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## U.S. MARKET COMMENTARY

### WHY NOT HOLD CASH?

May 2007

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## Why Not Hold Cash?

For investors who believe, as we do, that the current market rally is a cyclical bull within a long-term secular bear, there are a range of defensive strategies one can adopt.<sup>1</sup> We have advocated several of these, such as overweighting quality assets, diversifying among asset classes that have different *economic* sources of return, and frequently rebalancing back to policy weights. However, given our secular outlook, plus our assessment that every asset class is either fairly or overvalued, some clients have asked whether we consider it appropriate to explore either a tactical allocation to cash, or some form of hedging strategy involving derivatives.

This is a legitimate question, and for some investors it may make sense to either raise some cash (or take a “go-slow” approach to investing fresh/surplus capital), or to implement a derivatives-based hedge. However, the decision to take such action is complex. Since capital markets performance tends to be highly concentrated in a small handful of big days (both positive and negative), investors are highly unlikely to have perfect timing (Table A). Instead investors must develop a thoughtful game plan *and* have a strong will to execute this plan. For those choosing to raise cash, they must do the following: (1) develop iron-clad decision rules for market exit and re-entry (i.e., rules that trigger selling and re-entry at preset valuation levels); and (2) stick with these rules *no matter what* (i.e., accept the potentially significant opportunity costs of staying out of the market while it is rising, and be able to stomach further losses after buying back into the market should it continue lower). For hedging strategies, decisions are similar in nature, i.e., investors should not only have rules for when to implement a given hedge, but also for when to cash it in or roll it over. While taking steps to protect portfolios given today’s high valuations makes sense *in theory*, and while those considering such strategies no doubt believe they will be among the select few who have historically been able to implement such nimble maneuvers, the emerging field of behavioral finance suggests this confidence will be misplaced for the vast majority of investors.<sup>2</sup> Investors concerned *first and foremost* with stability of principal (assuming raising cash would not create a large tax liability) may be best able to implement a tactical allocation to cash and/or derivatives-based hedge, given their lessened sensitivity to relative performance and opportunity costs.

## The Opportunity Cost of Holding Cash

The biggest hurdle to successfully implementing a tactical allocation to cash is that of opportunity cost—essentially the lost opportunity for capital gains, dividends, or other income streams that accrue from assets other than cash. To get a rough estimate of the historical magnitude of this opportunity cost, we compared rolling three- and five-year returns on four annually rebalanced hypothetical portfolios (Tables B through E):

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<sup>1</sup> We have articulated these views in a series of papers on the evolution of the secular bear market in equities and our thoughts on how investors can best cope with the prevailing uncertainties. These papers are grouped together in the research section of our website under “Asset Allocation in the Current Environment.”

<sup>2</sup> For more details on overconfidence bias and other related topics, please see our 2000 report *Behavioral Finance*.

- (1) Simple, no cash (70% equities, 30% high-quality corporate bonds),
- (2) Simple, with cash (50% equities, 30% high-quality corporate bonds, 20% cash),
- (3) Diversified, no cash,<sup>3</sup> and
- (4) Diversified, with cash (same as #3, but with 20% cash drawn pro rata from all asset classes except bonds).

We performed the analysis over three- and five-year horizons, as these are common relatively short-term performance measurement periods used by most investors. (Of course, we recognize markets may experience mean reversion over a shorter time horizon, reducing the desire to hold some cash, or that extreme valuations could take more than five years to correct.) Further, we used year-end figures rather than choosing high and low points, since investors cannot assume they would get in or out at the optimal time. The 20% cash figure is also arbitrary, but is intended to represent a sizable “bet” on markets reverting to the mean within the given time frame. Finally, we used simple and diversified portfolios to illustrate the different risk characteristics inherent in each approach. Diversified portfolios are composed of assets less correlated to each other than a straight equity-bond mix, and thus usually provide greater protection in a market downturn.<sup>4</sup>

Not surprisingly, the portfolios with cash underperformed in most three- and five-year periods; as of third quarter 2006,<sup>5</sup> the cash diversified portfolio has underperformed its no-cash counterpart for 21 of 22 five-year periods, and 22 of 24 three-year periods. Of course, one could argue cash has been a drag over the last quarter century simply because financial assets have enjoyed an unprecedented run of prosperity, due to declining interest rates, strong economic growth, and (often forgotten) *low valuations at the beginning of the period*. Today, by contrast, inflation and interest rates are ticking higher worldwide, while *all* asset classes look at the very least fairly valued; thus, cash will not necessarily prove the drag it has been over the past 20+ years. We certainly have sympathy for this view; indeed, such high *and concentrated* valuations across asset classes are, as far as we know, unprecedented—even at the peak of previous bubbles, there have always been undervalued asset classes (e.g., real estate, oil and gas, and commodities were undervalued at the peak of the technology bubble in 1999-2000, while small-cap and value equities were dirt cheap *relative* to large-cap and growth stocks). Thus, there is a legitimate case to be made that, while holding cash has been fairly costly over the past few decades, the current environment is materially different than that of the last 25 years.

Going back a bit further, there is one glaring example when holding cash bolstered portfolios significantly—the Great Depression (Tables D and E). Beginning with the five-year period ending in 1931, the simple cash portfolio bested its no-cash counterpart for four periods in a row, with annual outperformance of 200 basis points (bps), 340 bps, 300 bps, and 260 bps, respectively. On a three-year basis, the cash portfolio did even better: for the periods ended 1930-33, the cash portfolio outperformed by annual

<sup>3</sup> The diversified portfolio is the average portfolio allocation (excluding cash) for clients with more than \$1 billion in investable assets as of December 31, 2006: 47.9% equities, 12.7% bonds, 5.3% real estate (private and REITs), 21.3% hedge funds, and 12.8% alternatives (venture capital, private equity, oil and gas, timber, commodities, and other inflation-hedging assets). However, we have backfilled returns for many asset classes (such as hedge funds, private equity, and venture capital) with public equity market returns due to a lack of reliable data generally prior to 1980. Thus, during the 1970s the diversified portfolio looks a lot like the simple portfolio.

<sup>4</sup> The one exception to this rule has been during extreme, crisis-type events (such as the sell-off sparked by the Russian debt default in August 1998), when correlations among all asset classes (except “safe havens” such as U.S. Treasuries and gold) have generally moved toward one.

<sup>5</sup> The most recent data available for non-marketable assets; all other periods end at year end.

rates of 100 bps, 630 bps, 630 bps, and 210 bps, respectively. Clearly, this constituted a “best-case” scenario for holding cash, with equity prices falling and consumer prices deflating (i.e., the value of cash was rising). Even so, relative performance quickly shifted, with the no-cash portfolio outperforming in 32 of the next 34 five-year periods, and 32 of 36 three-year periods.

### Timing Issues

While it is *possible* mid-2007 will prove (in hindsight) to have been a uniquely opportunistic time to sell richly valued assets and raise cash, the chances of getting such a call right are exceedingly small. Further, even if one *were* somehow able to predict that the next five years would prove difficult for equities, the difficulty of getting the timing right *within* that time frame presents yet another hurdle. Since 1970, for example, average annual compound returns for the worst decile of five-year returns for the S&P 500 have fallen between 0.1% and -3.8%. However, *every one* of these periods included a 12-month return of *at least* 24.4%; the *average* best 12-month period for the worst decile of five-year returns was 38.1% (Table F). In other words, secular bears tend to be punctuated by sharp, powerful rallies, even when the primary trend is down. (We also looked at figures for the rest of the developed world, with similar results.)

Further, even those with the best laid plans are likely to find the reality of handling a tactical cash position is significantly more complicated than it seems in theory. For example, an investor might consider it reasonable to sell equities and move to cash when valuations rise to 1 standard deviation above their long-term mean, and buy back in when they fall to 1 standard deviation *below* their mean. However, an investor who followed this rule for our preferred price-to-earnings (P/E) measure (which uses real earnings normalized over ten years), would have sold equities in 1992...and still be waiting to get back in. Indeed, even at the nadir of the 2002 bear market, an investor who moved to 20% cash in 1992 would have failed to catch up with one who simply chose to ride it out (Table G). Even if an investor waited to raise cash until P/E ratios based on 12-month trailing earnings moved 1 standard deviation above their long-term average in 1996, the result would have been similar—the portfolio with cash would have outperformed during the equity market decline, but on a cumulative basis, the portfolio that remained invested would have maintained a higher market value for the full period.

Finally, there are other, more practical considerations. As Jeremy Grantham of Boston money manager GMO recently pointed out, even if you believe, as they do, that “investors are paying for the privilege of taking risk...you could only have a little cash on the margin because the career risk or business risk of moving more would be unsupportable.”

