

5. Cash Management: Making the Little Things Count

Introduction

The term “cash management” is the process of collecting and managing and investing cash for the short-term. It 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.

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:

- A. Understand the importance and principles of cash management.
- B. Know the different types of financial institutions the need to spend time each week to effectively manage your finances.
- C. Understand the different cash-management alternatives and how to compare them.
- D. Understand and create your Cash Management Plan.

Understand the Importance and 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.

Trade-offs of Cash Management

There are three main trade-offs regarding cash management. The first is the risk-return trade-off: higher liquidity means less risk and 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 [spouse] 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.

Principles of Cash Management

The principles of effective cash management are:

- 1. Know yourself, your vision, goals, plans and budget.** It is critical to know what is important to you as you work to make the little things count.
- 2. Seek, receive and act on the Spirit's guidance.** This includes seeking diligently through study and prayer, living worthy of the Spirit's guidance, and then acting on it once it is received.
- 3. Understand your key areas of cash management.** Cash management funds are "emergency funds" where liquidity, the ability to convert funds to cash quickly, is necessary.
- 4. Seek for the highest return in terms of after-tax and equivalent taxable yield.** Make this consistent with your financial safety, interest rate, risk tolerance and liquidity requirements.
- 5. Monitor and revise your cash management strategy as necessary.** This will help you to meet your changing personal and market environments.

Finding Balance

As you work on managing your short-term finances, finding balance among doctrines, principles and application is important in helping you become better. We have shared some ideas for principles, although I am sure you can find others that are important to you. Below are a few ideas for doctrines on which the principles are based. As you strive to increase your ability and effectiveness in managing your cash, I recommend you study and ponder the doctrines and principles supporting cash management.

<u>Principles</u>	<u>Doctrines</u>
Know yourself, your vision, goals, and plans	Identity
Seek, receive and act on the Spirit's guidance	Obedience
Understand the key areas of cash management	Agency
Seek the highest return and safety	Agency
Monitor and revise your plan as needed	Accountability

From Obedience to Consecration

From the principles and doctrines, we can see that we are not just working on being wise with our liquid assets, which is an application. From a higher perspective, or increased vision,

We are children of Heavenly Parents (identity), striving to live worthy of the Spirit (obedience), using the talents and skills we have been blessed (stewardship), with a Plan to be wise stewards and agents over our short-term finances (agency). This is important as the small things can add up over time (accountability), helping us so that we can accomplish our personal missions and family vision and goals.

Know Types of Financial Institutions and the Importance of Spending Time on your Finances

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 funds in 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.?

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.

Making the Time Commitment

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

Understand Cash-Management Alternatives 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, short-term bond 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 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.

Chart 1. Checking Account Rates over Time



Source: St. Louis Federal Reserve at Fred.org

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.

A 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 (see Chart 2). Such accounts are also known as money market demand or deposit accounts.

Chart 2. Money Market Account Rates over Time



Source: Bankrate.com 2019/01/25

Money Market Accounts (MMA)

MMA's are liquid and give you the ability to add and withdraw funds on a daily basis. Even though liquidity is high in MMA's, 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. MMA's 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 (see Chart 3).

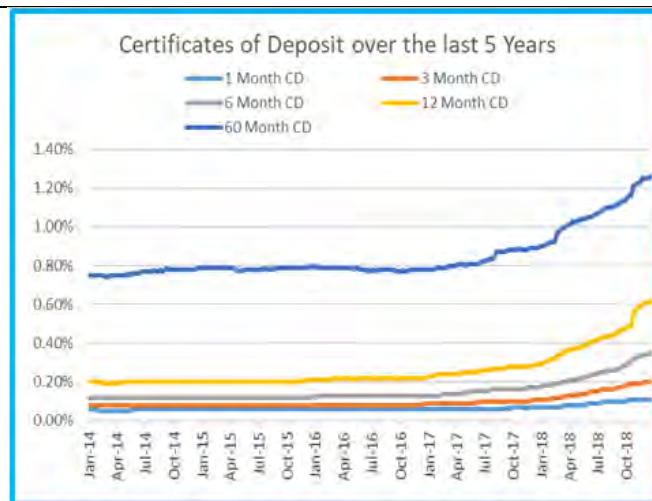
CDs are less liquid than other cash-management alternatives because the money must be deposited for a certain amount of time; however, with that reduction in liquidity comes a higher interest rate. The required minimum balance for a CD account is generally higher than it is for a savings or checking 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 <https://www.bankrate.com/>.

