

## Portfolio Management of Money Market Funds

**M**oney market mutual funds have become an essential cash management tool for both institutions and individuals. They were created in the 1970s for investors disappointed with the yields available on bank savings accounts, which at the time were limited by federal regulation.<sup>1</sup> Through money market funds, those investors could pool their funds together to buy higher-yielding short-term alternatives that were then generally available only in very large denominations. Money market funds quickly became a staple investment for both individuals and businesses. By the end of 2009, their assets topped \$3 trillion, equal to roughly 30 percent of total fund industry assets.

While the benefits of owning a money fund have always been clear, the risks have been less so. Investors don't expect to take a loss on shares of a money market fund. They anticipate instead that every dollar put into the fund will be returned, plus interest. That's a reasonable expectation, because money market funds are designed to maintain a NAV of \$1.00 per share. While the NAV of other types of mutual funds fluctuate daily, the NAV of money funds stays steady—usually, that is.

As investors learned to their shock in the 2008 credit crisis, the NAV of money market funds can indeed fall below \$1.00—meaning that investors do bear a risk of loss, however small. This chapter explores the inner workings of money market mutual funds: how they maintain a steady NAV and the risks to that stability.

This chapter reviews:

- The stable \$1.00 NAV and what can go—and has gone—wrong to make that NAV fluctuate
- The types of securities held by money market funds

- The investment process used to manage money market funds
- The role of money funds in the U.S. financial system, particularly during the credit crisis of 2008

**Note:** Before you read on, please note that we assume throughout this discussion that you are familiar with fixed income terminology. If that's not the case, you might want to turn first to the appendix to Chapter 6, which reviews bond basics. Both bonds and money market instruments are types of fixed income investments and, therefore, share the same fundamental characteristics.

## **HOW—EXACTLY—THE \$1.00 NAV WORKS**

At the end of each business day, money market funds, like all other mutual funds, must calculate and publish a NAV that equals the aggregate value of all of their holdings minus any liabilities. For all funds other than money funds, this NAV reflects the market value of the securities held in the fund.

But money market funds are different. If they meet certain tests, as set out in the SEC's Rule 2a-7, they can use the *amortized cost* accounting method to compute their reported NAV.<sup>2</sup> This method allows them to reflect the price paid for the security—rather than its current market value—in the NAV calculation.<sup>3</sup> No other mutual funds use this method.

Why is this treatment fair? Why don't money funds have to report a market value NAV? Because the securities in money market funds are of very high quality and have only a very short time to maturity. As a result, the odds are very high that investors will get their money back when the securities come due and that their values won't vary much between now and then. That means that the movements in the fund's NAV will be small—usually less than \$0.005 or one-half cent per share. In fact, these fluctuations are immaterial enough that it's reasonable for the fund to keep the NAV at \$1.00, a valuable convenience for investors. But that's true only if the fund sticks to high quality short-term investments.

Here's where Rule 2a-7 comes in. It keeps money market funds on the straight and narrow, by setting out detailed rules for money market portfolios—all designed to keep the NAV variation minimal. But it's important to note that it's not just Rule 2a-7 that keeps money fund management very conservative. Fund sponsors also want to make sure that they meet shareholders' expectations—and they definitely don't want to be called upon

to provide financial support to their money funds, which could be the case if the NAV drops significantly. (We explain in a moment when that is likely to happen.)

Rule 2a-7 contains requirements for money funds in four areas: maturity, credit quality, diversification, and liquidity.

1. *Maturity.* The longest maturity of the securities held by money funds is limited to approximately one year. (Technically, the limit is 397 days, based on the market practice of issuing one-year securities with an initial maturity that is slightly longer than a year.) That may not seem like a long time, but one-year maturity instruments can experience a big swing in price with a large shift in the level of interest rates.

If a money market fund put all of its assets into one-year securities, its NAV would be volatile—which is why 2a-7 also places a limit on the average maturity of the fund. Specifically, the weighted average maturity of all the securities held by a money fund may not exceed 60 days. If a fund holds longer maturity investments, they must be balanced with shorter maturities.

2. *Credit quality.* Credit quality is of paramount importance to a money market fund since the default of a security can be catastrophic, as we'll see. Rule 2a-7 states that money market investments must be of high quality, representing minimal credit risk. As of June 2010, it defines these as securities receiving ratings from the major credit rating agencies that place them in one of the top two short-term categories, or *tiers*. At least 97 percent of the fund's assets must be invested in securities in the top tier, the one that theoretically carries the least credit risk; the other 3 percent of assets may be invested in money market securities in the second tier. Table 7.1 shows the three highest ratings tiers for short-term taxable securities for the major credit rating agencies.

