

Banking

Chapter Outline

Introduction: Traditional Banks and Alternatives to Banks

How Banks Work

Banks as Lending Institutions

The Central Bank

The Federal Deposit Insurance Corporation

Why Use a Bank?

Case Study Part 1: Meet Leo

Choosing a Bank Account to Help You Manage Your Money

The Services a Bank Account Provides

Earning Interest on a Bank Balance

Fees Banks Charge

Online and Mobile Banking

Comparing Costs

Shared Accounts

Case Study Part 2: Leo Compares Accounts

Considering Other Investment Options

Earning Interest on Different Types of Investments

Reducing Risk

Loaning Money to Others

Case Study Part 3: Leo's Story, Two Years Later

Working With the Three Questions

Case Study Part 4: Leo's Story, Four Years Later

Chapter Summary

Chapter Learning Objectives

After reading this chapter, students will be able to:

- Outline how banks and similar financial institutions work
- Know when it is appropriate to use a bank account
- Describe how bank accounts can help you manage your money
- Choose a bank account that best serves your needs

INTRODUCTION: TRADITIONAL BANKS AND ALTERNATIVES TO BANKS

If your income is low and you spend it all before your next paycheck, you may not need a bank account. If you have savings—say \$10,000—that you want to set aside for a very long time, a bank account is probably not the place for that because you could invest it elsewhere and receive a higher return. Why, then, do people use bank accounts, and what exactly are they good for? As discussed in Chapter 3, almost everyone has to manage their cash flow—money coming in versus money going out—and bank accounts can help people do so. Bank accounts provide the following:

1. **Liquidity.** You can easily put your money into, and get it out of, a bank account, providing you with ready access to your money. That ready access is called **liquidity**. Printed checks, automated teller machines (ATMs), debit cards, automatic fund transfers, and online bill payment are among the convenient ways that banks help you deposit and

spend money.

2. **Safety.** When your money is in a bank account, it is in a place that is more secure than your home or your wallet. If you do your banking at a federally insured bank, the U.S. government insures your deposits for up to \$250,000.
3. **Investment.** While bank accounts pay low **interest rates** (the amount the bank pays you for keeping your money in an account), using a bank account is a very low-risk way to invest your money.

For the purpose of this chapter, we are interested in the types of accounts found in **commercial banks** (also called retail banks), which are banks whose primary business is to accept deposits and issue loans. Many commercial banks have a physical, or “brick and mortar” presence in cities and towns, though there are banks that operate entirely online. The accounts most commonly available through commercial banks are checking, savings, **certificates of deposit (CD)**, and money market. Commercial banks also provide home mortgages.

A financial institution that offers services similar to a commercial bank is a **credit union**. The difference between the two is that banks are privately owned and credit unions are member owned. This means that any surplus income made by credit unions is returned to members. Additionally, the mechanism for insuring credit union accounts is slightly different from the mechanism for insuring bank accounts. Although most of the information in this chapter refers to commercial banks, the principles are relevant to credit unions as well. Thus, when we use the word banks, we are considering banks, credit unions, and other similar financial institutions.

There are other institutions, frequently referred to as alternative financial services, that offer some of the services of commercial banks and credit unions. However, the cost and reliability of these alternatives can vary greatly. One example is a check cashing center. For

people without a traditional bank account, check cashing centers offer a way to quickly and easily cash a paycheck. They may be open longer hours than traditional banks, and they might be located more conveniently for some people. Check cashing centers sometimes offer additional services, such as money orders, mailing, notary public, currency exchange, photocopying, and even motor vehicle registration. Use of a check cashing center for banking services comes with fees that can add up to more than the fees charged by commercial banks. If you are using such a service, it's a good idea to know the fees and estimate how the costs will add up over time. While using a check cashing center may have its conveniences, it may ultimately be more expensive than other options, so you need to decide if the costs are worth the services offered.

HOW BANKS WORK

We know that banks help keep your money safe and accessible, but what is money, really? One part of the definition of money is tangible coins and bills made of various types of metal and paper. The actual value of a \$1, \$5, \$10, or \$20 bill does not equate to the value of the piece of paper it is printed on and we are able to use money without even touching coins or bills. When we talk about money, we are not always referring to actual coins or bills, but we are referring to the value they hold. Money serves three purposes:

1. Money is a unit of accounting. It's a way of keeping track of how much you have in your bank account or how much you owe on your student loan, car, or credit card. Money comes in a variety of units of currency (dollars, euros, pesos, etc.), depending on where you are located in the world.
2. Money is a medium of exchange. Without money, we would have a barter economy. It can be difficult to exchange goods in a barter economy: if you have something to sell,

you need to find someone who wants to buy it and who can give you something you want in exchange. Using money makes exchanges and processing payments easy.

3. Money is a store of value: a \$1 dollar bill is worth one dollar. Thus, you can invest in money the same way in which you invest in bonds, stocks, or real estate. Money carries less risk than other assets.

By considering the purposes money serves, we can define it. We just have to look at things that accomplish all three of these purposes. Cash does all of these things, but so do bank accounts. Thus, when we talk about bank accounts, we are indeed talking about money.

While commercial banks do not have vaults full of cash in amounts equivalent to the value of all of their customers' accounts, they do maintain careful records of the value of their customers' accounts and they pay interest on the account value. Banks are set up to be able to provide you with money, as long as you have adequate funds in your account, but they also provide services that allow you to use your money without even touching it. Most people don't receive weekly or monthly pay for the work they do as cash; instead it comes in the form of a printed check or via direct deposit into a bank account. Bank services then allow that money to be moved around via checks, debit and credit cards, and mobile banking transactions.

Banks as Lending Institutions

How do banks manage to pay interest on customers' accounts? Where does the money come from? It comes from the lending services banks provide. As a lending institution that has temporary possession of its customers' money, banks are allowed to lend a certain amount of that money and they charge interest (higher than the rate paid on customers' accounts) on the money that is lent. That is how banks make a profit and stay in business. Banks lend money to their

customers for a variety of purposes.

Because banks lend the money deposited by their customers, not all the people with bank accounts can withdraw all of their cash on the same day. It simply is not physically there. Despite this, you will always be able to retrieve the funds you have in your account because banks hold reserves to account for those requests. Banks must honor certain **reserve requirements**, the amount a bank is required to have on hand at all times. For example, if the bank is required to hold a reserve of 10% and a community bank has \$100, it can only lend \$90. The borrower of that \$90, however, could then deposit it back into the bank, at which point the bank would be allowed to lend \$81 of it again. Even though 10% is held in reserve at every step, because the deposits are based on loans themselves, the bank potentially lends a lot of money based on that initial deposit of \$100.

Banks have sophisticated ways of looking at inflows and outflows of money in order to predict how much depositors are likely to withdraw in a given time period. One way to think of this is in terms of probability. For example, what is the probability that all depositors will want to withdraw all of their money at the same time? As you can imagine, the probability of this happening is very small. But what if it were to happen? To answer this question, we need to understand bank reserves and the oversight and regulation of banks in our communities and, increasingly, online. This oversight is provided by the central bank, which we will examine in the next section.

The Central Bank

As we discussed in Chapter 1, the **central bank** oversees the nation's commercial banks and manages interest rates and money supply. Central banks exist in many countries. In the United

States, the central bank is known as the **U.S. Federal Reserve System**, often called the Fed. Other major central banks are the European Central Bank, the Bank of Japan, and the People's Bank of China. A central bank has many important roles, one of which is deciding how much money commercial banks can lend to their customers. In the United States, the Federal Reserve is the institution that imposes the reserve requirement.

The central bank can also provide liquidity to commercial banks. As bank customers deposit and withdraw money, the reserve needs of banks can fluctuate. Banks handle these fluctuations by borrowing from each other—a process overseen by the central bank. In addition to borrowing from each other, banks can borrow from the central bank, which functions as the “lender of last resort.” For this reason, the central bank is sometimes called the “bank of banks.” All of this helps to guarantee a smooth and well-functioning banking system.

The Federal Deposit Insurance Corporation

In the chapter introduction, we discussed that federally insured banks provide security for your money, but who is it that insures banks? The **Federal Deposit Insurance Corporation (FDIC)** is an institution that was created during the Great Depression to insure bank deposits. After the collapse of the U.S. stock market in 1929, economic activity plummeted, many people lost their jobs, and many companies closed or were unable to pay back their loans. Banks were in trouble, too, and depositors who feared for the security of their money went to the banks to withdraw their money. In these so-called “runs” on banks where people lined up to get their money, the demand for money exceeded the reserves that the banks had on hand. As a result, banks were unable to give people their money in cash.