Chart 3. CD Rates over time



Source: Fred.org 2019/01/25

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.

Short-term Bond Mutual Funds (STBMFs)

Chapter 5. Cash Management: Making the Little Things Count

Short-term bond mutual funds pool money from many investors to buy higher yielding debt securities, less than 1 year maturity. 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. We recommend you purchase no-load short-term mutual funds, which means they do not have a sales charge. You can review the structure and performance of these mutual funds on websites such as www.morningstar.com.

These STBMFs are generally very liquid. Because they are no-load funds, you can buy and sell easily. As mutual funds, they may have a required minimum balances. We will discuss where to find this information in a later section of this course. Interest rates are generally slightly higher than MMMFs, as the duration or maturity of these assets are a bit longer. These are not FDIC insured, and may be all taxable or tax free, depending on what the fund is invested in. To invest, contact a mutual fund company to set up an account and purchase a fund.

Chart 1. Cash Management Alternatives 2019

2019 Cash Management Asset Comparisons MBA 620/Fin418/Fin200 Financial Planning (1/26/19)									
Assets:	Traditional				Short-term Mutual Funds		Government Bills and Savings Bonds		
	Checking	Savings	Money Market (or MMDA)	Certificate of Deposit	Money Market Mutual Fund	Short-term Bond Funds	US Treasury Bills	EE Bonds	I bonds
Description:	Deposits held at a financial institution that allows withdrawals by checks and deposits on demand; hence, it is also called a demand account.	Deposits held at a financial institution that earn interest. Internet savings rates generally higher	A savings account that typically earns rates and that pays interest based on current money market interest rates. These have higher minimum balances.	Savings certificates with fixed maturity and interest rate, and can be issued in any denomination. Access to the funds is restricted until maturity date	An open-end mutual fund that invests in very short-term debt securities such as US treasury bills, municipal bonds, or commercial paper.	An open-end mutual fund that invests in short-term corporate bonds, municipal bonds, or Treasury securities with maturities less than one year.	Short-term US government debt obligations sold with different maturities and issued at a discount from par. Investors receive interest at maturity.	US government savings bonds where the interest rate is set every 6 months and tied to current market interest rates.	US government savings bonds with interest rates linked to US inflation and in which rates are set every 6 months
Liquidity:	Very liquid, daily	Very liquid, daily	Very liquid, daily	Fixed maturity on CDs	Somewhat liquid, get money in 3 days	Somewhat liquid, get money in 3 days	Somewhat liquid depending on maturity	After 12 months redeem at any bank	After 12 months redeem at any bank
Required Minimum Balances:	None	Low to none	Higher required minimum balances	Higher required minimum balances	Depends on mutual fund requirements	Depends on mutual fund requirements	Higher minimum balances	May purchase in denominations from \$25 to \$10,000	May purchase in denominations from \$25 to \$10,000
Interest Rates:	.05% - 2.5%	.05% - 2.0%, Internet .3% - 2.5%	.2% - 2.0%	1M: .11%, 3M: .20%, 6M: .35%, 1Yr: .62%, 3 Yr: 1.26%	Higher than MMA, 25-.5% depending on market conditions	Higher than MMMF, 35-.8% depending on market conditions	1M: 2.41%, 3M: 2.43%, 6M: 2.51%; 1Y: 2.58%; 5Y: 2.56, 10Y: 2.74%	Rates are reset every 6 months and are 0.1% through Apr. 30, 2019	Rates are reset every 6 months and are 2.83% through Apr. 30, 2019
Taxes:	Federal and State	Federal and State	Federal and State	Federal and State	Bonds - all taxable; Muni bonds - Fed. tax-free, if from your state - all tax free; US Treasuries - State tax free	Bonds - all taxable; Muni bonds - Fed. tax-free, if from your state - all tax free; US Treasuries - State tax free	State tax free	State tax free. If principle and interest used to pay for college tuition, then both Federal and State tax free	State tax free. If principle and interest used to pay for college tuition, then both Federal and State tax free
Safety:	FDIC insured	FDIC insured	FDIC insured	FDIC insured	Not FDIC insured but very short-term (<30 days)	Not FDIC insured but very short-term (< 1 year)	Not FDIC insured but a US debt obligation	Not FDIC insured but a US debt obligation	Not FDIC insured but a US debt obligation
Early Withdrawal Penalties:	None	None	None	Yes	None	None	Yes	Must hold 12 months then 3 months interest penalty before 5 years	Must hold 12 months then 3 months interest penalty before 5 years
Other features:	None	None	May have limited check writing	None	May have limited check writing	None	None	If proceeds used for tuition, then state and federal tax free	If proceeds used for tuition, then state and federal tax free
How to invest:	Contact a bank or other financial institution	Contact a bank or other financial institution	Contact a bank or other financial institution	Contact a bank or other financial institution	Contact a no-load mutual fund company to invest	Contact a no-load mutual fund company to invest	Purchase from www.treasurydirect.gov , banks and brokers	Purchase from www.treasurydirect.gov , \$10,000 per year plus \$5,000 from tax refund. Income limits apply	Purchase from www.treasurydirect.gov , \$10,000 per year plus \$5,000 from tax refund. Income limits apply