The SEC is under pressure to establish quality standards for money market funds that do not refer to credit agency ratings. This should not

**TABLE 7.1** Major Taxable Money Market Securities Ratings Categories

Fitch	Moody's	Standard & Poor's	Corresponding Long-Term Rating
F1	P-1	A-1	A or better
F2	P-2	A-2	BBB+ or A
F3	P-3	A-3	BBB

result in a significant change for most management companies, however, since Rule 2a-7 already requires that fund managers carry out independent credit analysis to verify that a proposed investment poses minimal credit risk. Under 2a-7, managers have never been able to rely solely on the opinion of third parties when judging credit quality.<sup>4</sup>

3. *Diversification.* Rule 2a-7 also places restrictions on a fund's exposure to the securities of nongovernment issuers. Specifically, money funds may not invest more than 5 percent of their assets in issuers in the top tier. If the issuer is rated in the second-highest category, the limit drops to 0.5 percent of assets per issuer. While Rule 2a-7 provides an upper bound, most management companies actually have tighter internal guidelines.
4. *Liquidity.* Money funds must be prepared to meet all shareholder redemptions without selling securities at a loss. (If a fund frequently locks in losses through sales, it violates the crucial operating assumption that it will usually get back what it paid for the securities it owns.) To make sure that money market funds will always have enough cash on hand, Rule 2a-7 requires that at least 10 percent of assets be *liquid* instruments with daily availability and that at least 30 percent of the fund be held in liquid instruments with weekly availability. (See "Trading Like Water" for definitions of these terms.)

## TRADING LIKE WATER

Liquid instruments are securities that can be readily turned into cash in virtually any market environment. The SEC defines instruments with daily liquidity as:

- Cash, meaning investments with a maturity of one day
- U.S. Treasury securities of any maturity
- Certain other government securities with maturities under 60 days

For weekly liquidity, the SEC takes the preceding list and adds any security with a maturity within five days or that has a contractual provision that ensures that it can be sold in the same period.<sup>5</sup>

At the other end of the liquidity spectrum, Rule 2a-7 requires that no more than 5 percent of the fund be invested in *illiquid* securities, meaning securities that may take more than a week to sell at close

to the current price. This 5 percent limit is much lower than the 15 percent limit applied to illiquid securities held in stock and bond funds.

Funds that pass all these tests may use amortized cost accounting to report a stable \$1.00 NAV to the public.

Rule 2a-7 has another provision, however. Behind the scenes, funds must compute a daily NAV using market prices to value securities, rather than amortized cost. This market-value NAV is known as the *shadow price*. Funds must regularly compare the shadow price to the \$1.00 NAV and report the difference to the fund's board of directors.

If the difference is under \$0.005, the board will generally do nothing. That's because, even using market prices for securities, rounding keeps the NAV at \$1.00. But if the difference is \$0.005 or more, the board may need to take action.

- If the shadow NAV is higher than \$1.04, no drastic action is required. The board will ask the fund manager to sell securities to generate realized capital gains and then distribute those gains to shareholders as part of the daily dividend. This is a very unlikely scenario, however, since money market securities rarely produce capital gains. Money funds also declare distributions daily, partly to prevent interest income from accumulating and drive the NAV above \$1.00.
- But if the shadow NAV falls below \$0.995, the board may decide to stop using amortized cost accounting and switch to a market value NAV calculation. At that point, the fund's reported NAV will fall below \$1.00 per share, thereby *breaking the buck*.

Why take this drastic action? Because fund directors want to ensure that all shareholders are being treated fairly. If they don't lower the NAV, shareholders who are redeeming from the fund will reap a windfall—getting \$1.00 for shares that are worth less—a bonanza that's paid for by the remaining shareholders. The pricing discrepancy could even encourage redemptions by savvy shareholders, creating a run on the fund. To prevent this, the board may suspend redemptions so that the fund can be liquidated in an orderly manner. This is the only time that a mutual fund can cut off redemptions without specific SEC approval.

Management companies can prevent funds from breaking the buck by stepping in to make good on the losses that caused the fund value to drop. The fund industry has been willing to provide this type of help when needed, because it wants consumers to continue to view money market funds as secure investments. Many fund sponsors provided that support in 1994, when

Orange County, California, surprised investors by declaring bankruptcy. Many California tax-exempt funds had large positions in its securities, and their shadow NAVs dropped below \$0.995. Fund management companies stepped in and either bought the securities at amortized cost or guaranteed their value.

A crucial caveat: fund sponsors are not required to provide this support; they do so only voluntarily. They may not want—or even be able—to help

## **SECOND TIME UNLUCKY**

The first time a money market fund broke the buck was in 1994, when the Denver-based Community Banker's U.S. Government Money Market Fund reported a NAV of \$0.96. It had the misfortune of owning securities that fell sharply in value during the rapid rise in interest rates that year. Because this was a small fund held by a small number of institutional shareholders, the impact was limited.

