5. Cash Management: Making the Little Things Count

Introduction

The term “cash management” used to mean putting your money into a checking or savings account. Since each bank had similar interest rates, there was little benefit to shopping around for higher returns. However, times have changed. An increase in competition and a reduction in banking regulations have resulted in a much different environment for managing cash and short-term liquid assets today.

The institutional environment has also changed. Previously, only banks could offer checking accounts, and only brokerage houses could sell financial assets such as stocks, bonds, and mutual funds. Now banks can offer financial services, including financial assets, and brokerage houses can offer checking accounts and other services. The challenge now is for you to understand the different alternatives available and to choose the alternatives that will help you achieve your financial goals the fastest.

Objectives

When you have completed this chapter, you should be able to do the following:

1. Understand the principles of cash management
2. Understand cash-management alternatives and how to compare them
3. Know the different types of financial institutions and understand how they can help you meet your financial goals
4. Understand the time commitment necessary for you to effectively manage your finances

Understand the Principles of Cash Management

Cash is important; it provides needed protection because of its liquidity. Liquidity means that your funds are immediately accessible; having liquid funds protects you from having to sell less-liquid, long-term investments at substantial discounts or losses.

The principles of cash management were best summed up by Benjamin Franklin when he wrote “A penny saved is a penny earned.” We are stewards over the resources we have, not only the large stewardships, but also over the small stewardships as well, i.e. the pennies. And as we take care of the small stewardships, we will find that the larger stewardships (the dollars) take care of themselves.

There are three main trade-offs regarding cash management. The first is the risk-return trade-off: higher liquidity means less risk and, therefore, lower returns. Generally speaking, the more liquid the financial asset, the lower the return you can expect to receive on the asset.
The second is the spending-investment risk trade-off: cash on hand is easier to spend than other financial assets.

The third is the return-time expended trade-off: since returns are smaller with cash-management assets, the time you spend managing those assets should be much less than the time you spend managing other types of financial assets.

In spite of these three trade-offs, you can still impact your portfolio in significant and positive ways by using your liquidity wisely. The key to using your liquidity wisely is relating cash management to your personal goals.

What goals do you want to accomplish? Let cash management help you. For example, do you want to save more money? Automate your savings account and pay yourself at specified intervals. Arrange for your bank or financial institution to transfer a specific amount of money each week or month into your savings or mutual fund account. Contribute to your company retirement plan each month with a specific amount that goes directly to that account.

Do you want to cut down on the time you spend working on your personal finances? Use cash-management software, such as Intuit’s Quicken or Mint.com. When properly set up, these programs can substantially reduce the amount of time necessary to manage your finances.

Cash management is an essential part of your emergency fund. Your emergency fund is a resource you can use to meet unexpected needs for cash. The general rule of thumb for an emergency fund is to have sufficient liquid assets to cover three to six months of expenses. I recommend that you substitute the term “income” for the term “expenses” because your income should be higher than your expenses. Keeping three to six months of income in your emergency fund means there is a greater chance you will not need to tap into long-term savings to meet short-term cash needs.

Is it still wise to have an emergency fund in this world of credit cards and home equity lines of credit? The answer is yes, absolutely! It may even be more necessary than it was in the past. Credit cards and home equity lines of credit may be canceled if you lose your job or have a debilitating accident. Secure, available funds that can be accessed quickly provide peace of mind in a troubling world. Gordon B. Hinckley stated:

> May the Lord bless you . . . to set your houses in order. If you have paid your debts, if you have a reserve, even though it be small, then should storms howl about your head, you will have shelter for your wives and children and peace in your hearts.¹

Being able to provide for one’s family and to feel secure financially are great goals for cash management.

**Understand Cash-Management Options and How to Compare Them**

There are many options for helping you manage your cash, and each has its own benefits and costs. Traditional cash-management alternatives include checking accounts and savings accounts. Less traditional, but still important, options for cash management include money...
market deposit accounts, certificates of deposit, money market mutual funds, U.S. Treasury bills, U.S. Series EE bonds, and U.S. Series I bonds.