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 (see Chart 5).

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. 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).

U.S. Treasury Bills

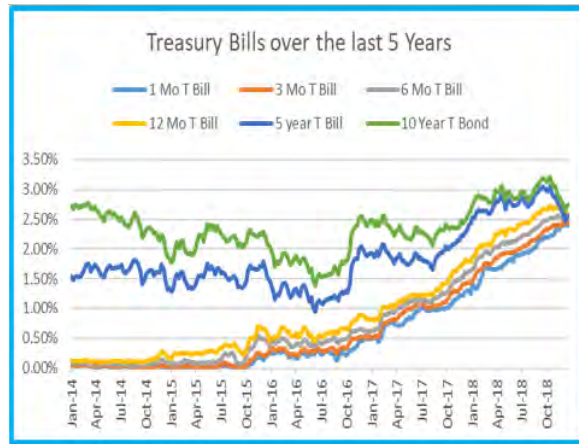
Treasury bills (T-bills) are short-term notes of debt that are issued by the federal government. They can take from one to 12 months to mature, and investors do not receive explicit interest on these assets. T-bills are purchased at a discount to their face value, and when the bill matures, investors receive the full face value (see Chart 4).

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 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 (see Chart 6).

Chart 4. Treasury Bill Rates over Time



Source: Fred.org 2019/01/25

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.

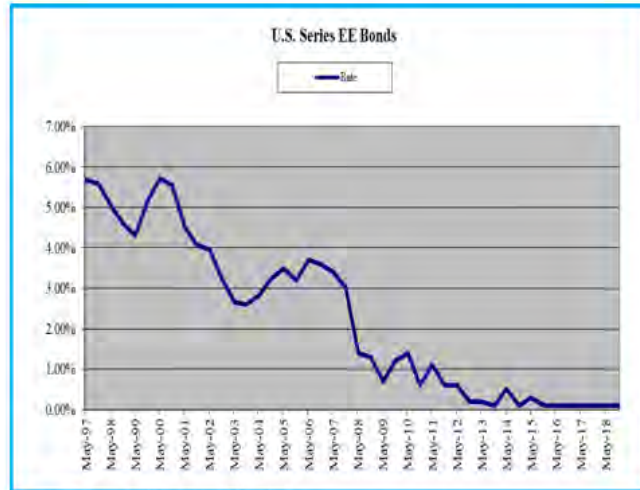
Table 1. US Government Series EE/I Savings Bonds MAGI Income Limits