### A Hedge by any Other Name...

The simplest methods to implement a derivatives-based hedge are to either scale back equity positions and gain exposure through buying index calls, or buy puts. The primary downside to such positions is the cost, which typically ranges from 200 bps to 300 bps a year, but can vary dramatically due to changes in implied volatility. In late February-early March, for example, the cost to implement a standard hedge (buying 12-month, 10% out-of-the-money put options) jumped by roughly 60 bps in a matter of days.

To further illustrate this cost, we created a simplified position (Table G) that shows the return impact for an investor who purchased 12-month, 10% out-of-the-money puts when real normalized P/Es rose to more than 1 standard deviation above their long-term mean in 1992, then rolled the position forward each year. We assumed a very conservative 200-bp-a-year drag on the equity portion of the portfolio (while this is roughly what such puts cost now, it was much higher for most of the period), and “credited” the investor with gains in years when the S&P 500 posted a return worse than -10% (this only occurred in 2001, when the index returned -12%, and 2002, when it returned -22%). As shown in the table, this approach would have been less costly than holding 20% in cash (again, we used very conservative assumptions<sup>6</sup>), but still lagged the no-cash portfolios by a wide margin.

“Cashless collars” are essentially a method for avoiding this cost, with proceeds from the sale of out-of-the-money call options used to fund the purchase of out-of-the-money puts. In a standard example, an investor sells 10% out-of-the-money calls and spends the proceeds on 10% out-of-the-money puts. Thus, the value of the investor’s portfolio is protected *after* the market falls by 10% within the given time frame (i.e., the maximum downside for the portfolio is 10%); however, if the market appreciates during this period, any upside beyond a 10% increase will be forfeited (Table H).<sup>7</sup> While many investors are attracted to cashless collars because they are self-funding in terms of the premium payment, there are other issues to consider. Collars not only place a cap on upside potential, but also introduce more complexity into the portfolio, as investors may be required to post collateral if the market rises above the strike price of the calls. Thus, investors looking to hedge against a steep decline should be wary of creating a collar (rather than just buying puts) simply because it is self-funding.

Another way to offset some of the cost of puts is to sell puts that are further out of the money. In other words, in exchange for a reduced premium, an investor can adopt a strategy where the portfolio is protected for a range of declines (say 10% to 25%), but is exposed in the event the market declines by more than the outer band of the collar. Indeed, while history is an imperfect guide to “fat tails,” what data we do have suggest investors are unlikely to need protection that goes beyond declines of 20% to 25% (Table I). As shown in the table, six-month declines of more than 20% have been quite rare in the United States, although they have been slightly more common in the United Kingdom, with a number occurring during the horrendous bear market of 1973-74. We believe the six-month time frame is the most applicable for most investors, as most investors choose to buy 12-month options, and it is unreasonable to assume, first, that the decline will begin immediately after purchase, and second, that the investor will hold the option to expiration. Thus, as a general rule, for those looking to mitigate the cost of buying put options, we would recommend selling further out-of-the-money puts (with a strike price, say, 25% lower than current levels) rather than selling calls.<sup>8</sup> *However*, it is important to understand that selling out-of-the-money puts also caps protection from a severe downturn. Thus, in a true “black swan”-type event (i.e., a severe and sustained market crash), an investor that used this strategy would accrue losses on *both sides* of the collar. To use a

<sup>6</sup> For returns to be the same as the portfolios with 20% cash, the annual cost of the options would have needed to be roughly 290 bps for the simple portfolio, and about 440 bps for the diversified portfolio.

<sup>7</sup> Investors may also be required to post collateral if the market rises above the strike price of the calls, with requirements for individuals likely to be more onerous than those for institutions.

<sup>8</sup> For those interested in a slightly more complex trade, it is generally possible to buy 10% out-of-the-money puts and sell 15% out-of-the-money puts, leveraged three times, for slightly more than it would cost to do the same trade (unleveraged) selling 25% out-of-the-money puts. Thus, the maximum upside is 15% (the same as with the 10-bp to 25-bp spread), but this would be achieved with a market decline of 15%, rather than 25%. As of mid-May, the difference in cost between the two strategies was about 30 bps.

simple example, if the market declined by 35%, someone who used a 10-bp to 25-bp spread would incur a loss of 20%—10% before the collar kicked in, and another 10% on the puts sold. Indeed, this issue is illustrative of our main point: namely, investors must be very clear exactly what it is they are hedging against, and structure positions appropriately. (Easier said than done, of course!)

## Conclusion

We recognize that at first glance, our advice to stick to policy targets (and not hold cash) seems somewhat incongruous with our opinion that most major asset classes are overvalued. However, investors who choose to hold cash *must* stick to their entry and exit strategies; otherwise, they risk incurring lots of opportunity cost, only to lose patience with the strategy and buy back into markets before they correct, locking in relative underperformance and eliminating any downside protection. In other words, such an investor would not only miss out on the upside, but also be fully exposed to future market declines. Using options to hedge against a market decline, meanwhile, not only entails making subsequent decisions about whether or not to maintain protection, but also introduces new complexity into the portfolio, and may require significant monitoring depending on the strategy used. Thus, for *most* investors, we believe the more prudent course is to ride out any market volatility, while reducing portfolio risk by significantly increasing exposure to quality within equities, maintaining a diversified portfolio with adequate exposure to fixed income and inflation-hedging assets in the event of macroeconomic shocks, and rebalancing frequently to take advantage of market fluctuations. *To be clear: we believe valuations are unusually high across asset classes, and investor risk appetite is at unsustainably high (and potentially dangerous) levels. However, given the complexities of either holding cash or implementing a derivatives-based hedge, and the uncertainties about the timing (and duration) of a potential market decline, we do not believe it makes sense for most investors to pursue such strategies.*

For those for whom stability of principal is the primary objective, *or* who are convinced a steep setback is imminent, we would recommend holding either cash or some form of out-of-the-money puts. While cash may seem the simpler of the choices, options are likely preferable for investors concerned with potential tax liabilities, as well as those who would like to maintain their current manager structure longer term. While taxable investors are more apt to be concerned with stability of principal, the taxes incurred by raising cash may push the cost of such a strategy to unacceptable levels. In these cases, derivatives-based strategies<sup>9</sup> may represent the most cost-effective method of maintaining stability, despite the potential upfront costs.

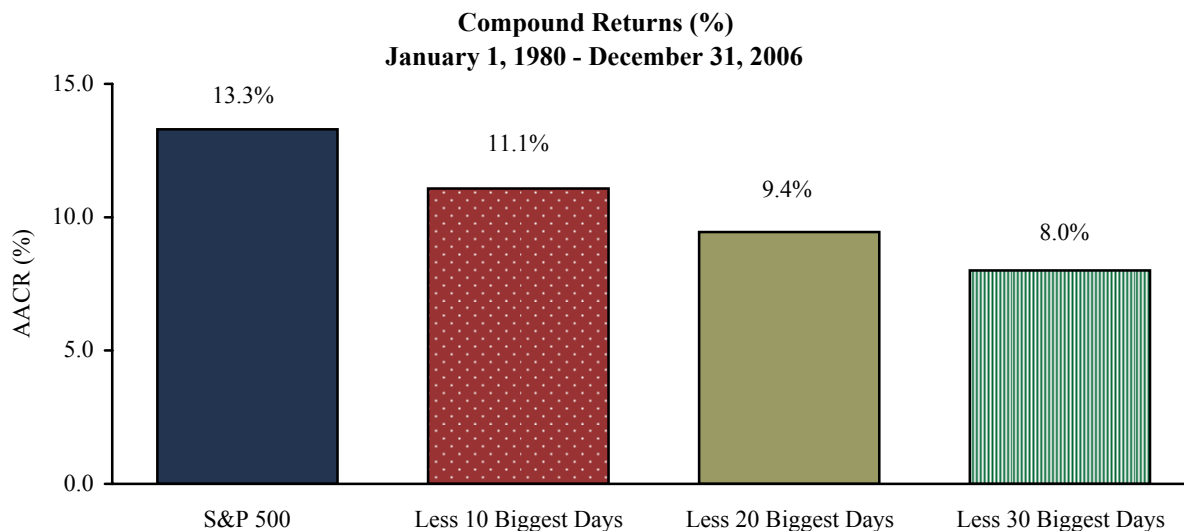
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<sup>9</sup> While our analysis has focused on options, investors can also use futures to hedge against a market decline; indeed, they may be more efficient for taxable investors. Detailed discussion of this issue is beyond the scope of this paper—interested parties should discuss with their tax advisors.

