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SELECTED CASES FROM “CASES IN FINANCE”

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Case 2

Peter Lynch and the Fidelity Magellan Fund

*There is nothing flamboyant about him, nothing exotic, nothing larger-than-life. He is 43 years old, tall and thin, his hair completely white, with classic Irish features. The only thing that sets him apart is this: for 10 years now, he has been the best mutual fund manager alive. . . . "Around Fidelity," says one former marketing aide, "Peter Lynch is God."*¹

In March 1988, Peter Lynch, the manager of the Magellan Fund of Fidelity Management and Research Company, gave an interview in which he said, "My goal is to outperform the market over the long term by 5–6 percent annually."² This goal stood in stark contrast to the historical performance of equally ambitious and talented managers of other mutual funds. The goal also contrasted with the conventionally held view that it would be difficult to outperform the broad stock market averages because of increased volatility in the market.

The Magellan Fund was the largest equity mutual fund in the world, with nearly \$7.7 billion in net assets after the stock market crash in October 1987. Fidelity Management Company, which provided management and advisory services to the fund's shareholders, was a privately held company, managing over 100 mutual funds. Fidelity's operating revenue in 1987 was \$1.07 billion; operating profit was \$80.7 million. Fidelity's assets under management at the end of 1987 were \$75.3 billion. Wide acknowledgment placed Fidelity among the most innovative—and aggressive—mutual fund advisors in the industry.³

¹Joseph Nocera, "The Ga-Ga Years," *Esquire*, February 1988, p. 87.

²"A Magellan Update with Fund Manager Peter Lynch," *Fidelity Investments*, March 1988.

³Christopher J. Chipello, "Fidelity Investments, Resigned to Drops in Profit, Growth, Remains Aggressive," *The Wall Street Journal*, Wednesday, May 18, 1988, p. 46.

This case was prepared by Robert F. Bruner.

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THE U.S. EQUITY MARKET

Institutional investors or “money managers” who managed pension funds and mutual funds on behalf of individual investors dominated the market for common stocks in the United States in the late 1980s. While statistics still revealed that households, life insurance companies, personal trusts (i.e., those managed by bank trust departments), and nonprofit institutions held the majority of shares of common stock (62.1 percent) the percentage had been declining in recent years (down from 69.7 percent in 1981). Growth in the percentage of equity held by pension funds and mutual funds offset this decline, as shown in Exhibit 1.

But the aggregate figures somewhat masked the rapid growth of mutual funds from 1981 to 1987. Over this period, assets in equities-oriented mutual funds grew from \$37.4 billion to \$210.1 billion. Moreover, the percent of individual investors who owned mutual fund shares rose from 15.8 percent to 30.3 percent between 1981 and 1985.

More importantly, the sheer dominance of money managers appeared not in assets held but in their trading muscle—their ability to move huge sums of money into and out of stocks on short notice. Accordingly, money managers were the principal price setters (or “lead steers”) in the stock market. Approximately 85 percent of all trades on the New York Stock Exchange involved institutional investors.

The rising dominance of institutional investors resulted in the growth of trading volume, average trade size, and, especially, in the growth of block trading (i.e., individual trades of more than 10,000 shares), which was virtually nonexistent 20 years ago but now accounted for about half of the trading volume (see Exhibit 2). The surge in size and power of institutional investors coincided with a bull market in common stocks that emerged in August 1982 and ended with the crash in October 1987 (see Exhibit 3). The collapse of the bull market resulted from several cumulative developments: (1) rising interest rates; (2) trade and government budget deficits; (3) instability in foreign exchange markets; (4) threatened changes in merger regulation; and (5) the failure of market clearing systems to keep up with the heavy volume of transactions—all compounded by (6) panic selling by the institutional investors.