In response to these events, the Banking Act of 1933 was enacted, and as part of this act,

the FDIC was created. Today, the FDIC insures all deposits in commercial banks up to \$250,000 per depositor, per qualified account, as per the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. In other words, even if a bank fails, as long as it is a member of the FDIC, its customers' deposits are guaranteed up to the specified limit per depositor, and will be paid back. If your bank is a member of the FDIC—something you can easily check, as member banks are required to display signs at their place of business—your deposits are insured. The FDIC does not insure credit unions, which are insured by the National Credit Union Share Insurance Fund (NCUSIF). The NCUSIF is operated by the National Credit Union Administration (NCUA), which is a federal government agency backed by the full faith and credit of the United States government.

Why Use a Bank?

As we've discussed, people use bank accounts because they provide liquidity and safety as well as specific services that enable their customers to conduct day-to-day financial transactions and invest money. Bank accounts are **liquid assets** in that funds in the account are readily accessible, meaning they can be used for buying things or paying bills. An example of a non-liquid asset is a real estate investment. While a home or piece of property can increase in value, building your wealth in the long run, it can't be immediately used to cover day-to-day financial transactions. To convert a piece of real estate into a liquid asset, you would have to sell it or take out a loan based on its value, both of which would take time and effort. If you have ever seen signs for a "liquidation sale," this often means a company is selling off its inventory (usually at a lower price) to build up its cash reserves. It will use the cash from the liquidation sale to buy new inventory, which it hopes will bring a larger profit than the old stuff that has been sitting around.

While alternatives to traditional banks, such as check cashing centers, offer similar services, banks are often less expensive to use. At a check cashing center, you might pay \$3 for each approved check or pre-paid debit card you cash with a value up to \$1,000. For checks and cards over \$1,000, the fee is higher. Fees at some check cashing centers are a percentage of the total amount of the check being cashed. If you need to cash a check for \$1,200, for example, you might pay

$$.03 * \$1,200 = \$36.$$

When it comes to using a bank and banking services, it is important to know your options, the costs of various services, and determine how those costs will affect you.

[Begin Case Study Part 1]

Case Study Part 1: Meet Leo

Having grown up in a small town east of San Diego, Leo was aware from a young age of the stark differences in wealth in his community. He went to high school with students who knew they would go to college, never worried about how they would pay for it, and lived in houses worth close to a million dollars. He also knew students whose parents had never set foot on a college campus, who perhaps had not finished high school, and who made a living cleaning the houses, tending the gardens, and fixing the cars of the wealthier people in the community. Leo's family was one of the latter. Both of his parents worked full time and then some, yet still made little money. Leo lived in a small apartment with his parents and two younger siblings and they barely made ends meet. Since he was fourteen, Leo had held part-time jobs to pay for his own clothes and cell phone. By the time he could drive, he had even saved enough to buy a beat-up old car.

Besides wealth, another difference Leo noticed between his hard working parents and the wealthier people in the community was their level of education. Now in his senior year of high school, Leo is determined to get an education that will lead to a lifetime of decent employment. His grades are good but not great—not enough to get a university scholarship. However, California has a widespread, open enrollment, inexpensive community college system. Leo feels that if he could complete two years in that system and save some money, he could complete his education at one of the state universities using his savings, perhaps the help of a scholarship, and loans.

After high school graduation, Leo enrolls at the local community college and finds a part-time job near campus that pays \$1,200 per month after deductions for taxes, Social Security, and Medicare. He will be able to live at home rent-free and can use his old car to commute. A lot of money will go to gas. He will leave early in the morning and get home late. He will study every spare minute.

Leo receives his first paycheck before tuition is due. Like many of his friends, Leo uses convenient check cashing services that are not affiliated with any bank. Leo cashes his first check at one. The check-cashing fee is 3% of the total:

$$.03 * \$1,200 = \$36.$$

Leo doesn't mind paying the fee. He takes some of the amount in cash, which he plans to spend carefully, and stores the rest on a prepaid debit card that he keeps at home.

Tuition is \$2,500 per semester. The college offers a payment plan, and Leo decides to sign up for it. He calculates that he will need to save about \$500 per month in order to meet his payments. He will need to save another \$300 per month plus all of his summer earnings if he wants to be able to transfer to a more expensive state university for his last two years of college.

When Leo goes to the bursar's office to set up the payment plan, he realizes that making the payments would be easiest if he could write a check or set up a direct deposit from a bank account.

Leo also realizes that having his own bank account will help him begin to build a financial life: paying his tuition, earning an income, and choosing what to do with his money. Therefore, when he receives his next paycheck for \$1,200, he goes to a bank near his home, opens a checking account with unlimited free check writing, and deposits a total of \$900. He also opens a savings account, puts \$300 into it, and plans not to touch it. He writes a \$500 check for his monthly tuition bill. This leaves him with \$400 in his checking account to get through the month.

Leo meticulously keeps track of his expenses that month: \$120 on gas, \$30 for his cell phone, \$40 on car repairs that he does himself, \$100 on food, and \$100 on textbooks for his courses. Total: \$390.

When he goes to the bank to deposit his next \$1,200 check, he looks at the balance in his account: -\$82. Negative! How on earth could that have happened when he had been so careful?

Discussion Questions

1. Do you agree with Leo's reasons for opening a bank account? Should he have done this earlier? Why or why not?
2. Can you think of reasons to have a bank account other than those mentioned by Leo?
3. How do you think Leo wound up with a negative balance in his account?

[End Case Study Part 1]

CHOOSING A BANK ACCOUNT TO HELP YOU MANAGE YOUR MONEY

When you choose a bank at which to open an account, you want to consider safety, services offered, and interest rates. Determining the safety of your bank account is as simple as being sure that your bank is FDIC insured. You can easily find this information online or at the bank itself. Selecting the account that is right for you is a bit more complicated. You need to consider your individual needs and weigh them against the services offered before you determine the bank and account type that is right for you.

The Services a Bank Account Provides

The two most common types of bank accounts are checking accounts and savings accounts. Checking accounts are designed to give you immediate access to your money. Savings accounts are intended for longer-term savings.

Services commonly provided with checking accounts include use of automated teller machines (ATMs), provision of a debit card that is linked to your account, and a supply of printed checks. Having ATM access allows you to withdraw cash from or deposit cash or checks into your account. Having a debit card linked to your checking account enables you to make point of purchase transactions, with the amount of the purchase immediately being deducted from your account. Debit cards make it less necessary to carry cash but use of cash back transactions can enable you to get cash when you make a small purchase with your debit card at a retail outlet, such as a convenience or grocery store. Cash back transactions are usually free. Writing a check is a similar transaction with delayed processing time.

If you have both a savings and a checking account at the same bank, you have the option of linking the accounts. This can make it easier to meet account balance minimums and can

facilitate **overdraft protection**. Overdraft protection is a line of credit supplied by the bank if you write a check or make a debit card transaction for an amount greater than the balance in your checking account.

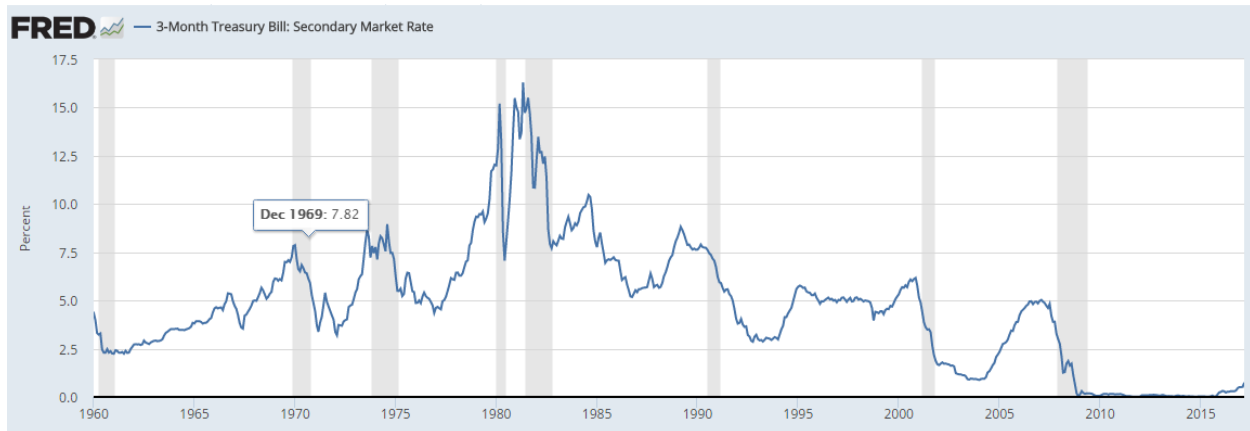
Earning Interest on a Bank Balance

In addition to being a safe place to keep your money, bank accounts are also an investment vehicle because they pay interest on the funds you have in your account. Banks offer varying interest rates. The rates offered on basic savings and checking accounts are usually quite low, but you should still know and understand them. You can determine interest rates online or by visiting your local bank. Some checking accounts offer services but pay no interest on your account balance (the services are the “payments” on those accounts), while savings accounts offer few services but are more likely to pay interest.

