

**SAN DIEGO COUNTY EMPLOYEES
RETIREMENT ASSOCIATION**

**Review of Economic Actuarial Assumptions
for the June 30, 2013 Actuarial Valuation**



**100 Montgomery Street, Suite 500
San Francisco, CA 94104**

**COPYRIGHT © 2013
ALL RIGHTS RESERVED
APRIL 2013**



THE SEGAL COMPANY
100 Montgomery Street, Suite 500 San Francisco, CA 94104-4308
T 415.263.8200 F 415.263.8290 www.segalco.com

April 9, 2013

Board of Retirement
San Diego County Employees Retirement Association
2275 Rio Bonito Way, Suite 200
San Diego, California 92108-1685

**Re: Review of Economic Actuarial Assumptions
for the June 30, 2013 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the June 30, 2013 economic actuarial assumptions for the San Diego County Employees Retirement Association. This report includes our recommendations and the analysis supporting their development.

The non-economic actuarial assumptions were reviewed in our triennial experience study for the period July 1, 2009 through June 30, 2012. Any changes to either the economic or non-economic actuarial assumptions adopted by the Board of Retirement will be applied in the June 30, 2013 valuation.

We are Members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

Paul Angelo, FSA, EA, MAAA, FCA
Senior Vice President & Actuary

Andy Yeung, ASA, EA, MAAA
Vice President & Associate Actuary

AW/hy

5230071v1/05536.001

Benefits, Compensation and HR Consulting ATLANTA BOSTON CALGARY CHICAGO CLEVELAND DENVER HARTFORD HOUSTON LOS ANGELES
MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA PHOENIX PRINCETON RALEIGH SAN FRANCISCO TORONTO WASHINGTON, D.C.



Multinational Group of Actuaries and Consultants BARCELONA BRUSSELS DUBLIN GENEVA HAMBURG JOHANNESBURG LONDON MELBOURNE
MEXICO CITY OSLO PARIS

TABLE OF CONTENTS

	Page
I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS	1
II. BACKGROUND AND METHODOLOGY.....	3
III. ECONOMIC ASSUMPTIONS	4
A. INFLATION	4
B. INVESTMENT RETURN	6
C. SALARY INCREASE	17

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the pension fund, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are changed, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Adjusting contributions as gains or losses occur without making a change in the assumptions is appropriate if the deviation from projections is considered temporary and if, over the long run, experience is expected to return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than the gain or loss as they occur.

The use of realistic actuarial assumptions is important to maintain adequate funding, while fulfilling benefit commitments to participants already retired and to those near retirement. The actuarial assumptions do not determine the “actual cost” of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic actuarial assumptions. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27, “Selection of Economic Assumptions for Measuring Pension Obligations.” This Standard of Practice puts forth guidelines for the selection of the economic actuarial assumptions utilized in a pension plan actuarial valuation.

Please note that the investment return assumption recommended in this report has been developed without taking into consideration the impact of any future allocations of “excess earnings” as described in the Board’s Interest Crediting and Excess Earnings Policy.

We are recommending changes in the investment return and inflation assumptions. The merit and promotional salary increase assumptions were reviewed in the triennial experience study of non-economic assumptions being performed this year. Our recommendations for the economic actuarial assumptions for the June 30, 2013 Actuarial Valuation are as follows:

Investment Return - The estimated average future rate of return, net of expenses, on current and future assets of the Association. This rate is used to discount future cash flows to determine costs and liabilities.

Recommendation: *Reduce the current annual investment return assumption of 8.00% to 7.75%, based on our recommended inflation assumption, updated market index returns and the Association's asset allocation. The 7.75% recommendation is consistent with the Board's past practice of having a margin for adverse deviation under the risk adjusted model used by Segal.*

Inflation - Future increases in the Consumer Price Index (CPI) which drives investment returns and active member salary increases, as well as cost-of-living adjustments (COLAs) to retired employees.

Recommendation: *Reduce the rate from 3.50% per annum to 3.25% per annum.*

Individual Salary Increases - Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components:

- Inflationary salary increases,
- Real "across the board" salary increases, and
- Merit and promotional increases.

