

2008 Financial Market & Retirement Board Performance Review

As the US — and most of the world — fell deeper into recession and interest rates on short Treasury securities approached zero, a horrific fourth quarter saw stocks tumble to multi-year lows in one of the market's worst, and most volatile, years ever. Several of the nation's largest financial institutions either failed or were taken over and the government resorted to unprecedented measures in a frantic effort to forestall an even worse economic debacle.

During the tumultuous quarter, the hotly debated \$700 billion rescue plan approved by Congress was signed by the President, the market followed with its worst week ever and then its single largest daily gain ever, the jobless rate rose to a 15-year high, consumer prices saw their biggest decline in over 60 years, stocks broke through their previous bear market lows, the government pledged to pump another \$800 billion into ailing credit markets, industrial output registered its biggest decline in almost thirty years, the government stepped in to stabilize Citigroup and then to shore up General Motors and Chrysler, mortgage rates declined to their lowest levels in decades, and the Fed cut interest rates to historic lows. And to complete the nightmarish quarter, financier Bernard Madoff was arrested in December on charges of orchestrating a massive multi-billion dollar investment fraud.

Equity Market

US stocks finished with their third worst year ever and worst since the Great Depression. The Dow Jones Industrial Average, off 33.8% for the year, had its worst year since 1931 and the S&P 500 (large cap) index, off 38.5%, had its worst year since 1937. The NASDAQ Composite fell 40.5%, registering its worst year ever, even surpassing the decline suffered after the tech stock bubble burst in 2000. The broad market Dow Jones Wilshire 5000 suffered a 37.3% decline. Scarily, these historically bad returns came even after a rebound of nearly 20% from lows reached during November.

The pain of the year's losses was sharpened by gut-wrenching volatility during the final months of the year. The Dow saw four of the largest one day losses as well as two of the biggest one day gains in its 113-year history. Average intraday swings between intraday highs and lows on the S&P 500 were 6.9% in October and 5.4% in November, representing the two most volatile months ever. Before recovering at year end, US stocks — at their November lows — were down about 54% from their October 2007 record highs, representing a loss of about \$10 trillion in market value. At the November lows, stocks were at their lowest level in six years.

After the carnage of 2008, most broad stock indices show negative annualized returns of about 1% for the trailing ten year period. Equity performance lags behind most other asset classes — including investment grade bonds, which returned an annualized 5.6% — over this period.

Small caps outperformed large caps by about 4% in 2008 even though larger companies are typically expected to hold up better in a recession. Value held up modestly better than growth. Among the S&P 500's sectors, financials performed the worst for the year (-56.95%). The best performing sectors for the year were telecom services (-2.86%) and consumer staples (-17.66%), respectively.

Among notable individual stocks, troubled mortgage giants Fannie Mae and Freddie Mac both saw their stocks decline 98% while crippled insurer AIG suffered a 97% loss. General Electric fell 56%, General Motors declined 87%, and Citigroup lost 77%. Reflecting consumers' penchant for belt tightening, WalMart (+18%) and McDonald's were among the market's few gainers for the year.

One theme heard throughout the year was that there was virtually no place to hide during 2008. This was certainly true of foreign stock markets as no region of the world was able to "decouple" itself from the US' problems. Europe appeared to be mired in a recession even more severe than the US, Asia's export economies were battered by evaporating demand in the West, and slumping commodity prices contributed to the woes of Latin America. The surprising strength of the dollar (up 8.6% in 2008 in the Fed's trade-weighted index) served to worsen losses for US investors. The MSCI-EAFE Index was down 43.4% for the year. MSCI's Emerging Markets index was down 53.3% for 2008.