The best way to evaluate cash-management alternatives is to review the characteristics of each type of account, such as liquidity, required minimum balances, interest rates, safety, costs, and benefits. Liquidity refers to how quickly and easily you can access your money. Required minimum balance refers to how much money must be in the account in order for you to qualify for specific benefits, such as a low interest rate or check-writing privileges. Interest rate refers to the Annual Percentage Rate (APR) of return received on the money in the account. Safety refers to the guarantee that the assets will be protected by either a direct guarantee (i.e., FDIC or NCUA insurance) or an indirect guarantee (i.e., the asset is a liability of the U.S. government). Costs are the costs associated with holding the account, including late fees, overdraft protection fees, and minimum balance fees. Benefits include special tax incentives that could make your earnings tax free at the state or federal level.

**Checking Accounts**

Checking accounts are the most common form of cash-management alternatives. Checking accounts generally come in two forms: (1) non-interest-bearing accounts and (2) interest-bearing accounts, also called negotiable order of withdrawal accounts (NOW). Because checking accounts allow immediate access to your funds, they are among the most liquid of all cash-management alternatives. However, with that high liquidity come low interest rates or even no interest at all. The rates on interest-bearing accounts are generally low and fixed.

Minimum balances on checking accounts are generally low, but there is some variation depending on the type of account. Checking accounts from banks are very safe; they are insured by the FDIC, and they carry no penalties for early withdrawal. Banks, credit unions, and other financial institutions can give you more information about setting up a checking account.

**Savings Accounts**

Savings accounts, also called time deposits, are next on the cash-management list. In the past, withdrawals and other transactions that affected a savings account would be registered in a “passbook”; hence the term “passbook savings” was coined. Savings accounts are now called statement accounts, and the customer receives a monthly statement from the financial institution.

Money in a savings account is deposited for a specific term (e.g., a day, week, month, or quarter) and hence is less liquid than money in a checking account. However, with the reduction in liquidity there is usually a slight increase in interest rate. Required minimum balances are low in savings accounts, although the amount does depend on the type of account. Savings accounts are very safe and are generally FDIC-insured; however, there are penalties for early withdrawal. Information on setting up savings accounts is available from banks, credit unions, and other financial institutions.

In addition to checking accounts and savings accounts there are other, less-traditional alternatives you should evaluate and understand.
Money Market Accounts (MMA)

An MMA is similar to a savings account, but instead of having a fixed rate of interest, its interest rate varies with the current level of market interest rates. Such accounts are also known as money market demand or deposit accounts.

MMAs are liquid and give you the ability to add and withdraw funds on a daily basis. Even though liquidity is high in MMAs, interest rates are variable and are generally higher than rates on savings accounts. Required minimum balances may be much higher than those required for savings accounts, from $500 to $1,000 depending on the account. MMAs are safe and are generally FDIC-insured. Other features of these accounts may include limited check-writing ability. There are generally no penalties for early withdrawal from an MMA, as long as your balance does not drop below the account’s minimum balance. Information on money market accounts and how to purchase them can be found in the Wall Street Journal and at various financial institutions and brokerage houses.

Certificates of Deposit (CDs)

Certificates of deposit pay a fixed rate of interest for keeping funds in your account for a fixed period of time. They are similar to savings accounts and time deposits. Interest rates are fixed for the life of the deposit, and the longer the term of the deposit, the higher the interest rate.

CDs are less liquid than other cash-management alternatives because the money must be deposited for a certain amount of time; however, with that reduction in liquidity comes a higher interest rate. The required minimum balance for a CD account is generally higher than it is for a savings or checking account. CDs are very safe and are generally FDIC-insured. CDs enforce penalties if you withdraw money before the end of the specified term. Information on CD rates and how to purchase CDs is available from the Wall Street Journal and various financial institutions.

Money Market Mutual Funds (MMMFs)

Money market mutual funds are not bank instruments; they are actually funds managed by mutual fund companies. These companies pool funds from many investors to buy a portfolio of securities. Because they are working with pooled assets, mutual fund companies can usually purchase higher-yielding investments that give higher returns to investors. Investments can be either taxable securities or tax-advantaged securities, such as municipal bonds, which are federal tax free.