Recommendation: *Reduce the current inflationary salary increase from 3.50% to 3.25% and maintain the current real "across the board" salary increase assumption at 0.75%. The combined inflationary and real "across the board" salary increases will decrease from 4.25% to 4.00%. Use the merit and promotional increases recommended in the June 30, 2012 triennial experience study for the June 30, 2013 valuation. Please note that the new merit and promotional increase assumption ranges from 0.75% to 6.00% for General and 1.00% to 8.00% for Safety.*

Section II provides some background on the basic principles and methodology used for the review of the economic actuarial assumptions. A detailed discussion of each of the economic assumptions and reasons behind the recommendations is found in Section III.

II. BACKGROUND AND METHODOLOGY

For this study, we analyzed the “economic” assumptions only. The primary economic assumptions reviewed are inflation, investment return and salary increases.

Economic Assumptions

Economic assumptions consist of:

Inflation - Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members.

Investment Return – Expected long term rate of return on the Association’s investments after expenses. This assumption has a significant impact on contribution rates.

Salary Increases – In addition to inflationary increases, it is assumed that salaries will also grow by “across the board” real pay increases in excess of price inflation that are assumed as a result of labor’s share of productivity gains. It is also assumed that employees will receive raises above these average increases as they advance in their careers. These are commonly referred to as merit and promotional increases. Payments to amortize any Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase each year by the price inflation rate plus any “across the board” pay increases that are assumed.

The setting of these assumptions is described in Section III.

III. ECONOMIC ASSUMPTIONS

The investment return assumption is comprised of two components: (i) Inflation; and (ii) Real Rate of Return.

A. INFLATION

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when “riskless” investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so it is set using primarily historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

Historical Consumer Price Index – 1930 to 2012			
(U.S. City Average - All Urban Consumers)			
	<u>25th Percentile</u>	<u>Median</u>	<u>75th Percentile</u>
15 year moving averages	2.6%	3.4%	4.8%
30 year moving averages	3.2%	4.2%	4.9%

The average inflation rates have continued to decline gradually over the last several years due to the relatively low inflationary period over the past two decades. Also, the later of the 15-year averages during the period are lower as they do not include the high inflation years of the mid-1970s and early 1980s.

In the 2011 public fund survey published by the National Association of State Retirement Administrators, the median inflation assumption used by 126 large public retirement funds in their 2010 valuations has decreased to 3.25% from the 3.50% used in the 2009 valuations. In California, CalPERS and LACERA reduced their inflation assumptions in 2012 to 2.75% and 3.00%, respectively.

SDCERA’s investment consultant, Hewitt Ennis Knupp (HEK), anticipates an annual inflation rate of 2.30%. Note that, in general, the investment consultants’ time horizon for this assumption is shorter than the time horizon we use for the actuarial valuation.

To find a forecast of inflation based on a longer time horizon, we referred to the 2012 report on the financial status of the Social Security program. The projected average increase in the Consumer Price Index (CPI) over the next 75 years under the intermediate cost assumptions used in that report was 2.8%. We also compared the yields on the thirty-year inflation indexed U. S. Treasury bonds to comparable traditional U. S. Treasury bonds. As of December 2012, the difference in yields is 2.55%, which provides a measure of market expectations of inflation.

Based on all of the above information, we recommend that the current 3.50% annual inflation assumption be reduced to 3.25% for the June 30, 2013 actuarial valuation. For members in Tier 1 or Tier A, we recommend maintaining the 3.0% assumption currently used to project the maximum 3% post-retirement COLA benefit for the June 30, 2013 actuarial valuation. For members in either Tier B or Tier C, we recommend maintaining the 2.0% assumption currently used to project the maximum 2% post-retirement COLA benefit for the June 30, 2013 actuarial valuation.

B. INVESTMENT RETURN

The investment return assumption is comprised of two primary components, inflation and real rate of investment return, with adjustments for expenses and risk.

Real Rate of Investment Return

This component represents the portfolio's incremental investment market returns over inflation. Theory has it that, as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. Therefore, the real rate of return assumption for a retirement system's portfolio will vary with the Board's asset allocation among asset classes.