Fixed Income Market

The credit markets were the major drivers behind most of 2008's historic events. During a quarter when it seemed that stock prices were falling to zero, yields on short-dated Treasuries actually did approach zero as a result of the Federal Reserve's aggressive action to resuscitate the economy and many investors' willingness to accept virtually no return as long as they were assured of getting their principal back. The Fed cut the Fed Funds rate seven times during 2008, from 4.25% at the start of the year to the record low 0-0.25% range set at its December meeting. Holders of Treasury securities enjoyed capital appreciation during 2008 as the yield on the ten-year note declined from 4.033% to 2.25% and the yield on the 30-year bond dropped from 4.457% to 2.671%. Both levels represented historic lows. However, investors in investment-grade corporate bonds suffered losses as the yield differential

between these bonds and Treasuries tripled from about 2% to 6% during the year. High yield "junk" bonds suffered their worst year ever as their yield spread to Treasuries generally tripled from about 6% to over 18% during the year. Performance of the Treasury's inflation-protected securities (TIPS) suffered as investors began to focus more on the threat of deflation than inflation. Investment-grade bond issuance fell 35% during the year while junk bond issuance plummeted by 75%. Overall, the Barclay's (formerly Lehman Brothers) Aggregate Bond Index rose 5.2% in 2008, while indices for investment grade corporate and junk bonds showed losses of about 7% and 26%, respectively.

With the freezing of so many parts of the credit markets leading stocks and the economy on their downward path in 2008, an unprecedented and very costly many-pronged effort by the Fed and the Treasury to restore liquidity to the markets by recapitalizing institutions and hopefully stimulating new lending was undertaken and by the end of the year there was cautious optimism that some of these bold moves were beginning to have a positive effect.