Year	Filing Single	Married Filing Jointly
2014	\$76,000–91,950	\$113,950–143,900
2015	\$77,200–92,199	\$115,751–145,749
2016	\$77,550–92,550	\$116,300–146,300
2017	\$78,150–93,150	\$117,250–147,250
2018	\$79,700–94,700	\$119,550–149,550*

*Note: As of June 18, 2019, income limits were not yet available.

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.savingsbonds.gov. Series I bonds have the same MAGI limits as Series EE bonds above (see Table 1).

Chart 5. US Series EE Bond Rates over Time



Source: Treasurydirect.org 2019/01/25

Comparing Cash-Management Alternatives

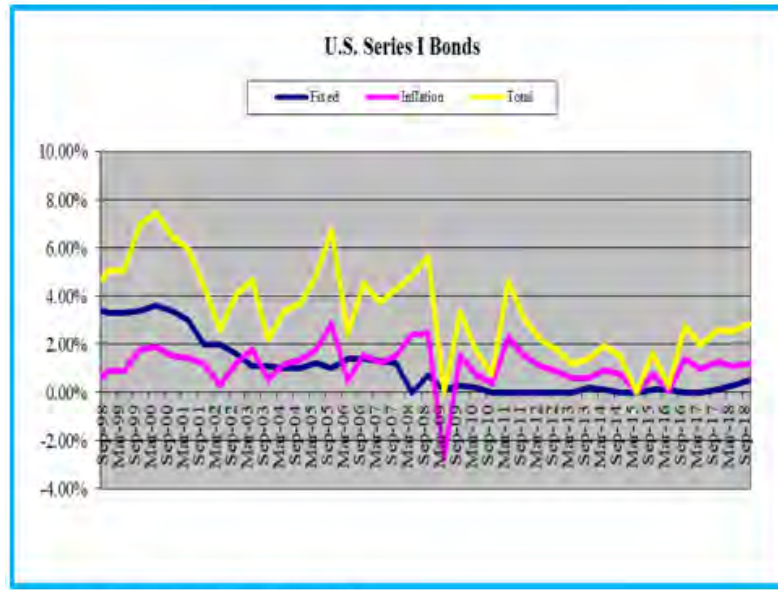
When comparing cash-management alternatives, it is critical to understand and accurately compare the following five areas:

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). The Annual Percentage Yield is the effective rate of return taking into account the effect of compounding interest. Look for this APY yield when comparing alternatives. It includes the impact of different compounding periods. The formula for APY = $(1 + [APR/Periods])^{Periods} - 1$.

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). The formula for After-Tax Return = Before-Tax Return * $(1 - \text{Marginal Tax Rate})$

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).

Chart 6: US Series I Bond Rates over Time



Source: Treasurydirect.org 2019/01/25

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). The formula for $ETY = \text{After-Tax Return} / (1 - \text{Marginal Tax Rate})$.

To gain a better understanding of after-tax returns and equivalent taxable yields, see [After-Tax, ETY, and Other After-Inflation Returns](#) (LT26).

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 as $\text{Real Return} = [(1 + \text{nominal return}) / (1 + \text{inflation})] - 1$ where nominal return is the return including inflation.

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?

[Understand and Create Your Cash Management Plan](#)

You need to develop a cash management plan for your finances. Following is one idea as to how you could do this.

1. Decide how many months of expenses you want in your emergency fund. Generally, 3 to 6 months is recommended. This is usually considered the time it takes to get another job.
2. Decide how you will divide your investments between the various cash management assets. I like to use a month's expenses as a good guide.
3. Diversify your cash management assets based on risk and return. Try to get the highest return at your level of liquidity, safety, and risk. Using additional assets discussed can help, and I try to diversify my assets over a number of different cash management alternatives.