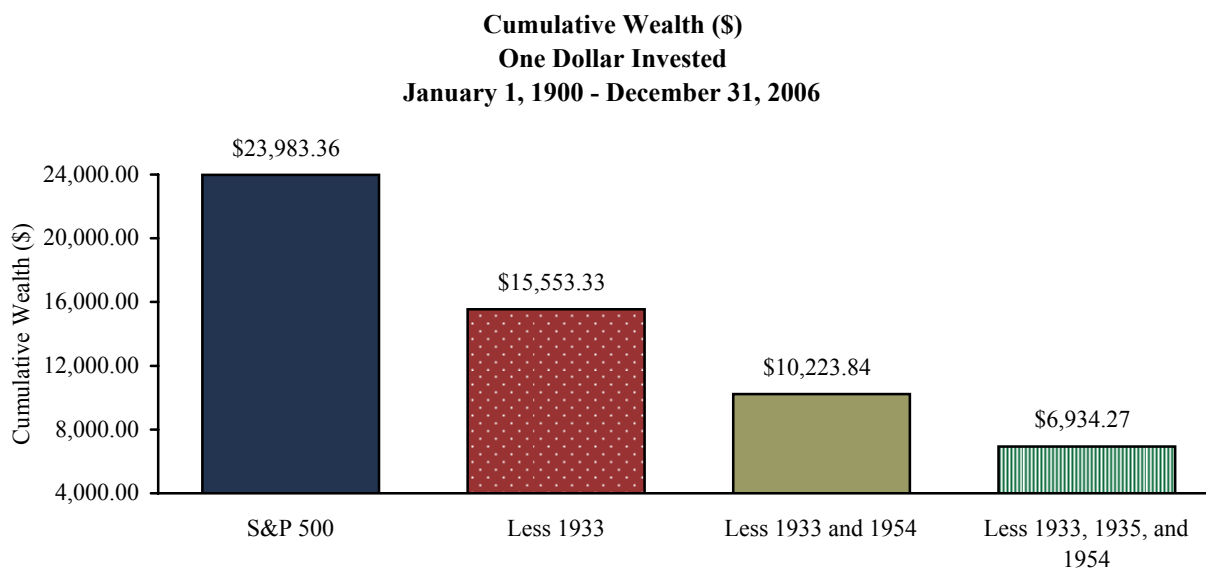
**Table A****MARKET TIMING - MISSING THE BEST DAYS**

Much of the return from equities is concentrated in very short time horizons. Returns on common stocks can be sharply cut if an investor misses only a handful of days or months.

A daily examination of the market from 1980 through 2006 dramatizes how a small error in timing can be costly. The horizon in this chart is the 7,044 trading days from January 1, 1980 through December 31, 2006.

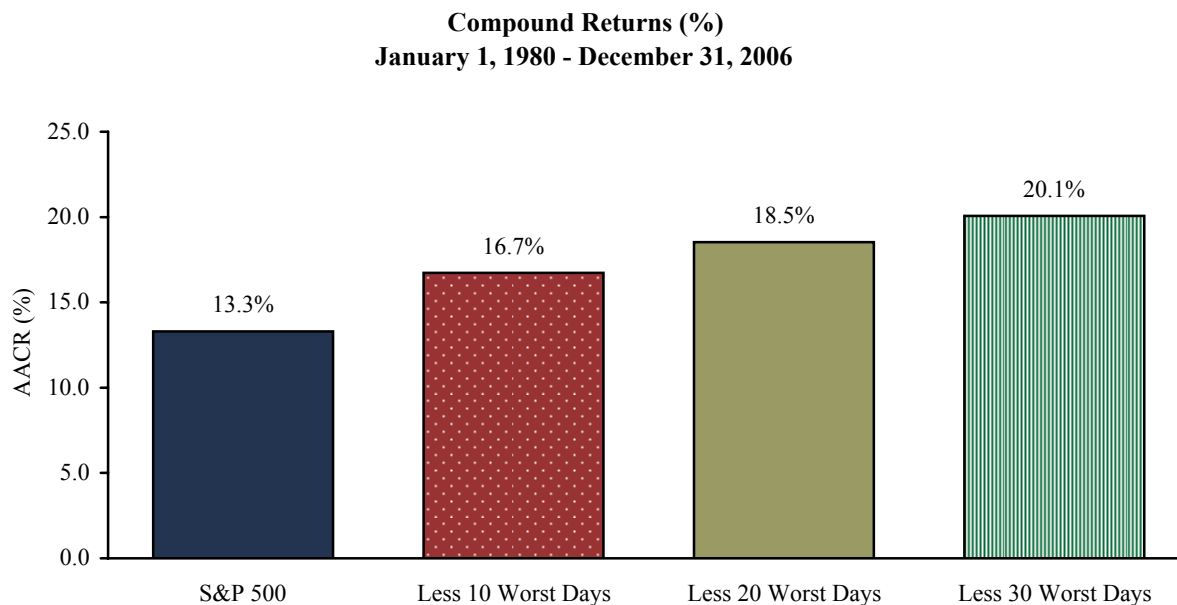


The data lead to the same conclusion when viewed over longer time periods.

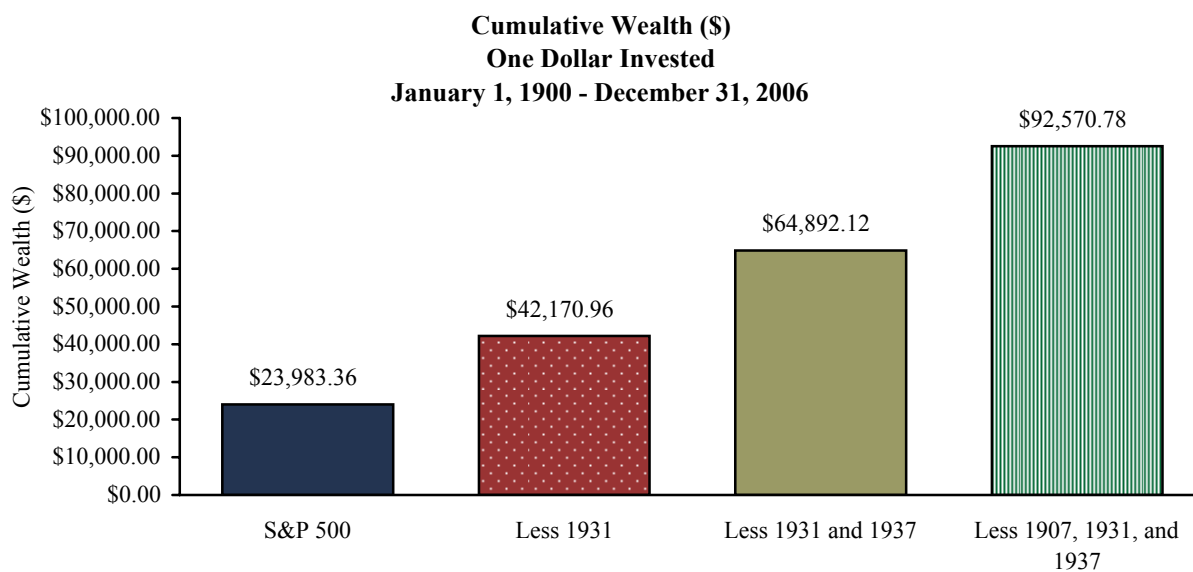


**Table A (continued)****MARKET TIMING - MISSING THE WORST DAYS**

Returns on common equities can be increased dramatically if an investor misses only a handful of days or months. Again, the horizon for this chart is the 7,044 trading days from January 1, 1980 through December 31, 2006.



The data lead to the same conclusion when viewed over longer time periods.



Sources: Standard & Poor's and Thomson Datastream.