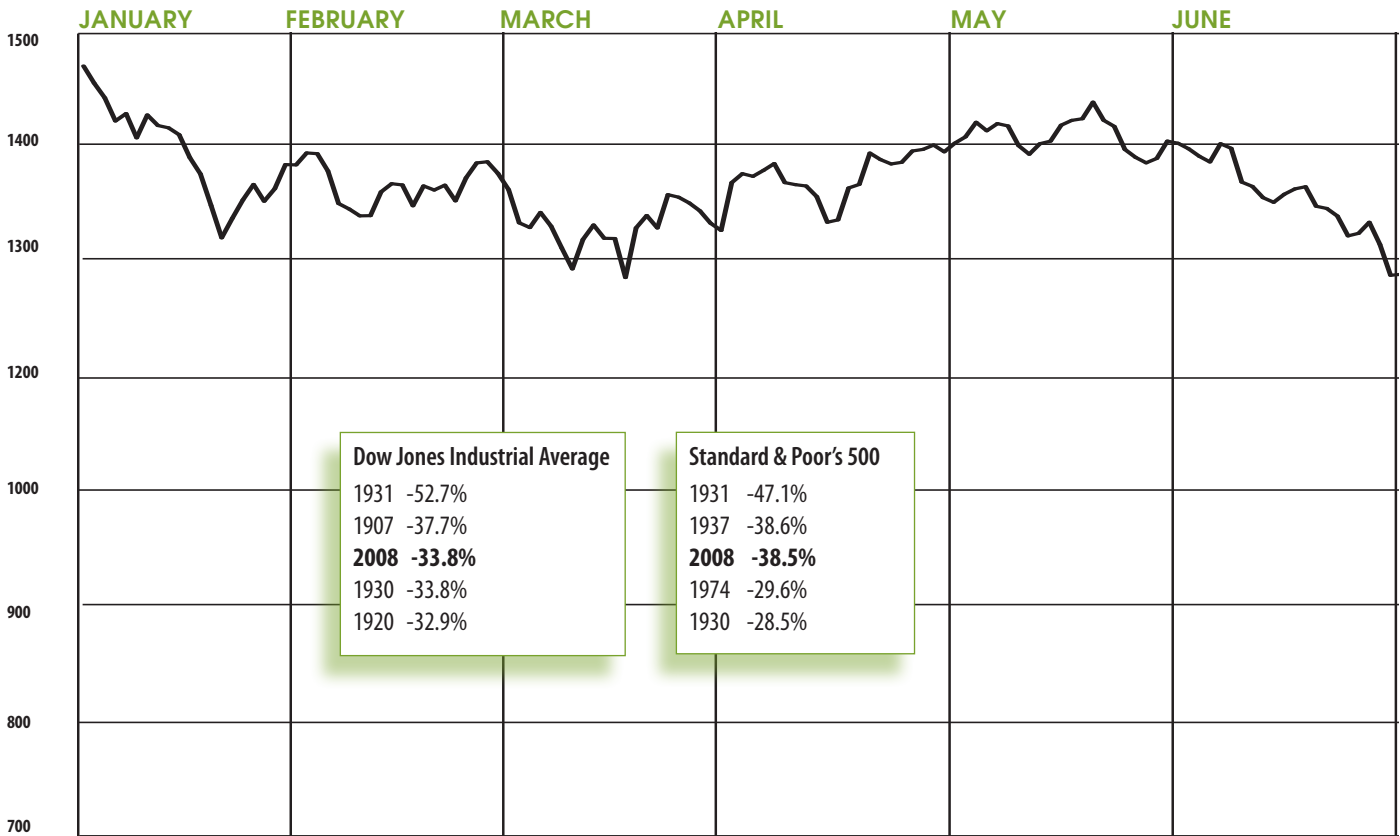
Other Asset Classes

For real estate, 2008 was the year when things went from bad to worse, when the residential housing market had its worst year ever and when troubles began spilling over to the commercial market as a result of the weakening economy and the worsening credit crunch that ground new deals to a virtual halt. It was difficult to obtain a reliable gauge as to just how far commercial property values have fallen since there have been so few actual transactions, but the 38% drop (all of which occurred in the fourth quarter) in the NAREIT Index of publicly traded equity real estate investment trusts offered an ominous clue. Weakness in both consumer and corporate spending was having obvious effects on the valuation of shopping malls, warehouses, office buildings, and hotels. The 6.5% decline in the NCREIF national property index for private investment was that benchmark's first negative year since 1992.

With activity in mergers and acquisitions as well as in the initial public offerings market grinding to an essential halt in 2008 and with the historic declines in the public equity markets, it was no surprise that alternative investments also fared poorly. Although, as always, performance will vary widely among specific managers in these areas, the Cambridge Associates indices for venture capital and private equity were down 16.53% and 24.20%, respectively.

As widely noted, there was no place to hide in 2008 and, to the dismay of many, this also applied to hedge funds,

MARKET SHAPING EVENTS AND THE S&P 500 IN 2008



JANUARY

JAN 2 1471.77 ↓

JAN 31 1385.62

- The Dow begins the year by falling 221 points, its worst opening trading loss in 25 years.
- The jobless rate in December reached 5%, the highest level in over two years.
- Bank of America buys Countrywide Financial, the US' largest mortgage lender, rescuing it from collapse.
- In an attempt to shore up investor confidence, the Federal Reserve announced a surprise 0.75% cut in the Fed Funds rate. Another 0.50% cut happens nine days later on January 29.
- Standard & Poor's downgrades thousands of collateralized debt obligations and other mortgage-backed securities.

- Chase at a fire sale price in a deal brokered and partly financed by the US.
- The Fed cuts short term rates by another 0.75%.
- Stocks finish their worst quarter in 5 1/2 years, down 7.6%.

- Lehman Brothers posts a big loss as doubts about its survivability rise.
- The Dow was down another 7.4% for the second quarter.

FEBRUARY

FEB 1 1396.02 ↓

FEB 29 1364.07

- With oil prices soaring, Exxon Mobil announces the largest annual profit in US history.
- Congress approves a \$168 billion economic stimulus plan.
- General Motors announces a \$39 billion loss, the largest ever by an automaker.
- Crude oil trades above \$100 a barrel for the first time ever.

APRIL

APR 1 1370.18 ↑

APR 30 1404.57

- Delta and Northwest merge to form the world's largest airline.
- Toyota overtakes GM as the world's largest automaker.
- March's new home sales were the slowest in over 17 years.