Interest rates on bank accounts have not always been as low as they are today. In a weak economy, the central bank sets interest rates low to encourage people to borrow money that might be used to purchase durable goods or start businesses. Buying goods and operating businesses keep people employed and keep money moving. However, if a bank can charge just a few percentage points on money it loans, then it cannot afford to pay much to its depositors and still make a profit. On the other hand, if the economy is strong, the central bank can raise interest rates on loans and interest paid on bank accounts will rise accordingly.

The interest rate paid on bank accounts closely follows the interest rates paid by the government on **treasury bills**, which are assets that provide both liquidity and investment. We can see how rates have changed over time by looking at Figure 4-1.

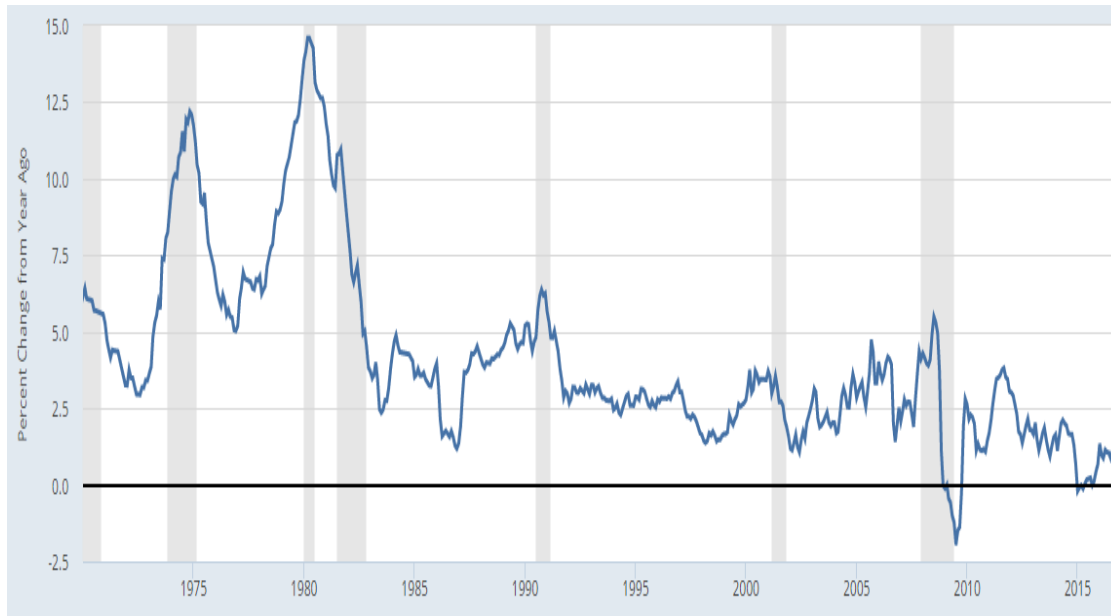
Figure 4-1: Short-Term Interest Rates on Three-Month Treasury Bills, 1960–2017



Source: Federal Reserve of St. Louis Economic Data.

As previously mentioned, recent low interest rates are the result of changes in monetary policy, but even interest rates as high as 15% should be considered in terms of the purchasing power of money, which rises and falls with inflation. Figure 4-2 shows U.S. inflation rates over a period similar to that shown in Figure 4-1. Notice that the high interest rates of the 1980s correspond with high inflation rates and a 15% rate of interest on treasury bills is offset by a high rate of inflation during that same period. In years when the inflation rate is higher than the interest rate (a rare occurrence), money would lose purchasing power as prices would go up faster than would earnings on investments.

Figure 4-2: U.S. Inflation Rate, 1960–2017



Source: Federal Reserve of St. Louis Economic Data.

Banks use two rates to describe the interest they pay. The simplest is **annual percentage rate**, or **APR**, which may be paid monthly, weekly, or daily. An APR of 12%, paid monthly, pays 1% per month. Because this 1 percent per month compounds over the course of a year, the actual amount of interest you receive from the bank at the end of the year is greater than 12% of your initial deposit. This higher rate is called the **annual percentage yield**, or **APY**, which is the effective rate earned on the money in the bank. The **Truth in Savings Act** requires that the interest rate on a savings account be reported as an APY.

For example, an initial deposit of \$1,000 at 1.2% APR compounded monthly for 12 months will yield \$1,012.07, which is higher than 1.2% of 1,000 ($.012 * 1,000 = 12$). The effective rate of interest, or APY, in this case is 1.21%. For a review of how to calculate compound interest, please see Chapter 2.

Fees Banks Charge

Fees that accompany bank accounts vary by account type and service. You can find basic checking and savings accounts that do not charge monthly fees, as long as you adhere to the account agreements, which might entail maintaining a **minimum balance** and engaging in a limited number of transactions per month. Some accounts charge a monthly fee but those accounts might offer more services or greater flexibility, perhaps not requiring that a minimum account balance be maintained. Either way, potential fees are an important consideration when it comes to choosing the right bank account for your needs.

Beyond monthly account fees, there may be fees associated with use of certain bank account features. Automated teller machine use can cost several dollars per transaction. Fees might be associated only with use of “foreign” ATM machines, machines that are privately owned or affiliated with different banks, or there might be a certain number of ATM transactions permitted per month, with fees charged beyond that. Fees vary with check writing, and it can cost money to purchase paper checks. You might get a certain number of free checks when you open an account, but have to buy additional checks once the free checks have all been used. Debit card use is often free, and has the added benefit of enabling cash back transactions at retail establishments, like grocery and convenience stores. You can buy a pack of gum and opt to get \$20 in cash, which will be immediately deducted from your account balance.

It should be noted that even a fee-free checking account can be expensive if it is not managed properly. Careless use of a debit card can lead to **overdrafts**, or spending more than what you have in your account. An overdraft occurs when you write checks or engage in a debit transaction for an amount greater than the balance of your account. One of the largest fees a bank may charge is associated with overdrafts. Overdraft fees range from \$10 to nearly \$40 per overdraft transaction. This means that if you have \$25 in your account, but think you have \$40

and make a \$30 purchase with your debit card, you will owe the bank the \$5 difference between your account balance and the purchase amount, plus the overdraft fee.

[Insert Mistakes People Make 4.1 here]

Online and Mobile Banking

Online and mobile banking services are available with most bank accounts. **Online banking** (also referred to as internet banking) allows bank customers to conduct financial transactions through the bank's website. The types of financial transactions available through online banking vary by institution but often include obtaining account statements, viewing recent transactions, obtaining account balances, making electronic transfers of funds, and paying bills electronically. Some banks have only an online presence; if you are a customer of one of these banks, you will do all of your banking through the bank's website, though you can get account assistance from a bank representative over the phone. **Mobile banking** is online banking through a mobile device such as a smartphone or tablet. Mobile banking usually requires use of an app provided by the financial institution.

Online and mobile banking can make it easy to monitor your accounts and manage your money. Traditional account management suggests regularly **reconciling** your bank account, or comparing the transactions listed on the monthly account statement provided by the bank with your own record of bank transactions to be sure that the records match. Doing this enables you to identify discrepancies between your records and the bank's; to catch bank errors, fees, or fraudulent activity on your account; and make note of any transactions you have engaged in that have not yet cleared the account (for example, a bill paid by check that has not yet been deducted from your account balance). Online and mobile account access makes possible even more

frequent account monitoring, such as tracking your transactions and account balance. It also allows you to set automatic alerts to let you know when your account drops below a certain balance, helping to avoid account overdrafts.

Comparing Costs

With a variety of options available, how can you know which bank account is best? Comparing costs and shopping for the best deals can help determine which account will make the most sense for your personal circumstances. Comparison-shopping is an important element of personal finance and it applies to every financial decision. Table 4-1 offers an example of varying services and fee structures you might encounter at three different banks.

