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Public Employee Retirement Systems' Response to the Economic and Investment Challenges of 2002

Adapted from a presentation by W. Michael Carter, F.S.A. and GRS Senior Consultant, to the National Education Association's 2002 Retirement and Benefits Forum and Trustee Workshop, November 14, 2002.

The significant investment declines over the past two years have raised questions about state and local retirement plan funding and future contributions. While members' benefits have not been jeopardized, it is likely the market declines will require higher employer contributions and more realistic expectations among plan members about future benefit enhancements.

The Good Ol' Days

The late 1980s and 1990s may well be seen as the golden age of state and local retirement plans. A sustained period of low inflation, coupled with historically high investment returns, resulted in steady improvements in plan funding.

According to the Public Pension Coordinating Council's Survey of State and Local Government Employee Retirement Systems, the average funded ratio (i.e., the ratio of plan assets to liabilities) grew from 81 percent in FY 1990 to 104 percent in FY 2000. As a result, employer contributions declined from an average of 14.4 percent of payroll in FY 1990 to 10.6 percent in FY 2000.

A Different Picture Today

Things have changed. Annual investment returns declined sharply after 2000, and many retirement plans earned negative returns in 2001 and 2002.

The dramatic and sustained downturn in the equity markets significantly reduced the market value of assets over the two-year period, possibly by 20 percent or more in some cases. Funded ratios fell and contribution rates increased.

The Near-Term Outlook

Most plans use a three-year to five-year market smoothing approach to determine the actuarial value of plan assets (AVA). This reduces the effect of market volatility on contribution rates. Up through the 2000 valuation, the AVA was less than the market value of assets (MVA), and it was not uncommon for the AVA to be only 80 percent to 90 percent of the MVA in 2000. This meant there were prior investment gains being deferred to future years when they would be available to offset investment losses.

But by 2002, the AVA exceeded the MVA for most plans, and it was not uncommon for the AVA to be 110 percent to 125 percent of MVA. This difference represents investment losses from 2001 and 2002 that are yet to be reflected in the unfunded actuarial accrued liability, the funded ratio, and the contribution rate.

Consequently, if returns during 2003 to 2006 don't rebound enough, these deferred losses will increase the plan's unfunded actuarial accrued liability and contribution rates over the next four to six years, if not longer.

Illustration

Consider the following illustration, based on an actual plan:

- Between 1993 and 2000, the plan's average annual compounded market return was 12.4 percent, with annual returns ranging from 1.2 percent in 1994 to 18.5 percent in 1997.
- Over this period the market value of assets grew from \$650 million to \$1.4 billion, and the funded ratio grew from 84 percent to 102 percent.
- The strong market returns reduced employer contributions, which averaged about 6 percent of payroll between 1993 and 1999, and which fell to about 1.5 percent in 2000.
- In 2001 and 2002, annual investment returns fell to -7.6 percent and -8.6 percent respectively, lowering the average annual compound return since 1993 to 7.9 percent.
- By year-end FY 2002, the market value of assets had fallen 17 percent to \$1.16 billion, lowering the funded ratio to 92 percent.
- As a result, employer contribution rates in FY 2002 increased to 6.1 percent of payroll.

Given that this system uses a 5-year AVA smoothing period and assumes an 8 percent rate of return on investments, it would need to average an annual return of 20.2 percent for FY 2003 to FY 2005 to com-

pletely offset the negative investment impact of FY 2001 and FY 2002. Since this is unlikely, the next question is what would happen under more realistic expectations?

Assuming a zero percent annual return in FY 2003 and an 8 percent return thereafter, the plan's funded ratio would continue to decline to 75 percent in FY 2005 and then level off. However, to achieve this, the employer's contribution rate would need to increase from 6.1 percent in FY 2002 to 14.9 percent in FY 2006 and level off thereafter.

What This Means

The first decade of the 21st Century is not going to be pretty. Unless we see 20 percent or greater market returns in 2003 and 2004, funded ratios will decline. Many systems that had funded ratios over 100 percent in FY 2000, may well see funded ratios below 80 percent. Moreover, employer contribution rates will probably increase for several years. For retirement systems whose contribution rate is constant from year to year, funding margins will decline or disappear.