MMMFs are liquid—you can generally deposit and withdraw money every day. While the increased liquidity results in lower interest rates, rates are still competitive (the rates depend on the individual funds). Minimum balances for MMMFs are much higher than for checking or savings accounts and may exceed $3,000. While MMMFs are generally considered safe, they are not FDIC- or NCUA-insured. Other features of such accounts may include limited check-writing ability. MMMFs are bought by the share and carry an administrative fee. There are no penalties for early withdrawal. Information on money market mutual funds can be found at various brokers and at www.bankrate.com.
MMMFs may be either taxable or tax free depending on the type and location of the securities the MMMF invests in. If the MMMF invests only in government securities, the interest earned (but not the capital gains) is state tax-free. If the MMMF invests only in municipal securities, then the interest is federal tax-free. If the MMMF invests only in municipal securities from your state, the interest may be both federal and state tax-free.

**U.S. Treasury Bills**

Treasury bills (T-bills) are short-term notes of debt that are issued by the federal government. They can take from one to 12 months to mature, and investors do not receive explicit interest on these assets. T-bills are purchased at a discount, and when the bill matures, investors receive the full face value.

T-bills can be very liquid, depending on maturity. Even though they are liquid, interest rates are competitive with current market rates. As the maturity of the T-bill increases, its interest rate generally increases. The required minimum balance of $1,000 is high. T-bills are very safe assets, even though they are not guaranteed by the FDIC, because they are government debt. Other benefits to T-bills include their exemption from state and local income tax; also, since T-bills are purchased at a discount and do not yield explicit interest payments, you do not pay taxes on interest until the bill matures. There are penalties for early withdrawal. Information on T-bills and how to purchase them is available from the *Wall Street Journal, www.treasurydirect.gov*, and various brokerage institutions.

**U.S. Series EE Bonds**

U.S. Series EE bonds are government savings bonds that are issued by the Treasury in small denominations (as small as $25); these bonds have variable interest rates. Bonds are purchased at face value, and when the bonds mature, principle and interest is paid. The interest rate paid on EE bonds is fixed for six months; interest rates are set biannually.

Series EE bonds are liquid in the sense that they can be cashed at any time after one year. Ideally, you should hold them for at least five years to ensure there will not be an interest penalty; after five years, these bonds can be cashed at any bank. Interest rates are competitive. Required minimum balances are low, and these bonds can be purchased in denominations from $25 to $10,000. Series EE bonds are very secure because they have an implicit government guarantee. Other features include interest being exempt from state and local income tax; interest may even be federal tax-free if the interest and principal are spent on eligible college expenses (mainly tuition and fees). One drawback to Series EE bonds is that there is a three-month interest penalty if you withdraw funds before the five-year term is over. Information on rates and how to purchase Series EE bonds can be found at [www.savingbonds.gov](http://www.savingbonds.gov). Investors can purchase savings bonds for up to $10,000 per year in electronic bonds and another $5,000 per year from their IRS tax refund. If your Modified Adjusted Gross Income (MAGI) is above specified limits in the year you cash the bonds, you cannot exclude the interest income from your income taxes for EE and I Savings bonds (see Table 1).
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<table>
<thead>
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<th>Year</th>
<th>Filing Single</th>
<th>Married Filing Jointly</th>
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<tbody>
<tr>
<td>2011</td>
<td>$71,100–86,100</td>
<td>$106,650–136,650</td>
</tr>
<tr>
<td>2012</td>
<td>$72,850–87,850</td>
<td>$109,250–139,250</td>
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<td>2013</td>
<td>$74,700–89,700</td>
<td>$112,050–142,050</td>
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<tr>
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<td>$76,000–91,950</td>
<td>$113,950–143,900</td>
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<tr>
<td>2015</td>
<td>$77,200–92,199</td>
<td>$115,751–145,749</td>
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Your Modified Adjusted Gross Income is your adjusted gross income with certain items added back, such as foreign income, foreign-housing deductions, student-loan deductions, IRA contribution deductions, and deductions for higher-education costs.

### U.S. Series I Bonds

U.S. Series I bonds are government savings bonds that are also issued by the Treasury in small denominations (as small as $25). Series I bonds have variable interest rates that are linked to inflation and a specified real rate of return.