MUTUAL FUND INDUSTRY

Mutual funds served several economic functions for investors. First, they afforded the individual investor the opportunity to efficiently diversify his or her portfolio (i.e., own many different stocks) without having to invest the sizable amount of capital usually necessary to achieve efficiency. Efficiency also was reflected in the ability of mutual funds to exploit scale economies in trading and transactions costs, economies unavailable to the typical individual investor. Second, in theory, mutual funds provided the individual investor the professional expertise necessary to earn abnormal returns through successful securities analysis.

A third view was that the mutual fund industry provided:

an insulating layer between the individual investor and the painful vicissitudes of the marketplace. This service, after all, allows individuals to go about their daily lives without spending too much

time on the aggravating subject of what to buy and sell and when, and it spares them the even greater aggravation of kicking themselves for making the wrong decision. . . . Thus, the money management industry is really selling “more peace of mind” and “less worry,” though it rarely bothers to say so.⁴

At the end of 1987, there existed 1,389 mutual funds.⁵ This total included many different kinds of funds, each pursuing a specific investment focus and categorized into several acknowledged segments in the industry: aggressive growth (i.e., capital appreciation-oriented), equity income, growth, growth and income, international, option, specialty, small company, balanced, and a variety of bond or fixed-income funds.⁶

Funds whose principal focus of investing was common stocks comprised the largest sector of the industry—890 funds. There were, in comparison, 40 balanced funds, and 428 fixed-income funds. In short, the mutual fund industry could be thought of as a predominantly equity-oriented industry.

The performance of a mutual fund could be evaluated in terms of its total returns to investors as calculated by:

$$\text{Annual total return} = \frac{\text{Change in net asset value} + \text{Dividends} + \text{Capital gain distributions}}{\text{Net asset value (at the beginning of the year)}}$$

Exhibits 4 and 5 indicate how net asset value (NAV) and the change in NAV were calculated for Magellan. For instance, using the data in Exhibit 6, the annual total return for 1986 would be:

$$\text{Total return 1986} = \frac{(48.69 - 45.21) + .46 + 6.84}{45.21} = 23.74\%$$

It is worth noting that computing the annual total return in this manner *does* take into account annual management fees, and *does not* take into account front-end or back-end “loads.”

Mutual fund advisors received compensation under various schemes that featured variations on two components:

Initial Payments. Nearly three quarters of all mutual funds were sold under some kind of commission, sales fee, or “load.” The load could be as large as 8.5 percent of the investor’s principal. Back-end loads (i.e., redemption fees) also were possible.

⁴Contrarius, “Good News and Bad News,” *Personal Investing* III, no. 16, August 26, 1987, p. 128.

⁵This estimate is based on the number of funds followed by Lipper Analytical Services, Inc. Excluded from this count are money market funds and short-term municipal funds, of which there were about 800.

⁶Aggressive growth funds seek to maximize capital gains. Current income is of little concern. Growth funds invest in more well-known companies with steadier track records. Growth and income funds invest in companies with longer track records that are expected to increase in value and provide a steady income stream. International funds invest in foreign companies. Option funds seek to maximize current returns by investing in dividend-paying stocks on which call options are traded. Balanced funds attempt to conserve principal while earning both current income and capital gains.

Annual Fees. Annual management fees ranged from under 0.5 to 2.0 percent of fund assets. Some funds also charged a separate fee for marketing and promotion expenses, which could run up to 2 percent of assets.

The net effect of these payments on shareholder returns could be dramatic.⁷ Another drag on returns to shareholders was the tendency of funds to keep 10 percent of assets in cash—5 percent to meet redemptions and 5 percent to meet unexpected bargains. In comparison, Magellan carried only 1.4 percent in cash before the stock market crash in October 1987, ultimately forcing Peter Lynch to dump \$1 billion worth of shares in the market in order to meet unexpectedly high redemptions.

The number and types of mutual funds increased dramatically during the bull market (see Exhibit 7 for a summary of the growth of mutual fund assets). This reflected the increased liquidity in the market and the demand by investors for equity surrogates. But more importantly, it reflected the effort by mutual fund organizations to *segment the market* (i.e., to identify the specialized and changing needs of investors and to create products to meet those needs). One important result was a broader customer base for the mutual fund industry as well as deeper penetration of the total market for financial services.