Table B

## FIVE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF PORTFOLIOS

March 31, 1970 - September 30, 2006

## Simple Portfolio Comparison

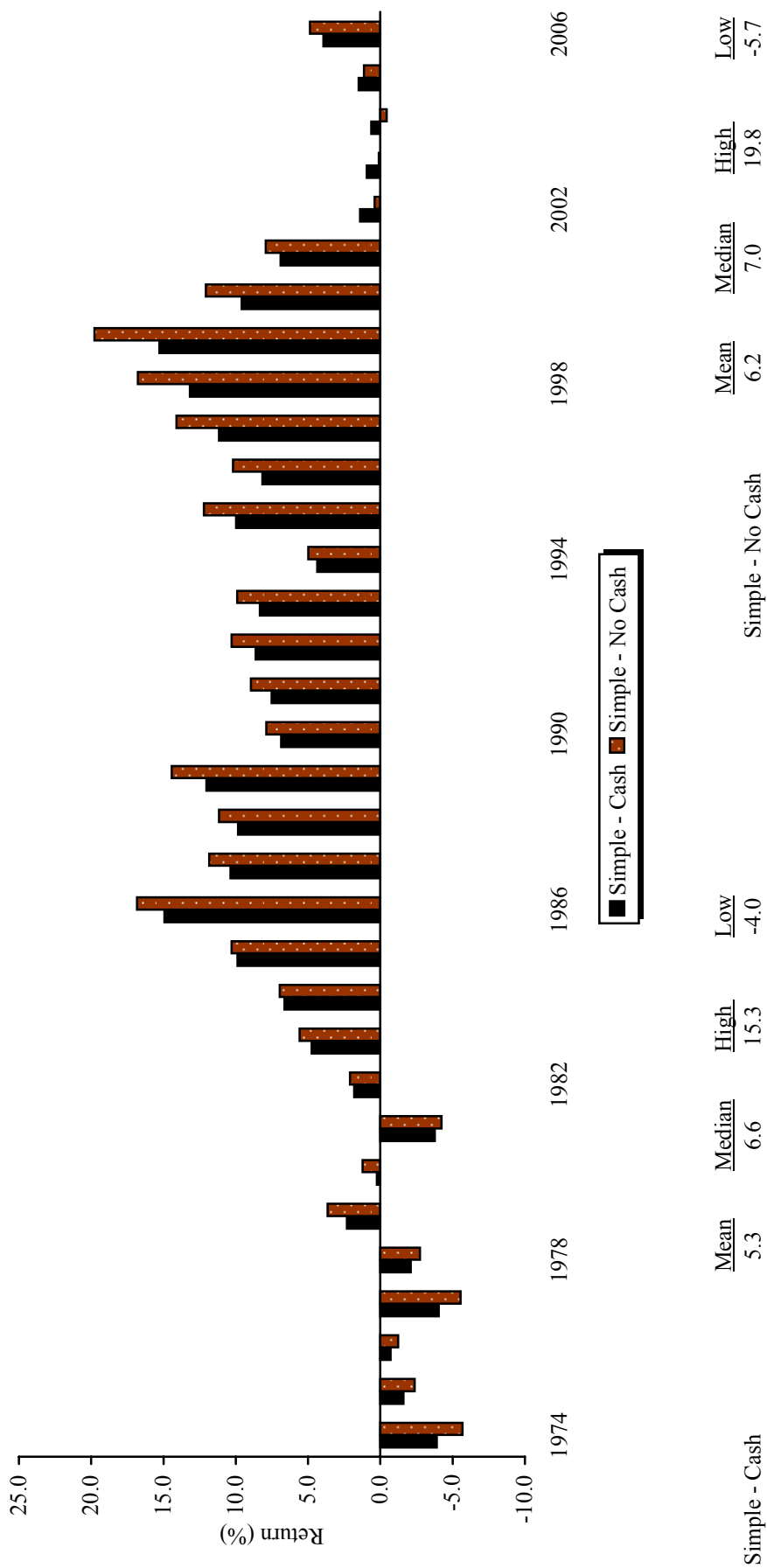
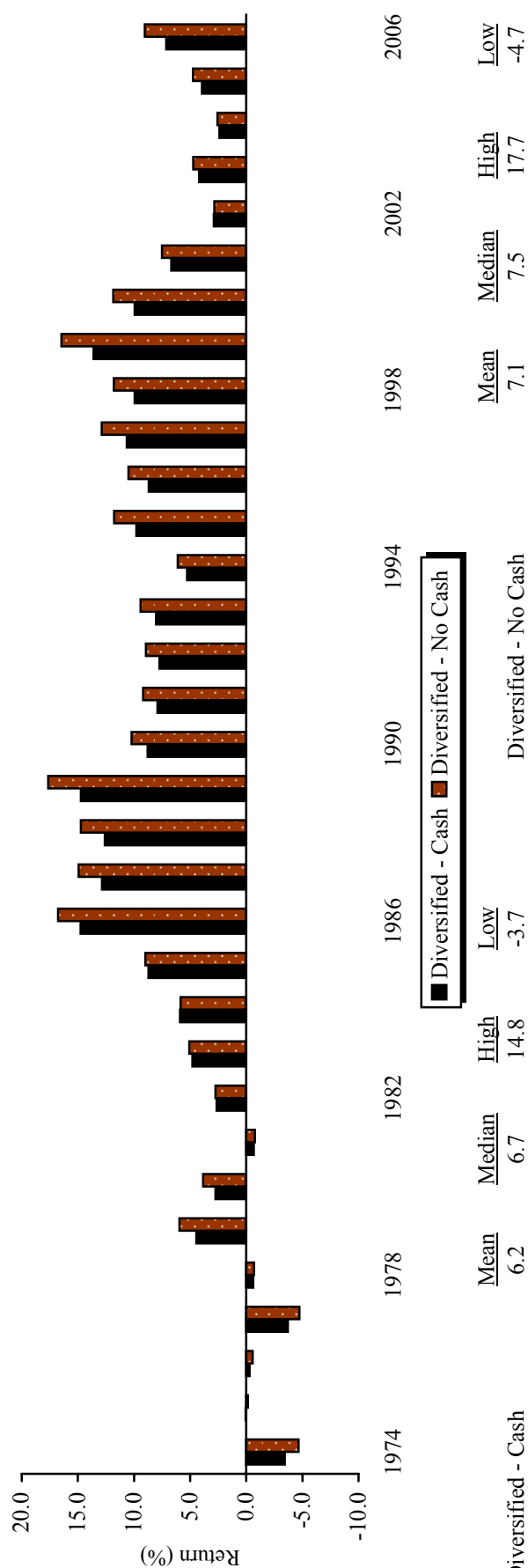


Table B (continued)

## FIVE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF PORTFOLIOS

March 31, 1970 - September 30, 2006

## Diversified Portfolio Comparison



Sources: Bureau of Labor Statistics, Cambridge Associates LLC Investment Manager Database, Cambridge Associates LLC Non-Marketable Alternative Assets Database, Citigroup Global Markets, Dow Jones & Company, Inc., Federal Reserve, FTSE International Limited, Goldman, Sachs & Co., J.P. Morgan Securities, Inc., Lehman Brothers, Inc., Merrill Lynch & Co., Morgan Stanley Capital International, National Association of Real Estate Investment Trusts, National Council of Real Estate Investment Fiduciaries, Prudential Real Estate Investors, Standard & Poor's, Standard and Poor's Emerging Markets Database, Thomson Datastream, and Wilshire Associates, Inc. MSCI data provided "as is" without any expressed or implied warranties.

Notes: Data for 2006 are through September 30. The simple portfolio consists of 70% U.S. equity and 30% high-quality corporate bonds. The simple portfolio including cash consists of 50% U.S. equity, 30% high-quality corporate bonds, and 20% cash. The diversified portfolio is the average portfolio for clients with more than \$1 billion in investable assets.