The next page shows the Association's current target asset allocation and the average assumed real rate of return assumptions by asset class. The column of return assumptions (except for Natural Resources and Other Real Assets, Hedge Funds – Macro, Hedge Funds – Relative Value, and Private Equity) represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rates of return provided to us by HEK and by eight other investment advisory firms retained by Segal's California public sector retirement clients. We believe these assumptions reasonably reflect a consensus forecast of long term future real market returns. The HEK assumptions are used for SDCERA's Natural Resources and Other Real Assets, Hedge Funds – Macro, Hedge Funds – Relative Value, and Private Equity because these asset classes may not be comparable to asset classes at other systems as reported to us in our sample.

**SDCERA Target Asset Allocation as of June 30, 2013 and Assumed Real Rate of Return
Assumptions by Asset Class and for the Portfolio**

<u>Asset Class</u>	<u>Percentage of Portfolio</u>	<u>Average Assumed Real Rate of Return from a Sample of Consultants to Segal's Public Sector Clients⁽¹⁾</u>
Global Equity (U.S. and Non-U.S. Developed) ⁽²⁾	20.0%	6.37%
Emerging Market Equity	5.0%	8.42%
High Yield Bonds	5.0%	3.30%
TIPS	5.0%	0.48%
Emerging Market Debt	10.0%	4.36%
US Treasuries	40.0%	0.59%
Real Estate	10.0%	4.87%
Natural Resources and Other Real Assets	10.0%	6.49% ⁽³⁾
Hedge Funds – Macro	10.0%	6.89% ⁽³⁾
Hedge Funds – Relative Value	10.0%	3.20% ⁽³⁾
Private Equity	<u>10.0%</u>	<u>10.83%</u> ⁽³⁾
Total	135.0% ⁽⁴⁾	5.78% ^{(5), (6)}

⁽¹⁾ These are based on the projected arithmetic returns provided by the investment advisory firms serving the county retirement systems of San Diego, Contra Costa, Orange, Mendocino, Alameda, Fresno, the LA City Employees' Retirement System, LA Department of Water and Power and the LA Fire & Police Pensions. These return assumptions are gross of any applicable investment expenses.

⁽²⁾ A further breakdown of SDCERA's target asset allocation of Global Equity is as follows:

Domestic Large Cap Equity:	8.40%
Domestic Small Cap Equity:	1.14%
Developed International Equity:	10.46%

⁽³⁾ For these asset classes, the HEK assumption is applied in lieu of the average because there is a larger disparity in returns for these asset classes among the firms surveyed and using the HEK assumption should more closely reflect the underlying investments made specifically for SDCERA.

⁽⁴⁾ The total portfolio asset allocation is greater than 100% to reflect the portfolio's leveraged asset allocation.

⁽⁵⁾ Return is calculated before deducting the cost of leverage. See Note 3 on the following page for a discussion of the cost of leverage.

⁽⁶⁾ If we use only HEK assumptions for all asset classes, the real rate of return is 6.25%.

Please note that the above are representative of “indexed” returns and do not include any additional returns (“alpha”) from active management. This is consistent with the Actuarial Standard of Practice No. 27, Section 3.6.3.e, which states:

“Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (pessimistic). Few investment managers consistently achieve significant above-market returns net of expenses over long periods.”

The following are some observations and our conclusions from the above analysis:

1. The investment consultants to our California public sector clients have each provided us with their expected real rates of return for each asset class, over various future periods of time. However, in general, the returns available from investment consultants are projected over time periods shorter than the durations of a retirement plan’s liabilities.
2. Using an average of expected real rate of returns allows the Association’s investment return assumption to include a broader range of capital market information and should help produce a more stable investment return assumption.
3. The Association has adopted an investment portfolio strategy that allows for leverage by allocating 40% of its investments to U.S. Treasuries. This results in a total portfolio return of 5.78% that can be achieved only with an allocation of 135% of its current assets, i.e., before reflecting the cost of providing leverage. It is our understanding that there is no cash outlay associated with the financial futures that are an integral component of the leverage portfolio. However, in developing our net investment return assumption, we have approximated the cost of providing the 35% leverage by deducting the return on cash equal to 35% of plan assets at the assumed real rate of return for cash of 0.06% (based on the sample of real rate of return assumptions used by Segal’s California public sector clients) or 0.02%. This then results in a total portfolio return of 5.76% after deducting the cost of leverage. This is summarized later in our development of the net investment return assumption.
4. Therefore, we recommend that the 5.78% and 5.76% portfolio real rates of return (before and after reflecting the cost of leverage) be used to determine the Association’s investment return assumption. This leveraged rate of 5.76% is 0.07% lower than the comparable return that was calculated three years ago.

