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Grantham, Mayo, Van Otterloo & Co., 2001

"Sit down. You've done a really bad job managing our money. Tell us why you are underperforming, and don't give us any of that mean-reversion nonsense." This admonition still echoed loudly as Jeremy Grantham and Benjamin Inker were preparing for a return visit to one of their firm's important clients. At a previous meeting in early 2000, Grantham and Inker, respectively chief investment strategist and head of asset allocation research at Grantham, Mayo, Van Otterloo & Company's (GMO), could not easily defend the firm's poor performance and its value orientation. Value stocks had underperformed growth stocks by 5.9% per annum over the prior 10 years, and GMO's asset allocation fund had underperformed its benchmark cumulatively by 25% since January 1998. As a result of this underperformance, the client took away half of its portfolio that GMO managed. Now, in late 2001, Grantham and Inker's argument that the underperformance was the result of a short-term bubble seemed prescient. The recent dramatic decline of growth stocks and the rise of value stocks now gave the value style a 2.5% per annum lead over 10 years, and GMO's global asset allocation account was cumulatively 6% ahead of its benchmark since January 1998.

While they could look back and congratulate themselves, Grantham and Inker were concerned that GMO's steadfast refusal to buy overvalued stocks during the bubble of the late 1990s may have won the battle but lost the war. Between 1997 and 2000, the firm had suffered $10 billion of net client withdrawals, and they wondered whether it made sense to change GMO's business model of investing according to their honest beliefs which often meant making large portfolio bets that might take years to pay off. GMO was presently in an enviable position, with nearly all of its products showing outperformance on a one, three and five-year basis, and since inception. This seemed to be an opportune moment for the firm to reexamine its business strategy and focus.

Early History

GMO was founded in 1977 by Grantham, Richard Mayo, and Eyk Van Otterloo. Their approach was to invest with a conservative value-orientation in stocks that were out-of-favor or not widely followed. GMO's first product invested in U.S. equities and was based on traditional company analysis combined with sector allocation decisions. Grantham was the macro strategist and Mayo selected the individual stocks. By 1981, assets under management reached $250 million, and the firm became concerned that additional asset growth might adversely affect investment performance. They decided to close the product to new accounts, and soon afterwards raised fees from 0.75% to 1% per annum without losing any clients.

Postdoctoral Fellow Joshua N. Musher and Professor André F. Perold prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

While GMO's investment strategy had reached capacity in the domestic equity markets, it had yet to be applied internationally. Soon after closing its U.S. Active product, the firm started an International Active product, managed by Van Otterloo using the same investment approach. Because of their strong U.S. track record and because few other managers offered a disciplined approach to international investing, this product attracted a number of existing clients as well as new clients. GMO closed the International Active product to new accounts in 1985 when it reached $550 million in assets.

In 1982, Grantham led an effort to leverage GMO's investment strategies using recent advances in computer technology. Hiring researchers with diverse technical backgrounds, he created the firm's U.S. Core product, one of the early funds to invest on the basis of quantitative models. GMO's quantitative models greatly increased the firm's capacity to manage money. Since the models did not rely on hands-on individual company analysis, they could quickly screen and select from thousands of stocks, which made it possible to create portfolios of many holdings. Quantitative processes thus allowed for more opportunities to be exploited relative to fundamental investment processes. In addition, the processes could be applied to other asset classes. By 2001, the firm's product range had grown to encompass 40 distinct categories, including a variety of debt-related offerings, all based on essentially very similar techniques. Most recently, GMO began applying the models in its new market-neutral and long-short hedge funds, which allowed them to sell short the least attractive stocks in addition to buying the most attractive stocks. Finally, by codifying the investment process, GMO established intellectual capital that remained with the firm, even if an employee left. As the firm's expertise and body of knowledge grew, it could seek and capitalize on more opportunities in diverse areas.

Beginning in 1985, GMO offered its services through commingled funds in addition to separate accounts. These commingled funds included mutual funds and other similar pooled vehicles where clients held proportionate shares of a single portfolio. This structure minimized transaction costs related to inflows and outflows as these could be netted against each other. Additionally, the net flows could be used to buy or sell securities that GMO in any event would have wanted to trade when the portfolios underwent periodic rebalancing. Finally, with clients invested in a single fund (one for each product), there would be no dispersion of investment performance across accounts.

As its products proliferated, some of GMO's clients increasingly became dependent on the firm for asset allocation advice, and this in turn influenced how the firm thought about the introduction of new products. For example, in late 1988, the firm's models suggested that U.S. growth stocks were undervalued. GMO introduced the U.S. Growth fund based on the same models that U.S. Core used selecting its growth stock holdings, but was careful to stress that growth stocks were not good investments in the long run. Indeed, in 1991, after a strong rally in growth stocks, GMO advised its clients to move their assets out of the U.S. Growth fund and into value stocks, which then outperformed. GMO did not charge for the advice it gave on asset allocation, that is, there were no fees levied beyond what clients were already paying in the underlying GMO funds.

By the fall of 2001, GMO had opened offices in San Francisco, London and Sydney. It employed 75 investment and 41 client service professionals, up from 16 and zero, respectively, in the late 1980s. Fourteen of the investment professionals had Ph.D.s in fields such as physics, computer science and economics. Employees were paid on the basis of individual contribution as well as team performance. Part of the compensation was in equity of the firm. Each year, the firm diluted its ownership by issuing an incremental 4.35% of the equity to employees. Over time, younger employees could build up significant equity stakes, a factor that helped keep employee turnover very low.

GMO had $20.6 billion under management, primarily for tax-exempt institutional investors. (**Exhibits 1** and **2** show the firm's accounts by client and product type.) GMO had always liked to concentrate on investing, and historically spent little time on sales and marketing. Many of the firm's clients knew about GMO through investment consultants such as Cambridge Associates, a leading consultant for endowments and foundations. This distribution channel often brought in the kinds of clients that GMO considered most desirable—long-horizon, sophisticated, and stable.

Investment Philosophy

GMO's experience over the years, together with a keen sense of fiduciary duty to their clients,[1] helped refine their investment philosophy. They believed that:

- The global capital markets were inefficient, that prices did not always reflect fair value and therefore excess returns could be generated;
- As profitability or perception improved, a portfolio of undervalued securities would provide returns greater than the market, with less risk than the market;
- Controlling risk included preserving capital.

In addition, they believed in keeping assets under management reasonable in relation to the approach used to invest them and to avoid growth for growth's sake. If the assets were too large, performance would suffer because funds would have to invest in some of their weaker ideas and would pay higher transaction costs when trying to establish (or exit) larger positions.

When introducing new products, GMO paid careful attention to investment cycles. Ben Inker had documented 28 times when an asset class had broken out of its historical trend to outperform by two or more standard deviations. In every case, the performance had reverted back to its long-term average. (See **Exhibits 3A** and **B** for selected cases.) This meant that GMO needed to watch for, and not invest in, these bubbles. It also meant that GMO should not recommend a new product for an asset class that was in the midst of one of these fads. Clients sometimes disregarded GMO's advice to avoid investment bubbles. For example, in 1986, a client asked GMO to start an actively managed Japanese equities fund. GMO created the product despite being loudly bearish on the long-term prospects for the Japanese market. Opening the fund helped GMO diversify its product base and keep clients in-house when they wanted to direct the allocation. It also established a platform for growth when the asset class became more attractive.

Quantitative Investment Processes

GMO's Quantitative division accounted for about two-thirds of the firm's assets and investment professionals. The division managed five sets of strategies: U.S., International and Emerging Market Equities, as well as Fixed Income and Asset Allocation. The largest single strategy was the U.S. Core fund, with about $3.4 billion in assets. Though the details differed for the various funds, the Quantitative group made investment decisions according to a common, integrated process that scored securities according to their performance prospects, and then constructed portfolios from these scores to maximize the expected return while minimizing the volatility of the returns. The investment rules codified the firm's active experience of what factors dominated security returns.

[1] Grantham was known for scolding clients when he thought they were making "loony" decisions.

The GMO stock selection process began by assigning each company a value score and a momentum score. A stock's value score was based on its price-to-fair value ratio, where fair value was estimated by means of a proprietary dividend discount model (DDM); a stock's momentum score was calculated based on its price momentum over the last twelve months. Stocks were then ranked according to these scores into value and momentum deciles. The overall portfolio was divided into a value subportfolio and a momentum subportfolio, each created independently by holding stocks in the top value and momentum deciles, respectively.

GMO's Value or Dividend Discount Model: As with any DDM, the value of a company was assumed to be equal to the present value of its future stream of dividends (including share repurchases). GMO estimated future dividends by projecting the firm's return on equity and payout ratio over time. Profits that were not paid out were retained inside the firm and increased the firm's book value. The critical factor in this model was the assumption of mean-reversion. Over the long-term, each company was assumed to generate average returns. If profitability of an individual company were significantly above this norm, it would fall over time, while if it started below average, profitability would rise. The premise for this mean-reversion process derived from simple economics: If a firm earned above-market returns, competitors would enter the market and depress margins. In Grantham's words, "that's how capitalism works." Each firm, however, was assumed to revert to average profitability in a unique manner that GMO carefully modeled based on individual company characteristics. GMO found that its model was less accurate than sell-side analysts in predicting changes in profitability over a one-year horizon, but it was a significantly better estimator of future profitability over a five-year horizon.

GMO also applied the mean reversion to dividend payout rates. Companies would retain earnings (i.e., not pay dividends) if internally they could generate above average returns on that equity capital. As the opportunity set decreased (or competition increased) the company would begin paying out excess income that it could not profitably put to work.

The projected dividend stream was discounted at a real rate of 5.7% adjusted for long-run expected inflation (currently forecasted to be 2.2% per annum), and also adjusted for firm quality and reporting biases. GMO defined a firm's quality as its survivability during periods of great economic distress. For example, companies that survived the Great Depression in 1929-1933 tended to be large with historically high profit margins and strong balance sheets. Stocks with these characteristics were valued at lower discount rates than poor quality stocks. The discount rate adjustment for reporting biases reflected the tendency of many firms' reported returns on equity to systematically overstate their future economic earnings. The nominal discount rates used by GMO were in the range of 11-14% for most stocks. **Exhibits 4A** and **4B** illustrate the DDM for the bookseller, Barnes and Noble, and the fashion designer and marketer, Liz Claiborne. The stocks with the lowest 10% of price to DDM ratios formed the top value decile.

GMO's momentum model: The momentum strategy attempted to take advantage of trends in stock prices that were related to market sentiment and that frequently produced deviations from fair value. Research had shown that stocks that had performed well in the last year tended to perform well in the future, and vice versa. However, stocks that had performed well in the previous month were likely to underperform the following month, and vice versa. Thus, the ideal momentum buy candidate was a stock that had performed well during the past year but that had underperformed during the last month. GMO carefully quantified these effects to produce its momentum scores.

