the costs and responsibilities of using credit—and it is very easy to overlook them.

Installment Credit

Retailers also may offer credit, usually as installment credit for a specific purchase, such as a flat screen TV or baby furniture. The cost of that credit can be hard to determine, as the deal is usually offered in terms of "low, low monthly payments of only..." or "no interest for the first six months." To find the actual interest rate you would have to use the relationships of time and value. Ideally, you would pay in as few installments as you could afford and would pay all the installments in the shortest possible time.

Retailers usually offer credit for the same reason they offer home delivery—as a sales tool—because most often, customers would be hesitant or even unable to make a durable goods purchase without the opportunity to buy it over time. For such retailers, the cost of issuing and collecting credit and its risk are operating costs of sales. The interest on installment credit offsets those sales costs. Some retailers sell their installment receivables to a company that specializes in the management and collection of consumer credit, including the repossession of durable goods.

Personal Loans

Aside from installment credit and rotating credit, another source of consumer credit is a short-term personal loan arranged through a bank or finance company. Personal loans used as credit are all-purpose loans that may be "unsecured"—that is, nothing is offered as collateral—or "secured." Personal loans used as debt financing are discussed in the next section. Personal loans used as credit are often costly and difficult to secure, depending on the size of the loan and the bank's risks and costs (screening and paperwork).

A personal loan may also be made by a private financier who holds personal property as collateral, such as a pawnbroker in a pawnshop. Typically, such loans are costly, usually result in the loss of the property, and are used by desperate borrowers with no other sources of credit. Today, many "financiers" offer personal loans online at very high interest rates with no questions asked to consumers with bad credit. This is a contemporary form of "loan sharking," or the practice of charging a very high and possibly illegal interest rate on an unsecured personal loan. Some loan sharks have been known to use threats of harm to collect what is owed.

One form of high-tech loan sharking growing in popularity on the Internet today is the "**payday loan**," which offers very short-term small personal loans at high interest rates. The amount you borrow, usually between $500 and $1,500, is directly deposited into your checking account overnight, but you must repay the loan with interest on your next payday. The loan thus acts as an advance payment of your wages or salary, so when your paycheck arrives, you have already spent a large portion of it, and maybe even more because of the interest you have to pay. As you can imagine, many victims of repeated payday loans fall behind in their payments, cannot meet their fixed living expenses on time, and end up ever deeper in debt.

Personal loans are the most expensive way to finance recurring expenses, and almost always create more expense and risk—both financial and personal—for the borrower.

Credit Trouble and Protections

As easy as it is to use credit, it is even easier to get into trouble with it. Because of late fees and compounding interest, if you don't pay your balance in full each month, it quickly multiplies and becomes more difficult to pay. It doesn't take long for the debt to overwhelm you.

If that should happen to you, the first thing to do is to try to devise a realistic budget that includes a plan to pay off the balance. Contact your creditors and explain that you are having financial difficulties and that you have a plan to make your payments. Don't wait for the creditor to turn your account over to a debt collector; be proactive in trying to resolve the debt. If your account has been turned over to a collector, you do have some protections: the Fair Debt Collection Practices (federal) law keeps a collector from calling you at work, for example, or after 9 p.m.

You may want to use a credit counselor to help you create a budget and negotiate with creditors. Many counseling agencies are nonprofit organizations that can also help with debt consolidation and debt management. Some "counselors" are little more than creditors trying to sell you more credit, however, so be careful about checking their credentials before you agree to any plan. What you need is more realistic credit, not more credit.

As a last resort, you may file for personal bankruptcy, which may relieve you of some of your debts, but will blemish your credit rating for ten years, making it very difficult—and expensive—for you to use any kind of credit or debt. Federal bankruptcy laws allow you to file under Chapter 7 or under Chapter 13. Each allows you to keep some assets, and each holds you to some debts. Chapter 7 requires liquidation of most of your assets, while Chapter 13 applies if you have some income. It gets complicated, and you will want legal assistance, which may be provided by your local Legal Aid Society. The effects of a bankruptcy can last longer than your debts would have, however, so it should never be seen as an "out" but really as a last resort.

Modern laws and regulations governing the extension and use of credit and debt try to balance protection of the lender and of the borrower. They try to insure that credit or debt is used for economic purposes and not to further social or political goals. They try to balance borrowers' access to credit and debt as tools of financial management with the rights of property owners (lenders).

In the United States, federal legislation reflects this balance of concerns. Major federal legislation in the United States is shown in Figure 7.10 "Major U.S. Federal Legislation: Credit and Debt".

Figure 7.10 Major U.S. Federal Legislation: Credit and Debt

Legislation	Effective	Major Purpose
Truth in Lending Act	1969, 1971, 1982	Disclosure of credit terms, interest rates
Fair Credit Reporting Act	1971	Disclosure of credit reporting process (credit scoring)
Fair Credit Billing Act	1975	Procedures for billing disputes, error resolution
Equal Credit Opportunity Act	1975, 1977	Prohibits discrimination and specifies procedures for extending or denying credit
Fair Debt Collection Practices Act	1978	Procedures for debt collection
Consumer Credit Reporting Reform Act	1997	Accountability in credit reporting and scores

In addition, many states have their own legislation and oversight. Not coincidentally, most of these laws were written after use of credit cards, and thus credit, became widespread. The set of laws and regulations that governs banking, credit, and debt markets has evolved over time as new practices for trading money are invented and new

rules are seen as necessary. You should be aware of the limitations on your own behavior and on others as you trade in these markets.

If you feel that your legal rights as a borrower or lender have been ignored and that the offender has not responded to your direct, written notice, there are local, state, and national agencies and organizations for assistance. There are also organizations that help borrowers manage credit and debt.

Laws and regulations can govern how we behave in the credit and debt markets, but not whether we choose to participate as a lender or as a borrower: whether we use credit to manage cash flow or to finance a lifestyle, whether we use debt to finance assets or lifestyle, and whether we save. Laws and regulations can protect us from each other, but they cannot protect us from ourselves.

KEY TAKEAWAYS

- Credit is used as a cash management tool or as short-term financing for consumption.
- Credit may be issued as revolving credit (credit cards), installment credit, or personal loans.
- Credit can be a relatively expensive method of financing.

- Credit accounts differ by the following features:
  - Credit limit
  - Grace period
  - Purchase guarantees
  - Liability limits
  - Consumer rewards

- Credit accounts charge fees, such as the following:
  - Annual percentage rate (APR)
  - Late fees
  - Balance transfer fees
  - Cash advance fees

- Credit remedies include the following:
  - Renegotiation
  - Debt consolidation
  - Debt management

- Bankruptcy

- Modern laws governing the uses of credit and debt try to balance protection of borrowers and lenders.

EXERCISES

1. Read the statistics about personal credit card debt at http://www.creditcards.com/credit-card-news/credit-card-industry-facts-personal-debt-statistics-1276.php#debt. Record in My Notes or in your personal finance journal all the facts that pertain especially to you in your present financial situation. What facts did you find most surprising or most disturbing? Share your observations about these data with your classmates.
2. Investigate online the sources and processes of debt consolidation. Sample the Web sites of debt consolidation businesses offering "free" advice and services (e.g., http://www.debtconsolidationcare.com/). Are they free? Now visit the National Center for Credit Counseling (NFCC) at http://www.nfcc.org/. When seeking advice about your credit, why might you want to use an NFCC advisor or consumer center?
3. Read the MSN Money Central article "Your Three Worst Debt Consolidation Moves" at http://moneycentral.msn.com/content/Savinganddebt/Managedebt/P36230.asp. According to this article, what are the three worst moves you can make to manage your debt? How can you consolidate your debt on your own?
4. Go to the U.S. Department of Education site on loan consolidation at http://www.loanconsolidation.ed.gov/. How can you consolidate your federal loans directly online with the U.S. government? Use the worksheets at this site to explore your real or hypothetical options as the recipient of federal student loans. For example, what would be the direct consolidation interest rate on your current federal student loans, and what would your payments be?
5. What is your credit rating or credit score? Apply for your three credit reports from Equifax (http://www.equifax.com), TransUnion (http://www.transunion.com), and Experian (http://www.experian.com). You can apply for all three at once from one source for free once each year, at https://www.annualcreditreport.com/. To ensure that you go to the legitimate site, type this URL directly into the address bar in your browser window.

a. How do the three reports vary? Is the information accurate?

b. How can you correct the information? For example, seehttp://www.equifax.com/answers/correct-credit-report-errors/en_cp.

c. What are your rights regarding your credit reports? Read about your rights athttp://www.ftc.gov/bcp/menus/consumer/credit/rights.shtm. What does the video on that site warn you against? You will find a summary of your rights under the Fair Credit Reporting Act athttp://www.ftc.gov/bcp/edu/pubs/consumer/credit/cre35.pdf. Find out if your state guarantees other rights or additional protections. Take steps now to correct your credit reports.

Research online how you can repair your credit history and improve your credit rating. Go tohttp://www.ftc.gov/bcp/edu/pubs/consumer/credit/cre13.shtm, and seehttp://www.ehow.com/how_4757_repair-credit-history.html.

[1] Federal Reserve Survey of Consumer Finances, February 2009, http://www.federalreserve.gov/PUBS/oss/oss2/scfindex.html (accessed February 11, 2009).

[2] Student Monitor annual financial services study, 2008.

7.4 Other People's Money: An Introduction to Debt

LEARNING OBJECTIVES

1. Define debt and identify its uses.
2. Explain how default risk and interest rate risk determine the cost of debt.
3. Analyze the appropriate uses of debt.

Debt is long-term credit, or the ability to delay payment over several periods. Credit is used for short-term, recurring expenses, whereas debt is used to finance the purchase of long-term assets. Credit is a cash management tool used to create security and convenience, whereas debt is an asset management tool used to create wealth. Debt also creates risk.

Two most common uses of debt by consumers are car loans and mortgages. They are discussed much more thoroughly in Chapter 8 "Consumer Strategies" and Chapter 9

"Buying a Home". Before you get into the specifics, however, it is good to know some general ideas about debt.

Usually, the asset financed by the debt can serve as collateral for the debt, lowering the default risk for the lender. However, that security is often outweighed by the amount and maturity of the loan, so default risk remains a serious concern for lenders. Whatever concerns lenders will be included in the cost of debt, and so these things should also concern borrowers.

Lenders face two kinds of risk: default risk, or the risk of not being paid, and **interest rate risk**, or the risk of not being paid enough to outweigh their opportunity cost and make a profit from lending. Your costs of debt will be higher than the lender's cost of risk. When you lower the lender's risk, you lower your cost of debt.

Costs of Debt

Default Risk

Lenders are protected against default risk by screening applicants to try to determine their probability of defaulting. Along with the scores provided by credit rating agencies, lenders evaluate loan applicants on "the five C's": character, capacity, capital, collateral, and conditions.

