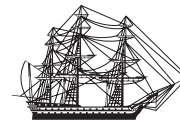


Vanguard's Investment Philosophy

We Believe #5

Minimizing cost is vital for long-term investment success.



Vanguard[®]

Successful investment management companies base their business on a core investment philosophy, and Vanguard is no different. Although we offer many strategies with both internally and externally managed funds, common themes run through the investment advice we provide our clients. Indeed, these tenets have been a part of the company since our inception and are embedded in Vanguard's culture. We've distilled our philosophy into nine statements, the fifth of which is presented here. For Vanguard, these nine statements represent both the past and the future—enduring principles that guide the investment decisions we help our clients make.

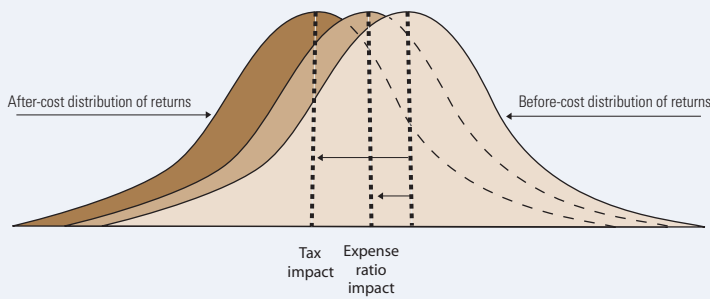
Vanguard believes that . . .

5. Minimizing cost is vital for long-term investment success.

Minimizing cost is critical to achieving long-term investment success. Contrary to the typical economic relationship between price and value, higher costs do not lead to higher returns. Every dollar paid for management

fees or trading commissions is a dollar less of potential return. Unlike market performance and the other elements that determine investor return, however, costs are predictable and controllable.

Figure 1. Hypothetical annual return distribution after costs



Note: Costs represented by fund expenses and taxes in two separate return reductions.

Elements of investing return

There are five primary components of total return: capital return, dividends/interest income return, operating costs, transaction costs, and taxes. These components can be combined in a simple equation. (Note: The actual calculation is slightly more complex.)

Total Return = (capital return) + (dividend/interest income return) – (operating costs) – (trading costs) – (taxes)

Of these five elements, only operating costs are fairly predictable. Capital return is perhaps the most unpredictable, with dividends and interest income less so. Trading costs such as market impact and commissions are somewhat unpredictable, but they can be minimized through best-execution practices. Tax costs are also somewhat unpredictable, though tax-management strategies can give investors some control over their tax liabilities. Operating costs, on the other hand, are predictable, and can have a significant impact on total return.

Operating costs include the fees paid to the portfolio manager, as well as administrative expenses such as recordkeeping and reporting costs. In a mutual fund, operating costs may also include a 12b-1 fee, which some funds charge to pay their marketing and distribution costs. These various costs are deducted from fund earnings and are expressed as the expense ratio. The expense ratio is calculated as annual fund operating costs divided by average net assets. Expense ratios range from 0.09% (\$0.90 a year for every \$1,000 in assets) to more than 2.00%, according to Lipper Inc. (2005).

For investors subject to them, taxes can also be a significant cost. Since 2003, qualified dividends and long-term capital gains have been taxed at a federal rate of 15%. Interest income, short-term capital gains, and nonqualified dividends can be taxed at rates as high as 35%. Investment returns may be subject to state and local taxes as well.

Figure 1 illustrates the potential impact of these various costs. In efficient markets, the average investor's return before costs is, by definition, equal to the market return (shown in the right-hand part of the figure). As the various costs are accounted for, the distribution of returns realized by investors is shown in the figure as moving to the left. The average investor's return is thus the market return reduced by operating and transaction costs, and, potentially, taxes.

Lower expenses can mean higher returns

As Figure 1 suggests, pushing the distribution of investor returns back toward the distribution of market returns (consisting of capital and dividends/income return) is a matter of keeping costs low. In fact, a number of studies from academics and practitioners have shown the critical importance of keeping costs low.