JULY

JUL 1 1285.31 ↓

JUL 31 1284.93

- With crude oil reaching new highs and increasing concern about the economy, the Dow's latest fall left it more than 20% below its record close of October 2007.
- Gasoline use fell to its lowest level in five years.
- IndyMac Bank becomes one of the US' largest bank failures.
- The SEC moves to curtail short-selling in a number of financial company stocks.
- Major banks announce large losses and Ford reports its largest quarterly loss ever.

MARCH

MAR 3 1335.13 ↓

MAR 31 1328.52

- Manufacturing activity for February was at a five-year low and consumers began to cut back on their driving.
- The Dow has its biggest one day advance in five years after the Fed announces a \$200 billion program of loans to troubled Wall Street firms.
- At the brink of collapse, Bear Stearns sells itself to JP Morgan

MAY

MAY 1 1410.07 ↓

MAY 30 1404.46

- The Fed makes its seventh cut in eight months as indications of recession mount.
- ALG posts a record \$8 billion first quarter loss.
- Consumer sentiment drops to a 28-year low.

AUGUST

AUG 1 1270.52 ↑

AUG 29 1297.59

- The Dow advances as plunging oil prices and reassuring signals from the Fed raise hopes that the worst is over.
- Russia sends troops into Georgia.
- Amid dazzling technology, the Olympics open in Beijing.
- Obama and McCain receive their parties' presidential nominations.

JUNE

JUN 2 1399.62 ↓

JUN 30 1290.31

- The Dow suffers its worst one day loss in over a year on June 6 as financials tumble.
- The jobless rate has its largest monthly increase in 20 years.
- As crude oil soars to a new high, gasoline prices surge above \$4 for the first time, further straining household budgets.
- Bond insurers MBIA and Ambac lose their "AAA" ratings, further pressuring financial markets.
- Expressing concern over inflation, the Fed keeps rates unchanged for the first time in almost a year.

SEPTEMBER

SEP 2 1303.04 ↓


SEP 30 1168.03

- Disappointing retail sales and employment numbers sent the Dow lower.
- At 6.1%, August's unemployment rate was the highest in almost five years.



- In its most dramatic market intervention yet, the government seized troubled mortgage giants Fannie Mae and Freddie Mac.
- September 14 was a historic day that marked the end of Wall Street as we knew it as Lehman Brothers declared bankruptcy and Merrill Lynch was acquired by Bank of America. Doubts about AIG's survivability increased.
- On September 15, the Dow fell over 4% and oil fell over 5% to below \$100 for the first time since March.
- In another stunning move, the US seized control of AIG.
- Formalizing the end of the traditional Wall Street model, the Fed agreed to convert the last two major investment banks, Goldman Sachs and Morgan Stanley, into closely-regulated bank holding companies.
- In a move seen as an expression of confidence in the financial system, Warren Buffet makes a \$5 billion investment in Goldman Sachs.
- In the largest bank failure in US history, the Fed's seize Washington Mutual and sell most of its operations to JP Morgan.
- New home sales dropped 11.5% from July through August amid a glut of unsold homes.
- The Dow fell 7% on September 29 as the House defeated the administration's \$700 billion rescue package and fears grew about more bank failures.
- Citigroup agrees to acquire Wachovia but Wells Fargo follows with a more attractive bid and ultimately wins control.
- The Dow was down another 4.4% during the third quarter.


OCTOBER

OCT 1 1167.03
OCT 31 984.38 

- Congress approved and the President signed the revised \$700 billion rescue plan.
- On October 6, the Dow fell below 10,000 for the first time in almost four years.
- For the first time since the Great Depression, the Fed will lend directly to corporations.