Table C

## THREE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF PORTFOLIOS

March 31, 1970 - September 30, 2006

## Simple Portfolio Comparison

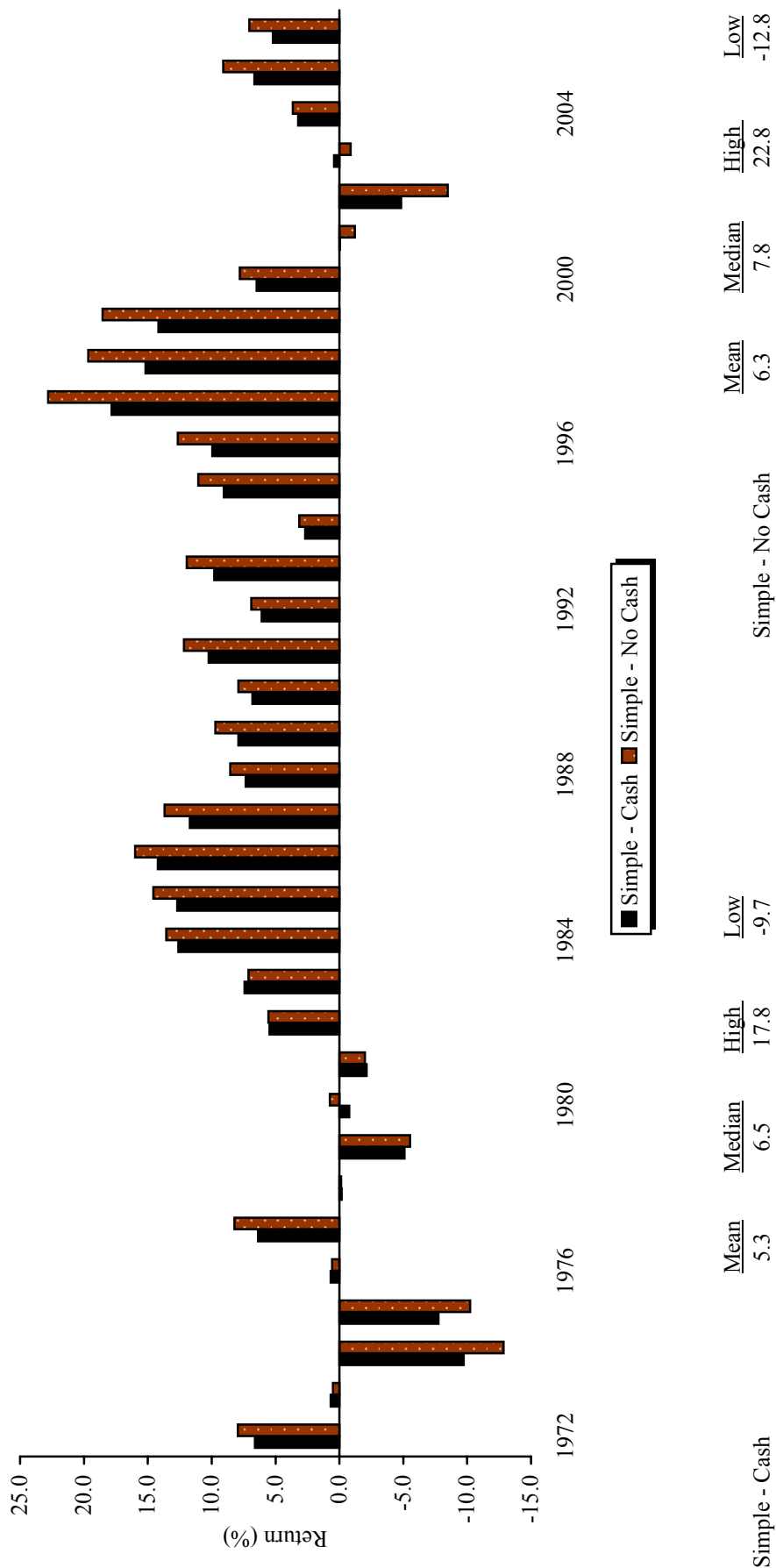
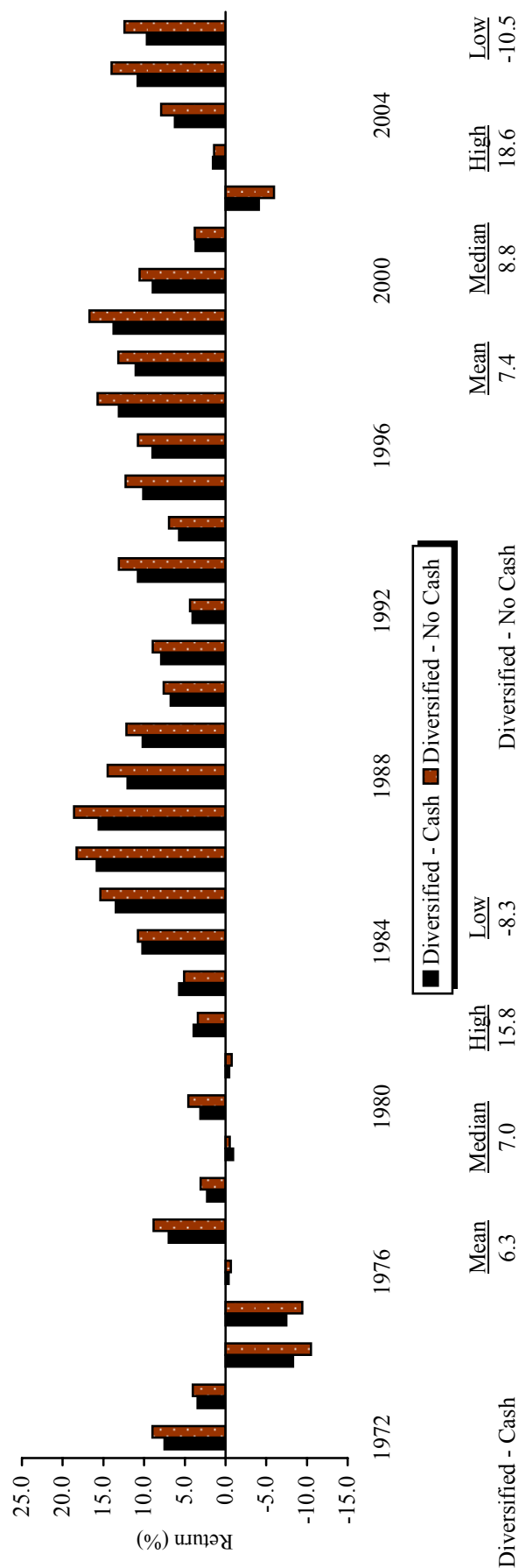


Table C (continued)

## THREE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF PORTFOLIOS

March 31, 1970 - September 30, 2006

## Diversified Portfolio Comparison



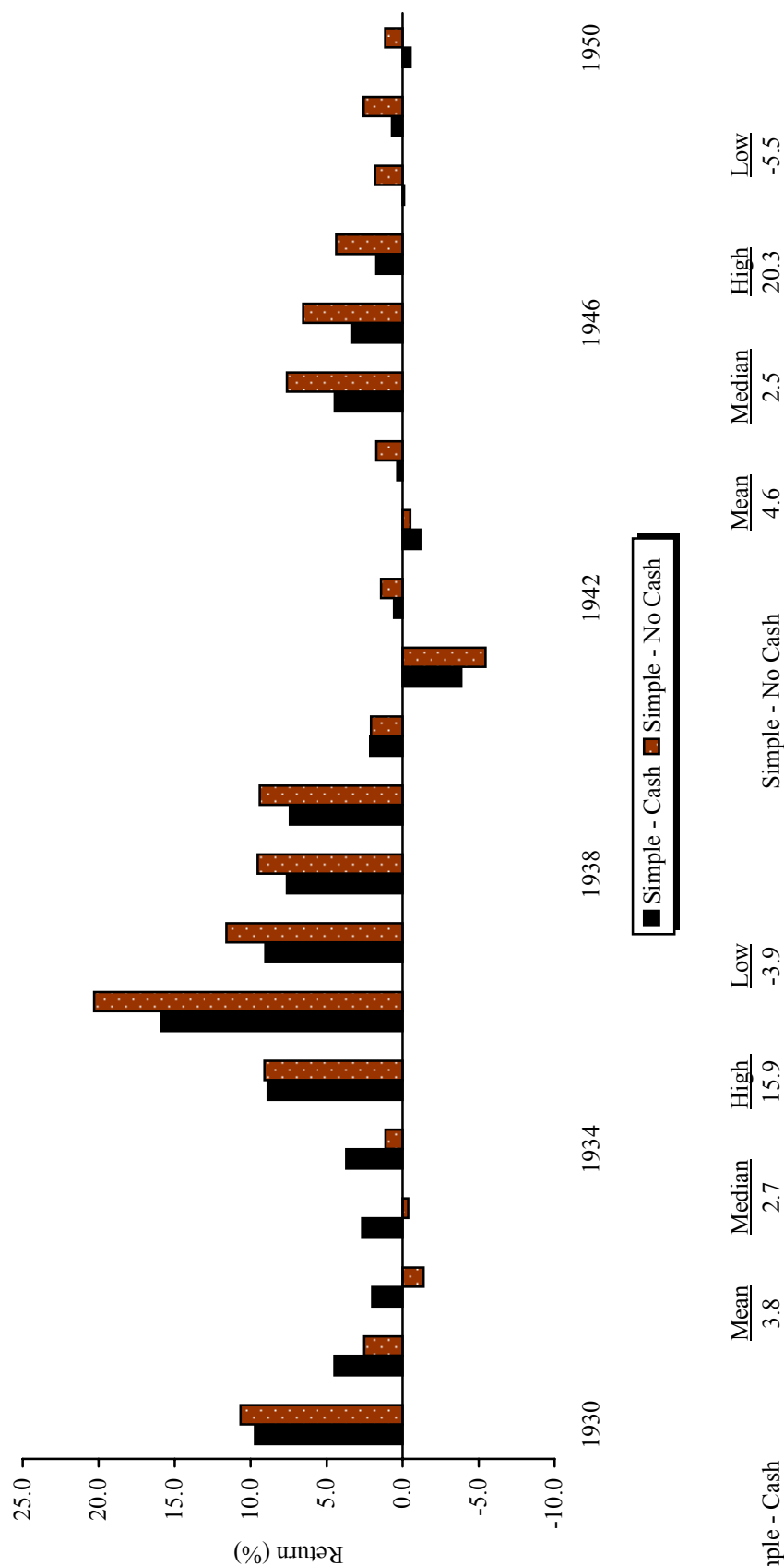
Sources: Bureau of Labor Statistics, Cambridge Associates LLC Investment Manager Database, Cambridge Associates LLC Non-Marketable Alternative Assets Database, Citigroup Global Markets, Dow Jones & Company, Inc., Federal Reserve, FTSE International Limited, Goldman, Sachs & Co., J.P. Morgan Securities, Inc., Lehman Brothers, Inc., Merrill Lynch & Co., Morgan Stanley Capital International, National Association of Real Estate Investment Trusts, National Council of Real Estate Investment Fiduciaries, Prudential Real Estate Investors, Standard & Poor's, Standard and Poor's Emerging Markets Database, Thomson Datastream, and Wilshire Associates, Inc. MSCI data provided "as is" without any expressed or implied warranties.