It wasn't until the credit crisis of 2008 hit that a fund broke the buck in a dramatic way. This was the Reserve Primary Fund—the first money market fund in the United States. The Primary Fund was a \$60 billion institutional money fund, open only to large investors.

Some of those shareholders kept a close watch on the Fund's holdings and noticed a large position in broker Lehman Brothers. These investors—sensing that the brokerage firm might be in trouble—decided to take their money out of the fund. To meet their redemption requests, the fund sold other securities—with the unfortunate result that the problematic Lehman securities became an ever-larger portion of the remaining assets.

As a consequence, when Lehman declared bankruptcy on September 15, 2008, the fund was hard hit, and the following day, the Primary Fund's board dropped the NAV to \$0.97 per share. At the time, the fund needed permission from the SEC to suspend redemptions, which it received. It then eventually returned the balance of its assets to the remaining shareholders—amid a flood of lawsuits.

So ended the life of the first money market fund in the United States. The incident accelerated the credit crisis and prompted the federal government to provide support for all money funds. We discuss the consequences of the Reserve Fund collapse in more detail in the last section of this chapter.

out a fund if losses are large and permanent. In the Orange County case, as in the SIV example we discuss shortly, the problem securities had significant underlying value and eventually recovered. As a result, the ultimate cost to the management companies was modest.

This financial support from management companies—combined with conservative money fund portfolio management policies—has made breaking the buck an extremely rare event. In fact, it has only happened twice. “Second Time Unlucky” reviews those two occasions.

Fund boards of directors have unique duties when it comes to money market funds—duties that apply only to money funds and not to other types of mutual funds. In addition to checking the portfolio’s shadow pricing and taking action if it drops significantly, the board must:

- Monitor credit quality and confirm that the fund manager’s research practices are rigorous. Directors will usually be informed of credit downgrades in the portfolio.
- Review the policies and procedures that the fund manager uses to assure compliance with Rule 2a-7.
- Oversee *stress tests* that gauge the fund’s ability to maintain a \$1.00 NAV should interest rates rise, yield spreads widen, shareholder redemptions surge, or issuers default. These are all scenarios that could cause a fund to break the buck.

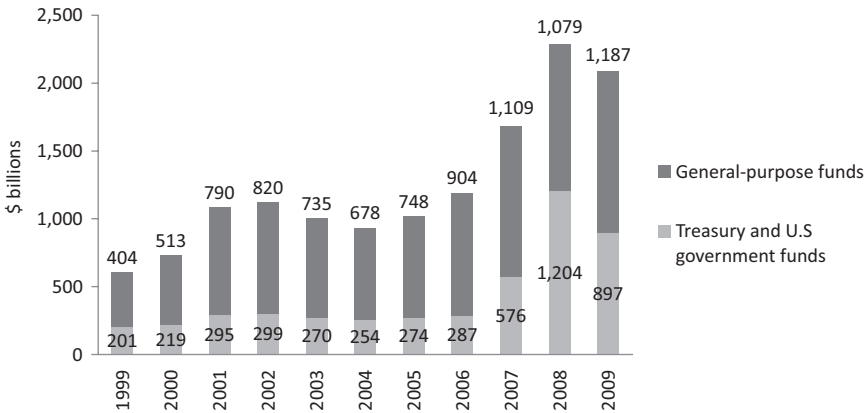
## **MONEY MARKET FUND HOLDINGS**

Money market funds are divided into two major segments: taxable and tax-exempt. While both types of money funds invest in high quality, short-term instruments, there are significant differences in the types of securities they own.

### **Holdings in Taxable Funds**

As we reviewed in Chapter 4, within taxable money market funds, there are three subcategories, each with a different set of permitted investments:

1. *U.S. Treasury funds* invest in U.S. Treasury securities only.
2. *U.S. government funds* invest in federal agency securities in addition to U.S. Treasuries.



**FIGURE 7.1** Institutional Money Market Fund Assets

Source: Investment Company Institute, 2010 *Investment Company Fact Book*.

3. *General purpose funds* can hold a wide range of securities, and they often have exposure to all of the major taxable categories. Their predominant exposure is normally in commercial paper and certificates of deposits issued by banks or corporations.

Figure 7.1 shows the assets in Treasury and government funds as compared to general purpose funds since 1999 (looking at institutional money funds only). Because of their higher yield, general-purpose funds are normally more popular, though Treasury and government fund assets tend to spike up during times of turmoil, as during the credit crisis.