Character is an assessment of the borrower's attitude toward debt and its obligations, which is a critical factor in predicting timely repayment. To deduce "character," lenders can look at your financial stability, employment history, residential history, and repayment history on prior loans.

Capacity represents your ability to repay by comparing the size of your proposed debt obligations to the size of your income, expenses, and current obligations. The larger your income is in relation to your obligations, the more likely it is that you are able to meet those obligations.

Capital is your wealth or asset base. You use your income to meet your debt payments, but you could use your asset base or accumulated wealth as well if your income falls short. Also, you can use your asset base as collateral.

Collateral insures the lender against default risk by claiming a valuable asset in case you default. Loans to finance the purchase of assets, such as a mortgage or car loan, commonly include the asset as collateral—the house or the car. Other loans, such as a student loan, may not specify collateral but instead are guaranteed by your general wealth.

Conditions refer to the lender's assessment of the current and expected economic conditions that are the context for this loan. If the economy is contracting and unemployment is expected to rise, that may affect your ability to earn income and repay

the loan. Also, if inflation is expected, the lender can expect that (1) interest rates will rise and (2) the value of the currency will fall. In this case, lenders will want to use a higher interest rate to protect against interest rate risk and the devaluation of repayments.

Interest Rate Risk

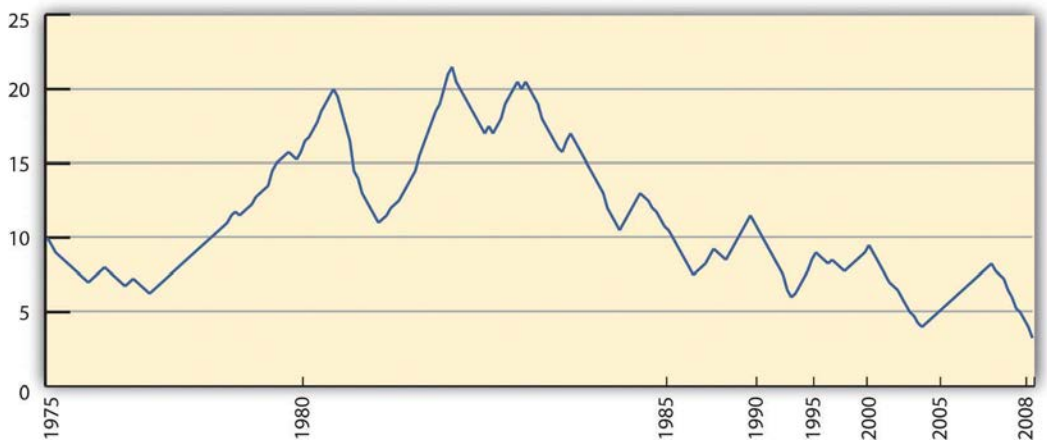
Because debt is long term, the lender is exposed to interest rate risk, or the risk that interest rates will fluctuate over the maturity of the loan. A loan is issued at the current interest rate, which is "the going rate" or current equilibrium market price for liquidity. If the interest rate on the loan is fixed, then that is the lender's compensation for the opportunity cost or time value of money over the maturity of the loan.

If interest rates increase before the loan matures, lenders suffer an opportunity cost because they miss out on the extra earnings that their cash could have earned had it not been tied up in a fixed-rate loan. If interest rates fall, borrowers will try to refinance or borrow at lower rates to pay off this now higher-rate loan. Then the lender will have its liquidity back, but it can only be re-lent at a newer, lower price and create earnings at this new, lower rate. So the lender suffers the opportunity cost of the interest that could have been earned.

Why should you, the borrower, care? Because lenders will have you cover their costs and create a loan structured to protect them from these sorts of risks. Understanding their risks (looking at the loan agreement from their point of view) helps you to understand your debt choices and to use them to your advantage.

Lenders can protect themselves against interest rate risk by structuring loans with a penalty for early repayment to discourage refinancing or by offering a floating-rate loanA loan for which the interest rate can change, usually periodically and relative to a benchmark rate such as the prime rate. instead of a **fixed rate-loan**. With a floating-rate loan, the interest rate "floats" or changes, usually relative to a benchmark such as the **prime rate**, which is the rate that banks charge their very best (least risky) borrowers. The floating-rate loan shifts some interest rate risk onto the borrower, for whom the cost of debt would rise as interest rates rise. The borrower would still benefit, and the lender would still suffer from a fall in interest rates, but there is less probability of early payoff should interest rates fall. Mainly, the floating-rate loan is used to give the lender some benefit should interest rates rise. Figure 7.12 "U.S. Prime Rate 1975–2008" shows the extent and frequency of fluctuations in the prime rate from 1975–2008.

Figure 7.12 U.S. Prime Rate 1975–2008[1]



Borrowers may be better off having a fixed-rate loan and having stable and predictable payments over the life of the loan. The better or more creditworthy a borrower you are, the better the terms and structure of the loan you may negotiate.

Uses of Debt

Debt should be used to finance assets rather than recurring expenses, which are better managed with a combination of cash and credit. The maturity of the financing (credit or debt) should match the useful life of the purchase. In other words, you should use shorter-term credit for consumption and longer-term debt for assets.

If you finance consumption with longer-term debt, then your debt will outlive your expenses; you will be continuing to pay for something long after it is gone. If you finance assets with short-term debt, you will be making very high payments, both because you will be repaying over a shorter time and so will have fewer periods in which to repay and because your cost of credit is usually higher than your cost of debt, for example, annual credit card rates are typically higher than mortgage rates.

Borrowers may be tempted to finance asset purchases with credit, however, to avoid the more difficult screening process of debt. Given the more significant investment of time and money in debt, lenders screen potential borrowers more rigorously for debt than they do for credit. The transaction costs for borrowing with debt are therefore higher than they are for borrowing with credit. Still, the higher costs of credit should be a caution to borrowers.

The main reason not to finance expenses with debt is that expenses are expected to recur, and therefore the best way to pay for them is with a recurring source of financing, such as income. The cost of credit can be minimized if it is used merely as a cash management tool, but if it is used as debt, if interest costs are allowed to accrue, then it becomes a very costly form of financing, because it creates new expense (interest) and further obligates future income. In turn, that limits future choices, creating even more opportunity cost.

Credit is more widely available than debt and therefore is a tempting source of financing. It is a more costly financing alternative, however, in terms of both interest and opportunity costs.

KEY TAKEAWAYS

- Debt is an asset management tool used to create wealth.
- Costs of debt are determined by the lender's costs and risks, such as default risk and interest rate risk.
- Default risk is defined by the borrower's ability to repay the interest and principal.
- Interest rate risk is the risk of a change in interest rates that affects the value of the loan and the borrower's behavior.
- Debt should be used to purchase assets, not to finance recurring expenses.

EXERCISES

1. Identify and analyze your debts. What assets secure your debts? What assets do your debts finance? What is the cost of your debts? What determined those costs? What risks do you undertake by being in debt? How can being in debt help you build wealth?
2. Are you considered a default risk? How would a lender evaluate you based on "the five C's" of character, capacity, capital, collateral, and conditions? Write your evaluations in your personal finance journal or My Notes. How could you plan to make yourself more attractive to a lender in the future?
3. Discuss with classmates the Tim Clue video on debt at http://karenblundell.com/funny/funny-video-debt. What makes this comedy spot funny? What makes it not funny? What does it highlight about the appropriate uses of debt?

[1] Data from the U.S. Federal Reserve, http://federalreserve.gov/releases/h15/data/Monthly/H15_PRIME_NA.txt (accessed February 11, 2009).

Chapter 8 Consumer Strategies

Introduction

Reva, Burt, and Kim are all students at the local state college. All are living at home to save money while in school, and all are working at least one job to pay tuition. Between their paychecks and financial aid, they can get by, but not by much.

Living in a city with public transportation, none of them needs a car, but Reva keeps an old beater in her dad's garage. The ace of her tech classes in high school, Reva loves to get under the hood.

Burt loves nothing more than to get lost in the world of games; he is hoping that his degree in digital media will lead to a career developing games and applications for a growing market. Whenever he can, he upgrades his laptop and smartphone with the latest killer "apps."

Kim is hoping to go into business as a fashion designer and is getting a head start by joining the campus business club. Wanting to make a good impression, Kim is careful to maintain a fashionable yet professional wardrobe.

All three are consumers and will be all their lives. All three make consumption decisions based on their financial and strategic goals, on their personal tastes and lifestyle, and on professional choices. Their choices are very different and have different financial consequences. While there are many aspects of your humanity that define you, the things that you choose to surround yourself with—or not—may define your ultimate happiness. You need strategies.

8.1 Consumer Purchases

LEARNING OBJECTIVES

1. Trace the prepurchase, purchase, and postpurchase steps in consumer purchases.
2. Demonstrate the use of product-attribute scoring in identifying the product.
3. Compare and contrast features of different consumer markets.

4. Analyze financing choices and discuss their impact on purchasing decisions.
5. Discuss the advantages of consumer strategies using branding, timing, and transaction costs.
6. Identify common consumer scams, strategies, and remedies.

Consumer purchases refer to items used in daily living (e.g., clothing, food, electronics, appliances). They are the purchases that most intimately frame your life: you live with these items and use them every day. They are an expression and a reflection of you, your tastes, and your lifestyle choices. Your spending decisions reflect your priorities. Maybe you take pride in your car or your clothes or your kitchen appliances or your latest, coolest whatever. Or maybe you spend whatever you can on travel or on your passion for hiking. Those very personal tastes will frame your spending choices.

Consumer purchases should fit into your budget. By making an operating budget, you can plan to consume and to finance your consumption without creating extra costs of borrowing. You can plan to live within your income. At times, you may have unexpected changes (loss of a job or change in the family) that put your nondiscretionary needs temporarily beyond your means. Ideally, you would want to have a cushion to tide you over until you can adjust your spending to fit your income.

A budget can also show you just how fast some "small luxuries" can add up. Stopping for a latte on your way to work or school every day ($3.95) adds up to $20 per week, or about $1,000 per year. That money may be better used to finance a bigger ticket item that you then would not have to finance with debt. With the budget to help you put expenses into perspective, you can make better purchasing decisions.

Purchasing decisions are always limited by the income available, and that means making choices. Your choices of what, where, when, and even how to buy will affect the amount that you spend and the utility (the joy or regret) that you ultimately get out of your purchase.

Shopping is a process. You decide what you want, then have to make more specific decisions:

- Should you buy more (and pay more) but get a cheaper unit price?
- Should you buy locally or remotely, via catalogue or Internet?
- Should you pay more for a well-known brand, or buy the generic?
- Should you look for a guarantee or warranty or consider long-term repair costs?
- Should you consider resale value?
- Should you pay cash or use credit? If you pay through credit, is it store credit, your own credit card, or a loan?

Each of these decisions creates a trade-off. For example, it may be more convenient—and quicker—to shop locally, but there may be lower prices and a better selection of products online. Or you may find lower prices online but have a harder time getting repairs done if you haven't bought locally.

