Executive summary. Money market funds play an important role for Vanguard clients, providing a high-quality and liquid investment in both stable financial markets and periods of uncertainty. Vanguard has managed money market funds for more than 30 years as an integral part of our full product lineup, and currently holds more than $190 billion in both taxable and tax-exempt money market funds. Money market funds offer one of the most conservative investment options available to our clients, who use them to manage cash that they hold for many purposes, such as to save for the purchase of a home, to pay for a child’s education, and as a low-risk investment option when other markets experience volatility.

The foundation for Vanguard money market funds’ investment philosophy is a consistent focus on several key principles: maintaining low expense ratios, high standards for managing credit in our portfolios, expert credit analysis, preserving liquidity through conservative fund management, and guarding against disruptive redemption activity. This commentary reviews each of these principles and highlights their ongoing importance for our money market funds.
Vanguard money market funds’ investment management principles

Maintaining low expense ratios and high value
Vanguard is well-known for its at-cost structure, which, coupled with economies of scale, has historically helped us drive down the expense ratios of our money market funds. At the same time, Vanguard offers more than just low cost in its money market funds. We believe that, by combining low cost with a strategic decision to maintain very high standards for managing credit, expert credit analysis, conservative fund management, and guarding against disruptive redemption activity, Vanguard money market funds offer tremendous value to our clients.

Managing credit in our portfolios
U.S. money market funds are highly regulated investments operated in strict accordance within the rule established by the Securities and Exchange Commission, SEC Rule 2a-7. Although the SEC defines the parameters within which money market funds operate, it is up to the fund advisor to independently determine the creditworthiness of each security purchased for the portfolio. Thus, all money market funds are not created equal. In addition, Vanguard taxable and tax-exempt money market funds are actively managed, allowing the portfolio managers to strategically reposition the funds’ investments when appropriate. Conservative portfolio management practices by our funds’ advisors were instrumental to Vanguard’s approach in managing our money market funds during the financial crisis of 2007–2008.

Notes on risk: All investments, including a portfolio’s current and future holdings, are subject to risk, including the possible loss of the money you invest. Past performance is no guarantee of future returns. An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although a money market fund seeks to preserve the value of your investment at $1 per share, it is possible to lose money by investing in such a fund. Bond funds are subject to credit risk, interest rate risk, and inflation risk. Credit risk is the chance that a bond issuer will fail to pay interest and principal in a timely manner, or that negative perceptions of the issuer’s ability to make such payments will cause the price of that bond to decline. Interest rate risk is the chance that bond prices overall will decline because of rising interest rates. Inflation risk is the possibility that the value of assets will decrease as inflation shrinks purchasing power. Although U.S. Treasury or government-agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest. Note that some or all of the income from the U.S. Treasury obligations held in a fund may be exempt from state or local taxes.

Note: The authors thank Pamela Wisehaupt Tynan, head of Vanguard Municipal Money Market Funds, and Robert F. Auwaerter, head of Vanguard’s Fixed Income Group, for their expert assistance with this paper.
Two key examples illustrate Vanguard’s approach in managing its money market funds. First, during the 2007–2008 financial crisis, Vanguard’s money market funds never invested in structured investment vehicles (SIVs). Before the crisis, SIVs had been a rapidly growing asset class that relied on money market funds as a source of funding. Even though many of these securities had received high ratings from credit agencies, Vanguard had never been comfortable with their structure, which relied heavily on their ability to liquidate assets in a funding crisis. In late 2007, our funds’ continued avoidance of SIVs proved to be a prudent decision when a highly rated SIV issuer defaulted, sending shockwaves through the SIV market. Overnight, investors became acutely aware of the risks associated with this asset class, which Vanguard had identified and guarded against years earlier.