Current tax revenue problems for the employer or the state may create efforts to undermine these necessary increases, and may create efforts to reduce employer contribution rates. This pressure on employer contributions will make benefit enhancements more difficult to achieve, at

least over the next four to six years.

Systems that depend on ad hoc increases for retiree cost-of-living adjustments may not see such increases again for four to six years, at least without a significant decrease in their funded level.

In this environment, system members should work to see that the employer does not arbitrarily reduce the contribution rate. This would only make a difficult situation worse. However, at the same time, members should be realistic in their expectations for benefit enhancements, including ad hoc retiree increases.

Even with the recent downturn in the financial markets, the benefits offered through defined benefit plans have not decreased. This has not been the case in defined contribution plans, where many participants have seen 40 percent to 60 percent reductions in their account balances. System members are still better off in a defined benefit retirement plan.

During the remainder of this decade, it will be important to maintain the long-term soundness of the system. The employer must continue to meet its financial commitment, and members must realize that care must be taken in advocating benefit enhancements until the investment markets recover and stability returns to plan funded levels and the contribution rate pattern.

Plan Funding. The general goal of actuarial funding is to accumulate monies in a systematic manner so that contributions can remain reasonably stable and plans can take advantage of typical long-term investment returns.

As such, these methods reduce the impact of short-term market fluctuations on plan contributions through the use of long-term assumptions and asset smoothing methods. This in turn protects the retirement benefits of employees, retirees and their beneficiaries from financial market volatility.

Actuarial funding has also been beneficial to state and local governments, allowing them to earn investment income totaling \$1.7 trillion on retirement plan assets between 1982 and June 2001. These are funds that would otherwise have to be contributed by state and local taxpayers.

Even with the market declines, the financial health of the vast majority state and local retirement plans remains strong. Moreover, these declines are the types of events actuarial funding is designed to mitigate. While the declines are unfortunate, they come after more than a decade of abnormally high investment returns.

Useful Web Sites for Investment Benchmarks. Information regarding the indexes discussed in this article can be found at the following web sites:

CNNMoney
<http://money.cnn.com/>

Lehman Brothers
<http://www.lehman.com/>

Morgan Stanley Capital International Inc.
<http://www.msci.com/>

Frank Russell Company
<http://www.russell.com/>

Standard & Poor's
<http://www.spglobal.com/>

Wilshire Associates Inc.
<http://www.wilshire.com/>

Selecting Appropriate Investment Benchmarks

Evaluating fund and manager performance against an investment benchmark is one of the more visible indicators that guides a public pension plan's long-term investment strategy. Therefore, the use of appropriate benchmarks becomes particularly important.

The proliferation of new investment vehicles has resulted in an increasing number of indexes designed to measure performance. However, investment in equities and bonds, especially U.S. domestic equities, continue to dominate the asset allocation deci-

sions of public retirement systems. The table below summarizes some of the more commonly used market benchmarks.

Benchmark Selection

Because benchmarks evolve to align with market circumstances, plans should evaluate their own long-term asset allocation decisions, manager styles, and investment strategies when selecting benchmarks. Since the selection of appropriate benchmarks is tied to a long-term investment strategy, a sound asset allo-

cation strategy should be in place before proceeding with benchmark selection. In general, plans should attempt to align the following benchmark characteristics with individual manager portfolios or funds:

- Equity benchmarks should reflect the appropriate manager style, growth or value.
- Company capitalizations for equity benchmarks and a manager's portfolio should be similar.
- International portfolios should be compared against indexes with comparable country concentrations.
- Duration, maturity, average credit rating, and issue type should be comparable when selecting fixed income benchmarks.