Table 4-1: Comparison of Bank Services and Fees

Monthly fee	Foreign ATM transaction fee	Minimum required balance	Overdraft charges	Check writing charges	Interest rate	Online services
Bank A: checking with linked savings account; debit card and ATM card						
\$12	\$2.50	\$25 in savings; no checking account minimum	\$0 if covered by overdraft protection, otherwise \$35	none	.02% APY on savings only	automatic bill payment, unlimited electronic bill

						payment
Bank B: checking with linked savings account; debit card and ATM card						
\$11	\$3.00	\$100 in savings, no checking account minimum	\$0 if covered by overdraft protection, otherwise \$45	First 5 per month free, then 10 cents per check	.03% APY on all accounts	automatic bill payment; unlimited electronic bill payment
Bank C: checking, no linked savings account; debit card and ATM card						
\$5 if above minimum balance; \$20 if below minimum	\$2.50	\$100	\$35	none	0%	automatic bill payment; limited electronic bill payment

With each of these account options, you pay a monthly fee. That fee is lowest with Bank C, assuming you maintain the \$100 minimum balance. At each bank, fees will quickly add up if you need regular access to cash via an ATM, unless the machines you have ready access to are affiliated with your bank; in that case, ATM use is free. Overdraft charges are high with each option; Bank A offers the best protection against overdrafts by offering a linked checking and

savings account with overdraft protection. If you need an account that will allow you unlimited check writing, you would be better off avoiding Bank B. Interest rates differ at each bank, but you need to do some calculations to determine how much of a difference that will make in your particular situation (see Do the Math 4.1).

[Insert Do the Math 4.1: How Much Interest Will You Earn?]

Banks often advertise their high interest rates, but you should do the math before being sold on an account for that reason alone. The difference between two interest rates might amount to very little. An error in judgment about monthly fees could do far more damage to your balance than would be outweighed by a higher interest rate.

If you have been in the habit of using alternative banking services, such as check cashing centers, you should also weigh the costs and benefits of a bank account versus use of that service.

Once you have decided on the type of bank account that will work best for you, you'll need to understand how to set up an account. In order to open a bank account, many banks will require the following items:

- Identification – a photo ID such as a driver's license, passport, or military ID.
- Personal information, including social security number, home address, phone number, birth date, and email address.
- Cash or check to deposit.

A bank's website will tell you what they require for setting up an account.

Shared Accounts

In addition to specific account features, you might also need to consider whether you are

setting up an independent or joint bank account. There are situations, often depending on your age and household composition, where you might consider a joint bank account. This means that the ownership of the account is shared among you and other people in your family or household: your parents, siblings, or a partner or spouse. If everyone who has ownership of the account has the same financial goals and habits and similar ideas about how the account is to be used, there are likely to be few problems with co-ownership. If, however, individuals have different preferences and financial habits, there can be problems ranging from mild disputes about money management to serious financial or legal problems.

A different but related risk is living as an adult in a household but not having ownership of any of the financial accounts. Your spouse or partner may handle all of the financial affairs in your household—perhaps because of time, ability, or interest in doing so. If you are an adult without access to your family’s finances, this could become a problem for you in the event of an emergency, such as death, disability, or divorce. Domestic financial abuse, in which one partner claims sole management of household finances in order to exert power and control in the relationship, is another serious problem. It’s important to be sure you are informed about your household accounts, including knowing account numbers, passwords, and how to access these accounts. The National Domestic Violence hotline is one resource for individuals experiencing financial abuse: www.thehotline.org.

[Begin Case Study Part 2]

Case Study Part 2: Leo Compares Accounts

Having discovered his negative balance, Leo goes into the bank to speak with a teller. The teller explains that Leo owes

- A \$12 monthly service fee
- \$2.50 for each of his four foreign ATM withdrawals: \$10
- Two \$35 charges for overdrafts: \$70

A total of \$92 had been deducted from the \$10 Leo thought he had remaining in his account, for a balance of -\$82. The teller points out that the bank had been very generous in covering his overdrafts.

Though Leo had carefully tracked his expenses, he had not realized he was paying monthly service and ATM fees. Thinking he still had \$20 in his account, he had written two checks for \$5 each as small presents for his younger brother and sister. These were considered overdrafts, because at that point the bank reckoned he already had a negative balance of \$2.

Noticing that Leo has a savings account with \$300 in it, the teller points out that the bank offers overdraft protection service. By electronically linking his savings and checking accounts, money from his savings could cover any checking account overdrafts. The transaction fee for this service is \$12.50 each time it is used, much less than the \$35 overdraft fee. Leo immediately signs up. The teller, recognizing a series of honest mistakes, checks with her boss. Fortunately for Leo, they decide to reverse the overdraft charges, crediting his account with \$70. They also made it clear that such a nice thing would never happen again.

Having just deposited his second paycheck of \$1,200, from which the \$12 negative balance was deducted, Leo's net deposit is \$1,188. Following the teller's suggestion, now that he has a better understanding of potential charges he could incur, he vows to get into the habit of regularly monitoring and reconciling his account.

Aside from the overdrafts, his banking costs that month are \$22: the \$12 service fee and four ATM transactions. This is still cheaper than using the check cashing service that charged

3% (3% of Leo's \$1,200 paycheck would come to \$36).

Leo also realizes that almost half of his banking charges are due to his use of convenient campus ATMs, which are affiliated with another bank. He decides he will deposit his check at his bank, minus \$50 cash, to be kept in his wallet. Most expenses could be covered with checks or by using the debit card linked to his checking account. He can also use this card to get cash back when making a purchase at a convenience store, with no fees attached.

Finally, having realized that banks offer a variety of account and fee structures, Leo resolves to reconsider the bank he is using. He does some online research and comes up with three possible options, summarized in Table 4-1.

Doing the math, Leo quickly realizes that the interest rates he is comparing are so low that differences between them have very little influence on the value of his accounts. Next, Leo considers the required minimum balances. When he was working at his high school job for fewer hours and at lower pay, he could not have maintained any minimum balance. He could remember many times that he spent everything he made. Now that he has a bank account and is saving for a goal, Leo is determined that there will never be less than \$100 in his savings account again, unless some disaster occurs, so Leo decides that the minimum balance is, for him, irrelevant.

What it comes down to is the monthly service fee and ATM fees versus the overdraft costs. If Leo never had an overdraft problem again, Bank C might be the best option, as its service charge is the lowest and it has no ATM fees. The savings of a \$5 versus \$12 monthly charge is \$7 per month, or \$84 per year. Leo did not consider this trivial. \$84 would cover the cost of a textbook. But Bank C does not offer a linked savings account, so every overdraft mistake would cost him \$35. Three mistakes a year would erase any savings from fees.

Leo plans to be exceptionally careful with his purchases. Nevertheless, accidents happen,

and with overdraft protection, Leo can avoid the worst fees. Leo reflects that he doesn't really need a savings account. He could keep all his money in his checking account and just not spend it. However, having just made some potentially expensive mistakes, Leo wants to separate the money allocated to cover his monthly budget from the money earmarked for longer-term savings. He also feels that it would be safer. If someone stole his debit card or somehow obtained the number on it, the damage to his account would be limited. The teller had explained that if there were large withdrawals that resulted in an overdraft, the bank would freeze the account and contact him to verify the transaction.

In the end, Leo decides that the higher monthly service fees charged by Banks A and B are worth it in exchange for the overdraft protection offered by having a linked savings account. Leo expects a bumpy financial ride through college. Overdraft protection will make some bumps smaller. He understands that financial decisions include managing risk, and that insuring against risk often comes with a cost.

Leo's decision comes down to Bank A versus Bank B. He could save a dollar in regular monthly fees with Bank B, but if he used an ATM even twice, or wrote too many checks, that would erase the difference. Bank A had a branch right near Leo's workplace. Bank B's nearest branch was five miles out of town in a direction Leo rarely went. He would spend more time and gas every month to use Bank B and decided his time would be better spent doing homework. This was definitely worth more to Leo than a dollar. Therefore, he stuck with Bank A, his original choice.

Discussion Questions

1. Leo vows to monitor and reconcile his account to avoid further mistakes. What might this

entail on a daily, weekly, and monthly basis?

2. In what way is a bank providing a service by providing overdraft protection on an account? If you have an account without overdraft protection, what would happen if you write a check but don't have the money in your account to cover it?
3. When Leo was making only \$300 per month and not trying to save money, the fee to use the check cashing service was \$9 ($\$300 * .03 = \9.00). Why might this be a better deal than the bank?