A second example is Vanguard’s decision to eliminate exposure to asset-backed commercial paper (ABCP) before the extreme widening in credit spreads in 2007 (see Figure 1). In early 2007, a major financial institution disclosed significant losses in its subprime mortgage division. Concerned about the potential for similar losses elsewhere, our credit analysis team conducted a thorough review of other previously approved financial institutions. The team’s analysis indicated that Vanguard money market funds remained well positioned, but concluded that the level of transparency was limited for some ABCP issuers. Vanguard resolved to eliminate the funds’ exposure to those securities and to closely monitor the others. The United States was in the early stages of what would become the subprime mortgage crisis, but Vanguard’s early response prevented our funds from being caught in the ABCP maelstrom.
Many investors may have difficulty distinguishing one money market fund from another, and only the most sophisticated investors might know the structural details of an SIV or the level of transparency in other securities. That responsibility is fundamentally Vanguard's. In 2010, the SEC mandated additional disclosure designed to provide more transparency for money market funds. Each month, we publish our funds’ holdings on vanguard.com; a more detailed version is also available on the SEC’s website, with a 60-day lag, at www.sec.gov.

Conducting expert credit analysis
SEC Rule 2a-7 specifies requirements for credit analysis of securities in money market funds. SEC rules establish a “floor” for the minimum allowable credit rating—as designated by a nationally recognized statistical rating organization—of securities purchased for a fund. In addition, Vanguard’s credit research group establishes its own independent credit rating as part of its minimum credit assessment. Securities purchased for our money market funds must pass both credit-ratings thresholds.

Vanguard maintains a seasoned internal team of credit analysts who evaluate the types of risk inherent in money market investments. Vanguard’s current team comprises 23 analysts—14 on the taxable fund side and 9 on the tax-exempt fund side—with an average of 19 years of related investment experience. A significant number of the analysts hold the Chartered Financial Analyst designation, and more than 90% also hold graduate degrees.

In conducting credit analysis, Vanguard’s credit research team performs fundamental analysis and evaluates issuers’ ability to repay obligations, based on a wide variety of factors. The team evaluates financial and credit trends both in sectors and individual issuers in which Vanguard invests, or expects to invest, as well as individual deal structures. A core component of the analysis includes the identification of excessive borrowing on the part of an issuer and nondiversified sources of funding. The research process can encompass a number of facets, such as analysis of the issuer’s financial statements and sensitivity testing on projected cash flows.

For each issuer in the coverage universe, our credit analysts identify the key drivers of credit, form a credit opinion and outlook, and assign an internal credit rating. The credit team then creates and manages an approved list of issuers eligible for investment in our money market funds, and disseminates that list to the portfolio managers, who use it to select potential securities for investment. By steering clear of credit concerns, Vanguard avoided many of the credit issues that characterized the recent financial crisis.

A case in point concerned the monoline insurance companies that provided “wrap” guarantees on interest and principal, thus enhancing the credit of many municipalities. By 2007, more than 50% of the outstanding issuance in the municipal market was wrapped by insurance, which had previously carried a AAA rating from the agencies that rate municipal debt. By then, however, the monoline insurance companies with the deepest market penetration had built up significant exposures to risky mortgage-backed derivatives, which eventually caused the collapse of this dominant business model. Because Vanguard’s rigorous approach to credit analysis includes a review not only of the insurance providers but also of the creditworthiness of the underlying municipal issuers, portfolio managers were well-positioned to work with underwriters and issuers to help ensure and maintain the safety and liquidity of our money market fund holdings without disruption.
In the early stages of the still-unfolding European debt crisis, the managers of our taxable money market funds addressed the growing concern that conditions in peripheral European financial institutions were eroding. In response, we modified the funds’ direct bank exposure in the affected countries and closely monitored the situation. As conditions deteriorated, we decided to remove all of our exposure to those banks, thus avoiding the erosion of those credits in our taxable money market funds. By December 2011 (and continuing as of this writing), Vanguard had eliminated all European bank exposure in our taxable money funds.

**Figure 2** further illustrates Vanguard’s conservative and purposeful approach to money management. In the early stages of the still-unfolding European debt crisis, the managers of our taxable money market funds addressed the growing concern that conditions in peripheral European financial institutions were eroding. In response, we modified the funds’ direct bank exposure in the affected countries and closely monitored the situation. As conditions deteriorated, we decided to remove all of our exposure to those banks, thus avoiding the erosion of those credits in our taxable money market funds. By December 2011 (and continuing as of this writing), Vanguard had eliminated all European bank exposure in our taxable money funds.