	STANDARD & POOR'S 500 (1)	RUSSELL 3000 (2)	RUSSELL 1000 (3)	RUSSELL 2000 (4)	WILSHIRE 5000 (5)	MSCI EAFE (6)	LEHMAN AGGREGATE BOND INDEX (7)
INDEX TYPE	Stock	Stock	Stock	Stock	Stock	Int'l Stock	Fixed-Income
COMPANY CAPITALIZATION	\$16 billion (mean); \$6.7 billion (median)	\$4 billion (mean); \$699.6 million (median)	\$11 billion (mean); \$3.5 billion (median)	\$490 million (mean); \$395.3 million (median)	See Note 5	Total Market Capitalization \$5.3 trillion	Bond issue must be at least \$100 million in par value
COMPANY WEIGHTINGS	Market Value	Market Value	Market Value	Market Value	Market Value	Market Value	Market Value
REBALANCING/ RECONSTITUTION	Continuous	Annual	Annual	Annual	Monthly	Annual	Annual
MARKET MEASUREMENT	Large Cap	Broad Market	Large Cap	Small Cap	Broad Market	Developed Markets (Ex. US & Canada)	Broad Market

1) Index primarily contains U.S. domestic companies. A company with a stock selling below \$5.00 per share may be removed or not selected for the index. Sector weights parallel those in the S&P Universe of 10,000 companies. Company capitalization is measured as price times shares outstanding. Source: Standard & Poor's.

2) Index contains U.S. domiciled companies. Company capitalization in the Russell indexes is measured by float (shares purchased rather than shares outstanding). Companies' stocks selling below \$1.00 per share are excluded from the index (removals are not made intra-year). Source: www.russell.com.

3) Index includes the 1000 largest companies contained in the Russell 3000. Source: www.russell.com.

4) Index includes the 2000 smallest companies contained in the Russell 3000. Source: www.russell.com.

5) The index, which was created in 1974, contains over 5,700 stocks. It includes almost all publicly-traded companies headquartered in the U.S. Five hundred of the stocks in the index are S&P 500 stocks. The remaining stocks in the index represent mid- to small-cap company issues. Source: www.wilshire.com.

6) The index currently contains 21 countries. Market Value is adjusted for free-float (shares available for foreign investors). Countries in the index are rebalanced annually. Source: Morgan Stanley Capital International, Inc.

7) Index is comprised of securities from the Lehman Brothers Government/Corporate, Mortgage-Backed, and Asset-Backed indexes. Securities must have maturities of one year or more and be rated at least BBB by S&P or Baa by Moody's Investor Services. Source: www.federatedinvestors.com and www.flagship.vanguard.com, and www.bondsonline.com.

- Total fund performance should be compared to an index that best reflects the long-term asset allocation of the plan. A well-constructed custom-benchmark will generally provide better insight into the performance of a fund than a single broad market index.

Changes in Index Composition

As indicated in the index descriptions above, indexes are rebalanced and reconstituted on a periodic basis. Changes are designed to ensure that index representation is based on current market conditions. Therefore, the composition of indexes tends to include those securities that best represent the market being measured as defined by the indexes' selection criteria.

For example, the inclusion of technology related stocks had a significant impact on the composition of indexes. During the 1990s, technology related stocks came to represent a large portion of the total market capitalization of the U.S. domestic market. At the end of 1980, IBM, the only technology stock in the S&P 500 top ten, ranked number one with a market capitalization of \$39.6 billion. In 1999, the top ten S&P stocks included six technology related stocks, with Microsoft leading the pack. The total market capitalization of these six stocks exceeded \$1 trillion.

More recently, Russell's 2001 annual reconstitution reflected the market value declines among technology stocks. Forty-two percent of the companies deleted from

Recent Changes in Benchmark Indexes. The following recent changes highlight the importance of periodically re-examining benchmark indexes to ensure they reflect the plan's long-term investment strategy:

the Russell 3000 were technology related companies.

The markets have been exceedingly active over the last decade as indicated by growth and declines in market capitalizations and these dynamic changes are reflected in index composition when rebalancing occurs.

Custom Benchmarks

Seeking the benefits of diversification has led institutional investors to hire specialty managers within the equity and bond asset classes, a strategy which also helps funds control the asset allocation decision rather than leaving it to a manager. The sub-specialities included in equity portfolios may include separate manager portfolios for large-cap, mid-cap, and small-cap stocks that are further separated by growth and value distinctions. Bond portfolios may be segmented so investments in corporate, government, and high-yield issues are managed separately.