[End Case Study Part 2]

CONSIDERING OTHER INVESTMENT OPTIONS

If you save money every month, over time your bank account balance will grow to the point that it makes sense to consider investment options other than checking and savings accounts. The low interest rates commonly associated with checking and savings accounts at commercial banks yield very little in interest payments, even when you have thousands of dollars in an account. One way to earn a slightly higher rate of interest through your bank is to invest in a money market account or purchase a certificate of deposit (CD). A money market account often has features similar to a checking or savings account, but it requires that you maintain a significantly higher minimum balance. CDs are investments where you agree to deposit a sum of money for a fixed period of time (such as a year). During the term of the CD, however, you do not have access to this money, unless you opt to pay a withdrawal fee. With a CD, you sacrifice liquidity for a higher interest rate. If you know you won't need the money, this may be a worthwhile trade off. However, if interest rates rise shortly after you purchase a CD, your money is earning less than it otherwise could be, so this is another potential down side.

Earning Interest on Different Types of Investments

As with account feature comparisons when setting up a bank account, you can compare options for what to do with a larger account balance. Say you determine that you have \$8,000 available to invest and you have ruled out the higher rates you might be able to get through higher risk investments, such as those listed in Table 4-3, some of which will be discussed in Chapter 11. Table 4-2 shows the outcome of investing that \$8,000 in three different bank products.

Table 4-2: Interest Earned in One Year on Traditional Bank Products

	Savings Account	Money Market	Certificate of Deposit
Amount invested	Interest rate: .02% with monthly compounding	Interest rate: .8% with monthly compounding	Interest rate: 1.3% with monthly compounding
\$8,000	\$8,001.60	\$8,064	\$8,104

As you can see, the amount in a higher-earning money market account would yield \$64 in interest at the end of the year. If you were to put the same amount of money in a CD with an annual yield of 1.3%, you would have:

$$(1 + .013) * \$8,000 = \$8,104$$

By calculating the future value of the accounts, as shown in Do the Math 4.2, you can determine what any interest rate will yield in a given time period for a given amount of principal.

[Insert Do the Math 4.2 here]

For the sake of comparison, other types of investments with representative rates of return are shown in Table 4-3, with hypothetical interest rates. Not all of these investments are

available through commercial banks, but it's worth noting them here, so you understand what else is available to you once you have saved enough money to be able to invest some of it.

Treasury bills, corporate bonds, and stocks will be discussed in detail in future chapters.

Suppose you invest \$100,000 in each of these investments. How much will you have after 40 years? Table 4-3 shows the future value of \$100,000 invested in each asset class.

Table 4-3: Value of \$100,000 Invested over Forty Years

Asset Class	Return	Future Value
Certificate of Deposit	1.5%	\$181,402
Treasury Bill	3.5%	\$395,926
Corporate Bond	6.0%	\$1,028,571
Stocks	13.0%	\$13,278,155

The difference between investing in a certificate of deposit and investing in stocks can be huge over the long term. Understanding these differences is key because of the potential opportunity cost of keeping large amounts of money in low-interest-earning accounts. The extent of that cost can be seen when you compare the gains that can be made over time with different investment vehicles, due to interest compounding, as seen in Table 4-3.

The different returns on these investments reflect differences in their liquidity and associated risk. As we have discussed, liquidity refers to the ability to convert an investment into cash quickly and inexpensively. Savings accounts are very liquid; bonds and stocks may be less so. Corporate bonds and stocks carry much higher risk than certificates of deposit or treasury bills.

Reducing Risk

In the context of investing money, risk refers to the possibility that the actual amount you receive from the investment differs from what you expect to receive. Both savings accounts and certificates of deposit are low risk, because there is little or no chance of the bank not returning the money. Corporate bonds are risky because the corporation that issued the bond might default. Stocks are risky because the price at which they can be purchased or sold is constantly changing and firms can fail. There is usually a trade-off between risk and return. As your own money manager, you must decide what level of risk makes sense for your situation.

Banks must also reduce their risks as much as possible. As lending institutions, banks need to assess the risks they are taking on when lending out money that they receive from their depositors. To understand this, let's first look at how banks invest the money they get from depositors. By pooling resources, banks can provide much larger loans than the amount deposited in an individual account. Imagine your classmate deposits \$50 in a bank account. This is a potentially large amount of saving for a student, but a firm that needs a loan will want a much larger amount. Suppose now that 2,000 students at your university deposit on average that amount. Now the bank has up to \$100,000 available that can be allocated to loans (and to reserves). The more depositors the bank has, the larger the pool of resources it has available.

What should the bank do with that \$100,000? If it lent the money to a single firm or a single entrepreneur, the bank would assume a lot of risk. If that one firm or project goes sour, the money would be lost. Keep in mind, however, that the FDIC protects the \$50 deposits of all those students; the bank would lose money but the individuals would be reimbursed for the value of their accounts. Banks, particularly those with large amounts of deposits, can reduce the risk of

their investments by not putting all of their eggs in one basket. By diversifying their investments, meaning investing in many firms, businesses, and projects, banks can substantially reduce the risk they take. Even if the firms were similar, by giving money to many of them rather than one, the risk is reduced because the risk that all of them will go bankrupt is very small. However, there are situations where all firms can suffer, for example if the economy goes into a deep recession. In that case, many if not all of the firms would be affected and diversification does not help.

Loaning Money to Others

In addition to established methods for growing your money, there are a variety of less traditional ways your money can be used to earn income. One is peer lending. So-called peer lending clubs are companies that screen individuals who want to borrow money, charging more for loans considered riskier. Loans are typically offered at interest rates ranging from 7% to 25% per year.

How does it work? There are various ways, but here is one example. You open an account and put money in it. Then you can look at data about the individuals who want to borrow money. The company has pre-determined the interest rate these individuals will pay based on their credit rating, which basically reflects the likelihood that they will repay the loan in full. You can give all of the money in your account to one person, or you can split it among various people, to reduce risk. If the person pays on time, most of the interest goes to you, but 1% of each payment goes to the company. If a borrower does not pay, you and the company are both out of luck. Instead of borrowing from a bank or getting low interest on a bank deposit, with peer lending, *you* are the bank.

[Begin Case Study Part 3]

Case Study Part 3: Leo's Story, Two Years Later

After two years of taking a full load of pre-engineering courses at community college while working 25 hours per week, as well as full time in the summers, Leo is ready to enter the computer engineering undergraduate degree program at San Diego State University. He has saved \$12,000 and obtained a federal loan of \$5,500 per year. Tuition is \$8,300 per year, and Leo estimates his living expenses at \$800 per month. This is less than what the college estimated, but Leo plans to rent a room in his cousin's house for \$500 per month rather than live on campus. He also plans to find a job on the bus route so he will no longer need a car. He will use the rest for food and occasional social activities.

He finds work as a mechanic at an automotive repair shop near campus—only 15 hours per week but with a decent hourly wage. His take home pay will be about \$850 each month. Leo hopes that by using the student loan, living frugally, and working full time in the summer, at the end of his college education he will still have \$12,000 in the bank.



Successful completion of general education and major prerequisites at a community college can be a cost-effective way to begin your college education, and can be a path to a university degree at a cooperating state school, provided that articulation agreements that allow

for transfer of credits are in place.

Leo realizes that because he will have more in the bank (\$12,000) than he will in total student loans (\$11,000), he could almost do without the loan. He thinks about foregoing it the first year, as he has enough money to get by without it. However, Leo has qualified for a **subsidized loan**, meaning all interest on the loan is deferred until he stops going to school. Leo could finish his undergraduate degree without having to pay any of the money back or accruing any interest during the years he is enrolled in school. Clearly, this is a case where borrowing makes more sense than paying with his own money. The extra cushion of \$12,000 in his own account will make finishing his degree much easier.

Because he now has a substantial amount saved, Leo reconsiders the issue of interest rates. His bank pays just .02% on his savings account, but he knows there are many more options for how to save and grow his money. Some investments return as much as 7% on average, although the return could vary a lot. Leo feels that he would prefer a more certain rate of return over his short saving horizon. Leo considers buying a one-year CD. He feels that he could safely put \$8,000 of his precious money away for a year. The best interest rate Leo can find for a CD gives an annual percentage yield of 1.3%. Leo calculates that he would be ahead by about \$100 if he put his money in the CD. That extra \$100 would be worth it, he decides, considering that it would represent almost half of a week of work at his part-time job.

But Leo still wonders if he could get a better rate of return elsewhere. He explores a variety of additional options, including treasury bills, corporate bonds, and stocks. He also considers an online “peer lending” investment company through which he could lend his money at a high rate of interest to an individual or group of individuals.