Series I bonds, like Series EE bonds, are liquid in the sense that they can be cashed at any time. Ideally, you should hold them for at least five years to ensure there will be no interest penalty; after that they are very liquid and can be cashed at any bank. Interest rates are variable and change with inflation. Required minimum balances are low, and bonds can be purchased in denominations ranging from $25 to $10,000. Series I bonds are very secure because they have an implicit government guarantee. There is a three-month interest penalty if you cash these bonds before five years. Other features include interest being exempt from state and local income tax; interest may even be federal tax-free if the interest and principal are spent on eligible college expenses (mainly tuition and fees). Because interest is not paid until maturity, there are no taxes on interest until the bond is redeemed. Information on rates and how to purchase Series I bonds can be found at [www.savingbonds.gov](http://www.savingbonds.gov). Series I bonds have the same MAGI limits as Series EE bonds above (see Table 1).

### Comparing Cash-Management Alternatives

When comparing cash-management alternatives, it is critical to understand and accurately compare the following five areas:

1. **Interest rates:** Certain cash-management assets are compounded annually, others are compounded quarterly, and still others are compounded daily. Use a consistent method of comparing interest rates when considering cash-management alternatives. Because of the Truth in Savings Act of 1993, financial institutions are required to report the rate of interest using the annual percentage yield (APY). Look for this yield when comparing alternatives. It includes the impact of different compounding periods. The APY = \((1 + [\text{APR}/\text{Periods}])^{\text{Periods}} - 1\).

2. **After-tax returns:** While certain assets may have lower returns, these same assets may be exempt from federal, state, and local taxes. Consider tax advantages and after-tax returns. The after-tax return equals your before-tax return (the reported APY) times one minus your marginal tax rate (the tax rate of each additional dollar of earnings).
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\[ \text{After-Tax Return} = \text{Before-Tax Return} \times (1 - \text{Marginal Tax Rate}) \]

Your marginal tax rate equals your federal marginal tax rate plus your state marginal tax rate (if applicable) plus your local tax rate (if applicable).

If any of the cash-management assets have tax advantages, meaning they are federal and/or state tax-free, calculate the equivalent taxable yield (ETY). The ETY is the yield you would have to make on an equivalent taxable asset to give you the same after-tax return as the tax-advantaged asset.

To calculate the ETY, first calculate the after-tax return of the tax-advantaged asset. Second, divide that after-tax return by one minus your marginal tax rate (your marginal federal, state, and local tax rates).

\[ \text{ETY} = \frac{\text{After-Tax Return}}{1 - \text{Marginal Tax Rate}} \]

To gain a better understanding of after-tax returns and equivalent taxable yields, see Learning Tool 26: After-Tax, ETY, and Other After-Inflation Returns in the Learning Tools section of the website.

3. Inflation: Remember, it is not what you earn but what you keep after taxes and inflation that makes you wealthy. Calculating the return after inflation, or the “real return,” is important. The real return is calculated using the following equation:

\[ \text{Real Return} = \left( \frac{1 + \text{nominal return}}{1 + \text{inflation}} \right) - 1 \]

If inflation is a concern for you, there are inflation-linked bonds, such as U.S. Government Series I bonds and Treasury Inflation-Protected Securities (TIPS), that take changes in inflation into account to determine yields.

4. Safety: Some investors consider all deposits at financial institutions to be safe. However, some banks and other financial institutions have historically made decisions that are not consistent with proper fiscal responsibility, and some investor deposits have been lost. FDIC and NCUA insurance are available for up to $250,000 per depositor (not per account). If your assets are greater than $250,000 and you want more insurance, deposit your assets in multiple federally insured institutions.

Although MMMFs are not insured, they may be invested in a diversified portfolio of government bonds, which are guaranteed by the government. MMMFs may also be invested in short-term corporate bonds, which have very little risk. A certain degree of safety exists because of this broad diversification and because this debt is very short-term (often less than 90 days). While there may be some concern for safety with MMMFs, it is not generally a major concern.

5. Maturity and interest-rate adjustment periods: When considering cash-management alternatives, consider the maturity of the investment. Some of these assets require the investment to be held for a minimum amount of time, e.g., CDs and EE/I bonds. In addition, consider how
often the interest rate could change and the potential impact of those rate changes on your financial situation.