In order to evaluate fund performance, a benchmark (or benchmarks) that reflects the long-term asset allocation decision should be developed. This is a relatively effective and reasonable approach as long as the benchmarks selected for the individual asset classes are appropriate. A custom benchmark is designed as follows:

- Using your asset allocation targets, determine the

weightings for each asset class.

- Using the asset class weights, determine the percent representation of each benchmark.

This can be done for any of the major asset classes: total equity, total bond, cash, as well as the total fund. This approach should create a benchmark that more closely matches highly diversified funds' investment policy decisions than a benchmark that only utilizes a broad equity and a broad bond index. Evaluating fund performance in this manner translates into maintaining a long-term investment strategy that parallels funds' decisions related to risk, liquidity and liabilities, rather than chasing index returns that may not reflect the goals and objectives of the plan.

Conclusion

The use of appropriate benchmarks to evaluate managers' and total fund performance provides reliable and credible comparisons. Plans should follow a stepped approach, which combines establishing a long-term investment strategy by performing an asset allocation study, followed by benchmark selection, and finally evaluation of portfolio returns. To be useful over the long-term, the cycle should be repeated periodically to reflect changing fund objectives, plan experience, and the market environment.

- On July 19, 2002, Standard & Poor's removed seven non-U.S. companies from the S&P 500 and replaced them with seven U.S. companies. The index now represents 80.3% of available U.S. domestic equities, versus 78.9% prior to the change.
- On May 31, 2002, MSCI Enhanced Methodology created the Provisional Series Index, and increased target market representation from 60% to 85%.
- In 2002, 242 companies were deleted from the Russell 3000, over half of which were from technology related industries. Total market capitalization for the Russell 3000 declined 16.9% from the previous year.
- On January 8, 2003, Standard & Poor's introduced the S&P 500 Equal Weight Index, offering a lower concentration of individual stocks, different sector exposures, and a slower rate of change in sector weightings than the S&P 500.

GRS' DROP Presentation Posted to NCTR Web Site. The National Council on Teacher Retirement (NCTR) recently posted GRS' presentation on Deferred Retirement Option Plans made during NCTR's 2002 Annual Conference in Anchorage, Alaska.

The presentation describes how demographic, economic, and social trends have changed our perception of retirement and influenced the development of deferred retirement option plans and related retirement options.

It also describes and provides examples for several common deferred retirement options, including:

- Forward DROPs
- Back DROPs
- Partial Lump Sum Options, and
- Work After Retirement Plans

It concludes with a discussion of key issues related to the various options, including the perception of "double dipping," administrative complexity, and cost-neutrality.

The presentation may be found in the Annual Conference section of the NCTR web site (www.nctr.org), under the "Anchorage, Alaska 2002" link. It is also posted in the GRS Library section of the GRS site (www.grsnet.com) on the Research Reports page.

Crediting Investment Earnings to DROP Accounts

Generally, Deferred Retirement Option Plans (DROPs) allow members who satisfy certain eligibility conditions (e.g., become eligible for normal retirement or reach their maximum benefit) to participate in the DROP and retire at a future date. Once a member elects the DROP, the member's pension is usually frozen based on credited service, final average salary, and retirement benefit provisions on the DROP election date. A DROP account is established for the member and credited with a percentage of the frozen monthly pension payments during the member's continued period of employment. Interest income may also be added to the DROP account.

Upon termination of employment, the member receives his or her monthly retirement benefit, plus payments from the DROP account. The DROP account may be distributed as a full or partial lump sum payment (eligible for rollover), converted to an annuity, or drawn down on another basis depending on the plan provisions.

Generally, there are four ways to credit investment earnings to DROP accounts. The primary considerations in choosing a method relate largely to plan objectives and cost differences. Also, certain regulatory rules apply differently depending on the method.

Fixed Rate Method

Under this method, the DROP accounts are credited with a fixed rate of earnings. The rate chosen can be the same as the actuarial assumption used for retirement fund earnings, or the yield rate on short-to-intermediate term fixed income instruments, or it can be some other rate. In some cases, the stated rate may be changed periodically by the governing body. Administratively, the earnings credit can be made from the date of deposit to the date of withdrawal.