Gruber (1996),¹ in a study on growth in the mutual fund industry, found not only that better-performing managers were not raising fees to reflect their performance, but also that high fees were associated with *inferior* management. When ranking funds by after-expense performance, Gruber reported that funds with the worst after-expense performance had the highest average expense ratio and that the performance differences between the worst and best funds exceeded the fee differences.

Mark Carhart followed in 1997 with a seminal study on performance persistence, in which he examined all diversified equity mutual funds in existence between 1962 and 1993.² Carhart showed that common factors in stock returns and investment expenses almost completely explain persistence in equity mutual fund performance. And he suggested that investment costs, such as expense ratios, transactions costs, and loads, all have a direct and negative impact on performance.

In a February 2002 study, the Financial Research Corporation evaluated the predictive value on future performance of ten different metrics, including past performance, Morningstar ratings, alpha, and beta. In their study, expense ratios were the most reliable predictor of future performance, with low-cost funds delivering above-average performance in all of the periods examined.³

Likewise in a 2004 Lipper Research Study, Clark investigated how well expenses and net returns predict future mutual fund performance. Clark found that for no-load equity and no-load bond mutual funds, the lowest expense quintile produced more index-beating funds than any other expense quintile.⁴

The conclusions reached in these studies are consistent with the data in Table 1 (page 4), which outlines the performance of mutual funds over a ten-year period for various market segments and asset classes. In each of these cases, higher costs led to lower returns.

Tax-management strategies can enhance after-tax returns

For investors who are subject to taxes, additional cost-reduction strategies are available. For example, investors can hold assets in tax-advantaged accounts such as IRAs and employer-sponsored plans. In accounts subject to current taxes, investors can use funds such as broad stock market index funds, which are, generally tax-efficient, as well as portfolios that follow explicit tax-management mandates. In the fixed income markets, higher-income tax-sensitive investors can consider tax-exempt municipal bonds.

Figure 2 (*a* and *b*, on page 4) shows that the impact of taxes can be significant. The bars show the range of tax costs for actively managed equity funds, index funds, and tax-managed funds. During the ten years ended July 31, 2005, for example, a shareholder in the median actively managed equity fund incurred tax costs of 1.92% per year. During the same period, the tax cost for the median index fund—a step above actively managed equity funds on the tax-efficiency scale—was 1.09%. In the median tax-managed fund, which is, on the whole, most tax-efficient, the tax cost was just 0.20%.

Conclusion

Minimizing investment costs is critical to long-term investing success. Research has repeatedly shown a powerful relationship between low costs and relatively high returns. This relationship is easy to exploit, since cost is the component of net investment return over which investors have the most control.

1 M. Gruber, 1996, Another Puzzle: The Growth in Actively Managed Mutual Funds, *Journal of Finance* 52: 783–810.

2 Mark Carhart, 1997, "On Persistence in Mutual Fund Performance," *Journal of Finance* 52 (1): 57–81.

3 Financial Research Corporation, 2002, *Predicting Mutual Fund Performance II: After the Bear* (Boston, Mass.).

4 Andrew Clark, 2004, *How Well Do Expenses and Net Returns Predict Future Performance?* Lipper Research Study (May); www.lipperweb.com/research/searchResults.asp.