Combining value and momentum: GMO back tested the value and momentum models using historical stock prices and company fundamental information since the late 1960s. They tracked the subsequent one-year return in excess of the benchmark (or "alpha") of the stocks in each value and momentum decile (summarized in **Exhibit 5** by quintile). On paper, stocks in the top momentum

decile and stocks in the top value decile had similar return and risk characteristics. Moreover, as shown in **Exhibit 6**, the performance of value and momentum stocks was negatively correlated, especially in extreme periods: when one strategy generated significant underperformance, the other tended to perform well. However, stocks' momentum rankings changed much more frequently than their value rankings. Consequently, portfolios of momentum stocks had much higher annual turnover (136%) than portfolios of value stocks (38%).

To determine the fraction of a portfolio to be allocated to the value subportfolio versus the momentum subportfolio, GMO simulated an efficient frontier as shown in **Exhibit 7A**. The risk and return assumptions for these calculations were based on historical back testing but adjusted for transaction costs. GMO estimated that transaction costs (brokerage commissions plus the price impact of trading) reduced expected returns by 0.10% per annum for the top-ranked value stock group and 0.73% per annum for the top-ranked momentum stock group (the higher transaction costs for momentum subportfolio stemming primarily from higher turnover). The optimal allocation between the value and momentum subportfolios was the one that maximized the information ratio, i.e., the ratio of outperformance (alpha) to the standard deviation of tracking error versus the benchmark. **Exhibit 7B** shows the value/momentum split for different products.

Slicing: The final stage of the investment process, called "slicing," related to the construction of the value and momentum subportfolios. Rather than hold the top-ranked stocks at all times, each subportfolio was divided into multiple slices that rolled over on a periodic basis. Each month, the oldest slice would mature and be reinvested in stocks that were currently ranked in the top decile, independently of how the other slices were invested. All other slices would be left untouched. For example, the value subportfolio contained 18 slices. In September 2001, the slice created eighteen months previously in March 2000 matured and the stocks in this portion of the portfolio were sold. The new slice representing one-eighteenth of the value subportfolio would then be invested in the stocks currently ranked in the top decile by value. These stocks would be held for 18 months, until the slice matured in March 2003. The momentum subportfolio was constructed similarly but with 8 slices. For further illustration, see **Exhibit 8** which shows how Philip Morris was incorporated over time into the U.S. Core portfolio.

GMO believed that slicing added value in several ways. The primary advantage was that positions would be built up slowly. GMO expected to be wrong about 30% of the time because there were many false signals in the data, and slicing prevented spurious signals that lasted only a short time from unduly influencing the overall portfolio and generating high turnover (with resulting transaction costs). Stocks that consistently ranked in the top decile would be weighted more heavily in the portfolio because they would be purchased in consecutive monthly slices. In addition, because only a small fraction of the total fund was being updated, the market impact of implementing the position would be small, thereby reducing transaction costs. The slicing approach also kept the firm from selling winners too soon, as shares of a stock could only be sold as part of a maturing slice. Finally, slicing provided a mechanism to buy more of a stock as it became cheaper, or a better value.

Asset Allocation Process

GMO managed about $5 billion in asset allocation accounts. In these accounts, the firm used its models to determine which asset classes represented the best long-term investments, over and beyond selecting securities within the individual asset classes chosen by the client. In some sense, this was a throwback to a period in the 1960s and 1970s when investment managers had broad discretion. The past twenty years had seen the proliferation of investment consultants and specialized managers, and the vast majority of clients now were taking direct responsibility for asset allocation decisions. While this allowed clients to choose investment managers they liked most for

each asset class, it did not necessarily mean that assets were being allocated to the most attractive asset class. Specialist managers generally were reluctant to make bearish statements about their particular area of expertise, as it would result in a loss of business if clients shifted to other asset classes. GMO considered itself a rare exception in this regard.

GMO's approach to asset allocation involved working closely with each client to establish a tailored strategic policy benchmark with ranges of weights (minimum and maximum) for each of the allowed asset classes. The benchmark would be changed only infrequently.

At any point in time, GMO would maintain an estimate of the expected future returns, and the expected alpha, of each asset class. The sum of the two forecasts determined the overall attractiveness of an asset class. The future return on a particular asset class was determined strictly on a valuation basis. In particular, for equities, GMO would estimate the gain or loss from changes in the price-earnings multiple, from changes in profit margins, from growth in sales per share, and from the dividend yield—all of which were expected to exhibit long-run mean reversion. (See **Table A**.) GMO did not incorporate momentum into the forecasts of asset class returns as they had found that, while price momentum worked at the individual security level, it had poor forecasting ability at the level of the broad asset class. The estimate of future alpha within an asset class was based on historical results, tempered with the knowledge that GMO's investment style was itself cyclical (i.e., mean reverting). If recent outperformance had been exceptionally good, the future estimate for alpha was somewhat lower. **Exhibit 10** shows these forecasts as of September 30, 2001 for each of the asset classes.

Table A Building a 10-year return estimate for the S&P 500 and emerging equities, September 2001.

Return source	Current Level		Level in 10 Years	Contribution to Annualized Return
S&P 500				
P/E	22.9		17.5	-2.7%
Profit margin	6.1%		6.0%	-0.2%
Real sales growth*		2.9%		2.9%
Dividend yield	1.5%		2.8%	2.2%
Total real return				2.1%
Emerging Equities				
P/E	10.3		15.0	3.8%
Profit margin	5.0%		5.2%	0.4%
Real sales growth*		3.1%		3.1%
Dividend yield	2.7%		2.7%	2.7%
Total real return				10.8%

Source: GMO

* Per annum sales growth over ten years

Because some asset classes were more volatile than others, the attractiveness of an asset class was determined by its "signal to noise" ratio—the ratio of the forecasted expected return of the asset class divided by its standard deviation. The portfolio weight of an asset class relative to the benchmark was then determined by a non-linear function of the signal-to-noise ratio as illustrated in **Exhibit 10**.

The function was chosen so that a small signal-to-noise ratio would only minimally affect the allocation, and a three standard deviation signal would generate a maximum deviation from the benchmark weight.

The investment process was designed to make significant bets when the signals were strong. Grantham believed that "in the investment industry, there is a general failure to differentiate between high and low confidence and therefore between major and minor bets. Managers are either risk takers or conservative. A better solution is to be conservative almost all the time but take large risks when the fat pitch finally arrives."[2] Since the firm's founding, GMO had made 18 big bets, a little less than one every year. Fifteen of the bets had been profitable, while the other three were currently under water but still open. (See **Exhibit 11** for a list of previous and current big bets.) The ability and confidence of GMO to make these large bets, and to incur greater deviations from their benchmarks, were key factors in the firm's long-term performance results.

The investment process was also aimed at capital preservation, and GMO expected most of its outperformance to occur in bear markets, when it most mattered to clients. Since January 1983, this "bear-market bias" strategy helped U.S. Core deliver an average value added of –0.06% per month during bull markets (145 months) and +0.40% per month during bear markets (80 months). The International Core fund had similar results since April 1987: -0.78% per month during 98 up-months, and +1.63% per month during 76 down months. Since July 1988, the Global Asset Allocation fund produced alphas of –0.21% and +0.67% per month in 106 up-, and 53 down-months, respectively.

GMO's performance since 1996

GMO's period of sustained underperformance began in 1996 when its models showed equities to be somewhat expensive, both domestically and internationally. Corroborating signs of overvaluation were the high volume of initial public offerings and the increased issuance of equity by corporations to facilitate takeovers, activities that were more likely to occur in an expensive market than in a cheap one. Larger companies were also taking significant restructuring charges (with no adverse impact on their stock prices) that inflated return-on-equity. While GMO did not foresee a crash, it expected future stock market returns to be disappointing. With no sectors looking particularly attractive, the GMO U.S. Core fund overweighted utilities and other defensive stocks that paid relatively high dividends. These sectors suffered, however, when the market became concerned that the U.S. Federal Reserve would raise interest rates, and the fund underperformed the index. GMO did not fare much better in international stocks when, from 1995 through 1997, the 20% most expensive stocks (measured by price to book ratios) had rallied after 12 years of underperformance.

Underperformance continued through 1998. By March of that year, the S&P 500 had a price-to-earnings ratio of 24, which GMO considered to be an exceptionally rich valuation by historical standards. (See **Figure 1**.) Prices had continued to climb even though consensus estimates for the year's earnings had declined during the period. In a mid-1998 update to clients, Grantham lamented:

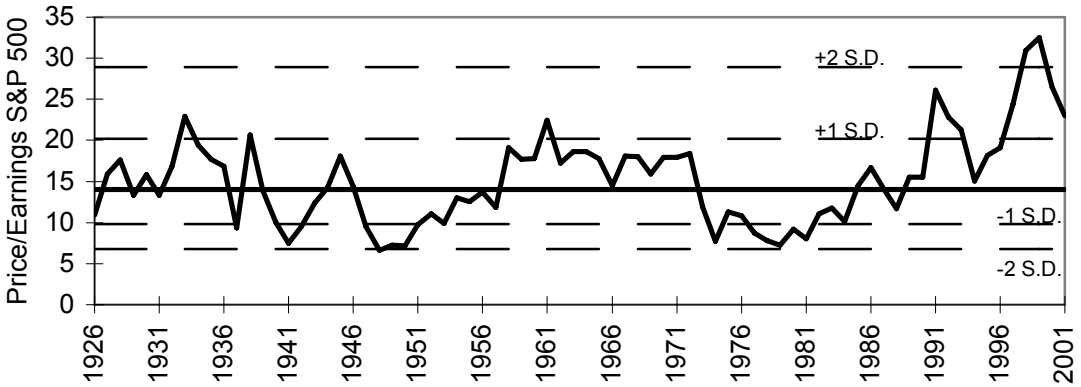
> In the second quarter, contrarian value investing failed as badly as in any period for which we have data. Every cheap asset class underperformed while the overvalued U.S. and European equity markets grew even more expensive. The theme 'in a panic, buy Coke' was extremely strong in the quarter, as record levels of foreign investment (almost $30 billion) flowed into U.S. blue chip stocks… **We cannot find any example of an asset class that has moved more than two standard deviations from its historic norm that has not then reverted**

[2] Jeremy Grantham, "Everything I Know About the Stock Market in 30 Minutes," Speech to America Plus, June 1997, item 44.

> **to its long-term average.** [original emphasis] ... We expect that market psychology will play a pivotal role in deciding the fate of large-cap stocks. Over the past few years, we have underestimated the ability of investors' attitudes to drive values far away from underlying fundamentals. Large-cap stocks look expensive to us on almost every measure — price to book, price to sales, price to cash flow, dividend yield and Tobin's Q (price to replacement cost of book value). At the stretched valuations of blue chip stocks today, the safe haven of U.S. equities seems to be growing precariously insecure. … The only questions remaining are what critical event will finally induce investors to decide that they are paying too much for blue chip earnings and when will it occur.