Most of the borrowers on the site Leo visits are requesting \$10,000 to \$30,000 loans for the purpose of “loan consolidation.” This means that they already have several loans, which they would combine by taking out one larger loan in order to pay off the smaller ones. The peer lending company is charging 5.3% to 20% interest, depending on the individual. Leo now has a credit card, which he rarely uses, that charges 12% interest. He could see how an individual who has (foolishly or otherwise) put \$15,000 on high-interest credit cards might want to use money borrowed from the peer lending company to pay off the high-interest balances, assuming the peer lending company rate is lower.

Leo notices one unusual borrower. This person has a gross income of \$5,000 per month and a “debt to income ratio” of 14%. This means that, on a monthly basis, he is paying $.14 * \$5,000 = \700 in debts. However, this borrower is not trying to use peer lending to pay off the debt. Instead, he is requesting a loan of \$18,825 to go on a vacation. The peer lending institution is willing to make such a loan at an interest rate of 18.55%. The loan would be paid off monthly over five years at \$483.69 per month. Leo is amazed. He dreams of making \$5,000 per month. He doesn’t understand how anybody could have such a big debt ratio if they make that much money, or what would possess them to borrow even more! He figures that he could probably take an entire year of vacation for \$18,825.

In the end, Leo does not put any money into the peer lending institution. Although he feels that it would be an interesting and perhaps lucrative way to invest over the long run, most of the loans are of four or five years’ duration—too long for him to tie up his money. But as a result of investigating the possibility, Leo has a better understanding of how banks work. In order to lend money to customers who are not particularly risky at a low rate of interest, a traditional bank has to be paying a very low rate of interest on its deposits. The high rate of

return Leo might have gotten from the peer lending institution translates directly into a high rate of interest charged to their borrowers. When Leo thinks of himself as the lender, the connection is crystal clear.

Discussion Questions

1. If Leo had an unsubsidized student loan, charging him 3.75% APR from the time he borrows it, how might this change his decisions?
2. Think about the pros and cons of peer lending. Do you think this investment model makes sense?

[End Case Study Part 3]

WORKING WITH THE THREE QUESTIONS

In the course of this chapter, we have considered decisions related to opening and managing a bank account. Safety, liquidity, and investment are important considerations in day-to-day financial management. Even decisions about the most ubiquitous financial instrument, a bank account, require careful consideration. Mistakes can result in high costs, so it is important to do calculations that help you make your decision. With modern technology, it is even possible to lend money to others and function as a bank. This is why it is so important to consider the three fundamental questions when making financial decisions:

1. How will this decision affect my present finances?
2. How will this decision affect my future finances?
3. What risk will I be taking with this decision?

1. How will this decision affect my present finances?

When you consider opening a bank account and/or which account makes the most sense for you, you'll want to ask yourself how your account choices will affect your present finances. The decisions you make regarding bank accounts will affect the ease with which you can access your money, i.e., liquidity. Having money in a checking account allows you to easily write a check or use your debit card to make a purchase or pay a bill. Allocating money to checking and savings accounts can help you manage your cash flow and stick to your budget by keeping money to be used for day-to-day expenses separate from money earmarked for savings.

While your present finances will be affected by your choice of a bank account, you also need to have a good understanding of your habits to select the right account for you and appropriately manage that account. You need to know how much money you will be keeping in the account on a regular basis, and how often you might use an ATM or write a check. Other features like automatic bill pay, online banking, or mobile banking can help you manage your monthly budget.

You also need to be aware of potential hidden costs associated with the account. Even if the account is advertised as "free checking," you may be susceptible to high fees due to errors such as account overdrafts. Being aware of these hidden costs in advance and regularly monitoring your account will help you avoid having to pay these costs.

2. How will this decision affect my future finances?

As we have mentioned before, every financial decision you make is about the future. If you are able to save money today, it means you will have more money in the future. Bank accounts provide a safe and easily accessible place to put your money, and an account that earns interest

will enable your money to grow a little bit over time.

Bank accounts also provide you with a means to organize your finances. Most people's finances become more complicated as they go through the life cycle, so becoming accustomed to financial management early in life means having a solid foundation to build on as complexity of financial holdings and obligations increases. As with any allocation of your money, there are opportunity costs associated with bank account selection. If you keep \$5,000 in a low interest checking account because you need that money for day-to-day spending, you forego the opportunity to earn potentially more money through a higher interest bearing investment vehicle, such as a CD or a stock market fund.

Thinking about where you are in the life cycle and your financial goals helps to determine your bank account needs. For example, is it most important that you have a lot of liquidity in order to purchase necessary items in the short term, or do you need a higher interest account that allows you to save for the long term?

3. What risk will I be taking with this decision?

Commercial bank accounts, as long as they are FDIC insured, come with no risk. Even if the bank fails, you will get the money deposited in your account, up to a limit. However, you do risk paying fees incurred because of mistakes or misuse. The likelihood of this is greatest if you have an account that is not well matched to your needs.

If you do not need the liquidity provided by commercial bank accounts, then keeping large amounts of money in these typically low interest bearing accounts means you are missing out on higher returns that could be made by investing your money differently. Knowing how much liquidity you need is important in choosing the right account, and this relates to managing

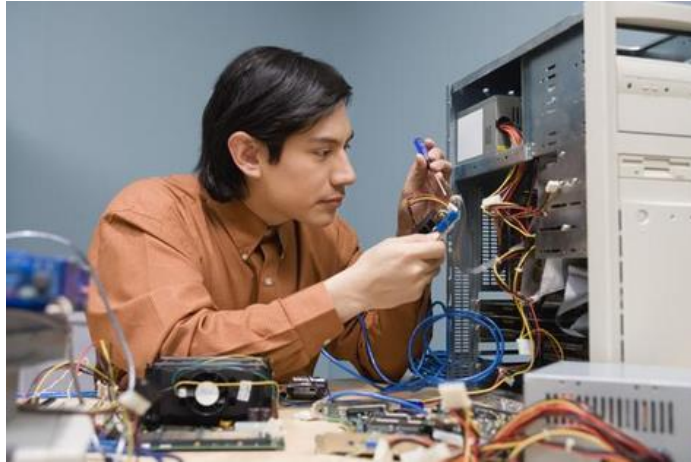
risk. For example, if you have no health insurance and keep very little money in an easily accessible account, you may run the risk of being unable to pay large medical bills in a timely manner.

If you need access to your money or decide you need a different type of bank account, can you easily close your account? Can you access your money without paying any penalties? As with any financial decision, you minimize risk if you are aware of potential exit strategies.

[Begin Case Study Part 4]

Case Study Part 4: Leo's Story, Four Years Later

Leo graduated with honors and took a job with a software engineering firm in San Diego at a starting salary of \$80,000. This resulted in monthly net take home pay of \$4,408.82. Carefully budgeting so that he lives on a fraction of his income, Leo expects to save \$20,000 per year. Leo is now accustomed to using bank accounts to manage his money. He understands how to monitor his accounts and how to use the services they offer to meet his needs. He also knows that, to build his wealth, he needs to maximize the return he gets on his investments. Although he will always have a traditional bank account to deal with his cash flow, now he will want to put most of his money into more lucrative investments. Maybe he will become a peer lender, or perhaps he will invest in stocks, mutual funds, or other kinds of investments. His savings have to work harder for him now—building his wealth rather than just assisting with cash flow. Reflecting on four years of working his way through college, Leo sees his bank accounts not as investments really, but as useful tools for managing money.



For most people, the goal of a college degree is getting a job doing something you enjoy that pays well, enabling you to meet your lifelong financial goals. If your college degree qualifies you to work as a software engineer, you might design, develop, maintain, test, and/or evaluate the software and systems that make computers (or anything that uses software) work. Software engineers work with businesses, government agencies, and non-profit organizations.

Over the course of managing his money through college and into his working years, Leo has gained a better understanding of how banks and bank accounts work. He's learned why he needs a bank account and the costs associated with banking. He's become good at using a bank account to manage his liquidity, and he understands when a bank account has become inadequate for his financial needs.

Discussion Questions

1. How would Leo's financial experience throughout college have looked different if he had chosen not to open a bank account? Discuss at least five possible scenarios.
2. If you were a bank manager, what types of bank accounts would you offer to college students?

3. If you were working in the Office of Student Accounts at your college and wanted to advise students on how to deal with banks, what would you tell them? Write a list of ten recommendations.

[End Case Study Part 4]

CHAPTER SUMMARY

In the course of this chapter, you learned how banks work, why you might want a bank account, and how to select an account that meets your needs. You've learned some of the costs associated with bank accounts and how to set up and use your account so it is cost effective. You've also learned when you might need to move some of your money from a traditional checking or savings account into something earning higher rates of return.