Table 1. Performance of mutual funds: Various market segments and asset classes, 1996 through 2005

Equity mutual fund expense ratio quartiles:

Average returns, 1996 through 2005

		Average expense ratio (%)	Average return (%)
U.S. Stock Funds			
Large-caps			
	Quartile 1	0.60	9.09
	Quartile 2	1.04	8.25
	Quartile 3	1.57	7.64
	Quartile 4	2.05	6.37
Mid-caps			
	Quartile 1	0.90	11.19
	Quartile 2	1.20	10.64
	Quartile 3	1.58	8.96
	Quartile 4	2.10	8.03
Small-caps			
	Quartile 1	0.90	11.21
	Quartile 2	1.24	11.02
	Quartile 3	1.59	9.96
	Quartile 4	2.21	6.06
International Stock Funds			
	Quartile 1	0.82	8.70
	Quartile 2	1.24	8.22
	Quartile 3	1.65	7.41
	Quartile 4	2.40	5.67

Fixed income mutual fund expense ratio quartiles:

Average returns, 1996 through 2005

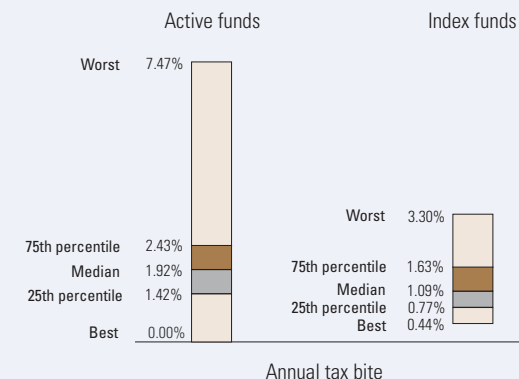
		Average expense ratio (%)	Average return (%)
U.S. Bond Funds			
Short bond			
	Quartile 1	0.54	4.78
	Quartile 2	0.75	4.58
	Quartile 3	0.99	4.57
	Quartile 4	1.51	3.90
Intermediate bond			
	Quartile 1	0.50	5.87
	Quartile 2	0.80	5.43
	Quartile 3	1.10	5.15
	Quartile 4	1.71	4.49
Long bond			
	Quartile 1	0.57	7.40
	Quartile 2	0.85	6.36
	Quartile 3	1.06	5.81
	Quartile 4	1.78	4.72
High-yield			
	Quartile 1	0.77	6.29
	Quartile 2	1.02	5.38
	Quartile 3	1.40	4.77
	Quartile 4	1.81	4.76

Sources: Data from Morningstar Direct; calculations from Vanguard Investment Counseling & Research. Past performance is no guarantee of future returns.

Figure 2. Impact of taxes on non-tax-managed versus tax-managed U.S. stock mutual funds:

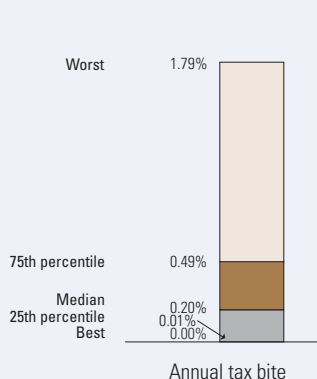
Periods ended July 31, 2005

2a. Mutual fund tax bites: U.S. stock funds (ten years ended 7/31/05)



Number of active funds = 1,321
Number of index funds = 61

2b. Mutual fund tax bites: Tax-managed funds (five years ended 7/31/05)



Number of tax-managed funds = 98

Sources: Morningstar and Vanguard Investment Counseling & Research.

Notes: Calculations assume account is not liquidated at the end of the period. Analyses exclude balanced funds, bear-market funds, and specialty funds.



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For more information about Vanguard funds, visit www.vanguard.com, or call 800-662-7447, to obtain a prospectus. Investment objectives, risks, charges, expenses, and other important information about a fund are contained in the prospectus; read and consider it carefully before investing.

Mutual funds are subject to risk. Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Foreign investing involves additional risks, including currency fluctuations and political uncertainty. Investments in bond funds are subject to interest rate, credit, and inflation risk. Shorter-term bond investors should be willing to accept lower yields and greater income variability in return for less fluctuation in the value of their investment. Because high-yield bonds are considered speculative, investors should be prepared to assume a substantially greater level of credit risk than with other types of bonds. Although the income from a municipal bond fund is exempt from federal tax, capital gains realized either through a fund's trading or from your redemption of shares are taxable. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the alternative minimum tax.

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