- The world's central banks launched a coordinated attack on the widening financial crisis.
- On October 9, the Dow's 7.3% decline left it at 8579, after seven straight daily losses wiped out over 20% of the market's value.
- October 10 was the most volatile day ever for the Dow as it fell to 8451 after its worst week ever.
- Spurred by government plans for direct capital injections into troubled banks, October 13 saw the Dow rise 936 points (11%), its best one-day point gain ever.
- The Fed announces a \$540 billion assistance fund for money market funds.
- In anticipation of another interest rate cut, the Dow had another surge of nearly 11% on October 28. The next day, the Fed cut the fed funds rate to 1%.
- Consumer spending suffered its worst fall in 17 years as the overall economy contracted at a 0.3% annual rate.
- Besides a 33% decline in oil and 32% plunge in auto sales, the Dow lost 14% in October, the worst month in over ten years.


NOVEMBER

NOV 3 975.57
NOV 28 896.25 

- In an historic election, Barack Obama won the presidency and Democrats increased their majorities in Congress.
- In the two days after the election, the Dow lost 10% in its biggest two day percentage drop in over 20 years and the largest point drop ever.
- October's jobless rate was reported to be 6.5%, a 14-year high.
- Circuit City's bankruptcy filing underscored the worsening retail picture.
- Detroit automakers pleaded with Congress for bailout money but their request was voted down.
- The largest single month decline in consumer prices in over 60 years added to fears of deflation.

- The government announced an unprecedented program of assistance to stabilize Citigroup.
- The US pledged to pump an additional \$800 billion into ailing credit markets.

DECEMBER

DEC 1 888.61
DEC 31 910.32 

- NBER states that the recession officially began in December 2007.
- November's largest monthly job loss in 34 years drove the jobless rate to 6.7%, a fifteen-year high.
- Bernard Madoff was arrested on charges of orchestrating a multi-billion dollar investment fraud.
- The Fed lowered its target rate to a historic low range of 0 to 0.25%.
- Oil prices fell to \$40 a barrel, the lowest level in four years.
- Conventional 30-year mortgage rates fell to 5.2%, the lowest level since at least 1971.
- The White House agreed to lend GM and Chrysler \$17.4 billion in an effort to prevent these firms' bankruptcies
- Even with price-cutting, weak sales brought a bleak holiday season for retailers.
- The government commits \$6 billion to stabilize General Motors Acceptance Corporation.
- After trading in a range of \$33.87 to \$145.29, oil closed the year at \$44.60 a barrel.
- Despite an upward trend at month-end, the Dow lost 18% during the fourth quarter and ended the year at 8776, a fall of 33.8%, its worst percentage drop since 1931 and the third worst ever. The S&P 500 was off 38.5% in price terms and NASDAQ was off 40.5%.

which suffered through the worst year by far in the industry's relatively short history. Hedge funds could not escape the huge decline in stock prices and the collapse of most areas of the credit markets, and when they were forced to sell assets as part of deleveraging or to meet redemptions, the fact that so many hedge funds owned the same or similar assets further aggravated the losses. Returns varied widely according to manager and strategy, but many of the industry's most highly regarded managers suffered significant losses and some of the strategies, like convertible arbitrage, that had provided some of the steadiest returns in the past posted huge losses in 2008. Hedge Fund Research's composite returns for the year were -18.7% for hedge funds overall and -21.0% for funds of funds. The fact that composite hedge fund losses were significantly less than those of stocks and several other major asset classes including publicly traded real estate and junk bonds was of little solace to investors expecting positive absolute returns. Assets under management declined (by about 25%, according to some estimates) for the first time ever and the rate of attrition among hedge funds was expected to show a sharp rise. Losses on hedge funds added further woe to those pension funds that employed portable alpha strategies and used hedge funds of funds as their alpha source. The Madoff scandal at year-end also added to hedge funds' perception problem; although the disgraced financier did not run a hedge fund, some hedge funds of funds had allocated money to him.