The international trends were similar, and investors withdrew over $3 billion in assets during the year, claiming that GMO "just did not get it." This was, after all, a "new economy."

Figure 1 Price to earnings ratio of S&P 500, 1926-2001.



Source: GMO
Note: Solid line represents long term average P/E of 14.1.

Valuations continued to become more extreme and, in 1999, the S&P 500 was trading at twice replacement cost and with a price-to-earnings ratio of 34 (see **Figure 1**). The earnings to price ratio was 2.9%, a paltry figure when compared with the yields on fixed-rate U.S. Treasury bonds of 5.5% and the yields on inflation-indexed Treasury bonds of 3.9%.

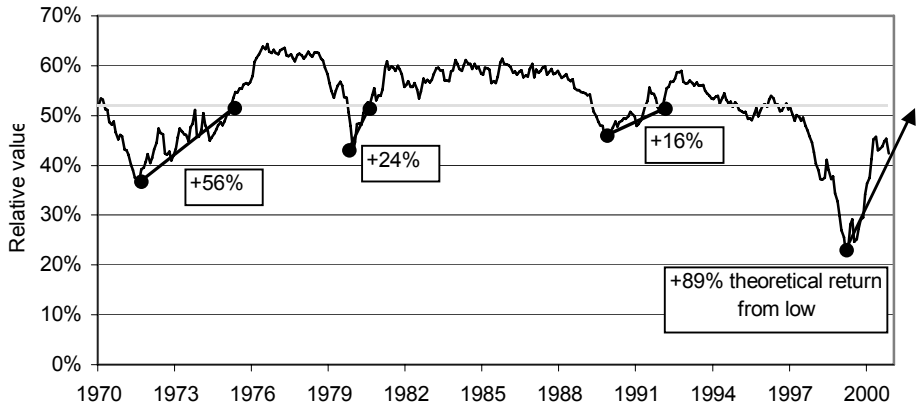
Grantham personally did not believe that the high price-to-earnings ratio could be maintained, and off-the-record neither did other analysts: when he informally surveyed professional money managers at industry conferences about long-term profit margins and price-to-earnings multiples, only 1 out of 300 disagreed with his projections of 6% margins (the high-end of historical results[3]) and a 17.5 price earnings ratio. The mathematics of those forecasts implied long-term poor performance of the broader equity markets, but the professionals were still bullish on U.S. equities. When Grantham posed the following hypothetical situation: "An angel tells you that there is a 70% probability that cash will outperform equities, what do you do?" the same money managers said that they would still invest in equities. Grantham likened his projection of the markets falling to a feather released in a strong wind. He could not say when the feather would fall, but he was confident that it would eventually hit the ground. Despite GMO's warnings, a number of clients who had seen their

[3] At the time, the federal government was estimating profit margins at 8% and with 3.5% productivity growth. Subsequent revisions brought the numbers down to 6% and 2.5% respectively, validating Grantham's assertions.

portfolios lag the benchmark continued to withdraw money and give it to growth-style managers, eventually to suffer sizable losses of capital.

At the height of the market in February and March 2000, the Internet sector had a capitalization of $1.2 trillion with a negative $2.5 billion in net income. By this time, GMO's stellar track record had been buried. As shown in **Exhibits 12A** and **12B**, compared to mid-1994 when almost all of the GMO funds had beaten their respective benchmarks, many of the funds were now behind the benchmarks, underperforming in 58% of the product-years in the last five years. As one partner privately admitted, "clients who looked only at the recent set of results might fear that they had committed a breach of fiduciary duty to continue to retain us." Yet, at this time, Inker was telling clients that this was the best buying opportunity for value stocks in a long time. At a client conference he presented **Figure 2** showing that if value stocks returned to their historical valuation, they would gain a blistering 89% relative to the S&P 500. (See **Exhibit 13** for a listing of the largest positions in U.S. Core as of March 2000.)

Figure 2 Price/Book of cheapest 25% (defined by lowest price/book) stocks relative to the S&P 500, and estimated returns from minimum relative value to average relative value, 1970-2001.



Source GMO
Note Dotted line represents long-term average of 52%.

Global Asset Allocation

GMO's Global Balanced Asset Allocation (GBAA) accounts were hardest hit by GMO's bearish views on equities. Although the underlying quantitative funds performed only slightly worse than the individual indices, GBAA held about one-third less equities than the benchmark, which was a major mistake when equities were delivering 20%+ per annum. GBAA also held a significant weight in emerging markets, which had suffered through two crises in the past three years. Fixed Income was trading at normal valuations, and so it too was overweighted. As a result, over the past four years, GBAA was cumulatively 20% behind a simple, low-cost approach to indexing to the benchmark.

In absolute terms, however, the performance of GBAA was better than GMO had forecasted: the fund was up about 50% in four years, or 10.6% per annum, and that was achieved with a large fixed

income component. From this perspective, the fund had significantly lower volatility (see **Exhibits 14A, 14B**, and **16**), and better performance, given the amount of risk undertaken, than the benchmark.

Following the market peak in March 2000, value-style investing came strongly back in favor over the next eighteen months. Growth-style investing, as measured by the NASDAQ index, declined by 70%, while the Russell 1000 Value Index appreciated by 1%. Value was now ahead of growth-style investing by 2.5% per annum over 10 years, consistent with the long-term excess return of value over growth of 2% per annum. That GBAA had been taking less risk also became evident over the past year and a half. While the S&P 500 and EAFE indices fell, and investors in the benchmark lost real capital, the GBAA actually increased in value. GMO's recommendations had performed spectacularly, as REITs, fixed income, and U.S. and international value stocks all beat the broader U.S. markets by 11% to 65%. GMO's results had also recovered spectacularly (see **Exhibit 12C**), vindicating the firm's observation that the decade of the 90s was more about irrational market behavior than dramatically improved fundamentals (see **Exhibit 16**). However, this vindication came at a cost. In 2000, the firm suffered its fourth consecutive year of net client withdrawals, and there were only modest net inflows in 2001 thus far. (See **Exhibit 17**.)

The fate of other value-oriented managers

GMO was not alone in suffering large withdrawals due to poor performance in the late 1990s. In February 2000, the legendary hedge fund manager Julian Robertson decided to shut his funds after investor withdrawals of over $8 billion. In his farewell letter, Robinson stated, "There is no point in subjecting investors to risk in a market which I frankly do not understand."[4]

Well-known value manager Gary Brinson was overseeing the management of $360 billion for UBS when he quit in March 2000. When asked what was different in handling his own money rather than other people's money, Brinson responded: "One of the complaints I had in my 30 years of managing money for other people is they would tend to focus on time horizons that I often felt were inappropriate, at least as I understood the objectives they were trying to achieve."[5]

In the U.K., another high profile value manager, Tony Dye, quit Phillips & Drew in March 2000. Nicknamed "Dr. Doom" for his bearish views on the equity markets, Dye's funds ranked 66 out of 67. According to The Times of London, "even his critics will acknowledge the intellectual rigour and coherence of his argument that many technology stocks are massively overvalued. However, stock markets, both in the UK, and around the world, have gone dot com crazy"[6]

Value investor Warren Buffett also did not fare particularly well. The year 1999 represented only the fourth time in 35 years that he had not outperformed the S&P 500 index. Berkshire Hathaway's stock price fell by 20% that year and a further 20% in early 2000 before rebounding.

Finally, in mid-2000, the highly respected value manager Sanford C. Bernstein & Co. was acquired by growth fund manager Alliance Capital Management. Bernstein too had suffered poor performance in the late 1990s, but then saw a strong rebound in 2001.

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[4] Michael Lewis, "World's most famous investors showing their age – Funds plunge amid growth of high-tech stock," The Toronto Star, May 8, 2000.

[5] Knight-Ridder Tribune Business News: Chicago Tribune – Illinois, 10/14/2001

[6] "Business Dye is cast out but strategy remains," Paul Durman, The Times of London, 03/03/2000

GMO's Future

In late 2001, Grantham and Inker and GMO's other senior management were trying to understand the issues raised by the events of the past few years. Was their investment strategy sensible? Should they stop making big bets? And how could they use their recent successes to grow their business?

For a firm of its size, GMO had a remarkably broad set of offerings. Management estimated that the existing products together had $100 billion in potential capacity, a five-fold increase from current levels. However, the individual products tended to have high tracking errors relative to their benchmarks, consistent with the firm's "bet big when you see the fat pitch coming" philosophy. And, as illustrated so vividly by the late 1990s bubble, these bets could lead to substantial short-term underperformance and strain the firm's ability to retain client accounts. In classic Grantham style, he critiqued his investors in his first quarter, 2001 review to clients:

> Unfortunately, over the 3 years of the technology stock surge, GMO lost, for the first time in 23 years, considerable assets: to more aggressive growth oriented strategies; to indexing on the S&P 500; and to lower tracking error, or closet indexing. This compares with the situation in Japan 13 years ago. We refused to buy into the Japanese bubble, owning 0% overpriced Japanese stocks versus a benchmark with 50% to 65% in Japan, lost 30% to the benchmark in 3 years, and got it all back with profit in 2 years. We lost no business. This time in our foreign quantitative fund, we made a similar bet, basically refusing to buy into a telecom-technology bubble, underperforming EAFE by 25% over 3 years. This time we got it all back with interest in 12 months. … *but the fact remains that had we owned Deutche Telekom, a telephone utility in an increasingly competitive industry at over 100 times earnings, and more Vodaphone, we would not have lost nearly as much business. [emphasis added]*

Grantham later would comment that if the events if 1996-2000 were in fact a 60-year flood, then if GMO hadn't underperformed, it couldn't have been swinging hard enough to win on the five- and ten-year bets. In addition, after a bubble burst, investor rationality usually would be restored and could persist for decades, which meant that GMO would need to continue to make big bets if it wanted to add significant value.

GMO's asset allocation business during this period only compounded this issue. Before it offered asset allocation advice as a service, clients had hired GMO for several independent investment mandates in separate asset classes. While funds in some asset classes might disappoint, others usually would shine. Now, some clients had only one comprehensive relationship, and these clients were gauging performance on ever-shorter time frames. A mistake in allocating assets could easily overwhelm any skill in picking specific securities within a class, and cause a client to pull the account.

In terms of revenues, GMO saw itself as charging above average fees reflecting the strong performance that it could deliver. Most of the firm's U.S. equity funds earned management fees of 48 bp per annum.[7] Industry wide, the most expensive 25% of asset managers charged 39 bp or less.[8] But the firm also delivered on its promise. Out of 334 product years, the firm outperformed the benchmark (net of fees) in 216 product years, or 65% of the time. The average value added over all

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[7] Fees were lower for fixed income funds (0.25-0.40%), and higher for international equity funds (0.69%-1.14%). Fees included custodial expenses ranging from 0.02% for U.S. equities to 0.20% for emerging markets equities. The minimum account size was $1 million. Share classes with lower fees were offered, in some funds, to accounts with $35 – $250 million invested. Approximately one-fifth of the firm's accounts carried fees directly linked to performance, but the firm expected that number to climb. New clients, wondering if past performance would continue, were demanding the concession in return for the higher than average expenses.