Notes: Data for 2006 are through September 30. The simple portfolio consists of 70% U.S. equity and 30% high-quality corporate bonds. The simple portfolio including cash consists of 50% U.S. equity, 30% high-quality corporate bonds, and 20% cash. The diversified portfolio is the average portfolio for clients with more than \$1 billion in investable assets.

Table D

## FIVE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF SIMPLE PORTFOLIO

March 31, 1926 - December 31, 1950



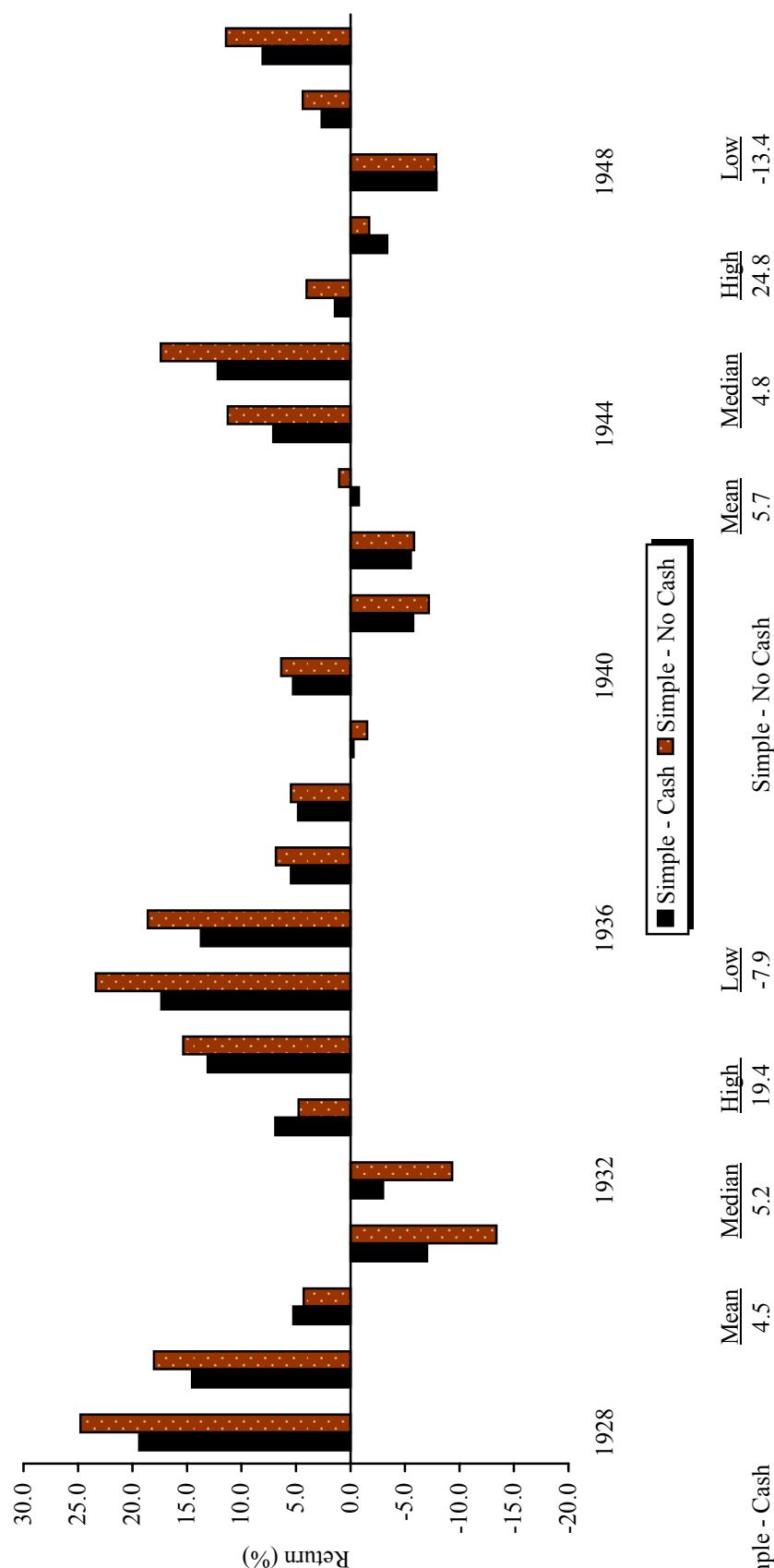
Sources: Bureau of Labor Statistics, Citigroup Global Markets, Federal Reserve, Standard & Poor's, and Thomson Datastream.

Notes: The simple portfolio consists of 70% U.S. equity and 30% high-quality corporate bonds. The simple portfolio including cash consists of 50% U.S. equity, 30% high-quality corporate bonds, and 20% cash.

Table E

## THREE-YEAR AVERAGE ANNUAL COMPOUND RETURN COMPARISON OF SIMPLE PORTFOLIO

March 31, 1926 - December 31, 1950



Sources: Bureau of Labor Statistics, Citigroup Global Markets, Federal Reserve, Standard & Poor's, and Thomson Datastream.

Notes: The simple portfolio consists of 70% U.S. equity and 30% high-quality corporate bonds. The simple portfolio including cash consists of 50% U.S. equity, 30% high-quality corporate bonds, and 20% cash.

Table F

## BOTTOM DECILE OF ROLLING FIVE-YEAR RETURNS

January 31, 1970 - April 30, 2007

	S&P 500	MSCI U.S.	MSCI Europe	MSCI Pacific	MSCI World
Decile Cutoff	0.1	-1.4	-0.9	-5.1	-1.1
Lowest Five-Year AACR (%)	-3.8	-4.6	-7.6	-8.1	-5.8

## EXTREME 12-MONTH RETURNS

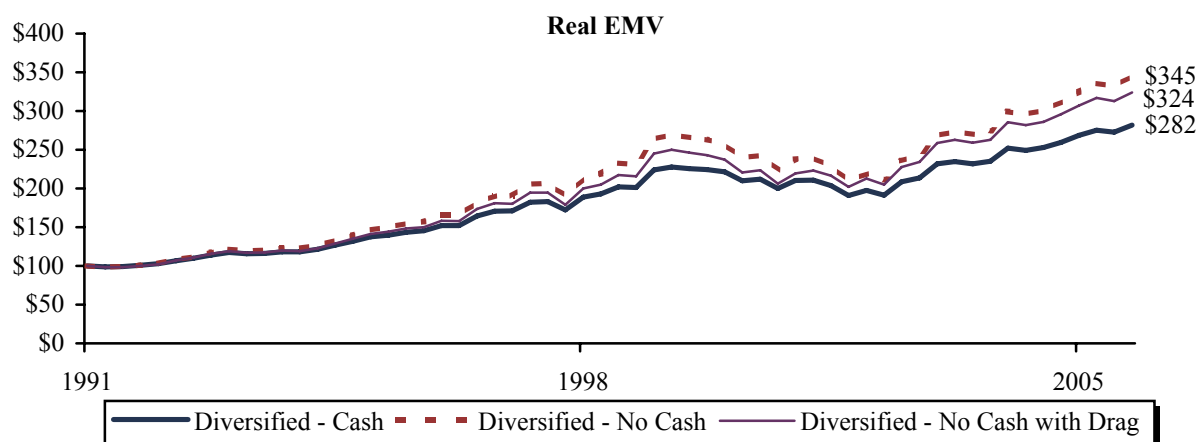
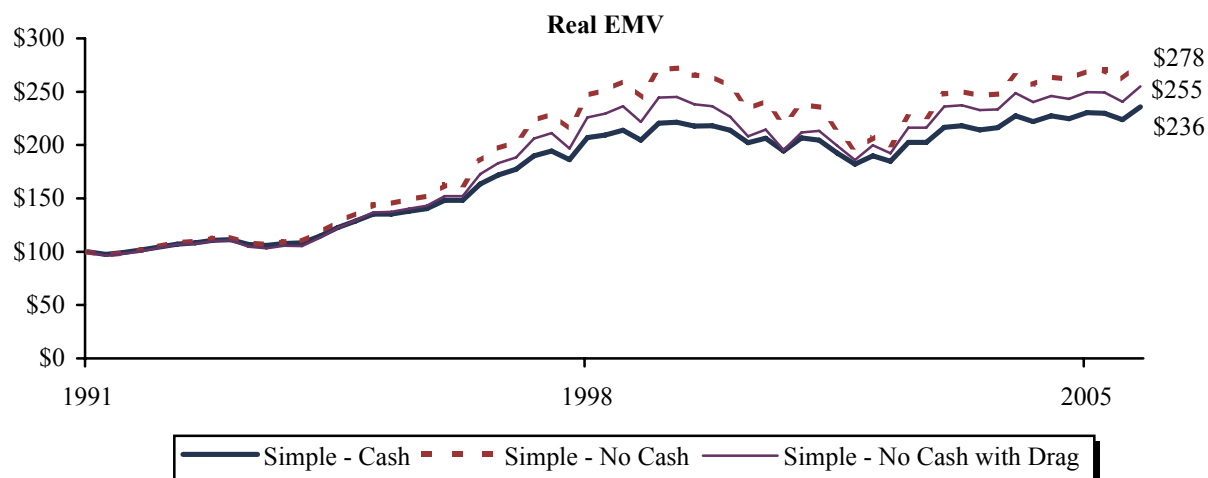
	S&P 500	MSCI U.S.	MSCI Europe	MSCI Pacific	MSCI World
Best 12-Month Return (%)					
Avg	38.1	37.3	34.1	38.4	34.4
Min	24.4	24.3	22.9	22.5	27.7
Max	41.8	40.9	54.3	44.6	36.4