Association Expenses

The real rate of return assumption for the portfolio needs to be adjusted for administrative and investment expenses to be paid from investment income.

Based on information provided by the Association, we have provided in the following table the administrative and investment expenses in relation to the actuarial value of assets for the five years ending June 30, 2012.

Administrative and Investment Expenses as a Percentage of Actuarial Value of Assets (All dollars in 000's)

Year Ending June 30	Actuarial Value of Assets*	Administrative Expenses	Investment Expenses**	Administrative %	Investment %	Total %
2008	\$7,539,284	\$10,511	\$77,730	0.14%	1.03%	1.17%
2009	8,507,057	10,107	61,631	0.12%	0.72%	0.84%
2010	8,573,030	10,441	59,201	0.12%	0.69%	0.81%
2011	8,568,142	10,514	89,142	0.12%	1.04%	1.16%
2012	8,650,728	10,866	86,091	<u>0.13%</u>	<u>1.00%</u>	<u>1.13%</u>
Average				0.13%	0.89%	1.02%

* *As of beginning of plan year.*

** *Excludes securities lending expenses. Because we do not assume any additional net return for this program, we effectively assume that any securities lending expenses will be offset by related income.*

In 2010, when we reviewed the level of estimated expenses it was pointed out to us that future investment expenses might be lowered as the alpha investment strategy was replaced by the more passive strategy going forward. Based on that guidance and the average administrative expense observed at the last review, we continued the 1.00% estimate of both administrative and investment expenses.

Even though the actual investment expenses has been higher in 2011 and 2012, the average administrative and investment expenses over this five year period was 1.02%. Based on this experience, we have continued to maintain the future expense component at 1.00% until more data is available to determine if an increase in this component should be considered by the Association.

Adjustment to Exclude Administrative Expenses in Developing Investment Return Assumption for use in GASB Financial Reporting

In 2012, GASB adopted Statements 67 and 68 that replace Statements 25 and 27 for financial reporting purposes. GASB Statements 67 and 68 are effective for plan year 2013/2014 for the Retirement Association and fiscal year 2014/2015 for the employer¹.

According to GASB, the investment return assumption for use in financial reporting purposes should be based on the long-term expected rate of return on a retirement system's investments and should be net of investment expenses but not of administrative expenses (i.e., without reduction for administrative expenses). As can be observed from the above development of the expense assumption, if the Board wishes to develop a single investment return assumption for both funding and financial reporting purposes, then it would be necessary to exclude the roughly 0.13% administrative expense from the above development and to develop a separate treatment of administrative expenses.

However, there are some complications associated with eliminating the administrative expense in developing the investment return assumption used for funding:

1. Even though GASB requires the exclusion of the administrative expense from the investment return assumption, such expense would continue to accrue for a retirement system. For private sector retirement plans, where the investment return is developed using an approach similar to that required by GASB (i.e., without deducting administrative expenses), contribution requirements are increased explicitly by the anticipated annual administrative expense.
2. Under the current approach of subtracting the administrative expense in the development of the investment return assumption, such annual administrative expense is accounted for implicitly by many public sector retirement systems by effectively deducting it from future expected investment returns.

¹ The new Statements (67 and 68) will require more rapid recognition for investment gains or losses and much shorter amortization for actuarial gains or losses. Because of the more rapid recognition of those changes, retirement systems that have generally utilized the previous Statements (25 and 27) as a guideline to establish the employer's contribution amounts for both funding and financial reporting purposes would now have to prepare two sets of cost results, one for contributions and one for financial reporting under the new Statements.