[8] Michael L. Goldstein, Igor Krutov, "The Future of Money Management in American," Bernstein Research, March 2000.

products since inception was an impressive 2.4% per annum, across both equity and fixed income investments. Grantham estimated that the chances these results were just pure luck as 1 in 2.5 billion assuming complete independence, or at most, as 1 in 4,000 assuming an 80% correlation among products. Would clients be sufficiently convinced of GMO's skill to pay higher fees?

As to increasing the firm's assets under management, there was always the option of continuing to grow organically. GMO was good at investing, and they could continue to rely on word-of-mouth and investment consultants to bring in new business. GMO also could more aggressively pursue the sub-advisor market. The firm had recently begun managing portions of Vanguard's U.S. Value and Explorer equity mutual funds, which quickly brought in close to $1 billion in assets. This strategy would be similar to that pursued very successfully by local Boston-based competitor Wellington Management, which managed over 200 mutual funds branded and distributed by others. Alternatively, recognizing that building a marketing and distribution infrastructure was outside their expertise, GMO could enter into a joint venture with, or be acquired by, an organization that already had well established distribution channels. This would lead to rapid asset growth and produce a large payout for the current partners. However, GMO was concerned that its ability to provide independent, unbiased advice would likely be compromised. GMO had previously received generous buyout offers from top firms over the last decade, but the partners had always said no to these solicitations, having little interest in becoming a firm dominated by marketing. Was this a good time to revisit this tenet?

Industry trends

There were a number of significant trends in the investment management industry, and the senior management of the firm also wondered how these should bear on GMO's strategy going forward:

- Large employers were shifting workers from defined benefit to defined contribution retirement plans and defined benefit pension plans increasingly would be entering a liquidation phase.

- In defined contribution plans, the employees themselves were responsible for the asset allocation. This gave the defined contribution plan industry a more retail character, which in turn placed greater emphasis on distribution.

- The market for providing asset management services to high net worth individuals had grown considerably in recent years. The wealthiest 2% of investors now controlled $10 trillion, or about half the discretionary assets in the United States. There was significant competition in this market.

- The explosive growth in index funds seemed to be continuing unabated. Index funds were for many the lowest cost way to invest over the long-term with guaranteed market performance. Index funds also experienced much lower turnover than actively managed funds and were consequently more tax efficient. Between 1989 and 1999, the percentage invested in index funds increased from 2% to 9.5% of total equity mutual fund assets.[9]

- Retail investors increasingly were willing to pay financial planners and stockbrokers for advice. This was analogous to the pension and endowment market where investment consultants advised institutional clients. Increasingly, financial planners and even stockbrokers were being compensated as a percentage of the assets managed with all transaction expenses imbedded in the fees. American Express Financial Advisers, the largest confederation of financial planners,

[9] Michael L. Goldstein, Igor Krutov, "The Future of Money Management in American," Bernstein Research, March 2000, p. 127.

advised about $275 billion for hundreds of thousands of clients. Some thriving mutual fund companies like Putnam Investments sold their funds solely through the advisor market channel.

- There was significant growth in alternative asset classes such as hedge funds, private equity, and real estate. Exemplifying this trend was the large state pension fund, CalPERS, that recently had increased the allocation of alternative asset classes to 14% of its overall portfolio, shifting $6 billion from traditional equity funds.[10] Year to date through September 2001, flows of new money into hedge funds totaled $22.3 billion, compared with $8 billion in all of 2000.[11]

In addition to these trends, a strong cultural shift in the industry had also taken place, a change that GMO viewed as particularly troublesome. Grantham lamented:

> The industry has reached a point where career risk and business risk dominate the investment process. You can no longer manage money with an eye towards absolute risk, the way you would for your parents. Concerned with the risk of underperforming their benchmark, managers are tailoring their portfolios to track their index, plus or minus a few minor adjustments. As a consequence, the arbitrage mechanism across asset classes has weakened considerably and markets are becoming quite inefficient.

Referring to clients generally, Inker exclaimed:

> Who is in charge of this issue at pension funds, foundations, and endowments? They are running amok by tracking the S&P 500 index, a volatile return series, when they need to make stable payment streams to pensioners or to the institutions and programs that depend on the funds for financial support. To us, 'no risk' means no chance of failing to meet the client's financial obligations. It has little to do with the chance of underperforming the popular benchmarks.

Grantham and Inker wanted to build GMO into a large and successful money management organization. But they also heeded the words of John Maynard Keynes, who observed in 1936:

> It is the long-term investor, he who most promotes the public interest, who will in practice come in for the most criticism, wherever investment funds are managed by committee or boards or banks. For it is in the essence of his behaviour that he should be eccentric, unconventional and rash in the eyes of average opinion. If he is successful, that will only confirm the general belief in his rashness; and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally.[12]

GMO's view of future market returns

While the drop in stock prices over the past year and a half had reduced the overvaluation of the equity market, GMO's models continued to show that the global equity markets were overvalued by 10-35%. Implied in current prices were future expected returns that remained significantly lower

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[10] Christopher Faille, Hedgeworld, "Hedge Funds Not An 'Alternative Investment' According to CalPERS," August 16, 2000. CalPERS is the California Public Employees' Retirement System, and had about $158 billion in assets at the time.

[11] TASS Research, "Commentary on TASS Asset Flows, January 1994 – September 2001," page 2.

[12] John Maynard Keynes, The General Theory of Employment, Interest, and Money, Harcourt Brace Jovanovich, 1936. Chapter 12, pp147-164.

than those offered by low-risk inflation-protected bonds, as shown in **Exhibit 9**. The current bets in the GMO portfolios were not as extreme as in the late 1990s, but they still reflected a substantial bearish view on U.S. equities in particular.

The outlook wasn't all negative, however, in that there were a number of asset classes that now looked very attractive. GMO assembled three "where-to-hide" portfolios that offered, in their opinion, places to earn positive real returns with low volatility, until the fundamentals of the broader equity markets caught up with their high prices. As shown in **Exhibit 18**, the recommendations were far from conventional. Thus far, only one client, an individual investor who had made his fortune as an entrepreneur in venture capital, actually followed this advice. To Grantham and Inker, this was not a surprise.

Appendix: Other Investment Strategies at GMO

U.S. Active Strategy

U.S. Active was GMO's original investment product and led by Dick Mayo. Using a quantitative DDM filter to find inexpensive stocks, most of the effort went into fundamental research. The research sought out market inefficiencies through top-down sector analysis and bottom-up company analysis. The team believed "that a portfolio of stocks with low expectations but sound fundamentals will, as profitability and/or perception improve, substantially outperform the broad market." The team had the discretion to invest a portion of the assets in foreign stocks when they had more attractive valuations. The investment process was also able to add incremental value by capitalizing on short-term price fluctuations that appeared to be the result of a motivated seller. The fund was managed with an eye towards absolute risk, rather than solely risk relative to its benchmark.

International Active Equity

The International Active Equity strategy was run by a team hired by Van Otterloo. The investment process focused on both country weights and security selection, with the former accounting for about 40% of the value added. As with the U.S. Active product, the first step was a quantitative screening of the investment universe using value techniques. The team then conducted detailed analysis of country, sector and company specifics to assemble a portfolio of about 400 stocks. Stocks that failed the "cheapness" tests could still be included if the responsible country manager felt strongly about a stock's potential. The fund could invest up to 10% of assets in emerging markets, and hedge up to 30% of its currency exposure.

Emerging Markets Equity

The Emerging Markets strategy combined quantitative analysis with a traditional investment approach. The quantitative steps were similar to those for developed equity markets, but were applied first to countries and then to the securities within those countries. When applied to countries, the value models included macroeconomic factors and currency exchange rates to help gauge long-term stability, analogous to the quality factor for stocks. Once the country weights were assigned, the analysis selected specific securities based on relative valuations. The fund also overlaid a more traditional analysis to "pick up on market conditions, long-term trends, paradigm shifts, and other opportunities that a strict quantitative approach would potentially miss."

Global Fixed Income

Fixed Income investing was a highly mechanistic process based on valuation with some momentum component. Unlike in equities, very short-term momentum moves tended to persist. However, there was little inefficiency in the domestic U.S. markets to enable GMO to add value. Consequently, most of its fixed income products had significant international exposure. This allowed GMO to capture mispricings in the currency as well as bond markets. Frequently, the currencies of countries with high interest rates would depreciate less than that implied by the interest-rate differential, and vice versa for the currencies of low interest rate countries.

Exhibit 1 Assets under management by client type, in millions of dollars, September 30, 2001.

Client Type	Assets Under Management	Number of Accounts
Corporate Pension	$8,973	128
Corporate Taxable	419	9
Endowments and Foundations	6,652	181
Individuals	954	119
Subadvisory	1,282	3
Public	1,774	8
Other - GMO related	522	6
Total	$20,576	**454**