Another important result of this development was that it added a degree of complexity to the marketplace that altered the investment behavior of some equity investors. In particular, this tended to encourage fund switching, especially from one type of fund to another within a family of funds. Such exchange activity increased from a few billion dollars in volume in 1980 to over \$100 billion in 1986. This reflected the greater range of mutual funds from which to choose, the increased volatility in the market, and the increased fashionability of timing-oriented investment strategies. In short, as the bull market matured, mutual fund money became “hotter” (i.e., tended to turn over faster).

PERFORMANCE OF THE MUTUAL FUND INDUSTRY

Exhibit 8 reveals that the average return on 683 general equity funds over the 1-, 5-, and 10-year periods was below that of the Standard & Poor’s 500 index of common stocks (S&P 500). In 1987, only one third of all equity mutual funds provided returns (before fees and expenses) greater than the S&P 500. This result was consistent with the performance of pension funds as well: over the period 1969 to 1984, pension funds, on average, underperformed the S&P 500 by one percentage point.⁸ Exhibit 9 presents summary data on the highest performing funds in recent years.

The two most frequently used measures of performance were (1) the percentage annual growth rate of net asset value (i.e., total return on investment), and (2) the absolute dollar value today of an investment made at some time in the past. These measures were then compared to the performance of a benchmark portfolio, such as the S&P 500. However, academicians criticized these approaches because of their failure to adjust for the

⁷For instance, suppose that you invested \$10,000 in a fund that would appreciate at 10 percent annually, and that you sold out after three years. Also suppose that the advisory firm charged annual fees of 2 percent and a redemption fee of 4 percent. The fees would cut pretax profit by 35 percent—from \$3,310 to \$2,162.

⁸Burton Malkiel, *A Random Walk Down Wall Street* (New York: W.W. Norton, 1985), p. 170.

riskiness of the mutual fund. For instance, it should be expected that a conservatively managed mutual fund would yield a lower return—precisely because it took fewer risks.

After adjusting for the riskiness of the fund, academic studies reported that mutual funds were able to perform up to the market on a gross returns basis; however, when expenses were factored in, they underperformed the market.⁹ Some analysts attributed this to the average 1.3 percent expense ratio of mutual funds and the need to hold cash.¹⁰

Most mutual fund managers relied on some variation of two classic schools of securities analysis:

Technical Analysis. This involves the identification of profitable investment opportunities based on trends in stock prices, volume, market sentiment, Fibonacci numbers, and the like.

Fundamental Analysis. This approach relies on insights afforded by an analysis of the economic fundamentals of a company and its industry: demand and supply, costs, growth, prospects, and so on.

While variations on these approaches often produced supernormal returns in certain years, there was no guarantee that they would produce such returns consistently over time. Burton Malkiel, an academic researcher, concluded that a passive buy-and-hold strategy (of a large diversified portfolio) would do as well for the investor as the average mutual fund:

While funds may have very good records for certain short time periods, there is generally no consistency to superior performance. The only dependable relationship in mutual fund performance is the tendency for funds assuming greater risks to earn, on average, a larger long-run rate of return.¹¹

Many academicians expected this result. They argued that the stock market followed a “random walk,” where the price movements of tomorrow are essentially uncorrelated with the price movement of today. In essence, this denied the possibility that there could be momentum in the movement of common stock prices. By this view, technical analysis was the modern-day equivalent of alchemy.

Fundamental analysis, too, had its academic detractors. They argued that capital markets are informationally efficient and that the insights available to any one fundamental analyst are bound to be available to all. Thus, they concluded that stock prices already impound all that is known about a company.