	S&P 500	MSCI U.S.	MSCI Europe	MSCI Pacific	MSCI World
Worst 12-Month Return (%)					
Avg	-28.5	-29.6	-36.9	-33.7	-30.2
Min	-38.9	-40.6	-37.9	-41.3	-37.4
Max	-24.9	-25.7	-27.2	-24.4	-27.6

Sources: Morgan Stanley Capital International, Standard and Poor's, and Thomson Datastream. MSCI data provided "as is" without any expressed or implied warranties.

**Table G**  
**CUMULATIVE WEALTH COMPARISON OF VARIOUS PORTFOLIOS**

**January 1, 1992 - September 30, 2006**

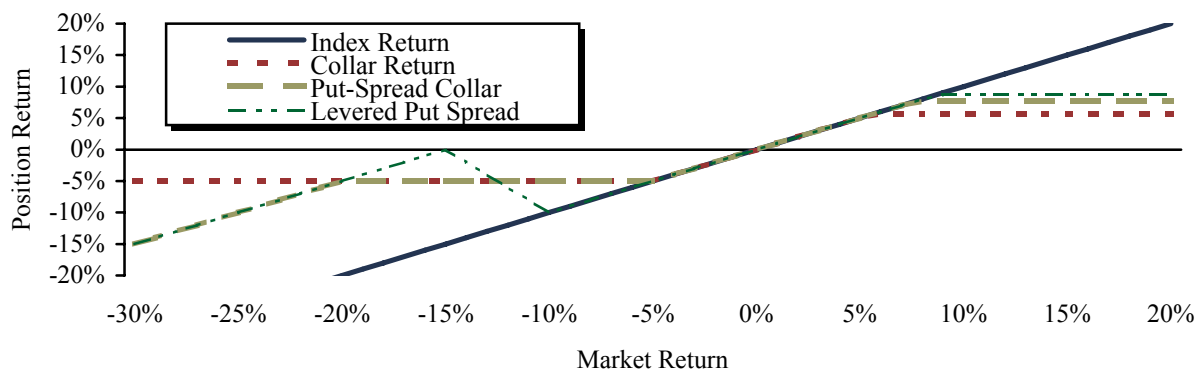
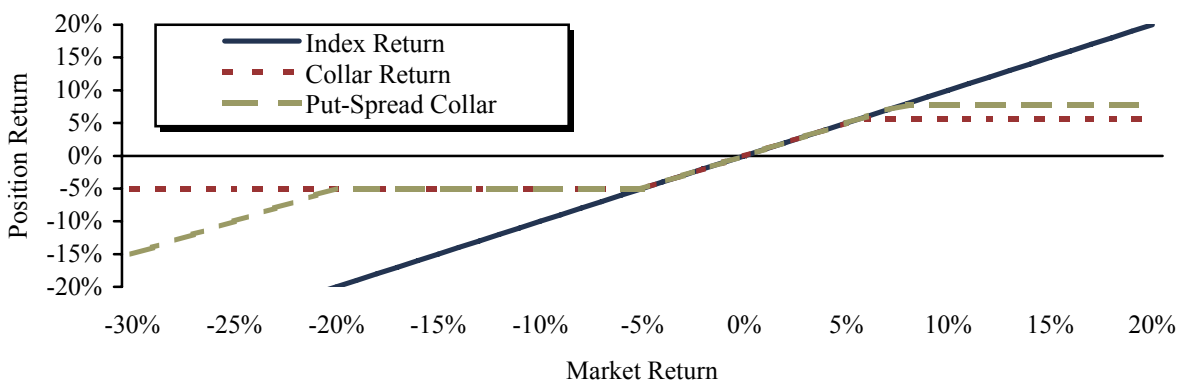
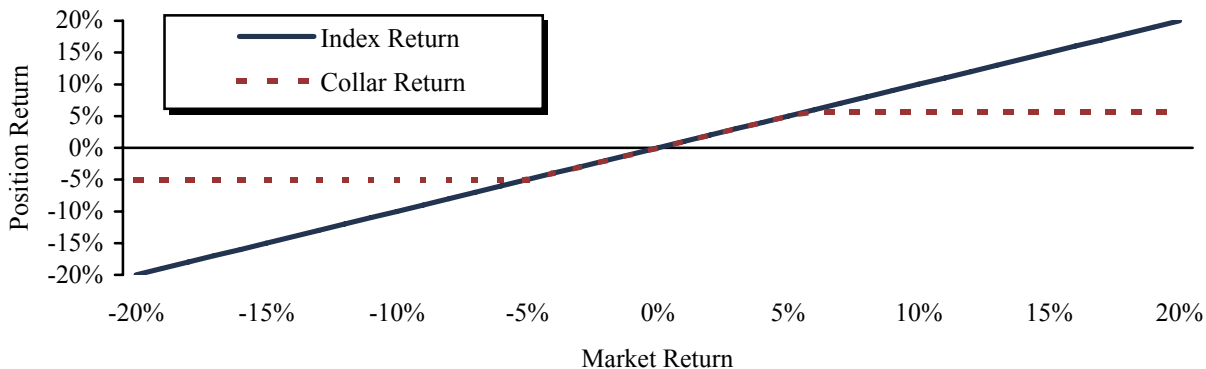


Sources: Bureau of Labor Statistics, Cambridge Associates LLC Investment Manager Database, Cambridge Associates LLC Non-Marketable Alternative Assets Database, Citigroup Global Markets, Dow Jones & Company, Inc., Federal Reserve, FTSE International Limited, Goldman, Sachs & Co., J.P. Morgan Securities, Inc., Lehman Brothers, Inc., Merrill Lynch & Co., Morgan Stanley Capital International, National Association of Real Estate Investment Trusts, National Council of Real Estate Investment Fiduciaries, Prudential Real Estate Investors, Standard & Poor's, Standard and Poor's Emerging Markets Database, Thomson Datastream, and Wilshire Associates, Inc. MSCI data provided "as is" without any expressed or implied warranties.

Notes: The simple portfolio consists of 70% U.S. equity and 30% high-quality corporate bonds. The simple portfolio including cash consists of 50% U.S. equity, 30% high-quality corporate bonds, and 20% cash. The diversified portfolio is the average portfolio for clients with more than \$1 billion in investable assets. No cash with drag assumes 200 basis point yearly drag from an annually rolled 12-month, 10% out-of-the-money put option on the public equity portion of the portfolio.

Table H

## COST/BENEFIT OF VARIOUS OPTIONS STRATEGIES



Notes: Collar assumes purchase of 5% out-of-the-money put and 5% out-of-the-money call. Put spread represents purchase of 5% out-of-the-money put, sale of 20% out-of-the-money put, and sale of 7.7% out-of-the-money call. Levered put spread shows purchase of 10% out-of-the-money put levered two times, sale of 15% out-of-the-money put, and sale of 8.7% out-of-the-money call. All strategies use 12-month options, and all calculations exclude dividends.