Taxable money market funds invest in the following types of securities:

*Treasury securities.* The U.S. Treasury has become the largest issuer of money market securities. It uses the proceeds from their sale to fund the U.S. budget deficit and to meet short-term imbalances between cash receipts and disbursements. While the U.S. Treasury securities have maturities out to 30 years, those attractive to money market funds are known as Treasury bills. T-bills are normally issued with maturities of 13, 26, and 52 weeks. They do not pay interest through coupon payments; instead T-bills are zero coupon securities that are sold at a discount to par value and reach par at maturity.

Because they are backed by the full faith and credit of the U.S. government, most investors consider T-bills to be credit risk-free. Their value will still fluctuate with interest rates, however. For example, a 52-week T-bill will rise and fall approximately 1 percent with a 1 percent change in interest

rates. (Note that maturity and duration are roughly equal for short-term securities.)

*Agency securities.* Agency securities are the obligations of federal government agencies or government-sponsored enterprises. Generally, agency debt offers a slight yield premium over T-bills. Turn back to Chapter 6 for more on agency securities.

*Commercial paper.* Commercial paper, or CP, is issued by corporations (including banks) to finance short-term cash needs. While smaller corporations usually depend on bank loans for this type of funding, larger corporations with good credit ratings can access the CP market and often do so. By raising money from investors directly rather than from a bank, these companies can lower their borrowing costs.

CP is normally issued with maturities of 270 days or less, though most CP has maturities of 90 days or under. Yields vary with maturity and credit quality, but CP normally offers a higher yield than Treasuries or agencies. Because CP has such a short maturity, the companies that issue it are almost constantly raising money in the market, rolling over or replacing CP that has just matured, as part of a commercial paper program.

Since the CP market is generally open only to issuers with strong credit ratings, there have been few defaults over the years—but there have been some. As a result, credit analysis is important in this area, to identify problems early. “And the Little One Said, ‘Roll Over’” describes a recent problem in the CP market.

### **AND THE LITTLE ONE SAID, “ROLL OVER”**

Not all commercial paper is issued by large corporations. For a time, CP issued by a *specialty investment vehicle* was all the rage. A SIV is a type of issuer of an asset-backed security. (See Chapter 6 for an introduction to this class of investments.) The SIV owns longer-term bonds with higher yields, then issues CP with a lower yield backed by the value of the bond portfolio.

When they were first created in the 1990s, SIVs seemed to be a good deal for everyone. They were certainly a good deal for the sponsor of the SIV, which kept the bulk of the difference in yield as income. But they also seemed to be a good deal for the money market funds buying the CP, which thought they had found a way to enhance yield without taking significant risk. Rating agencies were convinced that the SIV model—which had worked well so far—would continue

to work. In consequence, they published very high ratings for the CP issued by many SIVs.

Not everyone agreed with the rating agencies, however. Some money market analysts found that SIVs were too risky. Their big concern was the need to roll over or replace the CP every time it matured. (Remember that the CP had a much shorter maturity than the securities held in the SIV.) In other words, SIVs were dependent on the market for continued financing. If market participants didn't buy the next CP issue, the SIV would be in trouble.

While most analysts recognized the risks, many chose to focus instead on the value of the investment portfolio. They believed the SIV could easily sell those assets if CP funding became unavailable. This line of logic gave them a comfort level with SIVs that, in combination with attractive yields, caused explosive growth in the sector. By 2007, assets in SIVs had grown to approximately \$400 billion.

This comfortable arrangement came to an end when the housing market collapse raised concerns about the quality of all asset-backed investments, including securities issued by SIVs. Money market funds soon stopped buying their CP. And then the doomsday scenario struck: when SIVs attempted sell a large part of their portfolio holdings to pay off the CP when it matured, they found that they couldn't.

Money market funds had to mark down the prices on any SIV-issued CP that they still owned, in the process threatening to break the buck. To keep that from happening, a number of fund sponsors provided support for the value of the SIV-issued CP.

*Certificates of deposit.* Money market funds also make deposits in banks through certificates of deposit. A CD, as the name implies, is a certificate that identifies a deposit with a specific banking institution, stating a maturity date and an interest rate. Certificates with banking institutions outside the United States—but still denominated in U.S. dollars—are known as Eurodollar CDs, or just Eurodollar deposits. CDs carry the federal deposit insurance provided by the FDIC, but because that insurance is capped at \$250,000, it's of little value to a large money market fund.<sup>6</sup> As a result, good credit analysis of the bank issuing the CD is critical to avoid defaults.

*Repurchase agreements.* Repurchase agreements, or *repos*, enable broker-dealers to finance the huge blocks of securities that they hold as part of their business. These securities are used as collateral for a repo loan.