By implication, these academic theories were highly critical of the services provided by active mutual fund managers. Paul Samuelson, the Nobel Prize-winning economist said:

⁹For instance, Michael Jensen (1968) reported that gross risk-adjusted returns were $-.4$ percent and that net risk-adjusted returns (i.e., net of expenses) were -1.1 percent. Main (1977) updated the study and found that for a sample of 70 mutual funds, net risk-adjusted returns were essentially zero.

¹⁰Jeffrey M. Laderman, “The Best Mutual Funds,” *Business Week*, February 22, 1988, p. 64.

¹¹Malkiel, *A Random Walk Down Wall Street*, p. 161.

Stock prices already have discounted in them an allowance for their future prospects. Hence . . . one stock [is] about as good or bad a buy as another. To [the] passive investor, chance alone would be as good a method of selection as anything else.¹²

Various popular tests of this thinking seemed to support it. For instance, *Forbes* magazine chose 28 stocks by throwing darts in June 1967 and invested \$1,000 in each. By 1984, the \$28,000 investment was worth \$131,697.61 for a 9.5 percent compound rate of return. This beat the broad market averages and almost all mutual funds. *Forbes* concluded, "It would seem that a combination of luck and sloth beats brains."¹³

Yet the nagging problem remained that there were still *some* superstar money managers—like Peter Lynch—who, over long periods, way outperformed the market. In reply, Professor Burton Malkiel suggested¹⁴ that beating the market was much like participating in a coin-tossing contest where those who consistently flip heads are the winners. At the first flip, half the contestants are eliminated. At the second flip, half of the surviving contestants are eliminated. And so on until on the seventh flip only eight contestants remain. To the naive observer, the ability to flip heads consistently looks like extraordinary skill. By analogy, Professor Malkiel suggested that the success of a few superstar portfolio managers could be explained as luck. Consistent with this view, the ranking of high-return equity funds (see Exhibit 9) displayed little consistency across performance measurement periods.

As might be expected, the community of money managers received the academic theories with great hostility. And even in the ranks of academicians, dissension appeared in the form of the "investment behaviorists" who suggested that greed, fear, and panic are much more significant factors in the setting of stock prices than the mainstream theory admits. For instance, the stock market crash of October 1987 seemed to many to be totally inconsistent with the view of markets as fundamentally rational and efficient. Professor Lawrence Summers of Harvard argued that the crash was a "clear gap with the theory. If anyone did seriously believe that price movements are determined by changes in information about economic fundamentals, they've got to be disabused of that notion by [the] 500-point drop."¹⁵ Professor Robert Shiller of Yale said, "The efficient market hypothesis is the most remarkable error in the history of economic theory. This is just another nail in its coffin."¹⁶

FIDELITY MAGELLAN FUND

Exhibit 6 presents a summary of the Magellan Fund as it stood in late 1987 and of its performance over the previous 10 years. The balance sheet and operating statements of the fund are presented in Exhibits 4 and 5 respectively. The long-term performance results

¹²Paul Samuelson, quoted in Malkiel, *A Random Walk Down Wall Street*, p. 175.

¹³*Forbes*, summer 1984, cited in Malkiel, *A Random Walk Down Wall Street*, p. 164.

¹⁴Malkiel, *A Random Walk Down Wall Street*, pp. 167–68.

¹⁵B. Donnelly, "Efficient-Market Theorists Are Puzzled by Recent Gyration in Stock Market," *The Wall Street Journal*, October 23, 1987, p. 7.

¹⁶*Ibid.*

suggested to at least one analyst that Magellan tended to outperform the market in bull markets and underperform the market in bear markets. This was attributable to Peter Lynch's conscious strategy of staying fully invested at all times, rather than attempting to time the extent of the market investments.

The other striking fact about Magellan's recent financial results was its sheer rate of growth. One analyst pointed out that:

Because of its enormous size, Magellan can no longer beat the market the way it once could. Lynch himself advises people looking for big gains to try another fund. But they won't.¹⁷

In the fourth quarter of 1987, investors added approximately \$96 billion to their savings. Thus, it was a particularly relevant question to decide whether these funds should be allocated to superstars like Peter Lynch.