Some of your purchases involve few conscious decisions—for example, groceries—because you buy them repeatedly and often. Other purchases involve more decisions because they are made less often and involve costlier items such as a car. When you have to live with your decision for years instead of days, you tend to make it more carefully.

The decision process can be broken down into the following steps:

- Before you buy or "prepurchase,"
  - identify the product: compare attributes;
  - identify the market: compare price, delivery (return), convenience;
  - identify the financing.
- As you buy,
  - negotiate attributes: color, delivery, style;
  - negotiate price and purchase costs;
  - negotiate payment.
- After you buy, or "postpurchase," consider
  - maintenance;
  - how to address dissatisfaction.

Before You Buy: Identify the Product

What do you want? What do you want it to do for you? What do you want to gain by having it or using it or wearing it or eating it or playing with it or...? You buy things hoping to solve a need in your life. The more specifically you can define that need, the more accurately you can identify something to fill it. If your purchase is inappropriate for your need, you will not be happy with it, no matter how good it is. And because your budget is limited, you want to minimize your opportunity cost and **buyer's remorse** or regret at not making a better purchase in order to use your limited income most efficiently.

Sometimes you can identify a need, but have no idea of the kinds of products that may fill it. This is especially true for infrequent needs or purchases. For example, you may decide you need to get away and take a long weekend. To do it cheaply, you decide to go hiking and camping. To make it more fun, you decide to go to an area where you've never been before. You may not be aware of the camping options available in that area, however, or of equally cheap alternatives such as hostels, bed and breakfasts, or other accommodations. When you find that you have a range of choices, you can compare them and choose one that offers the most satisfaction.

Once you have identified the product, you can compare the attributes of those products. What characteristics do you require or want? How are you going to use the product? For example, do you need cooking facilities, access to a shower, a safe but scenic location, opportunities to meet other hikers, and so on? What attributes are important to you and what are available?

Sig is looking for a new computer keyboard, a hot gaming keyboard that can also be comfortable for writing college papers. Sig begins to research keyboards and finds over five hundred models from over fifty brands with different designs, attributes, and functions offered at a range of prices. He decides to try to filter his choices by looking only at gaming keyboards, which narrows it down to about eighty models.

Noticing that most of the keyboards range in price from twenty-five to fifty dollars, he decides to look in the fifty to a hundred dollar range, figuring he'll get a slightly higher-end product, but not an outrageously expensive one. This narrows his search to about twenty-five models.

None of the models has all the attributes that Sig desires. It's a trade-off: he can have some features, but not others. He decides to try to organize his research by creating a table ranking the product attributes in order of importance, and then scoring each model on each attribute (on a scale of one to ten), eventually coming up with an overall score for each model. Figure 8.4 "Sig's Product-Attribute Scoring" shows scoring for three models.

Figure 8.4 Sig's Product-Attribute Scoring

		VTK		TKG		GBY	
Attribute	**Weight (%)**						
backlit	25	8	2	10	2.5	9	2.25
wireless	25	9	2.25	10	2.5	0	0
programmable G-keys	25	2	0.5	10	2.5	5	1.25
game panel	8	7	0.56	1	0.08	5	0.4
touch	5	8	0.4	1	0.05	10	0.5
media controls	5	7	0.35	1	0.05	10	0.5
ergonomic design	5	7	0.35	1	0.05	10	0.5
warranty	2	0	0	0	0	10	0.2
Weighted Average Score	**100**		**6.34**		**7.72**		**5.55**

Multiplying each attribute's weight by its score gives its weighted score, then adding up each weighted score gives the total score for the product. Based on this attribute analysis, Sig would choose TKG, which has the highest overall score.

In the case of an asset purchase, you may eventually think of reselling the item, so the ease and/or costs of doing so may figure into your prebuying evaluation. You may decide to go with a "better" product—a more recognizable or popular brand, for example—that may have a higher resale value. You also need to consider the market for

used or preowned products: if there is one, how liquid the market is, or how easy it is to use. If the market is not very liquid, then the transaction costs of selling in the used product market may be significant, and you may be disappointed with the result.

The more choices you have, the better your chances of finding satisfaction. The more products there are to satisfy your need, and the more attributes those products offer, the more likely you are to find what "works" for you. Sometimes you need to be a bit creative in thinking about your alternatives, especially with limited resources.

Sources of product information include the manufacturer, retailer, and other consumers. Certain information must be provided for certain products by law. For example, food ingredients must be labeled, and perishable products dated. Appliances almost always come with operating and care instructions that can give you an idea of their ongoing maintenance costs as well as operating features.

The Internet has made it easy to research products online and to become a much better informed consumer. You can do lots of research online, even if you actually purchase locally. A feature of many online stores and consumer discussions is product reviews, where consumers give feedback on their satisfaction with the product. Such reviews can balance the information from the manufacturer and retailer, who want to inform consumers to encourage them to buy.

Other sources of information are magazines and trade journals (such as *Consumer Reports*, both in print and online), which have articles and ratings on products as well as ads. Your research may also involve actual or virtual window shopping, like going to stores to examine the products you are thinking of buying.

Before You Buy: Identify the Market

Your market may be local, national, or international, with advantages and disadvantages to each. Generally, a larger market (more vendors) will offer more variation and selection of product attributes.

As with any market, the real determinant of how your market works is competition. The more vendors there are, the more they compete for your business, and the more likely you will find options for purchasing convenience, product attributes, and price.

In markets where vendors are so plentiful that your problem is filtering rather than finding information, there are middlemen to provide that service. An example is the budget travel businesses with Web sites that make it convenient to research and buy flights, rental cars, and hotel accommodations. Middlemen or **brokers** exist in markets where they can add value to your purchasing process, either by providing information in the prepurchase stage or by providing convenience during the purchase. The more they can reduce the cost of a "bad" decision (e.g., a difficult flight schedule, an expensive car rental, an uncomfortable hotel accommodation), the more valuable they are. They can add more value in markets where you have too little or too much information or less

familiarity with products or vendors. Generally, the more expensive the product or the less frequent the purchase, the more likely you will find a middleman to make it easier.

Some products have a "new" and a "used" market, such as durable goods and some consumer goods like textbooks, vintage clothing, and yard sale goods. Evaluating the quality of a used or preowned product can require more research, information, and expertise, because the effect of its past use on its future value can be hard to estimate. Used products are almost always priced less than new products, unless they have become "collectibles" that can store value. The trade-off is that used products offer less reliable or predictable future performance and may lack attributes of newer models.

Different kinds of stores often offer the same products at different prices. Convenience stores, for example, typically charge higher prices than grocery stores but may be in more convenient locations and open at more convenient hours. Smaller boutique stores cannot always realize the economies of scale in administrative costs or in inventory management that are available to a larger store or a chain of stores. For those reasons prices tend to be higher at a smaller store. Boutiques often offer more amenities and a higher level of customer service to be competitive. You may also shop at a specialty store when you need a certain level of expertise or assistance in making a purchase.

Cooperative stores are owned and managed collectively and may provide goods or services that would not otherwise be available. Shopping is usually open to anyone, but members are eligible for discounts, depending on their participation in the store's operations or management. The members own the store, so they can forgo corporate profits for consumer discounts.

Increasingly, merchandise of all kinds may be bought directly from the manufacturer, often through a catalogue or online. The shopping experience is very different (you can't try on the sweater or see how the keyboard feels), but if you are well informed about the product, you may be comfortable buying it. Internet shopping has become a great convenience to those who are too busy or too far away to visit stores.

Auctions are becoming increasingly popular, especially online auctions at eBay and similar sites. Auctions are open negotiations between buyers and sellers and offer dynamic pricing. They also offer uncertainty, as the price and even the eventual purchase are risky—you may lose the auction and not get the item. Auctions are used most often for resales and for assets such as homes, cars, antiques, art, and collectibles. The popularity of online auctions has led to more buyers, bringing more competition and thus higher prices.

Before You Buy: Identify the Financing

Most consumer purchases are for consumable goods or services and are budgeted from current income. You pay by using cash or a debit card or, if financed, by using a credit card for short-term financing. Such purchases—food, clothing, transportation, and so on—should be covered by recurring income because they are recurring expenses. You

need to be able to afford them. As you read in Chapter 7 "Financial Management", consumers who use debt to finance consumption can quickly run into trouble because they add the cost of debt to their recurring expenses, which are already greater than their recurring income.

Unless financed by savings, durable goods such as appliances, household wares, or electronics are often bought on credit, as they are costlier items infrequently purchased. Assets such as a car or a home may be financed using long-term debt such as a car loan or a mortgage, although they also require some down payment of cash.

The use of middlemen or brokers to find and buy an item also contributes to the cost of a purchase because of the fees you pay for the service.

Products and preferred financing sources are shown in Figure 8.5 "Products and Preferred Financing Sources".

Figure 8.5 Products and Preferred Financing Sources

	Consumer Goods	Durable Goods	Assets
Cash, Debit, Income	✓	✓	
Savings		✓	✓
Credit		✓	
Debt			✓

As You Buy: The Purchase

Having done your homework and made your choice, you are ready to purchase. In some cases, you may be able to make specific arrangements with vendors as to convenience, price, delivery, and even financing.

In Western cultures, prices for consumer goods are usually not negotiable; consumers expect to pay the price on the price tag. In other cultures, however, haggling over price is common and expected, which often surprises travelers abroad.

Durable goods and asset purchases typically offer more purchase options than consumer goods, usually as an incentive to buyers. Vendors may offer free delivery or free installation, product guarantees, or financing arrangements such as “no payments for six months” or “zero percent financing.” Offers may be enhanced periodically to “move the merchandise,” when prices may also be discounted. Sales, “special offers” or “low,

low prices" may be used to sell merchandise that is about to be replaced by a newer model. If those product cycles are seasonal and predictable, you may be able to schedule your purchase to take advantage of discounts.

Or you may decide to wait and pay full price for the newer model to avoid purchasing a product that is about to become outdated.

The more the purchase process allows for negotiation, the more possibility there is for consumers to enhance satisfaction. However, the negotiation process can go the other way too: it allows more opportunity for the vendor to negotiate an advantage. The better-informed consumer is more likely to negotiate a more satisfying purchase, so it is important to be thorough in the prepurchase research.

A purchase may have transaction costs such as sales tax or delivery charges. For higher-priced products such as durables and assets, those transaction costs can add up, so you should figure them into your overall cost of the purchase.

Financing costs can also be significant if debt financing is used. Debt is long term and is a significant commitment as well. It may pay to compare financing rates and terms just as you would for the product itself, or you may be able to use financing costs as a negotiating chip in your price negotiations.

After You Buy

Now you can enjoy your purchase. Some products require maintenance and periodic repair to remain useful. You should research those additional costs before buying, because after the purchase you are committed to those activities.