- Banks work by taking in deposits and lending money out again. These transactions are related: the interest rates of one depend on the interest rates of the other. If you have less than \$250,000 in an FDIC-insured bank, you do not have to worry about the security of that money or about how the bank uses the money.
- Bank accounts help you manage your liquidity, pay your bills, and make it easy for you to manage your day-to-day financial needs. Although banks are one of the easiest financial institutions to understand, people don't always know how to use them effectively or understand how the misuse of bank accounts can generate many fees.
- A bank account is useful if you have enough money coming in that you want to save some of it and use some of it to pay bills and make purchases. The low interest rates offered by bank accounts mean they are not the best place for long-term savings, or for keeping large amounts of money, but they are a low-risk investment.

- Searching for a variety of banking options allows you to compare services and fees and select the account best suited for you and your needs while keeping the costs of having an account low. Knowing how to compute the consequences of the various interest rates offered and fees charged allows you to use a bank account to your best advantage.

KEY TERMS

Annual percentage rate (APR): The annual rate charged for borrowing or earned through an investment, expressed as a percentage per unit of time.

Annual percentage yield (APY): The effective annual rate of return, taking into account the effect of compounding interest within a single year.

Central bank: A country's central bank is the "bank of banks"; it oversees the nation's commercial banks and manages interest rates and money supply.

Certificates of deposit (CDs): Investments in which you agree to deposit a sum of money for a fixed period of time (such as a year).

Commercial bank: A financial institution that provides various financial services, such as accepting deposits and issuing loans.

Credit union: A financial institution that offers the same services as a bank; the distinction is that it is a member-owned financial cooperative, and profits are shared among the owners.

Federal Deposit Insurance Corporation (FDIC): An independent agency of the federal government that insures deposits of up to \$250,000 in member banks against bank failure.

Interest rate: The amount charged by a lender to a borrower for the use of assets, expressed as a percentage of principal, per unit of time.

Liquid asset: An asset that can be converted into cash quickly, with minimal impact to the price

of the asset.

Liquidity: The ease of making payments and moving money around.

Minimum balance: The balance that a banking institution requires account holders to have in order to avoid incurring maintenance fees.

Mobile banking: Online banking through a mobile device, such as a smartphone or tablet. Mobile banking usually requires use of an app provided by the financial institution.

Online banking: A service that allows bank customers to conduct a range of financial transactions through a bank's website.

Overdraft: Money spent from an account with too low a balance to cover the amount spent.

Overdraft protection: A service that covers an overdraft by drawing money from another account.

Reconcile: To make one account consistent with another. In the case of your personal bank account, checking your record of what you spent, fees incurred, and what remains versus the bank's record, which is issued as a monthly statement or made available online.

Reserve requirement: The amount of money commercial banks are required to have in reserve. The remainder is available for banks to lend.

Subsidized loan: A loan in which interest is deferred until a later date (typically after a person has graduated from school).

Treasury Bill (T-Bill): An investment backed by the U.S. government. It is actually a loan to the U.S. government, which the government will repay at a fixed time.

Truth in Savings Act: A federal law that requires the disclosure of interest rates, fees, and terms associated with savings institutions' deposit accounts.

U.S. Federal Reserve System: The central bank of the United States (also known as the Fed).

CHAPTER HOMEWORK

Check Your Understanding

1. When your money is in a bank account, you know you can always get it out because
 - a. the U.S. government guarantees it.
 - b. the bank guarantees it.
 - c. other people make deposits constantly, so there is always plenty on hand.
 - d. the bank keeps all of the money in a vault.
2. Bank accounts can pay interest on your deposits because
 - a. the U.S. government guarantees it.
 - b. the bank gets interest from lending your money to others.
 - c. the bank gets the interest back in fees for services.
 - d. the bank is funded by generous donors.
3. Banks may charge fees for
 - a. overdrafts.
 - b. ATM usage.
 - c. writing checks.
 - d. all of the above.
4. The interest rate banks pay on a deposit is lower than the interest they charge for a loan because
 - a. the bank is in business to make money.
 - b. some borrowers fail to pay the money back.
 - c. the government allows it.

d. all of the above.

5. Which statement is correct? A credit union is different from a bank because

- a. it is owned by its members.
- b. deposits are uninsured.
- c. it only offers savings accounts.
- d. it has higher fees.

Do the Math

Read the following scenario in order to answer the questions that follow:

Felicia has a part time job to help pay her college expenses. Every two weeks she receives a check for \$300. She uses it to pay for textbooks, entertainment, her prepaid cell phone card, personal items, and local transportation expenses. Neither she nor her parents have any expectation that part of this money will be saved. Felicia has three options easily available to her:

- a. Using a check cashing service that charges \$5 and returns any combination of cash and prepaid debit card.
- b. Opening a bank account that requires a minimum deposit of \$50, issues an ATM card, which is free to use at the local bank or costs \$3 per use elsewhere, plus a debit card for purchases, and provides check writing for 10 cents per check. Overdraft charges on either checks or the debit card are \$30 per transaction. This bank charges a monthly service fee of \$12 and pays interest at .5%.
- c. Opening an online bank account that requires a minimum deposit of \$300, issues an ATM card that is free to use anywhere, plus a debit card for purchases, and provides check writing for 10 cents per check. Overdraft charges on either checks or the debit card

are \$25 per transaction. This bank charges a monthly service fee of \$10 and pays interest at .1%.

1. If you were Felicia, which option would you choose? Explain your answer.
2. Which option is likely to result in the lowest monthly charge?
3. Which option is likely to give a better return on Felicia's deposits?
4. Over the summer, Felicia gets a full time job and is making quite a bit more money. By the end of the summer, she hopes to have a small nest egg of \$2,000. Of the three options listed above, which one is now the best for her, and why? Which is likely to result in the lowest monthly charge? Which is likely to give a better return on Felicia's deposits?
5. By the end of her sophomore summer, Felicia has saved \$4,000 in one of the accounts described above. She doesn't expect to use this money during the next two years unless there is an emergency. She would like to get a better rate of return than what is offered by the bank. What options are available to her? Using the internet, research three different options for Felicia—a CD, a mutual fund, and a higher interest bank account. Compute the amount she would have at the end of two years in each of these scenarios. Which option is best, and why?

Thinking Hard

For each of the following statements, say whether you agree or disagree with it and explain why.

1. Everyone should have a bank account.
2. Since the government guarantees up to \$250,000 in bank deposits at FDIC insured banks, it's good to invest all of your money in such a bank if you have less than \$250,000.
3. If a person is in a financial situation that makes it likely that they will be unable to pay

off a loan, then the bank is right to charge a higher rate of interest for a loan to that person.

4. The interest rate offered on a bank account is the most important thing to consider when choosing among possible bank accounts.
5. A credit union often offers better products and financial conditions than a bank.

Working with the Three Questions for Financial Decision Making

Question 1: How will this decision affect my present finances?

After finishing her degree in chemistry, Miriam gets a job with a water testing company in Florida. She has a small amount in savings—a \$1,000 gift from her parents—and she carries a college loan that will cost \$300 per month at an annual interest rate of 12%. After careful budgeting for the loan and all expenses, she expects to be able to save \$800 per month from her take-home pay. She considers putting \$500 of that into her retirement fund, which earns an average of 7% interest, and saving the remaining \$300 for future needs, unexpected expenses, and so forth. Bank accounts in her area pay around 1% interest, and she could put her \$300 into such an account, plus the \$1,000 from her parents that she already has. Because there are penalties for withdrawing money from the retirement account, Miriam vows never to touch it.

- What will the decision to put \$500 per month into her retirement fund do to Miriam's cash flow?
- What are the opportunity costs of putting \$300 per month into a bank account paying 1% per year?
- In terms of rate of return only, which is the best investment: the retirement account, the bank account, or paying off the student loan? Which is the worst? Why?

Question 2: How will this decision affect my future finances?

Suppose Miriam decides to go ahead with the plan she is considering and puts \$300 into her bank account and \$500 into her retirement account each month.

- At the end of two years (factoring in the interest rates as noted above), how much will she have total?
- What if she allocated her savings differently: how much would she have if she put \$600 into her retirement account and only \$200 into her savings account? What if she put all \$800 into one or the other?
- Two months into her job, Miriam needs a new computer, which will cost \$500. The store gives her the option to pay for the computer in five installments of \$120 each, essentially borrowing the money and repaying it over five months. At the end of five months, how much will be in her savings account if she uses the payment plan? How much if she pays cash now?
- In considering just these two account options (a high interest retirement account that she will not access for many years and a low interest savings account that is completely liquid and easily used), is there something that Miriam is missing out on; that is, are there other options she should consider? Why?