In summary, your choice of cash-management assets depends on five areas. First, your goals and risk tolerance: What is the purpose for the money you are investing? Second, the type of asset preferred: Are you investing in CDs, MMAs, MMMFs, or savings bonds? Third, your tax situation: What is your marginal tax rate? Fourth, the location of the financial assets: If they are municipal securities, are they municipal bonds from your state or from another state, and is there a state income tax in your state? And fifth, your use of the funds from savings bonds: Will the principal and interest be used for tuition at a qualified school?

Know the Different Types of Financial Institutions and Understand How They Can Help You Meet Your Financial Goals

There are many different types of financial institutions that offer the various cash-management alternatives we have just discussed. The distinction is blurring between which services are offered by traditional banks and which are reserved for non-bank financial institutions.

There are two major types of financial institutions: banks (i.e., deposit-type financial institutions) and non-banks (i.e., non-deposit-type financial institutions). The choice of institution you use depends on which institution will best serve your needs and help you achieve your goals the fastest.

Deposit-type financial institutions (i.e. banks) mainly fall under four classifications: commercial banks, savings and loan associations, credit unions, and Internet banks.

- Commercial banks generally compete by offering the widest variety of services; however, they usually do not offer the highest interest rates on deposits or the lowest interest rates on loans.

- Savings and loan associations have slightly different ownership arrangements than banks but are similar to commercial banks. Savings and loan associations may offer slightly higher rates on deposits and somewhat lower rates on loans than commercial banks.

- Credit unions are similar to savings and loan associations, but they are not-for-profit organizations and are owned by their members. They can sometimes offer higher rates on savings accounts and lower rates on loans because they are not driven to provide a profit to shareholders.

- Internet banks are electronic banks that do not have traditional brick-and-mortar branches. Because they have fewer branches, employees, and capital expenditures than traditional banks, they can generally pay higher interest rates on deposits and charge less for loans than traditional banks do.

Non-deposit-type financial institutions (i.e. non-banks) consist of two main kinds: mutual fund companies and brokerage firms.
Mutual fund companies have broken into the banking arena. With many mutual fund companies, you can now write checks against your mutual fund account. Brokerage firms have also gotten into the act. Many brokerage firms now issue credit cards and ATM cards, make loans, and allow you to write checks. Brokerage firms offer these and many other account features that were once reserved for traditional banks.

Both banks and non-banks offer online financial services, which allow you to access bank balances and other resources 24 hours a day. With the blurring of roles between deposit and non-deposit institutions, banks can now offer investment services, and non-banks can offer check-writing privileges, credit cards, and savings accounts.

Choosing a financial institution is a challenge. The key is to consider what you want to accomplish (your goals) and then to consider what the financial institution can provide. What do you look for in a financial institution? Your choices should ultimately and most importantly reflect your understanding of yourself and your investment needs. Consider these questions:

- Are you looking for low costs, low fees, and high returns on deposits?
- What services are important to you?
- Do you need loans, mortgages, or working capital for a small business?
- How important is safety for your deposits?
- Do you require government insurance? If so, know that this factor limits the types of institutions you can choose.
- What services does the financial institution provide? If all you require is a high return on your cash-management assets, then your choices are much broader.

The main goal of cash management is to give you sufficient liquidity to help you achieve your financial goals. Only you can determine which goals are most important to accomplish now. Please note that you do not need to limit yourself to just one financial institution to help you achieve your goals. You can use more than one financial institution to take advantage of each institution’s strengths.

Choosing a Financial Institution

In choosing a financial institution, consider the traditional three Cs of banking: costs, convenience, and consideration.

Cost: How expensive is it? What are the monthly fees? Minimum balances? Charges per check? Balance-dependent scaled fees? Interest rates received on deposits? Interest rates charged on loans?

Convenience: How convenient is it for you to work with the institution? What is the availability of branches and ATMs? Are they close to your home and work? Does the institution offer overdraft protection, safety deposit boxes, credit cards, etc.?
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**Consideration:** Does the institution offer personalized financial advice and give attention to detail? How important is it that a bank officer remembers your name and is happy to work with you?

The options for choosing a financial institution are many and varied. It is critical that you understand your goals and then work with the institution—or institutions—that offer you the most benefits. Note that whichever institution or institutions you choose, it is your responsibility to make sure that they do what they say they will and that they do it correctly.