If you are not satisfied due to a product defect, you can contact the retailer or manufacturer. If there is a warranty, the retailer or manufacturer will either fix the defect or replace the item. Many manufacturers and retailers will do so even if there is no warranty to maintain good customer relations and enhance their brand's reputation. An Internet search will usually turn up contact information for a product's customer service team.

There are also federal and state consumer protection laws that cover a seller's responsibilities after a sale. In the United States, the Federal Trade Commission (FTC) Bureau of Consumer Protection has the most direct responsibility for consumer issues. At the state level, the office of the attorney general usually has a consumer protection division. Locally, you can also contact your chamber of commerce or Better Business Bureau (BBB) for more information.

You can also resort to the judicial system for compensation. For limited claims, you can file in small claims court. Claim limits vary by state, but range between $500 and $10,000. Small claims court is a less formal and costly process than filing a suit. At the

other end of the spectrum is the class-action suit in which many plaintiffs pursue the same complaint, sharing the costs and the awards of the lawsuit.

Consumer Strategies

The advertising industry is proof of the importance of "branding." Customer brand loyalty is a real phenomenon. In 2007, the top 100 biggest advertisers spent $107,635,000,000 on advertising worldwide, with the automotive, personal care, and food industries leading the pack.[1]

Producers go to great expense to brand their products. When in doubt, consumers tend to choose a familiar brand. Once disappointed by a brand, consumers tend to avoid it. For some products, there are alternative private-label or store-label brands, applied to many products but sold by one store or chain. The store brand is usually a cheaper alternative and often, although not always, of comparable quality. This is a widespread practice in the food industry with grocery store brands. Shopping for the store brand can often yield significant savings.

Aiden's purchase comes with a two-year manufacturer's guarantee, but the salesperson is encouraging her to buy an extended warranty. She is already paying more than she wanted to for a high-quality machine, and the extended warranty adds nearly a hundred dollars to the purchase price. She decides to forgo the extra protection, reasoning that most repairs, if needed after two years, would cost less than that anyway.

An offer of a warranty with purchase can be valuable if it lowers the expected maintenance or repair costs of the product. Sometimes a product is offered with a warranty at a higher price; sometimes you can purchase an optional warranty for an additional cost. If the cost of a malfunction is low, then the warranty is probably not worth it.

Price advantage can sometimes come through timing. Seasonally updated products or models can force retailers to discount old inventory to get it off the shelves before the new inventory arrives. Automobiles, for example, have a one-year product cycle, as do many desktop computers and peripherals.

Some products are naturally dated, such as calendars or tax preparation software, and so may be discounted as they near their expiration date. However, that is because they have less and less usefulness and may not be worth buying at all.

Commodities prices can fluctuate depending on the season or the weather, and although you may not have a choice of buying home heating oil when you do, some products do offer you a choice. Tomatoes in January are more expensive than in August, for example; eating fresh foods seasonally can produce savings.

Price can also be affected by transaction costs, or the costs of making the purchase. They can be included in the price or may be listed separately. Larger and more expensive

items tend to have more transaction costs such as delivery and storage. Sales tax, which is a percentage of the price, may be required, and the higher the item's price, the more sales tax you will pay. Asset purchases also involve a legal transfer of ownership and often the costs of acquiring financing, which add to their costs. Sometimes, to entice a purchase, the seller may agree to bear some or all of the transaction costs.

Retailers change prices based on buyers' needs. They practice **price discrimination**, or the practice of charging a different price for the same product, when different consumers have different need of a product. Airlines are a classic example, charging less for a ticket bought weeks in advance than for the same flight if the ticket is bought the day before. Someone who purchases weeks ahead is probably a leisure traveler, has more flexibility, and is more sensitive to price. Someone who books a day ahead is probably a business traveler, has little flexibility, and is not so sensitive to price. The business traveler, in this case, is willing to pay more, so the airline will charge that person more.

Retailers also offer discounts, sales, or "deals" to attract consumers who otherwise would not be shopping. Sometimes these are seasonal and predictable, such as in January, when sales follow the big holiday shopping season. Sometimes sales are not sales at all, but prices are "discounted" relative to new, higher, prices that will soon take effect. **Quantity discounts**, a lower unit price for a higher volume purchased, may be available for customers buying larger quantities, although sometimes the opposite is true, that is, the smaller package offers a smaller unit price. While it may be cheaper to buy a year's worth of toilet paper at one time, you then create storage costs and sacrifice liquidity, which you should weigh against your cost savings.

In short, sellers want to sell and will use price to make products more attractive. As a buyer, you need to recognize when that attraction offers real value.

Scams: Caveat Emptor (Buyer Beware)

Unfortunately the world of commerce includes people with less-than-honorable intentions. You likely have been taken advantage of once or twice or have fallen victim to a **scam**, or a fraudulent business activity or swindle. Technology has made it easier for con artists to steal from more people, contacting them by telephone or by e-mail. The details of the scam vary, but the pattern is much the same: the fraud sets up a scenario that requires the victim to send money or to divulge financial or personal information, such as bank account, Social Security (federal ID), or credit card numbers, which can then be used to access accounts.

Here are some typical scams reported by *Consumer Reports*, the magazine of the nonprofit Consumers Union, an advocacy group for consumers:[2]

- This car's a cream puff.
- You've just won....
- There's a problem with your bank account.

- This stock is at 50 cents, and it's going to 5 or 6 bucks this week. Buy now!
- You don't need a physical to qualify for this low-cost health insurance!
- I'll be back sometime soon to finish your roof.
- This investment provides the guaranteed high returns and low risk that seniors like you need.
- We move u 4 less.
- I'm a political refugee. Help me move millions out of my former country into your bank account.
- I wouldn't go on vacation without this car repair.

The best way to protect yourself from scams is to be as informed as possible. Do your homework. If you feel like you are in over your head, call on a friend or family member to help you or to speak for you in negotiations. There are a number of nonprofit and government agencies that you can ask about the legitimacy of an idea or an arrangement. There are also some proven ways to try to protect yourself:

- Never give anyone personal and/or financial information when solicited by telephone or Internet. Legitimate business interests do not do that. When in doubt, contact the organization to verify their identity.
- Get a second opinion, especially when advised to do costly repairs.
- Check the credentials of prospective workers or service providers; most are certified, licensed, or recognized by a professional organization or trade group (e.g., auto mechanics may be endorsed by the American Automobile Association [AAA]).
- If you have doubts about a professional's credentials, such as an accountant, doctor, or architect, call the local professional society or trade group and ask about previous complaints lodged against him or her.
- Get a written estimate, specifying the work to be done, the materials to be used, the estimated labor costs, the estimated completion date, and the estimated total price. Ask the vendor to provide proof of insurance.

If you do get "scammed," it is your civic duty to complain to your state's consumer division in the attorney general's office and, if advised, to federal regulators at the Federal Trade Commission (FTC). That is the only way to stop and expose such frauds and to keep others from becoming victims. As the saying goes, "If it sounds too good to be true, it probably is."

KEY TAKEAWAYS

- The consumer purchase process involves
  - Prepurchase
    - Identifying the product
    - Identifying the market
    - Identifying the financing

- Purchase
  - Negotiating the purchase price and terms of sale
- Postpurchase
  - Ensuring satisfaction.

- Attribute scoring can be used to help identify the product.
- A product may be sold in different markets that may affect the cost of the purchase.
- Financing choices can affect the cost of the purchase.
- Strategies such as maximizing the advantages of branding, timing, and transaction costs can benefit consumers.
- There are common features of scams and also legal protections and remedies.

EXERCISES

1. Identify the last three items (consumer goods and durable goods) you purchased. Alternatively, select any three items you purchased during the last two months. Choose diverse items and analyze each item in terms of the following factors:
   a. Why did you buy that item? How did you decide what to get?
   b. What attributes proved most important in narrowing your choices? Create an attribute analysis chart for each item (see Figure 8.4 "Sig's Product-Attribute Scoring").
   c. Where did you get your information about the item?
   d. Where did you go to buy the item?
   e. In what kind of market did you make your purchase?
   f. Where did the money come from for your purchase?
   g. How much did you pay for the item, and how did you pay for it?
   h. How would you rate your satisfaction with your purchase?
   i. If or when you purchase that type of item again, what might you do differently?

   In My Notes or your personal finance journal, record your favorite strategies for making purchases. Include a specific recent example of how you used each strategy. Your strategies may relate to bargain shopping, high-end shopping, warranties, store brands, coupons, discounts,

rebates, seasonal shopping, expiry shopping, bulk buying, cooperative buying, special sales, or other practices. Share your consumer success stories with classmates and add at least one new idea to your list.

2. Have you ever been the victim of a consumer scam? What scams have you been exposed to that you managed to avoid? Describe your experiences in My Notes or your personal finance journal. Find out how many complaints of fraud the Federal Trade Commission received from consumers in its most recent reporting year (e.g., see http://www.ftc.gov/opa/2008/02/fraud.shtm). What were the most common fraud complaints?
3. How informed are you about your rights as a consumer in your state and as a citizen of the United States? For example, what are your rights in returning unwanted purchases and recalled items? In moving your house? In buying food? In having access to electricity? Research a topic relevant to your personal situation from the comprehensive list at the Federal Trade Commission's Consumer Guides and Protections for Citizens:http://www.usa.gov/Citizen/Topics/Consumer_Safety.shtml. How will what you learn guide you in your next related purchase or in taking some other action? Visit the following Web sites to learn more about the information and protections available to you as a consumer. What services do the organizations and agencies provide? What should you do if you have a complaint as a consumer or suspect you are being scammed?
    a. Better Business Bureau (http://www.bbb.org)
    b. Federal Trade Commission (http://www.ftc.gov)
    c. Consumer protection laws about making purchases (http://www.ftc.gov/bcp/menus/consumer/shop.shtm)

[1] Advertising Age, "Global Marketers: Top 100," December 8, 2007, http://adage.com/images/random/datacenter/2008/globalmarketing2008.pdf (accessed April 1, 2009).

[2] Consumer Reports, "Sneakiest Consumer Scams," September 2007, http://www.consumerreports.org (accessed April 1, 2009).

8.2 A Major Purchase: Buying a Car

LEARNING OBJECTIVES

1. Show how the purchasing process (e.g., identifying the product, the market, and the financing) may be applied to a car purchase.
2. Explain the advantages (and disadvantages) of leasing versus borrowing as a form of financing.
3. Analyze all the costs associated with car ownership.
4. Define "lemon laws."

Many adults will buy a car several times during their lifetimes. A car is a major purchase. Its price can be as much as or more than one year's disposable income. Its annual operating costs can be substantial, including the cost of fuel, legally mandated insurance premiums, and registration fees, as well as maintenance and perhaps repairs and storage (parking). A car is not only a significant purchase, but also an ongoing commitment.

In the United States, people spend a considerable amount of time in their cars, commuting to work, driving their children to school and various activities, driving to entertainment and recreational activities, and so on. Most people want their car to provide not only transportation, but also comforts and conveniences. You can apply the purchasing model, described in this chapter, to the car purchase.