Question 3: What risk will I be taking with this decision?

Let's assume Miriam has decided to allocate \$300 per month to a savings account. After 10 months, Miriam will have about \$4,000 in her savings account.

- Should she leave it in a bank account or put it into a CD? Which of these options has an

easier, and less expensive, exit strategy if she needs cash for an emergency at some point in the near future?

Miriam considers what would happen if she were to allocate her money differently.

- What risk would Miriam be taking if she put all of her \$800 per month into her retirement account? Into the bank account? Into paying off the student loan? What steps might she take to offset these risks?

Miriam's mother makes her an offer. If Miriam chooses to put \$800 per month into either her retirement account or her student loan debt, Miriam's mom will give her an interest-free loan if an unexpected expense arises. This offer eliminates much of the risk involved in those two strategies. Miriam agrees to this offer.

- In taking advantage of her mother's offer, how should she allocate her money to maximize her long-term wealth?

Case Study

There is a general discussion in the financial community about people who are "unbanked," meaning conducting their personal finances without the use of traditional banking institutions. What are the potential advantages of someone having a bank account, even if they only have a small amount of money in it? This case study begins with just such an individual.

Millie's father ran a bar and restaurant on the first floor of a building in semi-rural Oregon. Upstairs was an apartment in which Millie lived, along with her parents and her seven brothers and sisters. With an abusive father and alcoholic mother, life for the children was chaotic to say the least. Getting homework done in a quiet place was nearly impossible. Staying out of her father's way when he was in one of his rages was an endless concern.

When Millie was ten, her grandmother came to stay with her family for a week. She took Millie to the bank and opened a savings account for her. It was free, but offered no ATM card or debit card to a person as young as Millie. Her grandmother put twenty dollars into the account for her and explained that the bank is where you put money that you want to save for the future. At this point, Millie began to think about her future for the first time.

Money came and went extremely rapidly in Millie's household. Birthday money, holiday money, babysitting money, all got spent immediately. Little brother needed pencils, or little sister wanted an ice cream cone. Millie's mother would "borrow" money from the children to buy cigarettes. In this household, money stood little chance of accumulating. So Millie requested money instead of presents when birthdays and holidays came around. She put most of this, along with any money made from babysitting, in her bank account. She was very careful not to tell anyone in her family that her account was growing. They just assumed her money disappeared, the way money always did. By the time Millie was fourteen, she had \$200 in her savings account.

On Millie's fourteenth birthday, she came home from school to find her father in a terrifying rage and her mother hiding in the bedroom with two black eyes. Millie told no one, but the next day, she put a few things in a bag, skipped school, and got \$50 out of her bank account. The only person she could think to go to for help was her grandmother. She bought a bus ticket to Portland, 200 miles away, and then took a cab to her grandmother's address. Millie's grandmother lived in a modest retirement community, so staying with her long term would not be an option, but the nurses at the retirement community connected her with a social worker. Within a week, she was placed in the foster care of Jill and Carl, not far from her grandmother. She enrolled in the local high school and vowed to stay out of trouble.

Carl, a social worker, and Jill, a mathematics professor at a local college, did their best to encourage Millie in her studies. Her grades got better and better and she began taking more challenging classes. The little bank account also grew, although slowly. To Jill's great joy, Millie was talented in mathematics. Millie told Jill that she hoped to study math in college, earn a graduate degree, and maybe teach at a university someday, like Jill. Carl and Jill made Millie an offer: If she went to college locally, held a part time job, and paid her own personal expenses, she could stay with them for free. Millie thought this was an amazingly generous offer and agreed. However, she knew she needed a plan before starting her senior year of high school, and that plan had a large financial component.

Millie's goals are (1) finish her undergraduate degree in mathematics in the Portland area with excellent grades, (2) find a job to pay for expenses while she's earning her degree, (3) grow her bank account from its current balance of \$500 to a comfortable \$4,000 before applying to graduate school, and (4) take less than \$25,000 in student loans. Doing these things, she hopes, will help her get into a good graduate program and get a job or fellowship. With a little money in the bank and a modest student loan, Millie would be in decent financial shape to start such a program. This case study has three parts:

Part 1: Do some research about the Portland area. Answer the following questions and write a summary of your research for Millie to give her a sense of the options she has for going forward.

- Where might Millie go to college and what would it cost?
- Are there scholarships or loans available to students who are residents of Oregon that might help her?

- How much will she need to earn to supplement this scholarship or loan in order to pay her tuition?
- What jobs are available in the area and what do they pay?

Part 2: Make a plan. Using the information you compiled in Part 1, and assuming that Millie’s academic work remains excellent, how can she achieve the academic and financial goals she has set?

- Research bank or investment account options Millie might consider using in the Portland area (or online) to manage her money and build her nest egg. Will she be able to finish her undergraduate degree in four years, or will it take longer? How will she integrate work and school?
- How will her wealth grow and what services should she use to manage and grow it? How might these change over time?

Part 3: Reflect. Millie’s bank accounts are a part of her life from age 10 onward. What roles do they play, and how do they change as her life moves forward? In particular, how does the need for saving versus liquidity change as she progresses?

You Are Your Own CFO

In chapter 1, you created three possible scenarios for your future. Do some research on current interest rates for bank accounts in your area or online. If you haven’t already made estimates of your likely salary for your scenarios, do that now. Based on what you find, make plans for saving for whichever of life’s four big expenses—your children’s education, car, home, and

retirement—are part of your scenarios. How will you save for these needs for the first (or next) five years of your working life? How much will you save and where will you put that savings? Remember to consider inflation and likely salary increases. Is a regular bank account adequate for your needs throughout this period? Explain your answer. Do this for all three scenarios.

CHAPTER 4 FEATURES

Do the Math 4.1: How Much Interest Will You Earn?

Say you initially deposit \$1,000 in your savings account and you plan to add an additional \$300 to that each month. You can use an online investment calculator, or a financial calculator, as shown here, to determine how much of a difference varying interest rates will make for you.

Bank A, which compounds interest monthly, has an interest rate on just the savings account of .02% APR (annual percentage rate). After two years of saving in this manner, you would have \$8,202. Bank B, which also compounds interest monthly, with a higher rate of .03% interest on a combined savings and checking account, would yield \$8,203 on the savings account portion alone. A difference of just one dollar after two years. Compare this to the total amount you would have after two years if using Bank C, which offers no interest at all: \$8,200.

Play around with different inputs and see how the results vary. (See Chapter 2 for a review of how to do this calculation.)

Online calculator inputs to determine growth of savings over time at Bank A, which offers a .02% interest rate.

Category	Customized Input
Starting amount	1,000

Years to save	2
Rate of return	0.02
Additional contributions	300
Frequency	per month
Interest	compound monthly

Financial calculator inputs to determine growth of savings over time at Bank A, which offers a .02% interest rate.

Name	Value	Compute
Present value	1,000	Pv
Future value		Fv
Number of periods	24	Np
Payment amount	300	Pmt
Interest rate per period, %	.02	Ir
Payment at:	<input type="checkbox"/> Beginning <input checked="" type="checkbox"/> End	Clear

Do the Math 4.2: Future Value of Current Accounts

For each asset class, the future value of savings can be calculated with the formula:

$$F = P(1 + r)^T = \$100,000 * (1 + r)^{40}$$

The symbol r is the stated rate of return for the asset class, P is the principal (amount invested), and F is the future value. For a review of this formula, please see Chapter 2.

If you were to leave \$8,000 in the bank, at .02% APR (compounded monthly) for a year, you would have:

$$(1 + .0002/12)^{12} * \$8,000 = \$8,001.60.$$

At these interest rates, an APR of .02% corresponds to a monthly interest rate of .0002/12. But when you compute the APY, which is total interest earned divided by the principal (in this case \$1.60/\$8,000) you also get .02%. This is because .0002 is so small that $(1 + .0002/12)^{12}$ is approximately .02 (with an accuracy of five decimal places).

Mistakes People Make 4.1: Bank Account Mismanagement

Financial decisions range from small to large, but they are all consequential. For example, the mismanagement of a bank account can result in fees that can add up to thousands of dollars. Just two bank overdrafts a month, each resulting in a \$35 dollar fee, plus a \$10 monthly fee for dropping below a required minimum balance, result in a whopping \$960 a year—an amount that is well above what most people even hold in a bank account. Moreover, this figure does not even include ATM charges, the cost of checks, the cost of returned checks, and so on. If you are not careful about monitoring your spending, a bank account can generate high costs if not used appropriately, potentially even resulting in negative savings.