¹⁷Nocera, "The Ga-Ga Years," p. 88.

EXHIBIT 1 Breakdown of Control of U.S. Equity (billions of dollars, except ratios)

| | 1981 | 1982 | 1983 | 1984 |
|--|-----------|-----------|-----------|-----------|
| Total market value* | \$1,504.9 | \$1,720.9 | \$2,021.9 | \$2,021.5 |
| Amount controlled by pensions* | \$266.3 | \$322.2 | \$403.2 | \$405.2 |
| Percent of total | 17.7 | 18.7 | 19.9 | 20.0 |
| Amount controlled by households, personal trusts, and nonprofits* | \$1,049.4 | \$1,175.0 | \$1,324.5 | \$1,320.6 |
| Percent of total | 69.7 | 68.3 | 65.5 | 65.3 |
| Amount controlled by foreign sector | \$64.4 | \$76.3 | \$96.4 | \$94.6 |
| Percent of total | 4.3 | 4.4 | 4.8 | 4.7 |
| Amount controlled by mutual funds | \$37.4 | \$49.4 | \$74.4 | \$80.6 |
| Percent of total | 2.5 | 2.9 | 3.7 | 4.0 |
| Amount controlled by life insurance companies* | \$47.7 | \$55.7 | \$64.9 | \$63.3 |
| Percent of total | 3.2 | 3.2 | 3.2 | 3.1 |

*Does not include mutual fund shares.

Source: Federal Reserve Board.