First, you identify the need: What is your goal in owning a car? What needs will it fulfill? Here are some further questions to consider:

- What kind of driving will you use the car for? Will you depend on it to get you to work, or will you use it primarily for weekend getaways?
- Do you need carrying capacity (for passengers or "stuff") or hauling capacity?
- Do you live in a metropolitan area where you will be driving shorter distances at lower speeds and often idling in traffic?
- Do you live in a more rural area where you will be driving longer distances at faster speeds?
- Do you live in a climate where winter or a rainy season would make traction and storage an issue?
- How much time will you spend in the car every day?
- How many miles will you drive each year?
- How long do you expect to keep the car?
- Do you expect to resell or trade in the car?

Your answers to these questions will help you identify the product you want.

Identify the Product

Answering these questions can help identify the attributes you value in a car, based on how you will use it. Cars have many features to compare. The most critical (in no particular order) are shown in Figure 8.9 "Automobile Attributes and Relevance".

Figure 8.9 Automobile Attributes and Relevance

Automobile Attribute	Relevance
Fuel or Energy Efficiency	Determines the costs and convenience of operating the car, a major component of your annual operating expense. Energy efficiency may also relate to growing demand for "green" cars or hybrids. An environmentally friendly car may in itself be an attribute you care about when deciding to buy a car.
Size and "Horsepower"	Determined by your need to carry passengers and "stuff." Size may also refer to engine size, which affects fuel or energy efficiency.
Condition	New, floor model, or used. Physical condition and odometer readings on trade-ins are major attributes in the used car market.
Performance Quality	Usually described in terms of the car's acceleration (0 to 60 miles per hour in *x* seconds), but also in terms of the availability of four-wheel drive and the quality of the steering system, braking system, suspension, and transmission—all of which affect the ease and utility of driving the car and its expected maintenance and repair costs.
Entertainment Features	As more people spend more time in their cars, features such as DVD players and monitors have joined radios, CD players, and cup holders as desirable features. Plug-in capacity for cell phones and laptops has also become a critical feature for many consumers.
Navigation Features	Innovations such as real-time GPS systems with digital road maps are rapidly becoming standard.
Safety Features	Many safety features are mandated, but distinctive safety features are offered, including, for example, electronic locking systems, built-in security alarms, built-in child restraints, and reverse sonar.
Appearance and Comfort	For some buyers the color, shape, and fittings of a car and its interior are important attributes.
Reliability	Reliability refers to expected mileage and performance over time in all conditions, as well as to future maintenance and repair costs.
Make	Some buyers prefer particular brands or styles of car and remain loyal to them.

All these attributes affect price, and you may think of others. Product attribution scoring can help you identify the models that most closely fit your goals.

Mary lives on a dirt road in a rural area; she drives about 18,000 miles per year, commuting to her job as an accountant at the corporate headquarters of an auto parts chain and taking her kids to school. She is also a pretty good car mechanic and does basic maintenance herself.

John lives in the city; he walks or takes a bus to his job as a market researcher for an ad agency, but keeps a car to visit his parents in the suburbs. He drives about 5,000 miles per year, often crawling in traffic. All John knows about a car is that the key goes in the ignition and the fuel goes in the tank.

John and Mary would rate these attributes very differently, and their scoring of the same models would have very different results.

Mary may value fuel efficiency more, as she drives more (and so purchases more fuel). Driving often and with her children, she may rank size, safety, and entertainment

features higher than John would, who is in his car less frequently and alone. Mary relies on the car to get to work, so reliability would be more important for her than for John, who drives only for recreational visits. But Mary also knows that she can maintain and repair some things herself, which makes that less of a factor.

Car attributes are widely publicized by car dealers and manufacturers, who are among the top advertisers globally year after year.[1]

You can visit dealerships in your area or manufacturers' Web sites. Using the Internet is a more efficient way of narrowing your search. Specialized print and online magazines, such as *Car and Driver*, *Road and Track*, and Edmunds.com, offer detailed discussions of model attributes and their actual performance. *Consumer Reports* also offers ratings and reviews and also provides data on frequency of repairs and annual maintenance costs.

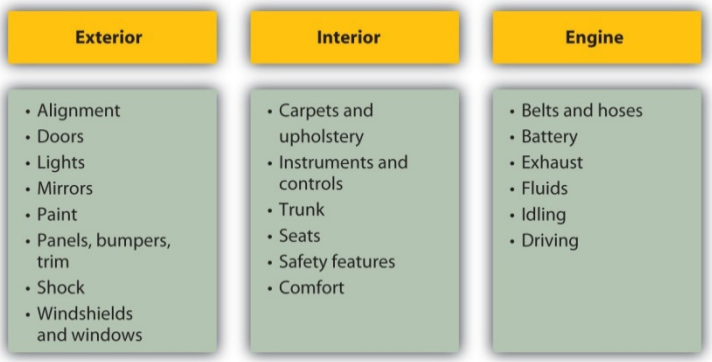
You want to be sure to consider not only the price of buying the car, but also the costs of operating it. Fuel, maintenance, repair, insurance, property taxes, and registration may all be affected by the car's attributes, so you should consider operating costs when choosing the product. For example, routine repairs and maintenance are more expensive for some cars. A more fuel-efficient car can significantly lower your fuel costs. A more valuable car will cost more to insure and will mean higher property (or excise) taxes. Moreover, the costs of fuel, maintenance, insurance, registration, and perhaps property tax on the car will be ongoing expenses—you want to buy a car you can afford *and* afford to drive.

If you are buying a new car, you know its condition, and so you can predict annual maintenance and repair costs and the car's longevity by the history for that model. Depending on how long you expect to own the car, you may also be concerned with its predicted resale value.

Used cars are generally less expensive than new. A used car has fewer miles left in it. Its condition is less certain: you may not know how it has been driven or its repair and maintenance history. This makes it harder to predict annual maintenance and repair costs. Typically, since it is already used when you buy it, you expect little or no resale value. You can gain a significant price savings in the used car market, and there are good used cars for sale. You may just have to look a bit harder to find one.

The National Automobile Dealers Association (NADA) offers a checklist for used vehicle inspection when buying a used car. The NADA also publishes guidebooks on used car book values (see http://www.nadaguides.com). Items to inspect in your exterior, interior, and engine checks are outlined in Figure 8.10 "Used Car Buyer's Checklist".

Figure 8.10 Used Car Buyer's Checklist[2]



The condition of exterior and interior features can indicate past accidents, repairs, or lack of maintenance that may increase future operating expenses, or just driving habits that have left a less attractive or less comfortable vehicle.

Services like Carfax (http://www.carfax.com) provide research on a vehicle's history based on its VIN (vehicle identification number), including any incidence of accidents, flooding, frame damage, or airbag deployment, the number and type of owners (was it a rental or commercial vehicle?), and the mileage. All these events affect your expectations of the vehicle's longevity, maintenance and repair costs, resale value, and operating costs, which can help you calculate its value and usefulness.

Unless you are an expert yourself, you should always have a trained mechanic inspect a used vehicle before you buy it. With cars, as with any item, the better informed you are, the better you can do as a consumer. Given the cost of a car and its annual expense, there is enough at stake with this purchase to make you cautious.

Identify the Market

New cars are sold through car dealerships. The dealer has a contract with the manufacturer to sell its cars in the retail market. Dealers may also offer repair and maintenance services as well as parts and accessories made especially for the models it sells.

New car dealers may also resell cars that they get as trade-ins, especially of the same models they sell new. Used car dealers typically buy cars through auctions of corporate, rental, or government cars.

Individuals selling a used car can also do so through networking—in an online auction such as eBay, a virtual bulletin board such as Craig's List, or the bulletin board in the local college snack bar. Dealers will have more information about the market, especially about the supply of cars and price levels for them.

Some people prefer a new car, with its more advanced features and more certain quality, but a used car may be a viable substitute for many purchasers. Many people buy used cars while their incomes are lower, especially in the earlier stages of their adult

(working) life. As income rises and concern for convenience, reliability, and safety increases with age and family size, consumers may move into the new car market.

While they are two very different markets, the markets for new and used cars are related. Supply of and demand for new cars affect price levels in the new car market, but also in the used car market. For example, when new car prices are high, more buyers seek out used cars and when low, used car buyers may turn to the new car market.

Demand for cars is affected by macroeconomic factors such as business cycles and inflation. If there is a recession and a rise in unemployment, incomes drop. Demand for new cars will fall. Many people will decide to keep driving their current vehicle until things pick up, unwilling to purchase a long-term asset when they are uncertain about their job and paycheck. That slowing of demand may lower car prices, but will also lower the resale or trade-in value of the current vehicle. For first-time car buyers, that may be a good time to buy.

If there is inflation, it will push up interest rates because the price of borrowing money rises with other prices. Since many people borrow when purchasing a car, that will make the borrowing, and so the purchase, more costly, which will discourage demand.

When the economy is expanding, on the other hand, and inflation and interest rates are low, demand for new cars rises, pushing up prices. In turn, prices are kept in check by competition. As demand for new cars rises, demand for used cars may fall, causing the supply of used cars to rise as more people trade in their cars to buy a new one. They trade them in earlier in the car's life, so the quality of the used cars on the market rises. This may be a good time to buy a used car.

Identify the Financing: Loans and Leases

The cost of a car is significant. Car purchases usually require financing through a loan or a lease. Each may require a down payment, which you would take out of your savings. That creates an opportunity cost of losing the return you could have earned on your savings. You also lose liquidity: you are taking cash, a liquid asset, and trading it for a car, a not-so-liquid asset.

Your opportunity cost and the cost of decreasing your liquidity are costs of buying the car. You can reduce those costs by borrowing more (and putting less money down), but the more you borrow, the higher your costs of borrowing. If you trade in a vehicle, dealers will often use the trade-in value as the down payment and will sell the car to you with "no money down."

Car loans are available from banks, credit unions, consumer finance companies, and the manufacturers themselves. Be sure to shop around for the best deal, as rates, maturity, and terms can vary. If you shop for the loan before shopping for the car, then the loan negotiation is separate from the car purchase negotiation. Both may be complex deals,

and there are many trade-offs to be made. The more separate—and simplified—each negotiation is, the more likely you will be happy with the outcome.

Loans differ by interest rate or annual percentage rate (APR) and by the time to maturity. Both will affect your monthly payments. A loan with a higher APR is costing you more and, all things being equal, will have a higher monthly payment. A loan with a longer maturity will reduce your monthly payment, but if the APR is higher, it is actually costing you more. Loan maturities may range from one to five years; the longer the loan, the more you risk ending up with a loan that's worth more than your car.