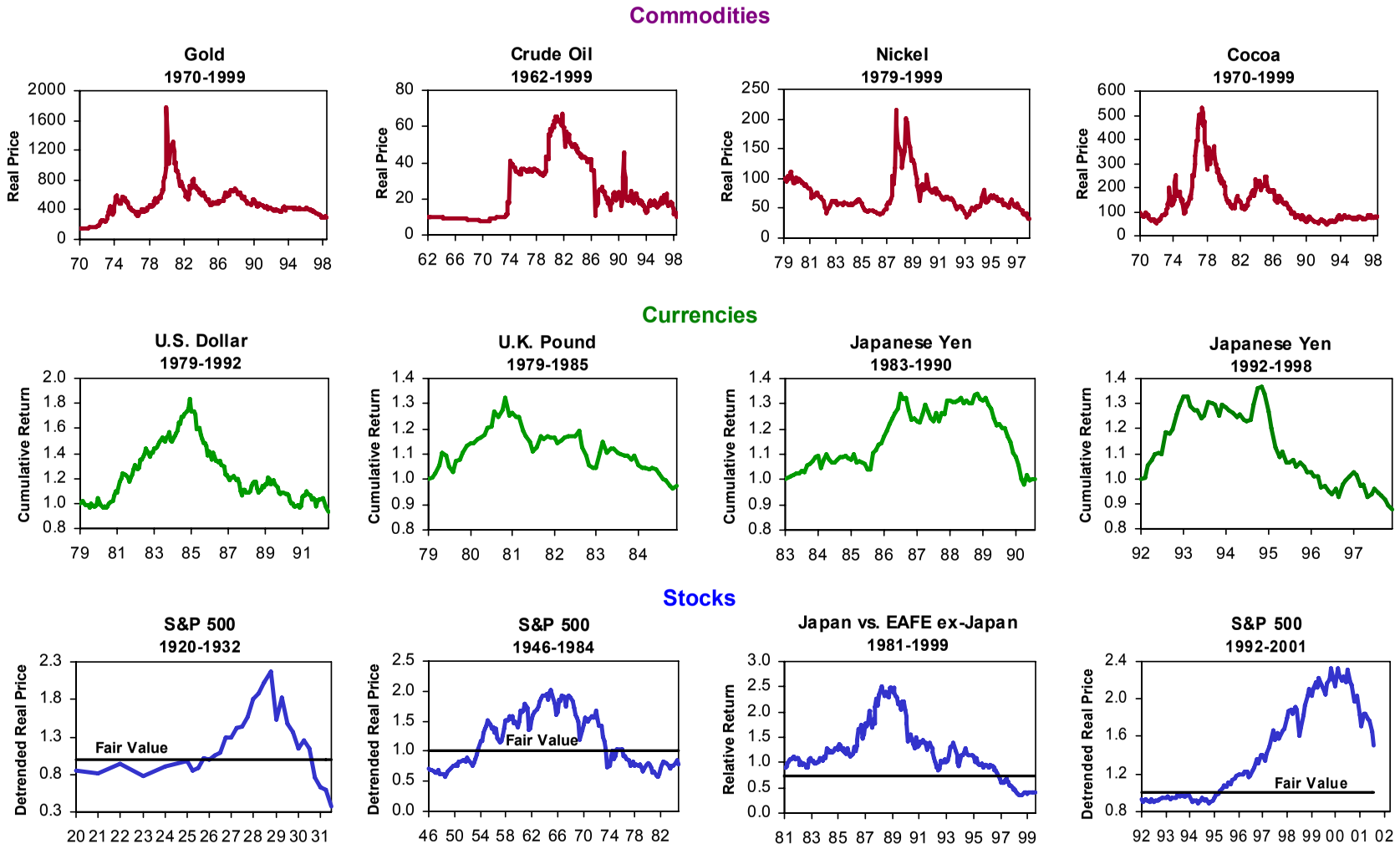
Source: GMO

Exhibit 2 Assets under management by asset type, in billions of dollars, September 30, 2001.

U.S. Equities		International Equities		Fixed Income		Asset Allocation		Alternative Assets	
U.S. Active	$1.3	International Active	$5.6	Emerging Country Debt	$1.0	Int'l Equity Allocation		Emerging Country Debt	$0.2
U.S. Value	0.2	Foreign Small Companies	0.1	International Bond	0.6	World Equity Allocation		REITs	0.2
U.S. Core	3.0	Int'l Intrinsic Value	1.4	Currency Hedged Int'l Bond	< 0.1	Global (U.S.+) Equity Allocation		Forrestry, L.P.	0.1
Tobacco-Free U.S. Core	0.4	Currency Hedged Int'l Equity	<0.1	Global Bond	0.5	Global Balanced Allocation		U.S. Aggressive Long / Short	0.2
Intrinsic Value	0.5	International Small Companies	0.2	Domestic Bond	0.2	U.S. Sector		Market Neutral Equities	0.1
Growth	0.2	Emerging Markets	1.1	Core Plus Bond	0.5				
Small Cap Value	0.4	Evolving Markets	<0.1	Inflation-Indexed Bond	0.1				
Small Cap Growth	0.5	Asia	0.1	Short-Term Income	< 0.1				
Tax-Managed U.S. Equity	0.1	Tax-Managed Int'l Equities	0.1						
Total	$6.4		$8.8		$3.1		$5.0		$0.8
GMO Woolley	$1.3								
GMO Australia	0.3								
Worldwide Total	**$20.6**			Quantitative approach		Traditional approach			

Source: GMO

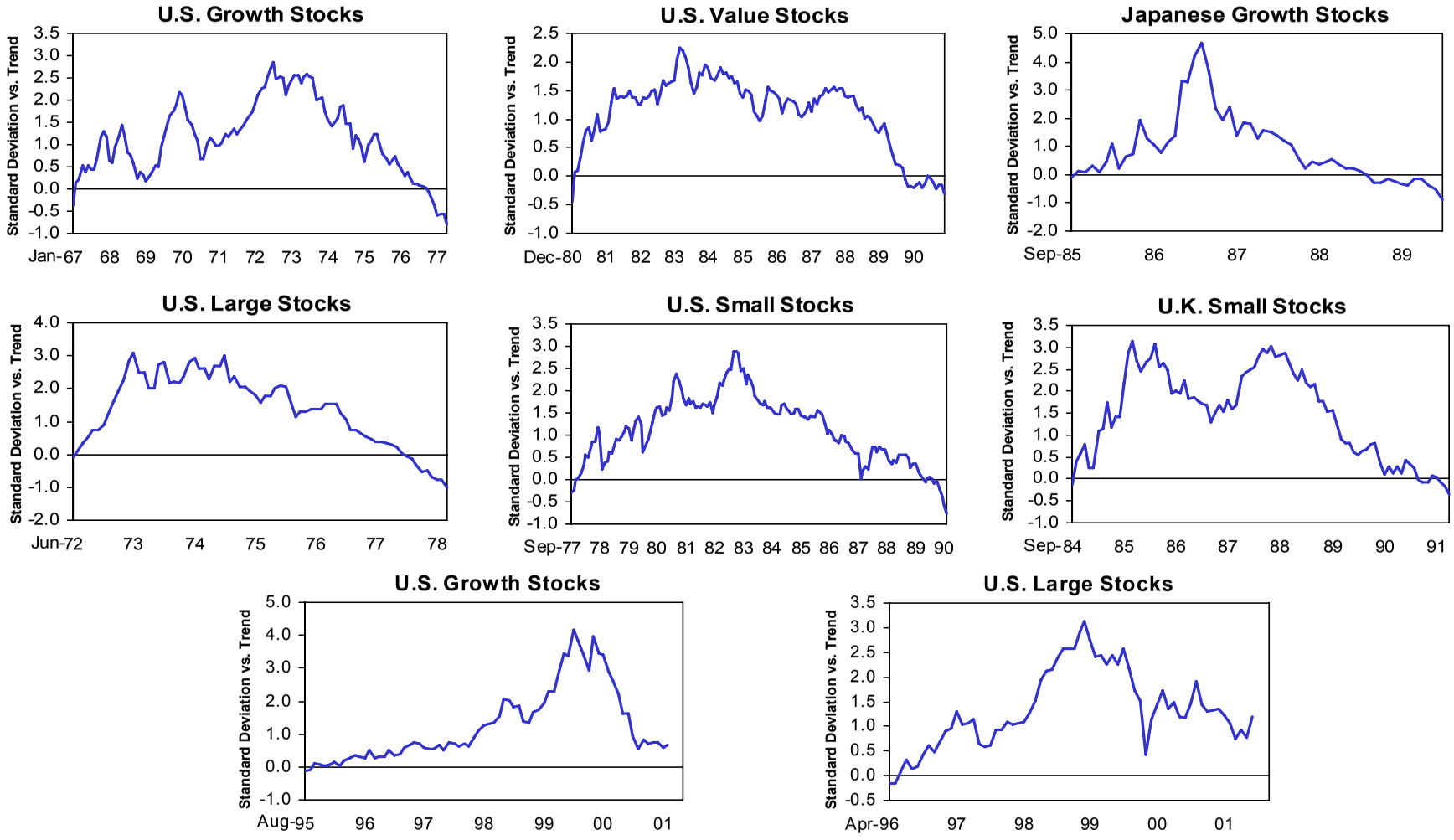
Exhibit 3A Sample asset bubbles defined as outperformance by two or more standard deviations from the long-term trend.



Source: GMO

Notes The real price was measured in constant, or inflation adjusted, dollars. The cumulative return was the cumulative return of holding the underlying currency relative to a trade-weighted basket of currencies, both adjusted for local inflation. The series were tabulated by J.P. Morgan Chase. Stock returns were measured by the real returns adjusted for a 2% annual increase trend (fair value). The relative return of Japan vs. EAFE ex-Japan was calculated by dividing the cumulative return of Japanese stocks by the cumulative return of the EAFE ex-Japan index. The solid line was the fair value of Japan vs. EAFE ex-Japan.

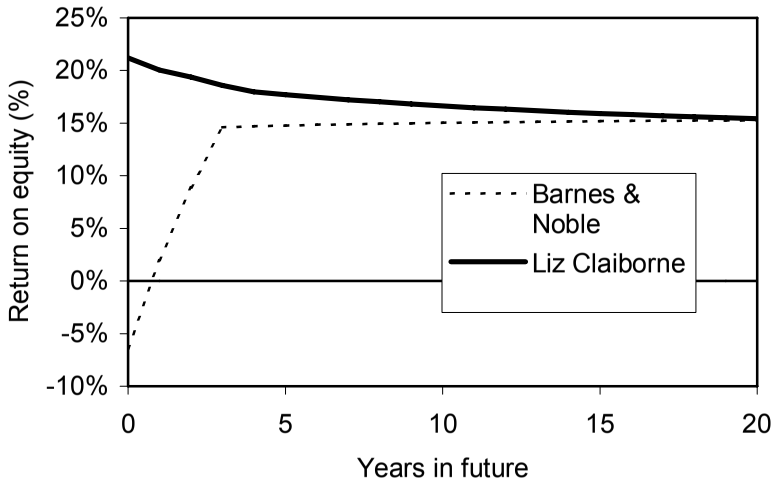
Exhibit 3B Stock sector bubbles defined as outperformance by two or more standard deviations from the long-term trend.

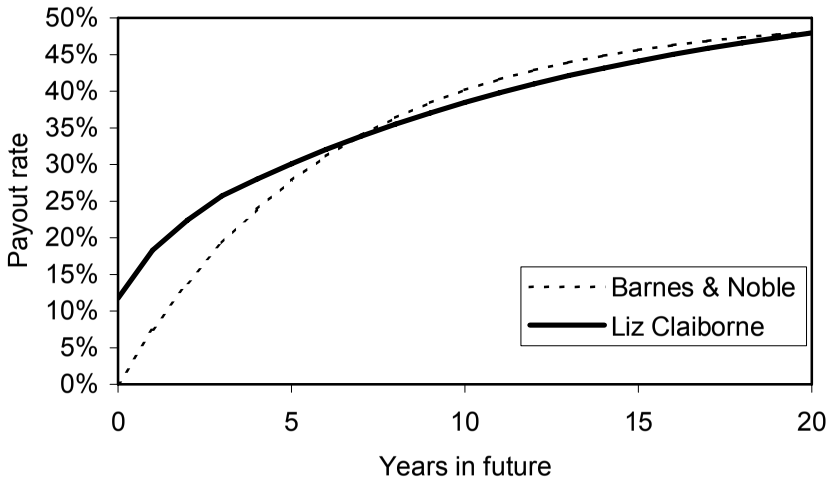


Source: GMO

Notes: The Growth sector was the group of stocks, with the highest price to book value ratios, which made up the more expensive 50% of the S&P 500 on a market capitalization basis. Value stocks were the remaining stocks. Trendlines assumed that value stocks outperformed growth stocks by 2% per annum, and that small stocks outperformed large stocks by 1.5% per annum. The 2% and 1.5% per annum adjustments were consistent with long-term historical results. The vertical axes represented the normalized deviations of prices from the long-term trends.