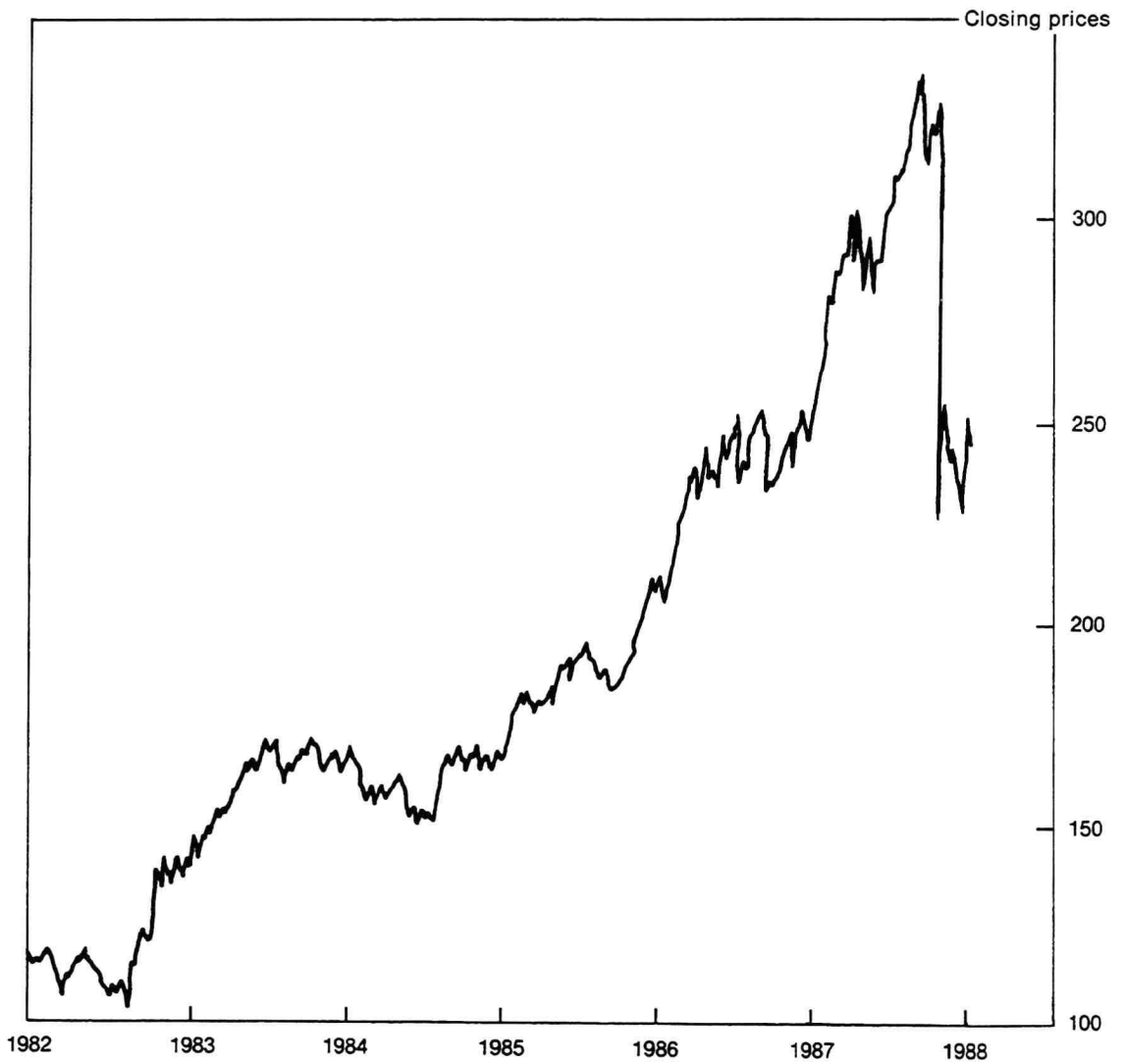
| <i>1985</i> | <i>1986:I</i> | <i>II</i> | <i>III</i> | <i>IV</i> | <i>1987:I</i> | <i>II</i> |
|-------------|---------------|-----------|------------|-----------|---------------|-----------|
| \$2,584.3 | \$2,876.7 | \$3,068.4 | \$2,836.3 | \$2,948.0 | \$3,521.1 | \$3,623.7 |
| \$513.4 | \$593.4 | \$627.0 | \$580.6 | \$606.6 | \$711.0 | \$739.1 |
| 19.9 | 20.6 | 20.4 | 20.5 | 20.6 | 20.2 | 20.4 |
| \$1,687.0 | \$1,833.0 | \$1,955.1 | \$1,792.9 | \$1,844.8 | \$2,215.9 | \$2,251.7 |
| 65.3 | 63.7 | 63.7 | 63.2 | 62.6 | 62.9 | 62.1 |
| \$124.1 | \$143.0 | \$160.4 | \$155.7 | \$167.4 | \$209.4 | \$223.8 |
| 4.8 | 5.0 | 5.2 | 5.5 | 5.7 | 5.9 | 6.2 |
| \$113.7 | \$140.9 | \$150.8 | \$148.1 | \$161.2 | \$195.6 | \$210.1 |
| 4.4 | 4.9 | 4.9 | 5.2 | 5.5 | 5.6 | 5.8 |
| \$77.5 | \$83.8 | \$87.1 | \$84.3 | \$90.9 | \$101.8 | \$105.4 |
| 3.0 | 2.9 | 2.8 | 3.0 | 3.1 | 2.9 | 2.9 |

EXHIBIT 2 Growth of Block Trading, NYSE

| | <i>Total Block Trades</i> | <i>Percent of Total Share Volume</i> |
|------------|-------------------------------|--|
| 1965 | 2,171 | 3.1 |
| 1970 | 17,217 | 15.4 |
| 1975 | 34,420 | 16.6 |
| 1976 | 47,632 | 18.7 |
| 1977 | 54,275 | 22.4 |
| 1978 | 75,036 | 22.9 |
| 1979 | 97,509 | 26.5 |
| 1980 | 133,597 | 29.2 |
| 1981 | 145,564 | 31.8 |
| 1982 | 254,707 | 41.0 |
| 1983 | 363,415 | 45.6 |
| 1984 | 433,427 | 49.8 |
| 1985 | 539,039 | 51.7 |
| 1986 | 665,587 | 49.9 |

Source: NYSE Factbook.