Rebecca buys a used Saturn for $6,000, with $1,000 cash down from savings and a GMAC-financed loan at 7.2 APR, on which she pays $115 a month for forty-eight months. She could have gotten a twenty-four-month loan, but wanted to have smaller monthly payments. After only twenty-five months, she totals her car in a chain collision but luckily escapes injury. Now she needs another car. The Saturn has no trade-in value, her insurance benefit won't be enough to cover the cost of another car, and she still has to pay off her loan regardless. Rebecca is out of luck, because her debt outlived her asset. If your debt outlives your asset, your ability to get financing when you go to replace that vehicle will be limited, because you still have the old debt to pay off and now are looking to add a new debt—and its payments—to your budget. Rebecca will have to use more savings and may have to pay more for a second loan, if she can get one, increasing her monthly payments or extending her debt over a longer period of time.

An alternative to getting a car loan is leasing a car. Leases are a common way of financing a car purchase. A **lease** is a long-term rental agreement with a **buyout option** at maturity. Typically, at the end of the lease, usually three or four years, you can buy the car outright for a certain amount, or you can give it back (and buy or lease another car), which removes the risk of having an asset that outlives its financing. Leases specify an annual mileage limit, that is, the number of miles that you can drive the car in a year before incurring additional costs. Leases also specify the monthly payment and requirements for routine maintenance that will preserve the car's value.

So, lease or borrow? The price of the car should be the same regardless of how it is financed—the car should be worth what it's worth, no matter how it is paid for. The cost of borrowing, in percentage terms, is the interest rate or APR of the loan. The costs of leasing, in dollars, are the down payment, the lease payments, and the buyout. Since the price of the car itself is the same in either case, the present value of all the lease costs should be the same as the price of the car. You can use what you know about the time value of money to calculate the discount rate that produces that price; that is the equivalent annual cost of the lease, in percentage terms.

For example, you want to buy a car with a price of $19,000. You can get a car loan with an APR of 6.5 percent from your bank. You are offered a lease requiring a down payment of $2,999, monthly payments of $359 for three years, and a final buyout of $5,000. The APR of the lease is actually 5.93 percent, which would make it the cheaper financing alternative.

In general, the longer you intend to keep the car, the less sense it makes to lease. If you typically drive a car "into the ground," until it costs more to repair than replace it, then you are better off borrowing and spreading the costs of financing over a longer period. On the other hand, if you intend to keep the car only for the term of the lease and not to exercise the buyout option, then it is usually more cost effective to lease. You also need to consider whether or not you are likely to stay within the mileage limits of the lease, as the mileage penalties can add significantly to your costs.

Some people will say that they like to borrow and then "own" in order to have an asset that can store value or "build equity." Given the unpredictable nature of the used car market, however, a car is really not an asset that can be counted on to store value. Thinking of a car as something that you will use up (although over several years) rather than as an asset you can preserve or save will help you make better financial decisions.

When you are buying a car, you want to minimize the cost of both the car and the financing. If you are purchasing both the car and the financing from the same dealer, you should be careful to discuss them separately. Car dealers, who offer loans and leases as well as cars, often combine the three discussions, offering a break on the financing to make the car more affordable, or offering a break on the car to make the financing more affordable. To complicate matters further, they may also offer a rebate on a certain model or with a certain lease. The more clearly you can separate which costs belongs to which—the car or the financing—the more clearly you can understand and minimize your costs.

Purchase and Postpurchase

A car purchase requires significant prepurchase activities. Once you have identified and compared appropriate car attributes, a seller, and financing options, all you have to do is drive away, right? Not quite.

Car purchases are one instance where the buyer is expected to haggle over price. The sticker price is the **manufacturer's suggested retail price (MSRP)** for that vehicle model with those features. Dealers negotiate many of the factors that ultimately determine the value of the purchase: the optional features of the car, the warranty terms, service discounts on routine maintenance, financing terms, rebates, trade-in value for you old car, and so on.

As more of these factors are discussed at once, the negotiation becomes more and more complex. You can help yourself by keeping the negotiations as simple as possible: negotiate one thing at a time, settle on that, and then negotiate the next factor. Keep track of what has been agreed to as you go along. When each factor has been negotiated, you will have the package deal.

Your ability to get a satisfying deal rests on your abilities as a negotiator. For this reason, many people who find that process distasteful or suspect that their skills are lacking find the car purchasing process distasteful. Dealers know this, and some will try to attract

customers by being more transparent about their own costs and about prices. Some even promise the "no-dicker sticker" sale with no haggling over price at all.

As with any product in any market, the more information you have, the better you can negotiate. The more thorough your prepurchase activities, the more satisfying your purchase will be.

While you own the car, you will maximize the benefits enjoyed by operating the vehicle safely and by keeping it in good condition. Routine maintenance (e.g., replacing fluids, rotating tires) can ensure the quality and longevity of your vehicle. New cars come with owner's manuals that detail a schedule of service requirements and good driving practices for your vehicle. You will be required to keep the car legally insured and registered with the state where you reside, and you must maintain a valid license to drive.

New cars, and some used cars, are sold with a **warranty**, which is a promise about the quality of the product, made for a certain period of time. The terms and covered repair costs may vary. You should understand the terms of the warranty, especially if something covered should need servicing, so that you know what repairs you may be charged for. The manufacturer, and sometimes the seller, issues the warranty. If you have questions about the warranty after purchasing, it may be best to contact the manufacturer directly.

If you are dissatisfied with your purchase (and the fault seems to be with the car), your first step should be a conversation with your dealer. If the problem is not addressed, you can contact the automobile company directly; its Web site will provide you with a customer service contact. If the dealer and the manufacturer refuse to make good, you should contact your state's consumer affairs division in the attorney general's office. In some states, there are entire state agencies or departments devoted to auto purchases.

For his first car Ray bought a ten-year-old coupe with only 60,000 miles on it for a price that seemed too good to be true. The seller said the good price was in exchange for getting payment in full in cash. The car broke down right away, however, and within two weeks died of a cracked block. When Ray complained, the seller claimed he didn't know about the cracked block and pointed out that there was no warranty on the car, so Ray was out of luck. Fortunately, Ray had read that a defective car, referred to as a "lemon," is covered under laws that protect consumers who unknowingly purchase a car that proves to be defective. **Lemon laws** regulate sales terms, purchase cancellation conditions, and warranty requirements. These laws are enforced on both the federal and state level in the United States. Other consumer protection laws apply specifically to motor vehicles and vary by state. Ray learned that laws in his state include used cars as well as new ones, and when he told the seller, he was able to get most of his cash back.

KEY TAKEAWAYS

- The purchase process may be applied to a car purchase.

- Attribute scoring may be helpful to identify the product.
- Common car financing is through a loan or a lease.
- A warranty guarantees minimal satisfaction with performance attributes.
- Laws protect consumers who are dissatisfied with their car purchases or unknowingly buy defective cars.

EXERCISES

1. Perform an attribute analysis for your next new or used car. Go online to research cars with the attributes you have prioritized, and find where you could buy what you want locally. Then research the dealership, including a quick check at the Better Business Bureau Web site or your local chamber of commerce to learn if there have been many consumer complaints. After researching the product, the market, and the price, visit a dealership, preferably with a classmate or partner, for the experience of getting information and practicing your negotiation skills (but without making any commitments, unless you really are in the market for a car at this time).
2. How will you finance a car? Play with the Car Loan Calculator at http://www.edmunds.com/apps/calc/CalculatorController. First identify a sample of new or used cars you would like to own, and for each choice calculate what your down payment, monthly loan payments, and term of payment would be. How much would you need to buy a car and where would that money come from? How much could you afford to pay each month and for how long? How could you modify your budget to accommodate car payments?
3. For a car you would like to drive, calculate and compare what it would cost you to buy it and to lease it. Use the Lease versus Buy Calculator at http://www.leaseguide.com/leasevsbuy.htm. What would be the advantages of owning the car? What would be the advantages of leasing it? For your lifestyle, needs, and uses of a vehicle, should you buy or lease?
4. View a 2009 Money Talks video on "Buying Cars in a Credit Crunch" at http://articles.moneycentral.msn.com/video/default-ap.aspx?cp-documentid=f5dda393-7ab1-4e25-b446- 30e313aa3796%26tab=Money %20Talks%20News. What sources of financing does the video identify for times when national banks and finance companies are not forthcoming with car loans because of downturns in the economy?

5. Check the lemon laws in your state at Lemon Law America's Web site:http://www.lemonlawamerica.com/. Click on your state on the map. What conditions do your state lemon laws cover? Some states do not cover used or leased cars under lemon laws. Under federal laws, if you buy a used car "as is," do you still retain rights under the lemon laws? Under federal lemon laws, in what situations, when the seller does not divulge the information, may you be able to get your money back on a car?

[1] Advertising Age, "Global Marketers: Top 100," December 8, 2007, http://adage.com/images/random/datacenter/2008/globalmarketing2008.pdf (accessed April 1, 2009).

[2] National Automobile Dealers Association, http://www.nadaguides.com (accessed November 23, 2009).

Chapter 9 Buying a Home

Introduction

Be it ever so humble, the "biggest" purchase you ever make may be your home. Unlike most other consumer purchases, a home is expected to be more than a living space; it is also an asset that stores and increases value. The house has a dual financial role as both a nest *and* a nest egg.

There are substantial annual operating expenses for repairs and maintenance, insurance, and taxes. Maintenance preserves a home's value, insurance protects that value, and taxes for community services both enhance and secure its value.

A home purchase is typically financed with debt that creates a significant monthly expense, the mortgage payment, in your budget. A mortgage is a long-term debt that obligates your cash flows for a long time, perhaps even reducing your choices of careers and your mobility.

Your choice of home reflects personal factors in your life. These factors include your personal tastes, your age and stage of life, your family size and circumstances, your health, and your career choices. These factors are reflected in your decision to own a home, as well as in the location, size, and use of your home.

9.1 Identify the Product and the Market

LEARNING OBJECTIVES

1. Describe the different building structures for residential dwellings.
2. Describe the different ownership structures for residential dwellings.
3. Identify the factors used by lenders to evaluate borrowers for mortgage credit.
4. Identify the components of the mortgage affordability calculation and calculate estimated mortgage affordability.
5. Identify the components of a buyer's inspection checklist.
6. Explain the potential effects of business cycles, unemployment, and inflation on the housing market.
7. Analyze the effects of the demand for housing financing on the housing market.

Renting a Home

If you have already decided on a goal of home ownership, you have already compared the costs and benefits of the alternative, which is renting. Renting requires relatively few initial legal or financial commitments. The renter signs a lease that spells out the terms of the rental agreement: term, rent, terms of payments and fees, restrictions such as pets or smoking, and charges for damages. A renter is usually required to give the landlord a security deposit to cover the landlord's costs of repairs or cleaning, as necessary, when the tenant moves out. If the deposit is not used, it is returned to the departing tenant (although without any interest earned).

Some general advantages and disadvantages of renting and owning are shown in Figure 9.2 "Renting versus Owning".