Oil was not the only basic commodity to suffer a drastic decline during the second half of 2008. While the stock prices were on a downward trajectory throughout 2008, commodities actually rose handsomely during the first half of the year before beginning an ugly decline at mid-year. As the financial crisis spread and tipped the world economy into recession, demand for basic materials weakened and prices were further impacted as many institutional investors were forced to liquidate positions and reduce leverage. The 37% drop in the Dow Jones-AIG Commodity Index for the year wiped out all the gains commodity investors had earned over the previous five years.

Summary

If there's any consolation to the horrors of 2008, it's that, in contrast to the situation a year ago when both stocks and bonds appeared fully priced, there appear to be bargains galore at this point. Depending on analysts' expectations for future corporate profits, price-earnings ratios on equities have declined to levels that range from historically average to well below average. As noted above, the attractiveness of investment grade and below investment grade bonds relative to riskless Treasuries has rarely been greater. Many good values are also likely there for the taking in real estate. The timetable for these various values proving profitable will depend on the success of the government's massive effort to rekindle lending, to

stabilize the housing market, and to encourage a reasonable amount of risk taking once again. Given the massive and worldwide nature of the problems, it is likely that the healing process will be an extended one.

After a year when everything other than Treasury securities (and cash) tumbled in value, this might not be the best time to repeat our usual strong encouragement for a diversified asset allocation. Nevertheless, the fact that all asset classes did not fall uniformly and that some asset classes did hold up significantly better than stocks does indicate that asset allocation certainly remains important.

After a year when the typical public retirement system is likely to have suffered a loss in the range of 25-27%, perhaps the one thing we can say with confidence is that it is finally over and we very unlikely to experience another year like 2008. Bear markets have happened before and they will occur again, but investors should not lose sight of the fact that their strategies and goals are long-term in nature.

Retirement Board Review

As of December 31, 2008, the composite asset allocation for the 55 local systems that invested predominantly on their own was: 31.9% Domestic Equity, 11.9% International Equity, 1.7% Emerging Markets, 25.7% Fixed Income (Domestic and International, including TIPS), 2.7% High Yield, 9.6% Real Estate, 0.6% Timber, 4.7% Alternative Investments, 5.4% Hedge Funds, 0.9% Balanced Funds, 2.1% PRIT Core, and 2.7% Cash. Assets in these systems totaled about \$10.5 billion. The composite asset allocation of these systems is similar to average asset allocations reported in national surveys of state and local pension plans. Nevertheless, there is a wide divergence in our local systems' asset allocations compared to the composite levels. For instance, allocations to domestic equity ranged from 9% to 58% and allocations to international equity ranged from zero (2 systems) to 28%. While 25 systems had allocations in excess of 10% in real estate, ten systems had no explicit exposure to this asset class (some of these had modest exposure through a partial investment in the PRIT Core Fund.) Thirty-three of the 55 systems had at least some exposure to alternative investments (and seven others had exposure through partial investment in the PRIT Core Fund), while allocations within these systems ranged from less than 1% to 9%. Thirty-two systems invest in absolute return (hedge funds). Fifteen systems had allocations to emerging markets, 19 systems had explicit allocations to high yield fixed income, and 8 systems invested in timber.

At the beginning of 2008, 41 local systems invested all (or essentially all) of their assets in the PRIT Core Fund. During the year, another eight systems joined PRIT, either voluntarily or as a result of Chapter 68. Assets of these 49 systems totaled nearly \$4.4 billion at year-end. The asset allocation of that \$37.8 billion fund as of December 31,

2008, was 20.5% Domestic Equity (19.7% conventional and 5.8% portable alpha), 17.6% International Equity, 3.7% Emerging Markets, 12.6% Fixed Income (10.1% US Bonds and 2.5% TIPS and other real return investments), 7.1% High Yield, 12.1% Real Estate, 4.3% Timber, 11.4% Alternative Investments, 5.6% Absolute Return (Hedge Funds). Compared to public funds nationwide, PRIT has below-average allocation to domestic equity and above-average exposure to nontraditional asset classes. In addition to the 49 systems that invested essentially all their assets in the PRIT Core Fund at year-end, 12 systems had partial investments in the PRIT Core Fund (in some cases, representing a significant portion of total assets) and nearly 40 systems participated in one or more of the PRIT Fund's segmentation options.