Now that you have a few ideas, following are some ideas to help you with your Plan.

Vision

- Likely from your Plan for Life. Other ideas include:
 - Financial difficulties are not a concern.

- I will always have sufficient to meet by short-term liquidity needs.
- To be prepared for all emergencies in life.

Goals

- Have adequate liquidity for short-term needs, and keep additional funds invested for better returns.
- Keep a 4 month Emergency Fund at all times.
- When Emergency Fund is drawn down, replenish it immediately to bring it back to its target level.
- Pay off all credit cards monthly and not pay any interest.
- Strive for the highest interest rate consistent with my level of risk.
- Seek to try to keep up with inflation.

Plans and Strategies

- Auto pay a specific amount monthly into savings/investing accounts.
- Diversify my short-term instruments in checking, saving, CDs, US Savings Bonds, MMMFs, and short-term bond funds.
- I will have 3 months expenses in my Emergency fund, 1 month of expenses in checking, 1 month savings/CD (for higher interest), and 1 month in a no-load short-term bond fund (for better than MMMF interest rates).
- I will have 4 months expenses in my Emergency fund, 1 month expenses in checking, 1 month in savings/CD, 1 month in a short-term bond fund, and 1 month in I bonds (which you have held for one year and which can be used for educational expenses for your children as well).
- Since my income is so volatile, I will have 6 months expenses in my Emergency fund, 1 month in checking, 1 month in a MMMF, 2 months in a short-term bond fund, and 2 months in I bonds.
- Reevaluate my cash management holdings annually to make sure I am getting the best tax-adjusted return.
- Watch requirements of high-yield and other savings accounts carefully so I do not lose return from additional fees.

Constraints

- Laziness will keep you from good record keeping.
- Not living on a budget will make it difficult to save.
- Getting caught up in the things of the world will make it difficult to save.

Accountability

- I will share my vision and goals with my spouse and children.
- I will remember these things in prayer with Heavenly Father each night and morning.

Realize that these are just ideas, but may give some thought as to what you can and should

include in your Cash Management Plan.

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. It is the challenge of making every dollar count.

Cash management is part of your overall plan to be a better and wiser steward over your resources to accomplish your personal and family vision and goals. Do it well.

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. 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. 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).

Finally, you should develop a Cash Management Plan. This Plan will help you know how much you should put into the various cash management alternatives and why.

Assignments

Financial Plan Assignments

Your assignment is to put together your Cash Management Plan. I recommend you use the [PFP Cash Management Plan Template](#) (LT01-06) as a starting point. With this template, create your Plan. Include:

Vision. What is your vision for Cash Management. For most it is to have the cash available as needed so you do not need to dip into long-term savings for short-term needs.

Goals. Where would you like to be with your Cash Management Plan?

Plans and Strategies. Your Action Plan should be the cash-management vehicles 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, (Internet banks) that can give you a higher return with the same amount of liquidity and safety?

Start by reviewing 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)? Which of these current vehicles, if any, do you use? What rates are you earning on your checking and saving accounts? What monthly and other fees are you paying.

Constraints. What will keep you from accomplishing this Plan? What can you do to minimize that chance?

Accountability. Who will you be accountable to?

Learning Tools

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

[After-Tax, ETY, and Other After-Inflation Returns](#) (LT26)

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

After-Tax Return: This is your return after the impact of taxes has been taken into account. It is your before-tax return times 1 minus your marginal tax rate, or $R_{\text{Before tax}} * (1 - \text{Marginal Tax Rate})$

Annual Percentage Yield: The Annual Percentage Yield is the effective rate of return taking into account the effect of compounding interest and includes the impact of different compounding periods.

Cash Management: Cash management is the process of collecting and managing and investing cash for the short-term.

CD Laddering: the process of getting a higher interest rate by buying longer term CDs and purchasing them more often. For example, 1 month CD rates are too low, but you like 6 month rates. Take the amount of money you want to invest, divide it by 6 (or any number), then invest 1/6 of your money every month in a 6 month rate. You are creating a ladder of CDs, and every month you have money coming in. You would then reinvest that in another 6 month CD.