Figure 9.2 Renting versus Owning

	Advantage	Disadvantage
Renting	• Limited financial obligation • Limited maintenance expenses • More liquidity • More mobility	• No equity growth or store of value • Lifestyle limitations (e.g., pets, smoking) • Decorating/renovating limitations • Less predictable housing expense
Owning	• Store of value and possible equity growth • Lifestyle choices • Decorating/renovating choices • Pride of ownership • Tax deduction for mortgage interest • More predictable housing expenses	• Substantial financial obligation • Significant annual expenses • Less liquidity • Less mobility

The choice of whether to rent or to own follows the pattern of life stages. People rent early in their adult lives because they typically have fewer financial resources and put a higher value on mobility, usually to keep more career flexibility. Since incomes are usually low, the tax advantages of ownership don't have much benefit.

As family size grows, the quality of life for dependents typically takes precedence, and a family looks for the added space and comfort of a home and its benefits as an investment. This is the mid-adult stage of accumulating assets and building wealth. As income rises, the tax benefit becomes more valuable, too.

Often, in retirement, with both incomes and family size smaller, older adults will downsize to an apartment, shedding responsibilities and financial commitments.

Home ownership decisions vary: some people just never want the responsibilities of ownership, while some just always want a place of their own.

Finding an apartment is much like finding a home in terms of assessing its attributes, comparing choices, and making a choice. Landlords, property managers, and agents all rent properties and use various media to advertise an available space. Since the rent for an apartment is a regular expense, financed from current income (not long-term debt), you need to find only the apartment and not the financing, which simplifies the process considerably.

Assessing Attributes

Once you decide to own your home, you must choose the home to own, considering the different kinds of homes and of home ownership.

There are single- and multiple-unit dwellings, for example. A **multiple-unit dwelling** can be used to create rental income or to house extended family members, but this choice imposes the responsibilities of being a landlord and also limits privacy.

There are previously owned, new, and custom-built homes. Previously owned homes may require some renovation to make them comfortably modern and convenient. New and custom-built homes typically have more modern features and conveniences and require less maintenance and repair expense. Custom-built homes are built to the homeowners' specifications.

Sales of existing single-family homes far outnumber sales of new and custom homes. In the month of February 2009, for example, 4.72 million existing homes were sold compared to 337,000 sales of new homes. The average price of a new house in February 2009 in the United States was $251,000.[1]

Mobile homes are large trailers fitted with utilities connections, which can be installed on permanent sites and used as residences. A mobile home may also be situated in a trailer park or mobile home community where the owner rents a lot. Mobile homes are often referred to as manufactured homes, and other examples of manufactured homes are prefabricated or modular homes, which are moved to a foundation site by trailer and then assembled.

In a **condominium**, the homeowner owns a unit in a multiple-unit dwelling, but the common areas of the building are owned and managed by the condominium owners' association. Condo owners pay a fee to cover the costs of overall building maintenance and operating expenses for common areas.

Cooperative housing is a unit in a building or complex owned by a nonprofit association or a corporation for the residents' use. Residents do not own the units, but rather own shares in the cooperative association, which entitles them to the right to dwell in its housing units.

Personal factors such as your age, family size, health, and career help you to answer some of the following key questions:

- How large should the house be? How many bedrooms and bathrooms?
- Which rooms are most important: kitchen, family room, or home office?
- Do you need parking or a garage?
- Do you need storage space?
- Do you need disability accommodation?
- Do you want outside space: a yard, patio, or deck?
- How important is privacy?
- How important is energy efficiency and other "green" features?
- How important are design features and appearance?
- How important is location and environmental factors?
- Proximity to work? Schools? Shopping? Family and friends?

After ranking the importance of such attributes, you can use an attribute-scoring matrix to score your choices. After understanding exactly what you are looking for in a home, you should begin to think about how much house you can afford.

Assessing Affordability

Before looking for a house that offers what you want, you need to identify a price range that you can afford. Most people use financing to purchase a home, so your ability to access financing or get a loan will determine the price range of the house you can buy. Since your home and your financing are long-term commitments, you need to be careful to try to include future changes in your thinking.

For example, Jill and Jack are both twenty-five years old, newly married, and looking to buy their first home. Both work and earn good incomes. The real estate market is strong, especially with mortgage rates relatively low. They buy a two-bedroom condo in a new development as a starter home.

Fast-forward five years. Jill is expecting their second child; while the couple is happy about the new baby, neither can imagine how they will all fit in their already cramped space. They would love to sell the condo and purchase a larger home with a yard for the kids, but the real estate market has slowed, mortgage rates have risen, and a plant

closing last year has driven up unemployment in their area. Jill hasn't worked outside the home since their first child was born two years ago—they are just getting by on one salary and a new baby will increase their expenses—making it even more difficult to think about financing a larger home.

A lender will look at your income, your current debts, and credit history to assess your ability to assume a mortgage. As discussed in Chapter 7 "Financial Management", your credit score is an important tool for the lender, who may also request verification of employment and income from your employer.

Lenders do their own calculations of how much debt you can afford, based on a reasonable percentage, usually about 33 percent, of your monthly gross income that should go toward your monthly housing costs, or
principal, interest, taxes, and insurance (PITI)Principal, interest, taxes, and insurance are the costs of home ownership. PITI is usually calculated on a monthly basis in the process of determining the affordability of a mortgage.. If you have other debts, your PITI plus your other debt repayments should be no more than about 38 percent of your gross income. Those percentages will be adjusted for income level, credit score, and amount of the down payment.

Say the lender assumes that 38 percent of your monthly gross income (annual gross income divided by twelve) should cover your PITI plus any other debt payments. Subtracting your other debt payments and estimated cost of taxes and insurance leaves you with a figure for affordable monthly mortgage payments. Dividing that figure by the mortgage factor for your mortgage's maturity and mortgage rate shows the affordable mortgage overall. Knowing what percentage your mortgage will be of the home's purchase price, you can calculate the maximum purchase price of the home that you can afford. That affordable home purchase price is based on your gross income, other debts, taxes, insurance, mortgage rate, mortgage maturity, and down payment.

Figure 9.5 "Mortgage Affordability Calculation" shows an example of this calculation for a thirty-year, 6.5 percent mortgage.

Figure 9.5 Mortgage Affordability Calculation

1. Gross Annual Income	60,000
2. Gross Monthly Income	5,000 = 60,000 ÷ 12
3. PITI + Other Debt Payments	1,900 = 38% of 5,000
4. Other Debt Payments	200 = your estimate
5. Affordable Monthly PITI	1,700 = (3) – (4)
6. Monthly Taxes + Insurance	700 = your estimate
7. Affordable Monthly Mortgage Payment	1,000 = (5) – (6)
8. Mortgage Factor	6.32 = mortgage factor
9. Affordable Mortgage	158,228 = (7) ÷ (8) × 1,000
10. Down Payment as % of Purchase Price	20% = your estimate
11. Mortgage as % of Purchase Price	80% = 1 – (10)
12. Affordable Purchase Price	197,785 = (9) ÷ (11)

These kinds of calculations give both you and your lender a much clearer idea of what you can afford. You may want to sit down with a potential lender and have this discussion before you do any serious house hunting, so that you have a price range in mind before you shop. Mortgage affordability calculators are also available online.

Searching for a Home

After understanding exactly what you are looking for in a home and what you can afford, you can organize your efforts and begin your search.

Typically, buyers use a **realtor** and realty listings to identify homes for sale. A real estate broker can add value to your search by providing information about the house and property, the neighborhood and its schools, recreational and cultural opportunities, and costs of living.

Remember, however, that the broker or its agent, while helping you gather information and assess your choices, is working for the sellers and will be compensated by the seller when a sale is made. Consider paying for the services of a buyer's agent, a fee-based real estate broker who works for the buyer to identify choices independently of the purchase. The real estate industry is regulated by state and federal laws as well as by self-regulatory bodies, and real estate agents must be licensed to operate.

Increasingly, sellers are marketing their homes directly to save the cost of using a broker. A real estate broker typically takes a negotiable amount up to 6 percent of the purchase price, from which it pays a commission to the real estate agent. "For sale by owner" sites on the Internet can make the exchange of housing information easier and more convenient for both buyers and sellers. For example, Web sites such as Picketfencepreview.com serve home sellers and buyers directly. Keep in mind, however, that sellers acting as their own brokers and agents are not licensed or regulated and may

not be knowledgeable about federal and state laws governing real estate transactions, potentially increasing your risk.

After you narrow your search and choose a prospective home in your price range, you have the home inspected to assess its condition and project the cost of any repairs or renovations. Many states require a home inspection before signing a purchase agreement or as a condition of the agreement. A standard home inspection checklist, based on information from the National Association of Certified Home Inspectors, is shown in Figure 9.6 "Standard Home Inspection Checklist".

Figure 9.6 Standard Home Inspection Checklist

Structural Elements	Foundation, floors, walls, ceilings, roof
Exterior Elements	Siding, fascia, trim, windows, doors Elevation, drainage, landscaping, pool Driveways, sidewalks
Roof and Attic	Framing, ventilation, flashing, gutters
Plumbing	Pipes: potable, drain, waste, vent Toilets, showers, sinks, faucets, traps
Electrical	Main panel, circuit breakers, wiring, fixtures
Systems	Furnace, water heater, air conditioner, ducts, chimney, sprinklers
Outdoor Buildings	Garage, tool shed, pool house

As with a car, it is best to hire a professional (a structural engineer, contractor, or licensed home inspector) to do the home inspection. For example, see the American Association of Home Inspectors at http://www.ashi.org/. A professional will be able to spot not only potential problems but also evidence of past problems that may have been fixed improperly or that may recur—for example, water in the basement or leaks in the roof. If there are problems, you will need an estimate for the cost of fixing them. If there are significant and immediate repair or renovation costs projected by the home's condition, you may try to reduce the purchase price of the property by those costs. You don't want any surprises after you buy the house, especially costly ones.

You will also want to do a title search, as required by your lender, to verify that there are no **liens** or claims outstanding against the property. For example, the previous owners may have had a dispute with a contractor and never paid his bill, and the contractor may have filed a lien or a claim against the property that must be resolved before the property can change hands. There are several other kinds of liens; for example, a tax lien is imposed to secure payment of overdue taxes.

A lawyer or a title search company can do the search, which involves checking the municipal or town records where a lien would be filed. A title search will also reveal if

previous owners have deeded any rights—such as development rights or water rights, for example, or grants of right-of-way across the property—that would diminish its value.

Identifying the Market

Housing costs are determined by the price of the house and by the price of the debt that finances the house. House prices are determined by forces of supply and demand, which in turn are determined by macroeconomic circumstances.

When the economy is contracting and incomes are decreasing, and especially if unemployment rises and incomes become uncertain, buyers are hesitant to add the significant financial responsibility of new debt to their budgets. They tend to continue with their present arrangements or may try to move into cheaper housing, downsizing to a smaller house, an apartment, or condo to decrease operating expenses. When the economy is expanding, on the other hand, expectations of rising incomes may encourage buyers to be bolder with their purchasing decisions.