This is the simplest and easiest of the methods to administer. Usually no administrative fee is charged to the members' account to offset against the fixed rate, even though there is some administrative cost. If this is the sole method available, its simplicity lacks some of the features that are of interest to many members. On the other hand, fixed rates often have desirable cost control advantages.

Fund Rate Method

Under this method, the investment return experienced by the retirement fund as a whole is credited to the individual DROP accounts. This method appeals to many members since it gives some exposure to stock market returns. Of course, this means that returns are sometimes up and sometimes down. Most investment advisors, however, expect a

balanced portfolio to grow at a higher rate over time than most fixed rates. Also, under this method, a DROP member benefits from professional investment advice at a lower fee than would be available to an individual. This method is a bit more involved, administratively, than the Fixed Rate. But many systems will outsource this service so as not to be encumbered with the administration.

Usually, the fund earnings (or loss) rate is credited to the DROP accounts quarterly, as soon as the quarterly return on the total fund is calculated. The rate would be for the whole quarter, and is usually credited as of the last day of the quarter. Often the fund rate credited is the net return, after investment-related expenses such as investment management, custody and monitoring. In addition, there may be an administrative fee charged for the recordkeeping services. Because the rate is credited only once each quarter, some loss of credit is experienced. For example, when a total distribution or rollover is made from a Fund Rate DROP account, it usually does not include any earnings (or losses) from the date of the last quarter-end to the date of the withdrawal.

While the Fund Rate Method gives exposure to a broader range of investments than crediting a fixed rate, it is nevertheless restricted to the same asset allocation among stocks and bonds as the total fund. If the total fund's asset allocation is 60%/40%, then the Fund Rate credited to the DROP account will reflect that mix. This may be acceptable to many members, but not to those who would prefer a more conservative or more aggressive mix.

Self-Directed Index Tracking

Under this method, members are permitted to control the asset allocation in their DROP accounts without regard to how the total fund is being invested. It also permits members to change their mix periodically if they choose. The plan would be designed to permit members to select any mix among, say, two or three indexes. This way some members can be conservative, some moderate, and some aggressive as they see fit. The accounts would not actually be invested in mutual funds, but the earnings credit would track the indices selected.

This method would probably be outsourced, but with some administrative simplifications it could be handled in-house. If outsourced, the investment election changes could be made daily, the earnings (or losses) could be credited daily, the account could be accessible on-line, and all earnings credits would automatically be made from date of deposit to date of withdrawal.

Self-Directed Mutual Funds

Under the previous three methods there is no real movement

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of assets. The accounts are all maintained on a bookkeeping basis. The underlying assets are invested with the investment managers who are investing the total fund. Furthermore, under the three previous methods, the Board is not assuming any additional fiduciary responsibility.

However, under the Self-Directed Mutual Funds Method, the Board identifies which mutual funds are made available to members. This is an important fiduciary decision. The Board should adopt an Investment Policy statement specifically for the selection and monitoring of the DROP mutual funds. As with the Fund's investment managers, the Board should monitor the funds ensure that they continue to perform acceptably and comply with the policy. The members may direct that their DROP accounts actually be invested in any combination of these mutual funds. This may be the method that ultimately has the most popularity.

Outsourcing administrative duties is usually required. The

earnings automatically credited via the mutual fund returns is already net of investment managements fees. But there may be other administrative fees to charge the accounts as well. Many mutual funds are willing to pay "revenue sharing" to help offset or eliminate the administrative fees. Care should be taken to ensure there are no conflicts of interest when there are mutual funds involved.

Other Considerations

Plan qualification issues should also be considered when choosing a method for crediting earnings to DROP accounts, especially regarding Internal Revenue Code § 415. In addition, the system's actuary should be asked to measure the financial effects of the methods under consideration.

Finally, care and a thorough discussion of the issues should be undertaken regarding fiduciary responsibilities, administrative duties, communications, and consideration of what the plan members want and need.

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- Defined contribution plan design
- Deferred compensation consulting
- DROP plan design
- Hybrid plan design
- Asset consulting
- Defined benefit plan administration
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- Employee communication
- Health care consulting
- Retirement technology