CDs: Certificates of Deposit are savings certificates with a fixed maturity date, a specific interest rate and can be issued in any denomination. A CD restricts access to the funds until the maturity date, and are generally issued by a commercial bank.

Checking Accounts: Checking accounts are deposits held at a financial institution that allows withdrawals and deposits on demand; hence, it is also called a demand account.

Commercial Banks. These financial institutions 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.

Corporate bonds: Debt instruments issued by corporations to fund the requirements of the companies.

Credit unions. These institutions 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.

EE Bonds: US government savings bonds where the interest rate is set every 6 months and tied to current market interest rates.

Equivalent Taxable Yield: This is the yield you would need to earn on a fully taxable security to give the same after-tax return that you receive on a tax advantaged security, i.e., a security that has specific tax advantages (i.e., tax free for Federal or State or both).

I Bonds: Inflation linked US government savings bonds, where the rates on the bonds are tied to inflation.

Inflation: This is the rate of general level of prices are changing

Interest Rates: This is the amount charged by a lender to allow a borrower the use of the funds. It is expressed as a percentage of principal; and typically noted as the APR or annual percentage rate.

Interest Rate Adjustments: With certain cash management instruments, the interest

rates can change over time, depending on a specific index and a spread.

Internet Banks: These financial institutions 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.

Maturity: Maturity is the amount time certain financial instruments require the investment to be held, i.e., 3 months, 5 years, or 10 years.

Money Market Account or Money Market Deposit Account: A non-financial account that pays interest based on current interest rates in the money markets. They typically require a higher minimum balance to avoid monthly fees and typically have a higher rate of interest.

Real Interest Rate: The real rate is the interest rate that has been adjusted to eliminate the effects of inflation.

Safety: Safety refers to the ability to invest without losing principle. Banks and credit unions have FDIC and NCUA insurance are available for up to \$250,000 per depositor (not per account).

Savings and loan associations. These institutions 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.

Savings Bonds: Bonds issued by the US government with tax advantages to encourage savings.

US Treasury Bills: These are short-term debt obligations of the US Government with a maturity of generally less than one year, are sold in different maturities, and are issued at a discount from par. Investors do not receive regular payments as with a coupon bond, but do receive interest at maturity.

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 bracket. 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)

$$\text{CB: } 6.50\% * (1 - (.15 + .07)) = 5.07\%$$

$$\text{MB: } 4.75\% * (1 - .07) = 4.42\%$$

$$\text{TB: } 5.00\% * (1 - .15) = 4.25\%$$

Suzie

$$\text{CB: } 6.5\% * (1 - (.35 + .07)) = 3.77\%$$

$$\text{MB: } 4.75\% * (1 - .07) = 4.42\%$$

$$\text{TB: } 5.0 * (1 - .35) = 3.25\%$$

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

$$\text{Return after tax} = \text{return before tax} * (1 - \text{tax rate})$$

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 $(1 - \text{tax rate})$).

$$4.8\% = x * (1 - (.25 + .07)) \text{ or } x = 4.8\% / .68$$

$$x = 7.06\%$$

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

$$\text{After-tax rate} = 4.8\% * (1 - .25) \text{ or } 3.6\%$$

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

$$\text{After-tax return} = \text{before-tax return} * (1 - (\text{federal} + \text{state marginal tax rate}))$$

$$4.5\% * (1 - (.35 + .07)) = \text{The after-tax return is } 2.61\%$$

$$\text{Real Return} = [(1 + \text{after-tax return}) / (1 + \text{inflation})] - 1$$

$$\text{The after-tax, after-inflation return is: } (1.0261 / 1.035) - 1 = -.86\%$$

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

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

² Thomas J. Stanley and William D. Danko, *The Millionaire Next Door*, Pocket Books, New York, 1996, 71.