While almost any type of security can be used in a repo, funds prefer to have U.S. Treasury or other government obligations as the collateral for most of their transactions. For added security, the collateral must equal at least 102 percent of the loan amount.<sup>7</sup>

The transaction is called a *repurchase agreement* because the securities are actually sold to the lender or investor at the beginning of the period of the loan; the borrower agrees to repurchase the securities at the end of the loan term, usually at the same price. (That's different from a typical secured loan; for those loans, the collateral is simply set aside in a separate account and is transferred to the lender only if the borrower fails to fulfill its obligations under the agreement.) To be absolutely precise, the borrower (the seller of the securities) is actually doing the repo, and the buyer—a money market fund, for example—is engaging in a *reverse repo*. However, the term *repo* is often used for both sides of the transaction.

In a repo, the buyer is not interested in owning the securities for any length of time, so most repos have extremely short terms of only up to seven days, and many are just overnight. That makes them perfect for all types of mutual funds, especially money market funds, which have cash on hand to invest for a day or a week.

## Holdings in Tax-Exempt Funds

The tax-exempt money market is more complex than the taxable money market. That's largely because of a supply-and-demand imbalance for very short-term municipal securities. There's a high level of demand for these issues—much of it coming from individuals who want to minimize their tax bill by placing their cash in a tax-exempt money market mutual fund. But supply is limited. States and municipalities generally prefer to issue longer-term securities, since the money raised is normally used to support long-lived projects such as roads or buildings or ongoing obligations, including the salaries of public employees. To provide a bridge between lenders and borrowers, a large derivatives market that synthetically creates short-term tax-exempt investments has evolved.

Tax-exempt money market funds invest primarily in the following securities:

*Municipal notes.* Municipal notes are issued by state and local governments with a maturity of one year or less. In some cases, these notes finance a specific project, while others are used to provide short-term cash flow, anticipating the receipt of revenues of some type. For example, a local government that needs money to pay for road construction now but also needs more time to prepare for a bond offering may issue a Bond Anticipation Note. When the bonds are eventually issued, the proceeds are used to pay

off the BAN. Similarly, TANs, or Tax Anticipation Notes, provide short-term cash while a local government is waiting for tax revenues to come in. And RANs—the *R* is for *Revenue*—are issued when income from a specific project, such as a sewer facility, is expected in the future. In all of these cases, when the revenues clear, the notes are repaid.

*Commercial paper.* As in the taxable market, maturities of tax-exempt commercial paper are generally shorter than 270 days—most often 90 days or shorter. In the municipal market, however, CP programs are often backed by a letter of credit from a highly rated bank or insurance company, which guarantees repayment in the event of the default of the issuer. That makes CP more attractive to money market funds, all of which are seeking minimal credit risk.

*Variable rate demand notes.* Variable rate demand notes, or VRDNs—also known as *variable rate demand obligations*, or *tender option bonds*—represent the vast majority of securities used in tax-exempt money funds. A VRDN has two components:

1. A long-term tax-exempt bond, which may be guaranteed by credit insurance or a letter of credit from a bank.<sup>8</sup> While this is a long-term bond, it pays interest at the rate of a short-term security (which is almost always lower than the rate on a longer-term bond).
2. A short-term put option, or *demand feature*, that allows it to be sold back to the issuer at face value whenever needed. This put is backed by a bank or other financial institution.

This demand feature bridges the gap between borrowers and lenders. It allows governments to issue the long-term bonds they prefer, while making that debt eligible for purchase by money funds that must invest in short-term securities.

Sound like the SIVs we discussed earlier? VRDNs are like SIVs in many respects, but with some key differences. First, there is generally less concern about the credit quality of the bonds in a VRDN than the securities held in a SIV—governments are usually pretty good payers. Second—and most importantly—the credit guarantees and put options in a VRDN are provided by independent, high quality financial institutions, meaning that VRDN holders are not dependent on the issuer's ability to roll over its short-term funding. If the issuer can't find a new buyer, the VRDN may have to be liquidated—but money market investors will have already exercised their puts and been paid.

Despite these advantages, the VRDN market experienced significant volatility during the credit crisis, as investors worried about the health of

the financial institutions that provided the crucial guarantees, although the disruption did not reach the level of the SIV crisis. To prevent a recurrence, the SEC has recently adopted news rules that require more disclosure from VRDN issuers.

## **PUTTING IT ALL TOGETHER: MANAGING A MONEY MARKET FUND**

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Now that we've reviewed the building blocks for money market funds, it's time to apply what you've learned. Imagine you've been given the task of managing a large multibillion-dollar money market fund. What would you do? Let's give it a try. We'll assume that the fund is a taxable general purpose money market mutual fund.

Your responsibility to investors means that you will to do everything you can to maintain the stable \$1.00 NAV and to assure liquidity any time a shareholder wants to withdraw cash—while providing a competitive yield. You have to keep your eye on all of these objectives at the same time.