Performance for 2008 among the 104 local systems ranged from -19.3% to -33.1%. The median return was -28.0% and the composite return was -28.6%. For the 63 systems that began 2008 investing on their own, the median return was -26.6%. Eight of these systems joined the PRIT Fund at various times during 2008. For the 55 systems that still invested on their own at year-end, the median return was -26.3%.

The median return for the 41 local systems that invested totally with PRIT for the entire year was -29.3%, slightly better than that of the PRIT Fund itself (-29.5%). Internal cash positions or cash flows, as well as returns from remaining investment partnerships, may have enhanced or subtracted from the returns of individual systems relative to PRIT's basic return. Up until 2008, a fundamental fact of institutional investing involving endowment funds, foundations, and public and private pension funds was that larger entities had been performing decisively better than smaller ones in recent years. For several years, the PRIT Fund's size had enabled it to invest meaningfully and efficiently in a wider range of asset classes than many of the local systems, and its clout enabled it to gain access to the top tier of managers in these nontraditional asset classes, particularly in alternative investments. 2008 was a trend-changing year, however, as smaller and mid-sized funds generally held up better than their larger counterparts. Thus, while the PRIT Fund's performance in past years was enhanced by its holdings in several asset classes — such as Alternative Investments, Timber, Emerging Markets, Hedge Funds, and Real Estate — that provided strong diversification benefits, 2008 was a year when nearly all asset classes were down. PRIT's Core Fixed Income portfolio was slightly positive for the year, but returns from Real Estate (-15.8%), Timber (-17.2%), Absolute Return (-19.0% net), and High Yield Bonds (-23.1%) were very disappointing while International Equity (-42.3%) and Emerging Markets Equity (-55.5%) were major contributors to the Fund's below-average peer performance. Since hedge funds had a rare year of negative returns, PRIT's Portable Alpha strategy served to detract from rather than enhance domestic equity performance.

As has typically been the case over the years, the performance of the local systems that invest on their own has been in line with national public fund medians. The 2008 median return (-26.3%) for the non-PRIT local systems was within the range of the following public fund universe medians: New England Pension Consultants/ICC, -24.8%%; Wilshire/TUCS, -24.9%% (-26.2% for funds with assets greater than \$5 billion); Mellon Analytical Solutions, -26.8%; and Northern Trust, -26.6%.

The ten local systems with the best performance last year registered losses of between -19.3% and -22.5%. They were all among the commonwealth's smaller systems; portfolio asset sizes ranged from \$7.5 million to \$130 million. Five of these systems do not employ an investment

consultant and utilize only one investment manager for substantially all their equity and fixed income assets. These systems generally had well-above-average cash positions, several in the range of 20% and one as high as 26%. In several cases, the systems made strategic moves during the course of the year to decrease their exposure to risky assets and increase their holdings of cash. These systems generally also had above average allocations to investment-grade fixed income, as much as 42% of total portfolio assets in some cases. Some of these systems also benefited from their investment managers registering strong investment performance relative to their market benchmarks.

Among the 55 non-PRIT systems as of year-end, seven underperformed the PRIT Fund last year, with returns

ranging from -29.8% to -33.1%. These included both small and mid-sized systems, with portfolio sizes ranging from \$17 million to \$209 million. They generally had small, if any, cash positions and several had above-average equity positions, with as much as 48% in domestic equity and 17% in international equity. These systems generally saw investment managers underperform their benchmarks in several, and in some cases all, asset classes. Three of these systems were particularly hurt by investment grade fixed income managers who trailed their benchmark by as much as 27% as a result of significant overweighting in corporate bonds and underweighting in US Treasuries, the one sector that showed appreciation last year.