Exhibit 4A Expected mean reversion of return on equity and payout ratios for Barnes & Noble and Liz Claiborne, November 8, 2001.





Source: GMO

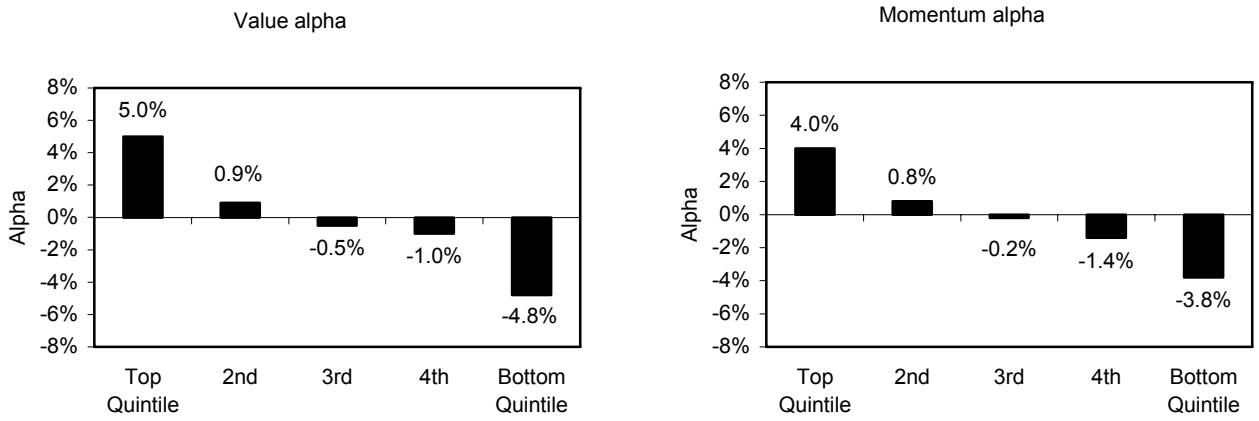
Note: Payout rate defined as net percentage of earnings paid out to investors.

Exhibit 4B Dividend discount model calculations for Barnes & Noble and Liz Claiborne, November 19, 2001.

	Barnes & Noble					Liz Claiborne				
Time	Book Value Per Share	ROE	Earnings Per Share	Payout Rate	Dividends Per Share	Book Value Per Share	ROE	Earnings Per Share	Payout Rate	Dividends Per Share
1	$11.99	-6.4%	($0.77)	0.0%	$0.00	$18.10	21.2%	$3.83	11.8%	$0.45
2	11.22	2.0%	0.22	7.5%	0.02	21.48	20.0%	4.30	18.3%	0.63
3	11.42	8.9%	1.02	13.9%	0.14	25.15	19.4%	4.87	22.4%	0.84
4	12.30	14.6%	1.80	19.3%	0.35	29.18	18.6%	5.42	25.7%	1.07
5	13.75	14.7%	2.02	23.9%	0.48	33.53	18.0%	6.03	28.0%	1.33
6	15.29	14.8%	2.26	27.8%	0.63	38.24	17.7%	6.77	30.1%	1.63
7	16.92	14.8%	2.51	31.1%	0.78	43.38	17.5%	7.57	32.0%	1.97
8	18.65	14.9%	2.77	34.0%	0.94	48.98	17.2%	8.44	33.8%	2.35
9	20.48	14.9%	3.06	36.4%	1.11	55.07	17.0%	9.37	35.5%	2.76
10	22.42	15.0%	3.36	38.4%	1.29	61.68	16.8%	10.37	37.0%	3.22
11	24.49	15.0%	3.68	40.2%	1.48	68.83	16.6%	11.45	38.5%	3.72
12	26.69	15.1%	4.02	41.6%	1.67	76.57	16.5%	12.61	39.8%	4.26
13	29.04	15.1%	4.38	42.9%	1.88	84.92	16.3%	13.86	41.0%	4.85
14	31.54	15.1%	4.77	44.0%	2.10	93.93	16.2%	15.20	42.1%	5.49
15	34.22	15.2%	5.18	44.9%	2.33	103.63	16.0%	16.62	43.2%	6.18
16	37.08	15.2%	5.63	45.6%	2.57	114.08	15.9%	18.16	44.1%	6.92
17	40.14	15.2%	6.10	46.3%	2.82	125.32	15.8%	19.81	45.0%	7.73
18	43.41	15.2%	6.61	46.8%	3.09	137.40	15.7%	21.57	45.8%	8.59
19	46.92	15.2%	7.15	47.3%	3.38	150.38	15.6%	23.46	46.6%	9.52
20	50.69	15.3%	7.73	47.7%	3.69	164.32	15.5%	25.49	47.3%	10.53
Terminal Value					$88.70					$268.53
Discount rate					13.9%					12.2%
NPV (Fair Value)					$12.23					$46.24
Current price					$26.45					$48.88
Price to Fair Value					2.16					1.06
Value decile					1					10
Momentum decile					10					8
S&P 500 Price to Fair Value					1.6					1.6

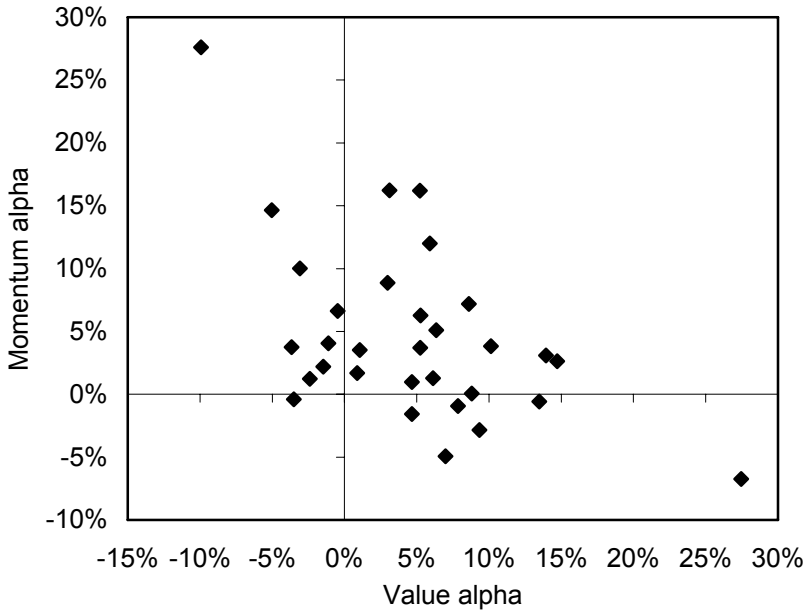
Source: GMO

Exhibit 5 Simulated alpha for value and momentum by quintile.



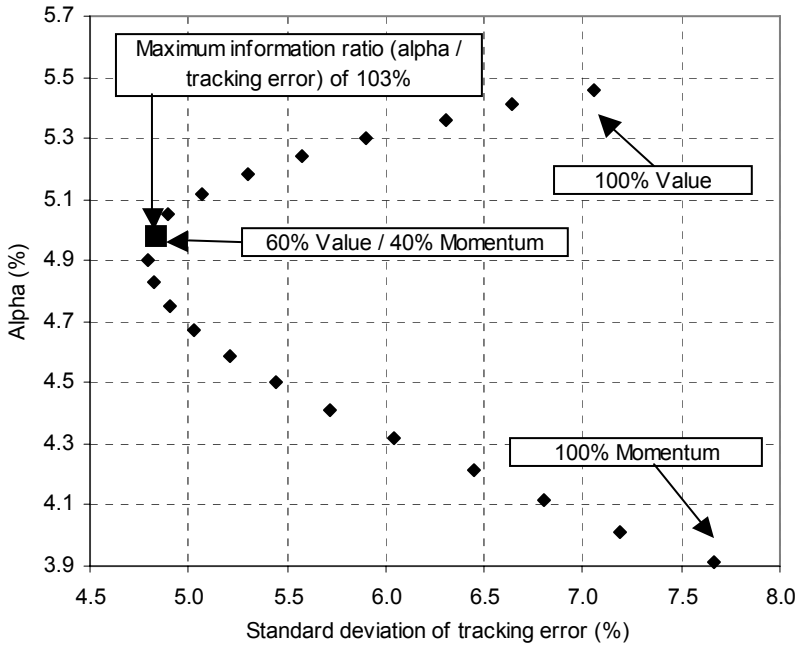
Source: GMO

Exhibit 6 Simulated annual value and momentum alpha versus S&P 500 benchmark, 1971-2001.



Source: GMO

Exhibit 7A Efficient frontier of monthly value- and momentum-style investment portfolios, U.S. Core portfolio.



	Value		Momentum
Expected alpha	5.51%		4.64%
Transaction costs	0.10%		0.73%
Net expected alpha	5.41%		3.91%
Tracking error	7.05%		7.67%
Correlation		-15%	

Source: GMO

Exhibit 7B Value and Momentum weights in Quantitative Equity Strategies, September 2001.