### **Research**

You'll start by speaking with the analysts and reading their reports. (See the "Career Track" box for insights on the work of the money market credit analyst.) If the fund you're managing ranges beyond U.S. Treasuries, you'll need rigorous research to determine which securities provide minimal credit risk. You'll be investing in them for three to six months or longer and need to be confident that they'll repay the fund at the end of the period. If they fail to do so, the fund may be forced to break the buck and exit the business: an outcome you, your employer, and the shareholders are all keen to avoid.

At the same time, you'll work with the analysts to increase return. That means that you'll concentrate on the creditworthiness of the issuers of both commercial paper and CDs, which offer higher yields. You're probably going to try to buy as many of these issues as possible—assuming that the analysts can verify that the investments are high quality. Your fund has the flexibility to invest in a wide range of securities, and your competitors are doing just that, looking for higher returns.

To keep risk in check, you'll diversify broadly, with position sizes of 1 percent or less of the assets under management. In fact, many portfolio managers will seek to bring the positions to well under 1 percent for even more diversification. You may want to do the same, while recognizing that

### **CAREER TRACK: MONEY MARKET CREDIT ANALYST**

Interested in becoming a money market credit analyst? Your job will be to identify issuers that carry minimal credit risk to the fund, meaning that they have a very high likelihood of repaying the fund when their securities mature. But within this group of very high quality companies, you'll be making distinctions, evaluating which securities should have a higher yield than others, and how much that yield premium should be.

To do this work, you'll review balance sheets, income statements, business plans, stock prices, and any other indicators of financial wherewithal, with a strong focus on short-term assets and liabilities. You'll look at the rating agency opinions as well as any other third party research. In short, a credit analyst in the money market area completes the same types of analysis as a bond analyst. In many firms, you'll research both bond and money market issuers, though at some larger firms, credit analysts specialize in the needs of the money market funds.

You'll work closely with both the portfolio managers and traders. More than in any other category of mutual fund, money fund portfolio management is a team effort.

you need to strike a balance between improving diversification and spreading the research analysts so thin that they can't be thorough enough in their analysis.

Keep in mind, though, that other market participants are doing this same work and may have come to the same conclusions. Therefore, you'll often find that the best credits in the market may well be the most expensive. The analysts will need to look out for unrecognized value, and you'll need to keep your eye on price trends. The credit opinions from the analysts generally do not change rapidly, but prices often do, which may create a buying opportunity one day.

### **Trading**

Knowing the issuers you want to purchase is only half of the process—you then have to find the paper in the market. That's not always easy. Like bonds, money market securities trade over the counter, so you'll need to do some digging to find out what's available. Because securities in the fund mature

almost every day, virtually all of the trading activity will be on the purchasing side. It's a rare day when a money fund sells a security, which usually only happens if a research opinion takes a dramatic turn to the negative—and it's not an easy thing to do in a market that normally does not buy securities back. You may monitor the market yourself, though at larger firms you'll be able to rely on the assistance of the money market trading desk.

The traders on the desk will contact broker-dealers to review their inventory of securities and keep them familiar with the needs of your funds. They'll also be in touch with corporations interested in issuing commercial paper directly to the buyers, without a broker-dealer as an intermediary.

The traders will also help out by monitoring the daily cash needs of the fund. They'll keep on top of which securities will be maturing that day, then add or subtract net shareholder inflows or outflows. (See Chapter 7 for more on trading.)

## **Portfolio Management**

Now that you have a list of attractive securities from the credit analysts and a list of available securities from the traders, you'll need to combine them into a portfolio.

One of your first decisions will be about the maturities you'd like to buy. Remember that Rule 2a-7 limits money market funds to securities with maturities of 397 days or less. If you invest the entire fund at 397 days, you'd almost definitely have the best-yielding fund in the market, but you wouldn't be complying with Rule 2a-7. (Remember the 60-day limit on average maturity!) Moving all the holdings to a 60-day maturity would meet the SEC average maturity requirement, but would make it difficult to handle outflows.

Here's why: if the fund invested all its assets in 60-day paper, and tomorrow your shareholders wanted to withdraw some of their money, you would be forced to sell 59-day securities in what could be a weak market. To prevent this—and comply with Rule 2a-7—you'll need to hold at least a 10 percent cash position. To make sure that you're always in compliance, you'll stagger the maturities of the holdings in the fund, so that some securities are being paid off every day, providing a steady cash flow.

But there's even more to the maturity decision. Part of your role in managing the fund is to determine when it's appropriate to hold a shorter portfolio—with an average maturity of, say, 30 days—and when extending the maturities is wise—up to maybe 45 or 50 days. That may not sound like a big shift, but there are hundreds of funds competing in this space, and your decision could significantly affect the ranking of the fund in its peer group.