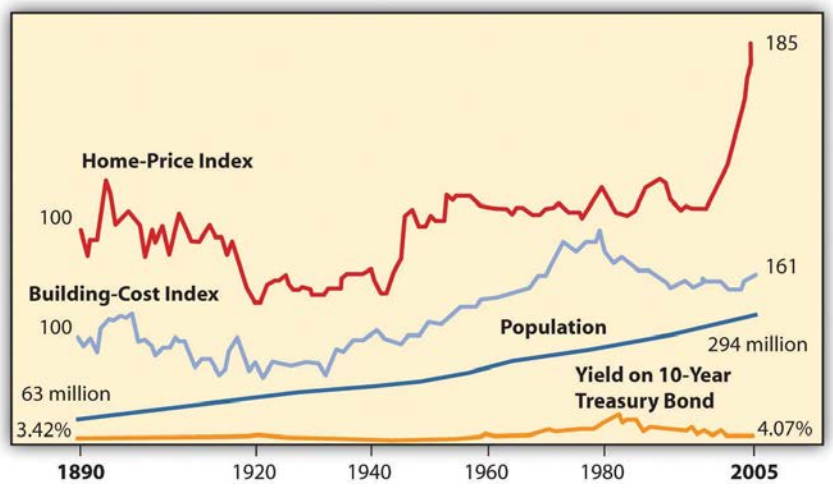
A house represents not only a housing expense but also an investment that can serve as a store of wealth. In theory, if a contraction creates a market with declining asset values, investors will seek out alternative investments, abandoning that market. In other words, if house prices decline, the house's value as an investment will decline. Investors will seek other assets in which to store wealth to avoid the opportunity cost of making an investment that does not generate returns.

Housing markets are local, however. If the local economy is dominated by one industry or by one large employer, the housing market will be sensitive to the fate of that industry or employer. If a location has value independent of the local economy, such as value as a vacation or retirement location, that value can offset local concerns. In that case, housing prices may be less sensitive to the local economy.

Since a house is an investment, the home buyer is concerned about its expected future value. Future value is not easy to predict, however, as housing markets have some volatility. In extreme periods, for example between 2004 and 2009, there was extreme volatility (read more on the real estate bubble in Chapter 13 "Behavioral Finance and Market Behavior"). Thus, depending on how long you intend to own the home, it may or may not be realistic to try to predict price trends based on macroeconomic cycles or factors. Some areas may seem to be always desirable, such as Manhattan's East Side or Malibu, California, but a severe economic shock or boom can affect prices in those areas as well.

Figure 9.7 "U.S. Housing Prices 1890–2005 (Inflation-Adjusted Dollars)" shows housing prices in the United States from 1890 to 2005 in inflation-adjusted dollars.

Figure 9.7 U.S. Housing Prices 1890–2005 (Inflation-Adjusted Dollars)



The data in Figure 9.7 "U.S. Housing Prices 1890–2005 (Inflation-Adjusted Dollars)" display some remarkable stability to housing prices. For example, for the half-century from the end of World War II until the mid-1990s, housing prices were fairly flat, as they were in the period from around 1920 to 1940. This suggests that while a house may be used to store value, it may not generate a real increase in wealth. It seems that over the long term, housing prices are not highly sensitive to economic cycles, population growth, building costs, or even interest rates.

Since the early 2000s, however, housing prices have soared. Most economists attribute this to a sustained period of low unemployment rates, low mortgage rates, and economic growth. As bubbles do, this one eventually burst in 2007 as the economy slumped into a recession. Housing demand and prices fell, even with low mortgage rates, creating a real buyer's market. Many economists attribute the severity of the slump to the banking crisis that froze the credit markets, because most housing purchases are financed with debt.

Ability to buy a house rests on the ability to finance the purchase, to provide a down payment, and to borrow. That ability is determined by the buyer's personal situation (e.g., stability of employment or income, credit history) and by macroeconomic events such as interest rate levels, expected inflation, and liquidity in the credit markets. If interest rates and inflation are low and there is liquidity in the credit markets, it will be easier for buyers to borrow than if inflation and interest rates are high and the credit market is illiquid. Demand for housing thus relies on the availability of credit for the housing market.

KEY TAKEAWAYS

- Different building structures are
  - single-unit or multiple-unit dwellings or mobile homes;
  - previously owned, new, or custom built.

- Different ownership structures include
  - conventional ownership,
  - condominium,
  - cooperative housing.

- The buyer's inspection checklist includes
  - structural elements;
  - exterior elements;
  - systems for plumbing, electrical, heating/cooling;
  - outdoor buildings and features.

- Lenders assess income, current debts, and credit history to determine the creditworthiness of borrowers.
- A mortgage affordability estimate uses an estimate of PITI and other debt payments as a percentage of gross monthly income and of the down payment as a percentage of the purchase price.

- Housing prices may be affected by business cycles as they affect
  - unemployment and income levels;
  - inflation, which affects not only the cost of houses but also interest rates and the cost of home financing.

- Housing prices are affected by the availability of home financing, which in turn depends on
  - interest rates and inflation,
  - liquidity in the credit markets.

EXERCISES

1. Perform an attribute analysis of your projected wants and needs as a homeowner. Begin by prioritizing the following personal and microeconomic factors in terms of their importance to you in deciding when to buy a home.
   - How large should the house be? How many bedrooms and bathrooms?
   - Which rooms are most important: kitchen, family room, or home office?
   - Do you need parking or a garage?

- Do you need storage space?
- Do you need disability accommodation?
- Do you want outside space: a yard, patio, deck?
- How important is privacy?
- How important is energy efficiency or other “green” features?
- How important are design features and appearance?
- How important is location and environmental factors?
- Proximity to work? Schools? Shopping? Family and friends?

2. In your journal or My Notes describe hypothetically your first or next home that you think you would like to own, including its location and environment. Predict how much you think it might cost to own such a home in your state. Then look through realty news and ads to find the asking prices for homes or housing units similar to the one you described. How accurate is your prediction?
3. Are you are a renter and likely to remain one for a few years? Read the advice about renting housing at http://www.ehow.com/how_111189_rent-apartment-house.html. How does that advice compare with the information in this chapter about buying a house? What advice, if any, would you add to the eHow.com site? Discuss with classmates the ins and outs of being a tenant and the ins and outs of being a landlord. Develop a comparison chart of benefits, drawbacks, and risks.
4. Do you live in a dorm or at home with parents or other relatives? What needs to happen for you to have a place of your own? Research Web sites that aid students in finding independent housing, such ashttp://collegelife.about.com/od/livingoffcampus/ht/Apartments.htm andhttp://www.gooffcampus.com/. Develop a flexible plan and timetable for finding and financing a place of your own and record it in your personal finance journal.
5. Investigate the real estate market in your area. How do local housing availability and pricing differ from other cities and towns, counties, and states? Use online resources to find this information, such as HousingPredictor.com, which provides independent real estate market forecasts for local housing markets for all fifty U.S. states, or RealtyTimes.com, an industry news

source that likewise analyzes local real estate markets nationwide. How stable or volatile is your real estate market? Is it a buyer's market or a seller's market, and what does that mean? To what local factors do you attribute the differences you find? Share your findings with classmates.

6. Identify and analyze the macroeconomic factors that are affecting your local real estate market. In what ways or to what extent does your local economy reflect macroeconomic factors in the national economy? According to the National Association of Realtors (http://www.realtor.org/research), what are the most important present trends in the real estate market? If you were shopping for a new or existing home today, or were planning to build, how would each macroeconomic factor and each trend you identify likely affect your choices? Record your answers in My Notes or your personal finance journal.
7. View the 2009 CBS News Money Matters video "Tips for First-Time Home Buyers" at http://www.cbsnews.com/video/watch/?id=2947766n. What do the commentators mean when they describe the current housing market as a buyer's market? What are four tips for avoiding overpaying for a home? Now view Bloomberg's Your Money video on "Buying a Home" athttp://www.youtube.com/watch?v=XnvirEoxRaQ. According to the experts in this video, what are the first two steps in buying a home? Other videos in the Bloomberg series cover related topics, such as renting versus buying, tips on financing, and so on.

[1] National Association of Home Builders, http://www.nahb.org/fileUpload_details.aspx?contentTypeID=3&contentID=97096&subContentID=153510 (accessed November 23, 2009).

9.2 Identify the Financing

LEARNING OBJECTIVES

1. Define the effects of the down payment on other housing costs.
2. Calculate the monthly mortgage payment, given its interest rate, maturity, and principal balance.
3. Distinguish between a fixed-rate and an adjustable-rate mortgage and explain their effects on the monthly payment and interest rate.
4. Distinguish between a rate cap and a payment cap, and explain their uses and risks.

5. Determine the effect of points on the monthly mortgage payment.

6. Identify potential closing costs.

Just as your house may be your most significant purchase, your mortgage may be your most significant debt. The principal may be many times one year's disposable income and may need to be paid over fifteen or thirty years. The house secures the loan, so if you default or miss payments, the lender may **foreclose** on your house or claim ownership of the property, evict you, and resell the house to recover what you owed. You may lose not only your house but also your home.

Banks, credit unions, finance companies, and mortgage finance companies sell mortgages. They profit by lending and competing for borrowers. It makes sense to shop around for a mortgage, as rates and terms (i.e., the borrowers' costs and conditions) may vary widely. The Internet has made it easy to compare; a quick search for "mortgage rates" yields many Web sites that provide national and state averages, lenders in your area, comparable rates and terms, and free mortgage calculators.

You may feel more comfortable getting your mortgage through your local bank, which may process the loan and then sell the mortgage to a larger financial institution. The local bank usually continues to service the loan, to collect the payments, but those cash flows are passed through to the financial institution (usually a much larger bank) that has bought the mortgage. This secondary mortgage market allows your local bank to have more liquidity and less risk, as it gets repaid right away, allowing it to make more loans. As long as you continue to make your payments, your only interaction is with the bank that is servicing the loan. Alternatively, local banks may earmark a percentage of mortgages to keep "in house" rather than sell.

The U.S. government assists some groups to obtain home loans, such as Native Americans, Americans with disabilities, and veterans. See, for example, http://www.homeloans.va.gov/ondemand_vets_stream_video.htm.

Keep in mind that the costs discussed in this chapter, associated with various kinds of mortgages, may change. The real estate market, government housing policies, and government regulation of the mortgage financing market may change at any time. When it is time for you to shop for a mortgage, therefore, be sure you are informed of current developments.

Down Payment

Mortgages require a **down payment**, or a percentage of the purchase price paid in cash upon purchase. Most buyers use cash from savings, the proceeds of a house they are selling, or a family gift.

The size of the down payment does not affect the price of the house, but it can affect the cost of the financing. For a certain house price, the larger the down payment, the