**Table I**  
**S&P 500 INDEX FULL PERIOD DRAWDOWNS (%)**

**1946-2007**

	Monthly		3 Months		6 Months		9 Months		12 Months	
	Worst Months	S&P 500	Worst Periods From To	S&P 500	Worst Periods From To	S&P 500	Worst Periods From To	S&P 500	Worst Periods From To	S&P 500
<b>1</b>	Oct-87	-21.5	Sep-87 Nov-87	-29.6	Apr-74 Sep-74	-30.7	Jan-74 Sep-74	-32.6	Oct-73 Sep-74	-38.9
<b>2</b>	Aug-98	-14.5	Jul-74 Sep-74	-25.1	Apr-02 Sep-02	-28.4	Jan-02 Sep-02	-28.2	Nov-73 Oct-74	-28.7
<b>3</b>	Sep-74	-11.6	Oct-87 Dec-87	-22.6	Mar-74 Aug-74	-23.2	Mar-74 Nov-74	-24.6	Sep-73 Aug-74	-28.2
<b>4</b>	Nov-73	-11.2	Apr-62 Jun-62	-20.6	Jan-62 Jun-62	-22.3	Nov-73 Jul-74	-24.5	Oct-00 Sep-01	-26.6
<b>5</b>	Sep-02	-10.9	Aug-87 Oct-87	-20.4	Jun-46 Nov-46	-21.8	Apr-74 Dec-74	-24.3	Jan-74 Dec-74	-26.4
<b>6</b>	Nov-48	-10.4	Apr-70 Jun-70	-18.0	Jun-87 Nov-87	-19.4	Apr-02 Dec-02	-22.3	Nov-00 Oct-01	-24.9
<b>7</b>	Sep-46	-9.8	Jul-46 Sep-46	-18.0	May-46 Oct-46	-19.2	Dec-73 Aug-74	-22.2	Apr-02 Mar-03	-24.8
<b>8</b>	Mar-80	-9.8	Jul-02 Sep-02	-17.3	Jan-70 Jun-70	-19.2	Feb-01 Oct-01	-21.7	Sep-00 Aug-01	-24.4
<b>9</b>	Feb-01	-9.1	Aug-46 Oct-46	-16.4	Oct-00 Mar-01	-18.8	Feb-74 Oct-74	-20.7	Aug-73 Jul-74	-24.0
<b>10</b>	Aug-90	-9.0	Jun-74 Aug-74	-16.0	Feb-02 Jul-02	-18.7	Feb-02 Oct-02	-20.7	Dec-73 Nov-74	-23.7
<b>11</b>	Oct-78	-8.8	May-02 Jul-02	-15.0	Aug-87 Jan-88	-18.2	Jan-01 Sep-01	-20.4	Aug-01 Jul-02	-23.6
<b>12</b>	Apr-70	-8.7	Jul-01 Sep-01	-14.7	Oct-87 Mar-88	-18.2	Jun-02 Feb-03	-20.1	Jun-69 May-70	-23.4
<b>13</b>	Aug-74	-8.5	Mar-62 May-62	-14.1	Jul-74 Dec-74	-18.1	Oct-69 Jun-70	-19.7	Feb-02 Jan-03	-23.0
<b>14</b>	May-62	-8.3	Aug-90 Oct-90	-13.8	Sep-00 Feb-01	-17.8	Jul-00 Mar-01	-19.5	Jul-69 Jun-70	-22.8
<b>15</b>	Sep-86	-8.3	Jun-02 Aug-02	-13.8	Apr-62 Sep-62	-17.7	May-02 Jan-03	-19.5	Mar-02 Feb-03	-22.7
<b>16</b>	Nov-87	-8.2	Jul-90 Sep-90	-13.7	Jun-74 Nov-74	-17.6	Jan-62 Sep-62	-19.4	Jan-02 Dec-02	-22.1
<b>17</b>	Sep-01	-8.1	Mar-70 May-70	-13.6	Sep-87 Feb-88	-17.5	Dec-01 Aug-02	-18.7	Apr-00 Mar-01	-21.7
<b>18</b>	Jun-62	-7.9	Aug-57 Oct-57	-13.4	Jul-87 Dec-87	-17.5	Sep-87 May-88	-18.5	Jun-46 May-47	-21.4
<b>19</b>	Nov-00	-7.9	Apr-02 Jun-02	-13.4	May-02 Oct-02	-17.0	Oct-73 Jun-74	-18.4	Oct-01 Sep-02	-20.5
<b>20</b>	Jul-02	-7.8	Sep-00 Nov-00	-13.1	Dec-69 May-70	-16.8	Sep-69 May-70	-17.9	May-46 Apr-47	-18.7
Average Performance		-10.0		-17.1		-19.9		-21.7		-24.5

Table I (continued)

## FTSE ALL-SHARE INDEX FULL PERIOD DRAWDOWNS (%)

1965-2007

	Monthly			3 Months			6 Months			9 Months			12 Months		
	Worst Months	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To	FTSE All-Share	Worst Periods From To
1	Oct-87	-26.5	Sep-87	Nov-87	-30.0	Jun-74	Nov-74	-40.7	Mar-74	Nov-74	-52.6	Dec-73	Nov-74	-56.0	Dec-73
2	Mar-74	-20.4	Oct-87	Dec-87	-27.2	Mar-74	Aug-74	-38.9	Jan-74	Sep-74	-46.0	Oct-73	Sep-74	-55.0	Oct-73
3	Sep-81	-16.4	Aug-87	Oct-87	-25.5	May-74	Oct-74	-35.9	Nov-73	Jul-74	-43.9	Nov-73	Oct-74	-54.9	Nov-73
4	Nov-74	-14.8	Jul-74	Sep-74	-25.4	Jul-74	Dec-74	-33.3	Dec-73	Aug-74	-43.2	Jan-74	Dec-74	-51.8	Jan-74
5	Nov-73	-12.7	Jun-74	Aug-74	-23.6	Oct-73	Mar-74	-33.2	Feb-74	Oct-74	-41.7	Sep-73	Aug-74	-46.9	Sep-73
6	Sep-74	-12.1	Nov-73	Jan-74	-22.6	Apr-74	Sep-74	-32.6	Apr-74	Dec-74	-39.7	Jul-73	Jun-74	-42.4	Jul-73
7	Sep-02	-11.8	Sep-74	Nov-74	-22.5	Nov-73	Apr-74	-29.6	Oct-73	Jun-74	-39.6	Aug-73	Jul-74	-41.8	Aug-73
8	Aug-74	-11.6	May-74	Jul-74	-20.4	Apr-02	Sep-02	-28.4	Jul-73	Mar-74	-36.3	Jun-73	May-74	-36.0	Jun-73
9	Jun-75	-11.4	Mar-74	May-74	-20.1	Jan-74	Jun-74	-27.6	Sep-73	May-74	-30.5	Apr-73	Mar-74	-34.9	Apr-73
10	Oct-76	-10.6	Jan-74	Mar-74	-20.0	Feb-74	Jul-74	-27.6	May-02	Jan-03	-30.1	Apr-02	Mar-03	-29.8	Apr-02
11	May-84	-10.4	Jul-02	Sep-02	-19.6	Feb-74	Jul-74	-27.6	Jun-02	Feb-03	-27.4	May-73	Apr-74	-29.7	May-73
12	Sep-72	-10.4	Aug-74	Oct-74	-19.5	Feb-69	Jul-69	-26.1	Feb-76	Oct-76	-27.4	Feb-02	Jan-03	-28.9	Feb-02
13	Aug-98	-10.4	Aug-76	Oct-76	-19.4	Jun-87	Nov-87	-26.1	Aug-73	Apr-74	-26.9	Jan-73	Dec-73	-28.7	Jan-73
14	Apr-70	-10.0	May-02	Jul-02	-17.9	Jul-74	Dec-74	-33.3	Jan-02	Sep-02	-26.8	Mar-02	Feb-03	-26.4	Mar-02
15	Nov-87	-9.9	Jun-02	Aug-02	-16.6	Oct-87	Mar-88	-24.2	Apr-02	Dec-02	-24.4	Feb-73	Jan-74	-24.3	Feb-73
16	Jun-74	-9.9	Jul-90	Sep-90	-16.6	Jul-87	Dec-87	-23.0	Feb-69	Oct-69	-24.0	Dec-72	Nov-73	-24.1	Dec-72
17	Feb-69	-9.8	Oct-73	Dec-73	-16.6	Aug-87	Jan-88	-22.3	May-73	Jan-74	-22.7	Jan-02	Dec-02	-22.7	Jan-02
18	Jan-73	-9.7	Jun-66	Aug-66	-15.5	May-02	Oct-02	-21.6	Jul-02	Mar-03	-21.2	Feb-74	Jan-75	-22.5	Feb-74
19	Jul-66	-9.7	Jun-92	Aug-92	-15.2	Jul-73	Dec-73	-20.3	Feb-02	Oct-02	-20.3	May-02	Apr-03	-22.0	May-02
20	Sep-01	-9.4	May-69	Jul-69	-15.1	Aug-73	Jan-74	-19.7	Aug-87	Apr-88	-20.2	Aug-01	Jul-02	-20.8	Aug-01
Average Performance		-12.4			-20.5			-28.6			-32.2			-35.0	

Sources: Standard and Poor's, FTSE International Limited, and Thomson Datastream.

Note: Data for 2007 through February 28.