Since an investment return assumption net of investment and administrative expenses has been used historically to establish both the employer's and the employee's contribution requirements, such expense has been paid for implicitly by both the employer and the employees.

3. A switch from the method described in (2) to the method described in (1) may require a new discussion on how to allocate administrative expenses between employers and employees, including possibly establishing a new method to allocate the anticipated annual administrative expense between them.
4. As the Board may be aware, legislative changes under AB 340 impose major modifications to both the level of benefits and the funding of those benefits for county employees' retirement systems. Included in such modifications is the requirement to fund the Normal Cost on a 50:50 basis between the employer and the employee.

Based on all these considerations, it is our recommendation that a decision to adopt a single investment return assumption for both funding and financial reporting purposes be deferred until more analysis can be performed on the allocation of administrative expense. For that reason, this report continues to treat administrative expenses as an offset to future expected investment returns.

Risk Adjustment

The real rate of return assumption for the portfolio generally is adjusted to reflect the potential risk of shortfalls in the return assumptions. The Association's asset allocation also determines this portfolio risk, since risk levels are driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the actuarial investment return assumption in the long term². The 5.78% and 5.76% gross and net of leverage expected real rates of return developed earlier in this report were based on expected mean or average arithmetic returns. This means there is a 50% chance of the actual return in each year being at least as great as the average (assuming a symmetrical distribution of future returns). The risk adjustment is intended to increase that probability. This is consistent with our

² This type of risk adjustment is sometimes referred to as a "margin for adverse deviation".

experience that retirement plan fiduciaries would generally prefer that returns exceed the assumed rate more often than not.

Three years ago, the Board adopted an investment return assumption of 8.00%. That return implied a risk adjustment of 0.33%, reflecting a confidence level of 55% that the actual average return over 15 years would not fall below the assumed return, assuming that the distribution of returns over that period follows the normal statistical distribution³.

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the actual average return would equal or exceed the assumed value over a 15-year period. For example, if we set our real rate of return assumption using a risk adjustment that produces a confidence level of 60%, then there would be a 60% chance (6 out of 10) that the average return over 15 years will be equal to or greater than the assumed value. The 15-year time horizon represents an approximation of the “duration” of the fund’s liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

If we use the same 55% confidence level to set this year’s risk adjustment, based on the current long-term portfolio standard deviation of 11.28%, provided by HEK, the corresponding risk adjustment would be 0.37%. Together with the other investment return components, this produces a net investment return assumption of 7.64%, which is lower than the current assumption of 8.00%.

Based on the magnitude of this change in this long term assumption and the general practice of using one-quarter percentage point values for this assumption, we evaluated the effect on the confidence level of an alternative investment return assumption. In particular, a net investment return assumption of 7.75%, together with the other investment return components, would produce a risk adjustment of 0.26%, which corresponds to a confidence level of 53%.

As we have discussed in prior years, the risk adjustment model and associated confidence level is most useful as a means for comparing how the Association has positioned themselves over periods of time⁴. The use of the 53% confidence level should be considered in context with other factors, including:

³ Based on an annual portfolio return standard deviation of 10.00% provided by HEK in 2010. Strictly speaking, future compounded long-term investment returns will tend to follow a log-normal distribution. However, we believe the Normal distribution assumption is reasonable for purposes of setting this type of risk adjustment.

⁴ In particular, it would not be appropriate to use this type of risk adjustment as a measure of determining an investment return rate that is “risk-free.”

- As noted above, the confidence level is more of a relative measure than an absolute measure, and so can be reevaluated and reset for future comparisons. Note that Segal’s other California public retirement system clients generally have risk adjustments corresponding to confidence levels in the range of 50% to 60%.
- The confidence level is based on the standard deviation of the portfolio that is determined and provided to us by HEK. The standard deviation is a statistical measure of the future volatility of the portfolio and so is itself based on assumptions about future portfolio volatility and can be considered somewhat of a “soft” number. This is especially true for the leveraged asset allocation, where the relatively low standard deviation is based on a high assumed negative correlation between the leveraging asset class and the rest of the portfolio.
- A lower level of inflation should reduce the overall risk of failing to meet the investment return assumption. Lowering the confidence level to some extent could be justified as consistent with the change in the inflation assumption.
- As with any model, the results of the risk adjustment model should be evaluated for reasonableness and consistency. One measure of reasonableness is discussed in the following section that presents a comparison with assumptions adopted by similarly situated public sector retirement systems.