The maturity decision will reflect your view of the direction of short-term interest rates over the coming weeks or months. You'll want a longer average maturity or duration when interest rates are falling and a shorter one when they're rising. A working knowledge of economics will help you sort through the market drivers that determine the direction of interest rates.

Once you've made the maturity decision, determining the optimal mix among U.S. Treasuries, agencies, commercial paper, CDs, and repos is still in front of you. If credit risk is too much of a concern, you can avoid it altogether by investing your general purpose fund entirely in U.S. Treasury bills. You'd have a very safe fund, but one that probably wouldn't be around for long, simply because its yield would be too low to be competitive. You'll talk constantly with research analysts and traders to choose higher-yielding securities that still have the financial health to meet their obligations. The combination will help the fund meet all of its objectives.

After you've figured out a good strategy and asset mix for that day, you'll have to start all over again, because your holdings are moving closer to maturity each day. In other words, your 45-day average maturity will fall to only 38 days in one very short week. The portfolio structure of a money market fund changes rapidly, faster than any other type of fund because of the short-term nature of its holdings. Managing a money market fund is a demanding job that requires the ability to continuously balance competing priorities in an ever-changing environment.

## **MONEY MARKET FUNDS AND THE FINANCIAL SYSTEM**

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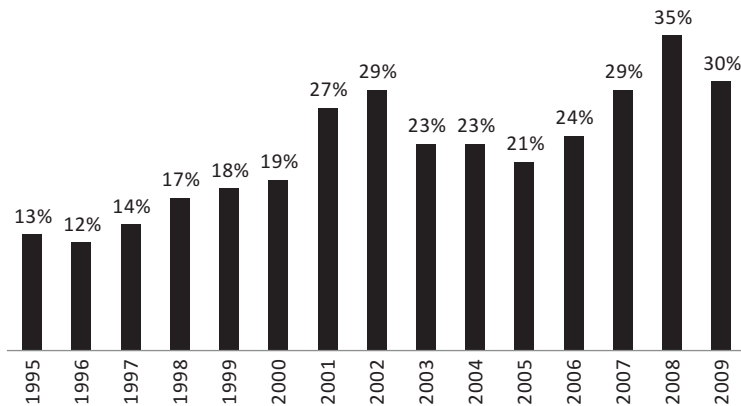
Many investors use money market funds interchangeably with savings accounts. There are, however, clear distinctions between the two. Let's compare a retail money market fund and a bank deposit:

- *Immediate access to funds.* Provided by both.
- *Payment of competitive market interest rates.* Provided by both, but through different mechanisms. Money market funds provide a direct investment in securities yielding market rates of interest. The rates on bank deposits are set by the bank itself, which takes into consideration both market interest rates and the bank's need for funds.
- *FDIC insurance.* Carried by bank deposits, but only up to \$250,000 per account. Balances over that limit are not insured and will likely incur substantial losses if the bank fails. Money market funds, in contrast, carry no guarantee, although they hold a diversified portfolio of high-quality securities to minimize the risk of significant losses.

- *Local convenience.* Banks have a local presence through bricks and mortar branches, while money funds don't. Instead, the convenience of mutual fund investing is derived from the Internet and telephone. But with more banking being done online, there is now less of a distinction between bank deposits and money market fund investments in this regard than there was in the past.
- *Banking services.* Banks have always provided a myriad of services, often bundled with their deposit and savings accounts. Money market funds provide bank-like services of their own, including check writing, bill pay, and other conveniences.<sup>9</sup> Making matters even fuzzier, many banks offer money market funds as an alternative to their traditional deposit accounts.

While the blurring of the lines between banks and mutual funds has generally benefited investors, it has created difficulties for regulators overseeing the financial system. The term *shadow banking* is now used for describing these banklike activities by nonbanks, including money market funds. And these activities are substantial. For example, money funds now manage 30 percent of the short-term assets of U.S. businesses, more than double their share 15 years ago. Figure 7.2 shows the trend.

While the growth of shadow banking has lowered the cost of borrowing, the enormous size of these activities in aggregate can create significant disruption when things go wrong, as happened during the credit crisis of 2008. The U.S. Treasury had actually considered getting involved



**FIGURE 7.2** Money Market Fund Management of U.S. Businesses' Short-Term Assets

Source: Investment Company Institute, 2010 *Investment Company Fact Book*.

with money funds during the SIV crisis in mid-2007 which we discussed earlier. While those problems were resolved without government intervention, both the Treasury and the Federal Reserve became acutely aware of the size of money market funds and their importance to the financial system.