**Understand the Time Commitment Necessary to Effectively Manage Your Finances**

The authors of *The Millionaire Next Door* point out:

> People who become wealthy allocate their time ... in ways consistent with enhancing their net worth. [They] allocate nearly twice the number of hours per week to planning their financial investments as [those who do not become wealthy] do.\(^2\)

If those who become wealthy allocate nearly twice as many hours per week to planning their financial investments as those who do not become wealthy, shouldn’t we, who are trying to become financially self-reliant, do the same?

We all have the same 24 hours in each day to spend however we see fit. It is important that you plan and spend sufficient time on your financial responsibilities each week to ensure you are moving toward your financial goals. Unless you are *spending one or two hours per week* on your financial responsibilities, such as your goals, budget, insurance, retirement, and investment framework, it may be difficult for you to reach your personal and financial goals.

Set aside time once a week to review and update your goals and review what you want to accomplish in life. Update your budget. How are you doing with maintaining your budget? Balance your cash-management accounts and ensure that all charges and balances are correct by comparing them to your credit card and electronic fund transfer statements. Be alert to the possibility of human error and computer problems; these kinds of mistakes can happen quite often.

Use wisdom in your cash-management framework. Never deposit cash in an ATM; there is no way to confirm that deposit. If you do find mistakes in your statement, contact your financial institution quickly and correct the error. Write or call your institution within 60 days of receiving your statement, state the problem, and correct the error. If the problem cannot be resolved, write to the address below:

Board of Governors of the Federal Reserve System  
Division of Consumer and Community Affairs  
20th Street and Constitution Avenue, N.W., Stop 801  
Washington, D.C. 20551
Summary

Cash management refers to how you manage your cash and liquid assets. Liquid assets allow you to invest your money and earn an acceptable return while at the same time keeping your assets available to pay bills or cover emergencies. While liquid assets are low-risk and are great for emergency funds, their return is generally very low. The challenge of cash management is to balance the risk of lower returns with the need for liquidity.

Good cash management is important because it will help you earn more income on your liquid assets; in this way, cash management can help you achieve your personal goals. There are three main trade-offs regarding cash management. The first is the risk-return trade-off: higher liquidity means lower returns. The second is the spending-investment risk: cash on hand is easier to spend than other financial assets. The third trade-off is the return–time expended risk: since returns are smaller with existing liquid assets, the time you spend managing those assets should be much less than the time you spend managing other types of financial assets. In spite of these three trade-offs, you can still influence your portfolio in a positive and significant way by using your liquidity wisely.

Traditional cash-management alternatives include checking accounts and savings accounts. Less traditional, but still important, alternatives include money market deposit accounts, certificates of deposit, money market mutual funds, asset-management accounts, U.S. Treasury bills, U.S. Series EE bonds, and U.S. Series I bonds. While rates for each of these assets can change from day to day, you can find current rates at major financial Internet sites and in the pages of most financial newspapers, such as the Wall Street Journal.

When you are comparing cash-management alternatives, it is critical to accurately evaluate four areas. First, use a consistent method for comparing interest rates. Cash-management assets can be compounded annually, quarterly, or daily. Use a consistent method of comparing interest rates when considering cash-management alternatives.

Second, use a consistent method of comparing after-tax returns. While certain assets may have lower returns, these same assets are often exempt from state and local taxes, and they may be exempt from federal taxes if the assets are used for college tuition. Consider tax advantages and after-tax returns. If the assets have tax advantages, calculate the equivalent taxable yield; the taxable yield is the yield you would have to make on a taxable asset to give you the same after-tax return as the tax-advantaged asset.

Third, consider inflation. Remember, it is not what you earn but what you keep after taxes and inflation that makes you wealthy. Calculate the “real return” of each of your assets.

Fourth, consider safety. FDIC and NCUA insurance are available for amounts up to $250,000 per depositor (not per account).

We concluded by discussing different types of financial institutions that offer the various types of cash-management alternatives. The distinction is gradually blurring between which services are offered by traditional banks and which services are reserved for non-bank institutions.
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There are two major types of financial institutions: banks (deposit-type financial institutions) and non-banks (non-deposit-type financial institutions). Which institution you use depends on which will serve your needs the best and which will help you achieve your goals the fastest.