EXHIBIT 3 U.S. Market: S&P 500 Index, January 1982 to November 1987



Source: U.S. Government Report on Market Mechanisms.

EXHIBIT 4

Statement of Assets and Liabilities

September 30, 1987

Assets:

| | |
|---|-----------------------|
| Investments in securities, at value (including repurchase agreements of \$174,166,000), (Average cost \$9,642,195,222) (Notes 1 and 6)— | |
| See accompanying schedule | \$11,659,850,929 |
| Receivable for investments sold | 294,356,506 |
| Receivable for Fund shares sold | 37,307,861 |
| Dividends receivable | 25,004,653 |
| Interest receivable | 1,497,480 |
| Other receivables | 103,940 |
| Total assets | 12,018,121,369 |

Liabilities:

| | |
|---|--------------------|
| Payable to custodian | \$ 68,917,308 |
| Payable for investments purchased: | |
| Regular delivery | 328,992,246 |
| When-issued basis (Note 1) | 6,152,741 |
| Payable for Fund shares redeemed | 7,812,689 |
| Accrued management fee | 7,030,967 |
| Other payables and accrued expenses | 4,185,219 |
| Total liabilities | 423,091,170 |

Net Assets **\$11,595,030,199**

Net Assets consist of:

| | |
|--|----------------------|
| Capital paid in | \$ 8,781,397,800 |
| Accumulated undistributed net investment income | 114,192,414 |
| Accumulated undistributed realized gain on investments—net | 681,784,278 |
| Unrealized appreciation (depreciation) in value of investments based on average cost—net | <u>2,017,655,707</u> |

Net Assets, for 198,673,409 shares outstanding **\$11,595,030,199**

Net Asset Value and redemption price

| | |
|---|----------------|
| per share (\$11,595,030,199 ÷ 198,673,409 shares) | <u>\$58.36</u> |
| Offering price per share (100/97 of \$58.36) | <u>\$60.16</u> |

Source: Six-month report, Magellan Fund.

EXHIBIT 5

Statement of Operations **Six Months Ended September 30, 1987**

Investment Income:

| | | |
|-----------------------------------|------------------|--------------------|
| Dividends: | | |
| Unaffiliated issuers | \$106,352,900 | |
| Affiliated issuers (Note 6) | <u>3,811,274</u> | \$110,164,174 |
| Interest | | <u>7,129,932</u> |
| Total income | | <u>117,294,106</u> |

Expenses:

| | | |
|---|---------------|-------------------|
| Management fee (Note 4) | 40,724,990 | |
| Transfer and shareholders' servicing agent (Note 4) | 13,730,330 | |
| Accounting (Note 4) | 48,804 | |
| Trustees' fees and expenses (Note 4) | 74,922 | |
| Custodian fees and expenses | 696,502 | |
| Reports to shareholders | 511,867 | |
| Audit | 91,762 | |
| Legal | 139,259 | |
| Registration fees | 409,259 | |
| Interest (Note 5) | 48,232 | |
| Miscellaneous | <u>99,598</u> | |
| Total expenses | | <u>56,575,525</u> |
| Investment income—net | | <u>60,718,581</u> |

Realized and Unrealized Gain
(Loss) on Investments (Note 3):

| | | |
|--|-------------------|-----------------------------|
| Realized gain (loss) on investments on basis of average cost—net: | | |
| Unaffiliated issuers | 801,416,371 | |
| Affiliated issuers (Note 6) ... | <u>30,117,285</u> | |
| Realized gain (loss) on investments on basis of average cost—net | | 831,533,656 |
| Increase in unrealized appreciation (depreciation) | | <u>64,305,483</u> |
| Net gain (loss) on investments | | <u>895,839,139</u> |
| Net increase (decrease) in net assets resulting from operations | | <u><u>\$956,557,720</u></u> |

Source: Six-month report, Magellan Fund.