**Preserving liquidity through conservative fund management**

Money market funds are designed to provide maximum liquidity to their investors, which is a fundamental reason why the funds purchase highly rated short-term investments. Recent SEC changes to money fund rules have reinforced this purpose, by requiring all money market funds to hold at least 30% of their total assets in securities that can be converted to cash within the following five business days. Also, taxable money market funds must hold at least 10% of their total assets in securities that can be converted to cash by the next business day.
Figure 3. Vanguard Tax-Exempt Money Market Fund 7-day liquidity

Percentage of fund assets with maturities of less than 7 days

Note: See text for discussion of the SEC’s 2010 liquidity requirement.
Source: Vanguard.

Figure 4. Vanguard Prime Money Market Fund weekly and daily liquidity

Note: See text for discussion of the SEC’s 2010 liquidity requirements.
Source: Vanguard.
The construction of the tax-exempt market lends itself well to the SEC’s recent liquidity requirements for money market funds. The vast majority of investment products available are in the form of securities with variable rate demand features that may be tendered for cash upon five business days’ notice or less. Figure 3 shows the percentage of assets with maturities of less than 7 days that were held in Vanguard Tax-Exempt Money Market Fund during the financial crisis and beyond. Investors should take comfort in the fact that tax-exempt money market funds have portfolio compositions that clearly exceed the liquidity requirements imposed by the SEC. Figure 4 shows weekly and daily liquidity in Vanguard Prime Money Market Fund.

When market liquidity is constrained, as it was during the financial crisis, it’s not unusual for Vanguard taxable money market funds to increase their holdings of U.S. Treasury securities (Figure 5), which are the most liquid security in all market environments. As with numerous other practices that are part of the day-to-day management of our funds, Vanguard’s approach in this respect has been demonstrated during periods of extraordinary market volatility.
**Guarding against disruptive redemption activity**

Large or unforeseen redemptions in a fund can harm the existing investors by disrupting the fund and increasing fund expenses. Amendments made in 2010 to SEC Rule 2a-7 require money market funds to develop procedures to identify investors whose redemption requests may pose risks for the funds. The funds are also required to hold enough liquid securities to meet foreseeable redemptions.

Vanguard takes additional measures to protect our money market funds from exceptional volatility that can be caused by certain shareholder practices.

One of the most important of these is to actively communicate with clients seeking to make a significant investment (several million dollars or more) in the funds. In doing so, Vanguard tries to ascertain:

1. **The nature and purpose of the proposed investment in the money market fund.** For example: Is the client looking to use the vehicle as part of a low-risk investment portfolio in a strategic manner or in a more tactical, short-term manner? Does the investment reflect an aggregation of individual investor holdings (for example, an omnibus 401(k) account), or is the entire investment actively managed by a small set of decision makers?

2. **The length of time that the investor intends to hold the money market fund.** Although our money market funds’ investments are highly liquid, significant transactional activity over short periods of time can create disruptive transaction costs and management issues.

3. **The investor’s position in funds outside of Vanguard.** Is the client simply shopping for yields and intending to redeem or liquidate as soon as a “better option” becomes available?

Based on information gathered in these conversations, Vanguard has routinely rejected prospective customers whose intended activity could, in our view, be detrimental to the portfolios’ daily operations. This includes turning away exceptionally large investments that could be disruptive when withdrawn, and rejecting short-term assets, or “hot money,” that could dilute investor returns and drive up fund expenses if suddenly withdrawn. In particular, we routinely reject large proposed “corporate cash management” investments that we determine are likely to be short term in nature.

**Lessons from Vanguard money market funds**

Low expense ratios, high standards for managing credit, expert credit analysis, conservative fund management, and guarding against disruptive redemption activity are central to Vanguard’s approach to money market funds. The SEC’s amendments in 2010 to Rule 2a-7 are consistent with how Vanguard has managed its money market funds for many years. Our practices enhanced our ability to manage our taxable and tax-exempt money market funds during the financial crisis. We believe our consistent focus on maintaining these core principles continues to make Vanguard money market funds a high-quality and liquid investment for our clients.