It wasn't until after Reserve Primary Fund broke the buck that the government took direct action. In the weeks following that event, over \$400 billion was withdrawn from general purpose money funds, principally by institutional investors. (Much of this money was moved to government money market funds.) The market for commercial paper was drying up, cutting off a critical source of funding for major U.S. corporations.

The federal government stepped in with a series of programs to reduce fund redemptions and stabilize the markets. While only the U.S. Treasury's Temporary Guarantee Program was directed specifically at money market funds, each of the programs in the following list played a significant role in alleviating the stress faced by money market funds.

- *September 19.* The U.S. Treasury established the Temporary Guarantee Program, which insured the value on that day of all the shareholder accounts of money market funds that chose to participate in the program. Virtually all funds signed up.
- *October 7.* The Federal Reserve created the Commercial Paper Funding Facility to provide support for issuers of highly rated commercial paper. The facility helped issuers who had been unable to roll over their commercial paper. As large holders of commercial paper, money market funds benefited from the renewed confidence in this segment of the short-term market.
- *November 21.* The FDIC instituted the Temporary Liquidity Guarantee Program, which provided a government guarantee for short-term debt issued by banks, improving their ability to raise money. The value of bank debt in money fund portfolios was boosted by this action.
- *November 25.* The Federal Reserve announced the creation of the Term Asset-Backed Loan Facility to provide relief to the asset-backed securities market, which was perhaps the hardest-hit sector. As owners of asset-backed securities, money market funds were helped by the increased liquidity.

The crisis raised basic questions about the basic structure and operations of money market funds, and in 2009 the SEC initiated a sweeping review of all of its regulation in the area. In the ensuing debate, three options for money market funds were presented:

- *Option 1: Bank-like regulation.* Money market funds could be regulated like banks. Their deposits would be insured with the FDIC, and funds or their management companies would guarantee fund values, holding capital to ensure their ability to support those guarantees.
- *Option 2: Floating NAV.* Money market funds could be treated like other mutual funds and have a floating NAV.
- *Option 3: Tighter restrictions.* Money market funds could continue to operate much as they had been, though maybe with some tighter rules.

As of late 2010, the SEC has so far gone with Option 3. The limit on holdings of illiquid investments was lowered from 10 percent to 5 percent, while 10 percent of a fund is now required to be invested in assets with daily liquidity. Furthermore, the average maturity of money market funds was reduced from 90 to 60 days. But the basic structure of the funds, including the reliance on amortized cost accounting, was left intact.

Yet more dramatic changes are still being considered. Money fund advocates argue that Rule 2a-7 has done a very good job in protecting investors for 30-plus years and that the SEC's recent tightening of restrictions is sufficient. Other industry observers and bank regulators counter that money market funds now pose a systemic risk to the financial system and that a completely different approach is required. The Investment Company Institute is developing the concept of a *liquidity bank*—to be established by the major fund sponsors—that would provide additional liquidity to money market funds in times of severe market disruption. The debate will continue for some time into the future.

## CHAPTER SUMMARY

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Money market funds may report a stable \$1.00 per share NAV if they comply with the provisions of SEC Rule 2a-7. This rule limits their investments to only high quality, short-term fixed income instruments and places restrictions on the maturity, credit quality, diversification, and liquidity of money fund holdings. However, if the value of a money market fund's investments drops sharply, it may be forced to stop using the \$1.00 NAV. This is called *breaking the buck*, and it has only happened twice in the history of money market funds. On other occasions when money funds have threatened to break the buck, fund sponsors have stepped in with financial support to enable funds to maintain the \$1.00 NAV.

Taxable money market funds invest in Treasury bills, federal agency securities, and commercial paper and certificates of deposit issued by banks and other corporations. They also engage in repurchase, or *repo*, agreements

with broker-dealers. The prospectus determines which securities are available to a particular fund.

The primary holdings in most tax-exempt money funds are variable rate demand notes, which are long-term tax-exempt bonds combined with put options that allow them to be sold back to the issuer whenever needed. Tax-exempt money funds also invest in municipal notes and commercial paper, although these are in limited supply.

Credit analysis plays a key role in money market portfolio management, especially for funds investing in commercial paper and certificates of deposit. Portfolio managers must also carefully manage the maturity structure of the fund's holdings to ensure both that cash is always available when shareholders wish to redeem and that the fund's yield is competitive.

Many businesses and individuals use money market funds interchangeably with bank deposits. As a result, money funds have become a critical part of the U.S. financial system, and problems at a few money funds aggravated the recent credit crisis. As a result of the 2008 problems, the SEC has tightened the Rule 2a-7 restrictions on money market fund investments. Regulators and fund sponsors are also considering alternative approaches to money fund operations and oversight.