Deposit-type financial institutions generally fit into four categories: commercial banks, savings and loan associations, credit unions, and the newer Internet banks. The two main types of non-bank financial institutions are mutual fund companies and brokerage firms.

Assignments

Financial Plan Assignments

Your assignment is to review your current cash-management framework. What interest rate(s) are you earning on your savings account(s)? What are you paying in fees and expenses on your savings account(s)?

What interest rate(s) are you earning on your checking account(s)? What are you paying in fees and expenses on your checking account(s)?

Which cash-management vehicles should you be using to help you get higher interest rates on savings or checking accounts and still maintain adequate liquidity to meet your needs for cash? Are there less-traditional alternatives, such as Internet banks, that can give you a higher return with the same amount of liquidity and safety?

Learning Tools

The following Learning Tool may be helpful as prepare your Personal Financial Plan:

26. After-Tax, ETY, and After-Inflation Returns

This document is an example of a spreadsheet you can use to calculate your after-tax returns, equivalent taxable yields on tax-advantaged assets, and after-inflation returns on all assets.

Review Materials

Terminology Review

Adjustments. Adjustments are deductions from total income allowed by the IRS to get your Adjusted Gross Income (AGI). These include (among others): qualified medical savings contributions (flexible spending accounts), contributions to individual retirement accounts (IRA), contributions to Health Savings Accounts (HSAs), student loan interest and tuition and fees deduction (IRS 970) (within limits), one-half self-employment tax, etc. Losses include net capital losses (up to $3,000), sole proprietorship losses, and active participation real estate losses.
Average tax rate. This is the average amount of every dollar you earned that was paid for federal income taxes. It is generally calculated at income taxes paid divided by AGI or Total income.

Capital gains taxes. These are taxes you pay on assets held a specific period of time.

Credits. Credits are dollar for dollar reductions in your taxable liability. Credits are worth significantly more than deductions.

Deductions. Deductions are IRS allowed reduction amounts (standard deduction) or taxpayer determined amounts (itemized deductions) to get taxable income from your Adjusted gross income.

Effective marginal tax rate. This is the average amount of every dollar you earned that paid for all local, state, and federal income taxes.

Excise “sin taxes” and state sales taxes. These are taxes imposed when goods are purchased.

Exemptions. An exemption is an amount of money set by the government that you can deduct for each qualifying person in your household.

Gift and estate taxes. These are taxes imposed when assets are transferred from one owner to another.

Gross Income. Gross income for tax purposes is all income, unless specifically excluded or deferred.

Income Taxes. Income taxes are a progressive tax meaning that the more you earn the more you pay.

Itemized Deductions. These are allowable deductions (if you itemize) and include: charitable contributions (cash, in kind, and/or mileage), home mortgage interest, medical expenses (>10% AGI), un-reimbursed qualified job expenses (> 2% AGI), casualty and theft expenses (> 10% AGI), etc.

Local income taxes. These are uncommon; but some larger cities, for example, New York City, impose such a tax.

Long-term capital gains. These are gains from assets held for 366 days or longer. These are taxed at a preferential tax rate.

Marginal tax rate. This is the percentage of the last dollar that you earned that will go toward federal income taxes.

Medicare. This is a health care insurance program for elderly and disabled.
Non-refundable credits. Non-refundable credits include child tax, child and dependent care, elderly and disabled, adoption, hope learning, and lifetime learning and are only good up to the amount of taxes owed.

Real estate and property taxes. These are taxes imposed annually or semi-annually on assets owned.

Refundable Credits. These are credits paid to the taxpayer even if the amount of the credits exceeds the tax liability.

Short-term capital gains. These are gains from assets held less than 366 days. These are taxed at your ordinary tax rate.

Social Security or FICA. This is a mandatory insurance program administered by the federal government that provides support in the event of death, disability, health problems, or retirement.

State taxes. Most states impose an income tax; however, some, like Texas and Nevada do not. Alaska actually pays you to live in that state.

Tax Freedom Day. This is the day you stop working for the government and begin working for yourself.

Tax Tables. These are tables to help you calculate how much taxes you owe.

Taxes. These generally are your largest single annual expense. These may include personal, income, business, transportation and other taxes. Taxes can further be divided into Federal taxes, or taxes we pay the Federal government; State taxes, or taxes we pay the state government, and local taxes, which are taxes we pay the local government.