Taking into account the factors above, our recommendation is for a reduction in the net investment return assumption from 8.00% to 7.75%. In terms of our “risk adjustment” methodology, this return implies a risk adjustment of 0.26%, reflecting a confidence level of 53% that the actual average return over 15 years would not fall below the assumed return.

Recommended Investment Return Assumption

The following table provides the calculated net investment return assumption that results from the previous discussion. For comparison purposes, we have also included similar values from the last study.

Calculation of Net Investment Return Assumption		
<u>Assumption Component</u>	<u>Recommended Value</u>	
	<u>June 30, 2013</u> <u>Valuation</u>	<u>June 30, 2010</u> <u>Valuation</u>
Inflation	3.25%	3.50%
Plus Portfolio Real Rate of Return (“indexed”)	5.78%	5.99%
Minus Cost of Providing Leverage	(0.02%)	(0.16%)
Minus Expense Adjustment	(1.00%)	(1.00%)
Minus Risk Adjustment	<u>(0.26%)</u>	<u>(0.33%)</u>
Total	7.75%	8.00%
Confidence Level	53%	55%

Based on this analysis, we recommend that the investment return assumption be reduced from 8.00% to 7.75% per annum, based on market index returns including reflection of the leverage portfolio.

Test of Risk Adjustment

The original development of the risk adjustment component of our investment earnings assumption model arose from our experience with many retirement boards over many years. Quite simply, combining the boards’ inflation assumption with the real return and expense components produced – and produces – a substantially higher assumed return than what the boards actually adopt, regardless of the consulting actuary or the methods involved in the process. This led to the development of a risk adjustment component for our model.

There is a range of risk adjustment methodologies that may be incorporated in the development of an earnings assumption. Ideally, the particular risk adjustment selected should reflect the “downside” risk tolerance of the boards making the decision. This is similar to the volatility risk that boards consider when selecting an appropriate asset allocation.

In addition to the generally risk adverse attitude of retirement boards noted above, we believe another reason for this involves the inflation assumption. As noted earlier, the inflation assumption for actuarial valuations is generally longer term than that used by investment consultants. For many years, that has led to higher actuarial valuation inflation assumptions. A higher inflation assumption has a conservative effect - higher current cost - on the wage increase and COLA assumption, but is less conservative as part of the investment earnings assumption. In effect, the risk adjustment compensates for this by offsetting the effect of the higher inflation assumption on assumed investment earnings.

One way to test the reasonableness of the risk adjustment incorporated in our recommendation is to compare our risk adjusted investment return (i.e., 7.75%) against the expected net investment return that would result from using the average of all the capital market assumptions -- including the lower inflation assumption -- of the investment consultants in our sample.

The following table shows that comparison. This table shows how the difference between our recommended return and that derived using the average of all the capital market assumptions of the investment consultants in our sample can be attributed to the relationship between the two different inflation assumptions and the risk adjustment.

<u>Assumption Element:</u>	<u>Risk Adjusted Method</u>	<u>Average of Investment Consultant Sample</u>	<u>Difference</u>
Inflation	3.25%	2.62%	0.63%
Risk Adjustment	(0.26%)	0.00%	(0.26%)
Net Real Rate of Return*	5.76%	5.76%	0.00%
Expenses	<u>(1.00%)</u>	<u>(1.00%)</u>	<u>0.00%</u>
Total	7.75%	7.38%	0.37%

**Equals portfolio real rate of return (“indexed”) minus cost of providing leverage.*

The 0.37% (37 basis points) difference between the two calculations represents about a 5% higher confidence level under the higher inflation, risk adjusted method, as compared to the lower inflation result without the risk adjustment.