Portfolio	Assets ($ billion)	Value weight	Momentum weight
U.S. Core	3.4	60%	40%
Growth	0.2	40%	60%
Intrinsic Value	0.4	80%	20%
Small Cap Value	0.4	80%	20%
Small Cap Growth	0.6	0% *	100%
International Intrinsic Value	1.8	70%	30%
International Growth	Not yet operational	40%	60%
Emerging Markets	1.1	80%	20%
Weighted average		62%	38%

Source: GMO

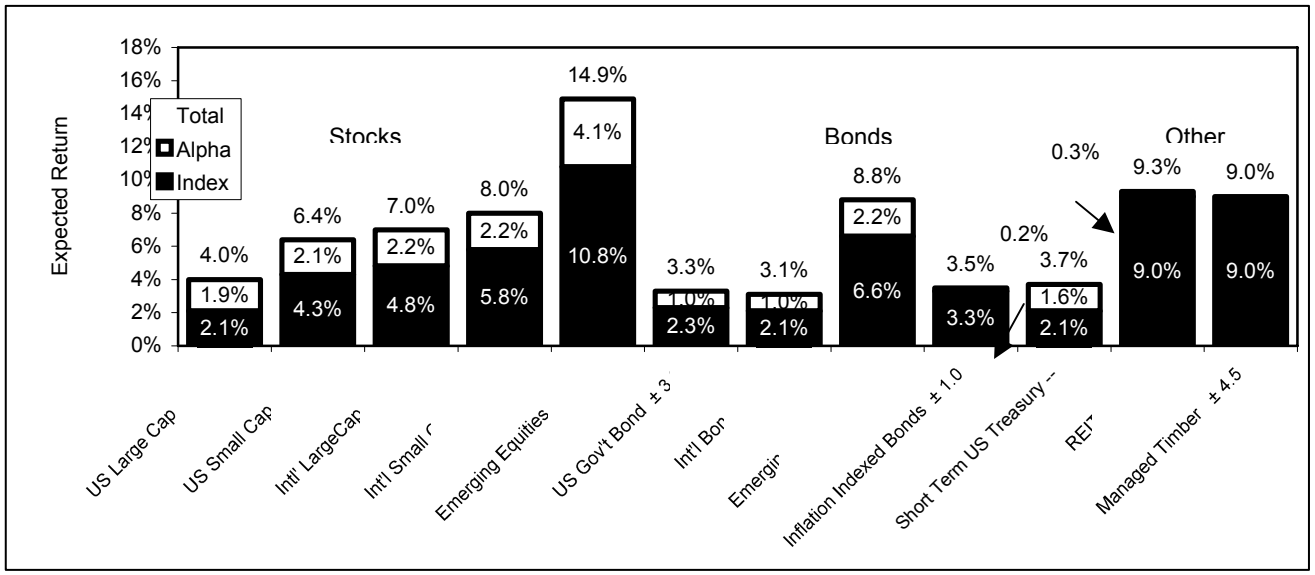
* Currently under review, Grantham expected this number to be raised in the near future.

Exhibit 8 How Philip Morris was incorporated into the U.S. Core portfolio as of June 30, 2001.

Portfolio Slice	Value Decile	Weight of Philip Morris in Slice	Momentum Decile	Weight of Philip Morris in Slice
June 2001	9	0.00%	10	1.20%
May 2001	9	0.00%	10	0.95%
April 2001	10	2.94%	10	0.60%
March 2001	10	3.00%	10	0.35%
February 2001	10	3.00%	9	0.00%
January 2001	10	2.76%	9	0.00%
December 2000	10	2.76%	9	0.00%
November 2000	10	2.46%	8	0.00%
October 2000	10	2.28%		
September 2000	10	1.98%		
August 2000	10	2.28%	Legend	
July 2000	10	1.92%		
June 2000	10	1.98%	Philip Morris in slice	
May 2000	10	2.10%	Philip Morris not in slice	
April 2000	10	1.56%		
March 2000	10	1.32%		
February 2000	10	1.56%		
January 2000	10	1.62%		
Total portfolio weight of Philip Morris		**2.33%**		
S&P weight		**0.95%**		

Source: GMO

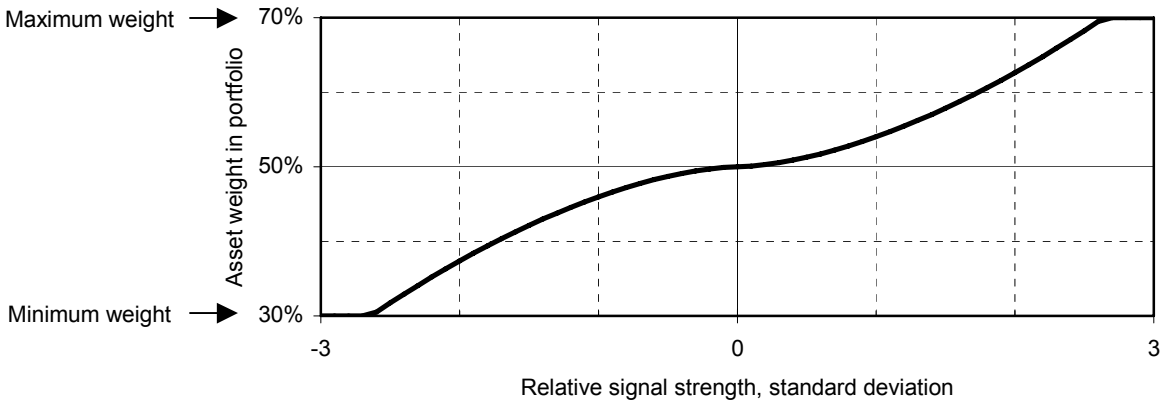
Exhibit 9 GMO 10-year asset class real return forecasts and ranges by underlying index and expected alpha from active management, September 30, 2001



Source: GMO

Notes: Estimated ranges of returns are for the asset class. Long-term inflation at 2.2%. U.S. Treasury alpha transported from global equity management. International bond returns are hedged. Unhedged expected returns are 0.5% higher.

Exhibit 10 Sample asset weighting as a function of relative potential for investment return, for asset class with 50% target allocation and a +/- 20% range.



Source: GMO

Exhibit 11 Historical GMO big bets and results as of September 30, 2001, 1973-2001.

Start Date	Bet	End Date	Results
1977	Overweight U.S. Small Value	1980	+151%
1982	Overweight U.S. Long Bonds	1986	+32%
1983	Underweight U.S. Small Stocks	1996	Loss avoidance
1983	Underweight U.S. Value	1990	Loss avoidance
1985	Underweight U.S. Dollar	1992	+42%
1987	Overweight Japanese Small Stocks	1990	+80%
1988	Underweight Japan vs. EAFE ex-Japan	1990	+69%
1988	Overweight U.S. Growth Stocks	1991	+15%
1991	Overweight U.S. Value Stocks	1994	+20%
1992	Underweight U.S. Growth Stocks	1994	Loss avoidance
1992	Overweight U.K. Small Value	1994	+39%
1994	Overweight Emerging Debt	1996	+58%
1995	Underweight U.S. Stocks	Ongoing	Losing money
1996	Overweight Emerging Equities	Ongoing	Losing money
1996	Overweight U.S. Small Stocks	Ongoing	Making money
1996	Overweight REITs	Ongoing	Making money
1997	Overweight Forestry and Other	Ongoing	Losing money
1999	Overweight Global Value	Ongoing	Making money

Source: GMO

Note: Loss avoidance was an underweight of specific asset classes that suffered a loss. No returns were calculated for the losses not incurred.

Exhibit 12A Historical value added of GMO funds, in percent, September 30, 2001 (net of fees).

GMO Product	Benchmark	Inception	1 Year	3 Year	5 Year	Since Inception
Domestic Equity						
U.S. Active	S&P 500	09/77	+32.6	+6.9	+2.6	+3.3
U.S. Core Composite	S&P 500	12/82	+7.8	+4.6	+2.6	+1.6
Intrinsic Value*	Russell 1000 Value	06/95	+11.3	+1.8	+1.4	+1.5
Growth	Russell 1000 Growth	12/88	+2.7	+6.6	+3.5	+1.9
Small Cap Value	GMO Russell 2500 Value +	12/91	-1.2	+0.7	+0.0	+1.3
International Equity						
International Active	MSCI EAFE	05/81	+12.6	+6.2	+5.4	+4.4
Int'l Intrinsic Value	MSCI EAFE	03/87	+18.1	+4.6	+3.2	+3.9
Int'l Small Cos.	SSB EMI World ex-US	10/91	+18.3	+4.2	+4.5	+3.9
Foreign Small Cos.	SSB EMI World ex-US	01/95	+22.1	+13.6	+9.0	+7.8
Emerging Markets	IFC Investable Composite	12/93	+10.9	+8.9	+5.8	+5.7
Fixed Income						
International Bond	JP Morgan Non-US Gov't	12/93	+0.5	+0.5	+0.7	+2.2
Emerging Country Debt	JP Morgan EMBI Global	04/94	+1.3	+7.6	+3.1	+5.5
Asset Allocation						
Global Balanced	GMO Global Balanced Index	06/88	+15.8	+4.7	+0.5	+1.5

Summary of Value Added for Individual Years

	Positive alpha		Negative alpha
Total product years	216		118
Percent product years	65%		35%
Average alpha	+6.7%		-5.5%
Average all years		+2.4%	

Source: GMO

Notes: MSCI EAFE is the Morgan Stanley Capital International Europe Far East and Australasia index.
SSB EMI World ex-U.S. is the Salomon Smith Barney Extended Market Index World ex U.S. Index, the small capitalization component of the Salomon Smith Barney Broad Market Index, which tracks companies in 22 countries.
EMBI is the Emerging Markets Bond Index tabulated by J.P. Morgan Chase.

Exhibit 12B Historical value added of GMO funds, in percent, March 31, 2000 (net of fees).

GMO Product	Benchmark	Inception	1 Year	3 Year	5 Year	Since Inception
Domestic Equity						
U.S. Active	S&P 500	09/77	-12.8	-13.7	-10.3	+1.1
U.S. Core Composite	S&P 500	12/82	+1.3	-0.7	-0.4	+0.7
Intrinsic Value*	Russell 1000 Value	06/95	-7.3	-2.6		-1.4
Growth	Russell 1000 Growth	12/88	+12.0	+2.8	+1.5	+1.1
Small Cap Value	GMO Russell 2500 Value +	12/91	+0.5	-0.1	-0.7	+1.4
International Equity						
International Active	MSCI EAFE	05/81	-0.9	-1.8	+2.3	+3.5
Int'l Intrinsic Value	MSCI EAFE	03/87	-15.1	-8.3	-3.9	+1.6
Int'l Small Cos.	SSB EMI World ex-US	10/91	-15.3	-4.7	-1.6	+0.9
Foreign Small Cos.	SSB EMI World ex-US	01/95	+14.5	+3.7	+6.1	+5.5
Emerging Markets	IFC Investable Composite	12/93	+7.9	+3.5	+2.4	+4.4
Fixed Income						
International Bond	JP Morgan Non-US Gov't	12/93	+2.4	-0.4	+3.8	+2.6
Emerging Country Debt	JP Morgan EMBI Global	04/94	+16.2	+0.7	+8.0	+6.1
Asset Allocation						
Global Balanced	GMO Global Balanced Index	06/88	+0.5	-7.4	-2.2	-0.3

Summary of Value Added for Individual Years

	Positive alpha		Negative alpha
Total product years	158		141
Percent product years	53%		47%
Average alpha	+5.3%		-5.1%
Average all years		+0.4%	

Source: GMO

Exhibit 12C Historical value added of GMO funds, in percent, June 30, 1994 (net of fees).