Review Questions

1. What are the three main trade-offs regarding cash management?
2. What is the key to using liquidity wisely? Why?
3. What is an emergency fund? Why should you have one? How much should you have in your emergency fund?
4. What are six account characteristics that can be used to analyze cash-management alternatives?
5. What are the four key areas used to compare cash-management alternatives?

Case Studies

Case Study 1

Data

Bill is an investor in the 15-percent federal marginal tax bracket and 7-percent state tax bracket. Suzie is an investor in the 35-percent federal tax bracket and 7-percent state tax
They are each considering purchasing one of the following bonds for their investment portfolios:

1. A 6.5-percent corporate bond (all taxable)
2. A 4.75-percent municipal bond (federal tax free)
3. A 5.0-percent treasury bond (state tax free)

Calculations

Calculate the after-tax returns for each of the above bonds for both Bill and Suzie. Which bonds should Bill and Suzie purchase and why?

**Case Study 1 Answers**

**Calculations**

Bill (Taxable return * (1 – tax rate) = after-tax return)

- CB: 6.50% * (1 – (.15 + .07)) = 5.07%
- MB: 4.75% * (1 – .07) = 4.42%
- TB: 5.00% * (1 – .15) = 4.25%

Suzie

- CB: 6.5% * (1 – (.35 + .07)) = 3.77%
- MB: 4.75% * (1 – .07) = 4.42%
- TB: 5.0% * (1 – .35) = 3.25%

**Recommendations**

The corporate bond is the best for Bill. The municipal bond is the best for Suzie.

**Case Study 2**

**Data**

Kaili and Taylor are in the 25-percent federal and 7-percent state tax bracket. They have a $3,000 wedding gift that they will invest either for school tuition or for a vacation.

**Calculations**

If they invest the $3,000 in a U.S. Series I bond that earns 4.8 percent, what is the equivalent taxable yield (ETY) if the principal and interest are

A. used to pay for law school tuition?

B. used to pay for a family vacation?

**Case Study 2 Answers**

**Calculations**

A. If Kaili and Taylor use the principal and interest for tuition, the bond is both federal and state tax exempt. The formula is

Return after tax = return before tax * (1 – tax rate)

Since this asset is federal and state tax free, the equivalent yield on a taxable bond would be the tax-free return divided by 1 minus the tax rate, which includes both federal and state taxes (mathematically, you divide both sides of the equation by (1 – tax rate)).

4.8% = x * (1 – (.25+.07)) or x = 4.8% / .68

x = 7.06%
B. If Kaili and Taylor use the principal and interest for a family vacation, it is only state tax-free.
The after-tax rate yield is
\[
\text{After-tax rate} = 4.8\% \times (1 - .25) \text{ or } 3.6\%
\]
The equivalent taxable yield is
\[
\text{ETY} = 3.6\% / (1 – (.25 + .07))
x = 5.29\%
\]

**Case Study 3**

**Data**
Your buddy Paul asks you about real returns. After you show him the correct method for calculating real returns, he wants to know what his real return is on his money market account. He shows you his brokerage statement, where he is earning a 4.5-percent yield. He also estimates that inflation will be 3.5 percent this year. Paul is in the 35-percent federal and 7-percent state marginal tax brackets.

**Calculations**
What is his after-tax, after-inflation return?

**Recommendations**
What are the implications of this result for cash-management decisions?

**Case Study 3 Answers**

**Calculations**
\[
\text{After-tax return} = \text{before-tax return} \times (1 – (\text{federal + state marginal tax rate}))
\]
\[
4.5\% \times (1 – (.35 + .07)) = \text{The after-tax return is } 2.61\%
\]
\[
\text{Real Return} = \left[\frac{(1 + \text{after-tax return})}{(1 + \text{inflation})}\right] - 1
\]
The after-tax, after-inflation return is: \((1.0261/1.035) – 1 = –.86\%\)
Note: You must take out taxes before you take out the impact of inflation.

**Implications**
- It is very difficult to do much more than keep up with taxes and inflation with liquid assets.
- Only the amount needed to meet immediate emergency needs and short-term goals should be invested in this account.

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1 “To the Boys and to the Men,” *Ensign*, Nov. 1998, 51