Comparing with Other Public Retirement Systems

One final test of the recommended investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

We note that the 7.75% investment return assumption (while on the high end) is within the most common range for this assumption among most California public sector retirement systems. That range, with few exceptions, is from 7.25% to 7.75%. For instance, in 2012 CalPERS and LACERA adopted a 7.50% earnings assumption⁵. Note that CalPERS uses a lower inflation assumption of 2.75% while LACERA uses an inflation assumption of 3.00%. More recently, OCERS and CCCERA adopted a 7.25% investment return assumption with a 3.25% inflation assumption.

The following table compares the SDCERA recommended net investment return assumptions against those of the nationwide public retirement systems that participated in the National Association of State Retirement Administrators (NASRA) 2011 Public Fund Survey:

Assumption	SDCERA	NASRA 2011 Public Fund Survey		
		Low*	Median	High*
Net Investment Return	7.75%	7.00%	8.00%	8.50%

The detailed survey results show that of the systems that have an investment return assumption in the range of 7.50% to 7.90%, about half of those systems have used an assumption of 7.75%. The survey also notes that several plans have reduced their investment return assumption during the last year, and others are considering doing so. State systems outside of California tend to change their economic assumptions slowly and so may lag behind emerging practices in this area.

In summary, we believe that both the risk adjustment model and other considerations indicate a lower earnings assumptions. The recommended assumption of 7.75% continues to provide for some risk margin within the risk adjustment model and is consistent with the Association’s current practice relative to other public systems.

⁵ The approach adopted by LACERA was to phase in the reduction from their current 7.75% assumption to their 7.50% over a three-year period.

C. SALARY INCREASE

Salary increases impact plan costs in two ways: (i) by increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll which in turn generates lower UAAL contribution rates. These two impacts are discussed separately below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. Inflation – Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces may require an employer to maintain its employees' standards of living.

As discussed earlier in this report, we are recommending that the assumed rate of inflation be reduced from 3.50% to 3.25%. This inflation component is used as part of the salary increase assumption.

2. Real “Across the Board” Pay Increases – These increases are typically termed productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees “across the board.” The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real “across the board” pay increases have averaged about 0.50% - 0.75% annually during the last ten to twenty years.

We also referred to the annual report on the financial status of the Social Security program published in April 2012. In that report, real “across the board” pay increases are forecast to be 1.1% per year under the intermediate assumptions.

The most recent salary increase experience indicates that actual average salary increases were generally lower than the expected average increases:

<u>Valuation Date</u>	<u>Actual Average Increase</u>	<u>Actual Change in CPI*</u>
June 30, 2012	(3.1)%**	1.6%
June 30, 2011	2.3%	3.0%
June 30, 2010	1.1%	1.3%
June 30, 2009	1.4%	0.0%
June 30, 2008	<u>5.0%</u>	<u>3.9%</u>
Average	1.3%	2.0%

* Based on the change in the annual CPI for the San Diego area compared to the prior year.

** This decrease in average salary can be primarily explained by the elimination of an assumption in the valuation to anticipate pay for performance, rather than an actual reduction in individual members' salaries.

If we exclude the experience of 2012 from the above calculations, the actual average increase for the four-year period was 2.5% and the actual average change in CPI for the four-year period was 2.1%.

Considering these factors, we recommend maintaining the real “across the board” salary increase assumption at 0.75%. This means that the combined inflation and “across the board” salary increase assumption will decrease from 4.25% to 4.00%.

3. Merit and Promotional Increases – As the name implies, these increases come from an employee’s career advances. This form of pay increase differs from the previous two, since it is specific to the individual. For SDCERA, this assumption is structured as a function of an employee’s service and is derived from employee specific information as part of the triennial experience study. The assumed increases range from 0.75% to 6.00% for General members and 1.00% to 8.00% for Safety members.

The merit and promotional assumptions recommended in the June 30, 2012 triennial experience study, if adopted by the Board, will be used for the June 30, 2013 valuation.

Active Member Payroll

Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay for all employees. The average pay for all employees increases only by inflation and real “across the board” pay increases. The merit and promotional increases are not an influence, because this average pay is not specific to an individual.

We recommend that the active member payroll increase assumption be decreased from 4.25% to 4.00% annually, consistent with the combined inflation plus real “across the board” salary increase assumptions.

5230071v1/05536.001