GMO Product	Benchmark	Inception	1 Year	3 Year	5 Year	Since Inception
Domestic Equity						
U.S. Active	S&P 500	09/77	+1.9	+4.6	+0.2	+4.3
U.S. Core Composite	S&P 500	12/82	+2.4	+1.5	+1.5	+1.2
Growth	Russell 1000 Growth	12/88	+1.0	+0.0	+0.7	+0.9
Small Cap Value	GMO Russell 2500 Value +	12/91	+0.9			+4.6
International Equity						
International Active	MSCI EAFE	05/81	+12.6	+6.2	+5.4	+4.4
Int'l Intrinsic Value	MSCI EAFE	03/87	+7.0	+4.9	+7.7	+5.9
Int'l Small Cos.	SSB EMI World ex-US	10/91	+14.4			+7.8
Asset Allocation						
Global Balanced	GMO Global Balanced Index	06/88	-0.6	+0.5	+1.7	+2.1

Summary of Value Added for Individual Years

	Positive alpha		Negative alpha
Total product years	79		33
Percent product years	71%		29%
Average alpha	+6.0%		-4.1%
Average all years		+3.0%	

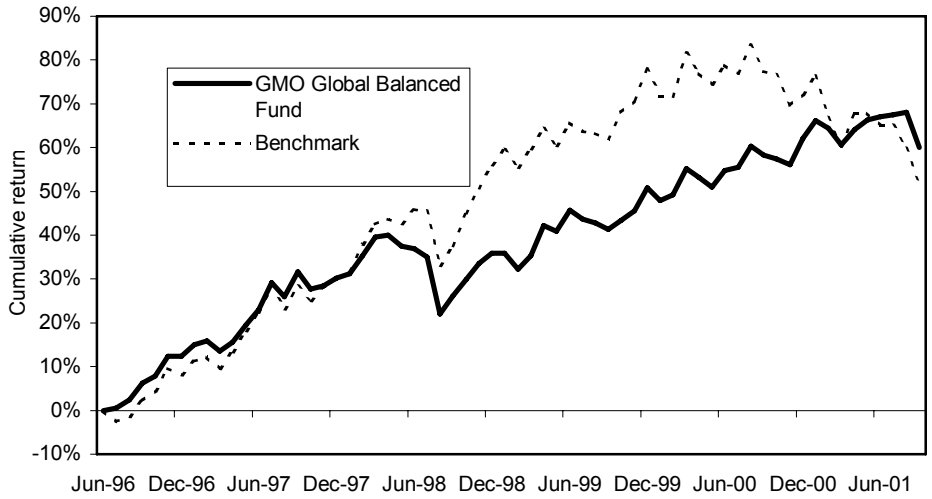
Source: GMO

Exhibit 13 Twenty largest positions of the U.S. Core portfolio and the S&P 500 index, March 31, 2000.

Largest Position in U.S. Core	U.S. Core	S&P 500	Value Decile	Momentum Decile	Largest Position in S&P 500	S&P 500	U.S. Core	Value Decile	Momentum Decile
Oracle	5.4%	1.9%	4	10	Microsoft	4.5%	0.6%	7	5
AT&T	3.7%	1.4%	10	4	Cisco Systems	4.1%	2.2%	3	10
Intel	2.8%	3.7%	6	9	General Electric	4.1%	1.1%	4	8
Citigroup	2.7%	1.6%	10	5	Intel	3.7%	2.8%	6	9
Cisco Systems	2.2%	4.1%	3	10	Exxon Mobil	2.0%	1.2%	5	7
Sun Microsystems	2.1%	1.3%	3	10	Oracle	1.9%	5.4%	4	10
Nortel Networks	2.0%	1.5%	2	10	Wal-Mart Stores	1.9%	0.3%	6	6
General Motors	1.9%	0.4%	10	6	Citigroup	1.6%	2.7%	10	5
Bank Of America	1.7%	0.7%	10	1	Lucent Technologies	1.6%	0.0%	4	4
Texas Instruments	1.6%	1.1%	2	9	IBM	1.6%	0.6%	4	3
J P Morgan Chase	1.3%	0.6%	8	2	Nortel Networks	1.5%	2.0%	2	10
Motorola	1.3%	0.9%	3	8	AT&T	1.4%	3.7%	10	4
Exxon Mobil	1.2%	2.0%	5	7	Sun Microsystems	1.3%	2.1%	3	10
BMC Software	1.2%	0.1%	10	9	American Int'l	1.3%	0.0%	6	4
Applied Materials	1.2%	0.6%	3	10	AOL-Time Warner	1.3%	0.0%	2	2
Amgen	1.1%	0.5%	7	9	SBC Communications	1.2%	1.1%	10	2
SBC Communications	1.1%	1.2%	10	2	Home Depot	1.1%	0.2%	5	8
JDS Uniphase	1.1%	0.0%	2	10	Dell Computer	1.1%	0.0%	4	8
Qualcomm	1.1%	0.8%	2	10	Hewlett-Packard	1.1%	0.8%	5	7
Merrill Lynch	1.1%	0.3%	9	6	Merck	1.1%	0.1%	8	4
Total	37.8%	24.7			Total	39.4%	26.9%		
Number of positions	264	500				500	264		

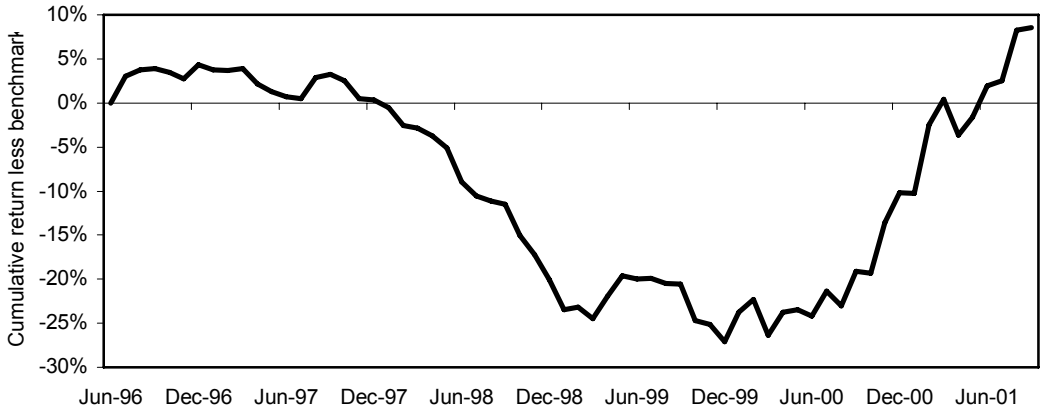
Source: GMO

Exhibit 14A Cumulative return of asset allocation fund and benchmark, June 1996-September 2001.



Source: GMO

Exhibit 14B Cumulative return of asset allocation fund relative to its benchmark, June 1996-September 2001.



	Annualized Return	Volatility	Annualized Alpha	Standard Deviation of Tracking Error	Sharpe Ratio	Draw Down
GMO Asset Allocation Fund	9.4%	7.4%	1.2%	8.9%	0.56	18%
Benchmark	8.2%	11.0%	N/A	N/A	0.27	32%
Risk-free (3 month T-bill)	5.2%	0.4%	N/A	N/A	N/A	N/A

Source: GMO
Note: The draw down was the worst peak-to-trough decline in over the period.

Exhibit 15 GMO global asset allocations and benchmark, 1992 - 2001.

Date	U.S. Equity	International Equity	Emerging Equity	Fixed Income	Total
Benchmark, 1999-YTD	**48.8%**	**14.9%**	**1.4%**	**35.0%**	**100%**
September 2001 YTD	32.2%	13.4%	7.8%	46.6%	100%
December 2000	32.0%	12.6%	8.5%	46.9%	100%
December 1999	31.7%	13.3%	7.7%	47.3%	100%
Benchmark, 1992-1998	**45.0%**	**20.0%**	**0.0%**	**35.0%**	**100%**
December 1998	24.1%	21.4%	4.2%	50.4%	100%
December 1997	24.8%	23.8%	5.5%	45.9%	100%
December 1996	25.4%	26.1%	5.2%	43.3%	100%
December 1995	30.1%	18.4%	3.5%	48.0%	100%
December 1994	23.2%	23.8%	2.7%	50.3%	100%
December 1993	22.3%	23.0%	0.1%	54.6%	100%
December 1992	23.5%	18.5%	0.0%	58.0%	100%

Source: GMO

Note: U.S. Equity benchmark was the S&P 500; the International Equity benchmark was the Morgan Stanley Capital International All Country World Index except U.S.; the Fixed Income benchmark was the Lehman Aggregate Bond Index.

Exhibit 16 Economic statistics for the 1990's compared to the rest of the 20th century.

Rank	Decade	Real GDP Growth	Decade	Real Corporate Profit Growth	Decade	Productivity Growth	Decade	Real S&P Price Gain
1	60's	4.3%	20's	12.2%	50's	3.4%	20's	15.0%
2	50's	4.2%	60's	4.8%	60's	3.2%	90's	13.8%
3	40's	4.2%	90's	3.7%	40's	2.7%	50's	10.9%
4	20's	4.2%	70's	3.7%	20's	2.4%	80's	8.6%
5	00's	4.0%	00's	3.6%	90's	2.2%	00's	3.3%
6	70's	3.3%	80's	1.7%	70's	2.1%	60's	3.0%
7	90's	3.1%	30's	1.2%	10's	1.9%	40's	-3.1%
8	80's	3.0%	40's	1.1%	00's	1.8%	30's	-4.0%
9	10's	2.6%	50's	-0.2%	80's	1.6%	70's	-6.2%
10	30's	2.2%	10's	-4.9%	30's	1.6%	10's	-9.9%

Source: GMO

Exhibit 17 Net client deposits into GMO funds, including new products and excluding GMO Woolley and GMO Australia, in millions of dollars, 1995-2001, as of September 28, 2001.

Year	Beginning of year assets	Change in market value	Net client asset flow	End of year assets
1995	14,442	2,725	3,098	20.265
1996	20,265	2,784	1,621	24,669
1997	24,669	2,891	(2,354)	25,206
1998	25,206	996	(3,059)	23,142
1999	23,142	3,260	(3,379)	23,024
2000	23,024	(1,383)	(1,392)	20,249
2001 YTD	20,249	(2,177)	710	18,783

Source: GMO

Exhibit 18 GMO's "Where-to-hide" portfolios for achieving high real returns with reasonable risk, when equity markets were expensive, September 30, 2001.

Asset Class	Low Risk Portfolio	Medium Risk Portfolio	High Risk Portfolio	Global Equity Index
Inflation protected Treasury bonds	55%	28%	0%	
Aggressive Long / Short Hedge Fund	9	20	20	
Market Neutral Hedge Fund	11	0	0	
Emerging Debt	7	11	5	
Emerging Equities	6	14	20	
International Small Value Stocks	6	11	20	
International Large Value Stocks	0	0	15	
REITS	6	17	20	
Expected real return	6.5%	9.0%	11.9%	2.8%
Volatility	4.9%	8.4%	12.5%	14.4%
Beta relative to S&P 500	0.12	0.26	0.49	0.93
Expected 20-year maximum draw down	-3.1%	-7.8%	-13.9%	-26.0%

Source: GMO