

MEMORANDUM

To: House Pensions and Benefits Committee
From: ^{ADC} Alan D. Conroy, Executive Director
Date: February 25, 2015
Subject: Market Return and Cash Balance Formula

Background

2014 HB 2533 revised the basis on which additional interest credits or "dividends" are granted for the KPERS 3 cash balance plan from a discretionary dividend granted by the KPERS Board of Trustees to a formulaic dividend. When fully implemented, the dividend is equal to 75% of the five-year average net compound rate of return as determined by the Board for that calendar year and the previous four calendar years on the market value of the system's assets that is above 6%.)

In the cost study of 2014 HB 2533, KPERS' consulting actuary, Cavanaugh MacDonald, used a total interest credit of 6.5%, which includes the 4.0% minimum guaranteed interest credit, plus interest dividends averaging 2.5%. The 2.5% average dividend was based on modeling of portfolio returns over a 50-year period and the proposed dividend formula contained in HB 2533. The expected return of the portfolio used in the modeling was 8%, KPERS' investment return assumption, and the standard deviation used was 12%. The resulting average total interest credit over the 46-year period (the first four years were not included since five years of returns were needed) was 6.47%, which was rounded to 6.5%.

Historical Return Analysis

As a point of reference, attached is an analysis of the dividends that 2014 HB 2533 formula would have produced using historic returns of KPERS' portfolio from 1986 through 2013. 2014 HB 2533 provided for the returns used in the formula to be the net compound rate of return. Historical data regarding portfolio expense and fees was used to establish the net compound return for each year from 1993 through 2013. However, it was necessary to use an assumption of the average investment costs for the period 1986 through 1992. Based on the smaller size and active management of KPERS' portfolio during that time, as well as generally higher investment fees typical of this period, expenses were likely to have been substantially higher than in more recent years. For purposes of this analysis, the net return was assumed to be 0.60% less than gross returns from 1986 through 1992.



The attached graph summarizes the data for each year beginning in 1990 (the first year with a rolling five-year average net compound rate). The data includes the annual net return and the rolling five-year average net compound rate for each year, plus the total interest credit, composed of the 4% guaranteed interest credit and the dividend for that year, if any. Recognizing that these historical returns may not be representative of future returns, several highlights and observations about the data follow.

Investment Returns

- Of the 28 years from 1986 through 2013, there were 18 years in which the net return was greater than 8.0%.
- Of the 24 years with a rolling five-year average net compound rate –
 - 13 were greater than 8.0%
 - 15 were greater than the formula's threshold of a minimum 6.0% five-year rolling return
 - There would have been nine years in which the 6.0% threshold was not reached, and therefore, a dividend was not granted.

Dividends

- The average dividend over the 24-year period would have been 2.43%, slightly below the expected 2.5% average dividend based on Cavanaugh Macdonald's portfolio modeling for the HB 2533 cost study.
- Of the 15 years in which a dividend would have been granted –
 - The maximum dividend would have been 8.05% (1999). The smallest would have been 1.05% (2001).
 - Four of the dividends would have been less than 2.5%
 - Six dividends would have been between 2.5% to 5.0%
 - Five dividends would have been greater than 5%.

Impact of Rolling, Five-year Average

- The rolling five-year average results in a lag in dividends relative to investment returns on both the upside and the downside of markets.
- Due to the large returns in 1996 through 2000, a dividend would have been granted in 2000 (3.91%) and 2001 (1.05%), despite negative returns in those years (-1.95% and -4.93%). However:
 - No dividend would have been granted in 2002, the third year of negative returns (-7.11%).
 - Dividends would not have been granted in 2003 through 2005, due to the impact of the trailing negative returns, despite annual returns well above 8.0% for those years (9.72% to 21.90%).
- The magnitude of the -28.33% downturn in 2008 was such that:
 - No dividend would have been given in 2008, despite returns in excess of 8.0% for each of the other four years included in the 2008 five-year rolling average.
 - A dividend would not have been given for any of the five years from 2008 through 2012, despite returns ranging from 13.39% to 22.81% in three of those years. (The 0.08% return for 2011 would have been an additional drag on the five-year average in 2011 and 2012.)

KPERS 3 Funding of Dividends

Under the current dividend formula, criteria for granting KPERS 3 interest dividends relate to KPERS' investment returns. However the dividends are not simply funded from "excess" returns above KPERS' 8.0% actuarial investment return assumption. All cost studies for the cash balance plan build in liability and funding for the expected total average interest credits, both the guaranteed quarterly interest credit set by statute and the projected average dividend. Therefore, actuarial rates are designed to fund the total average interest credit, including a 2.5% dividend – in years with portfolio returns above 8.0% and in years below 8.0%, and in years when dividends are granted and years in which they are not granted.

KPERS 3 Cash Balance Plan Impact Relative to Legacy Tiers

In considering the operation of the dividend formula (or any other basis for determining dividends for KPERS 3), it is important to keep in mind that KPERS 3 will be small relative to the legacy KPERS 1 and KPERS 2 groups for a number of years.

- The payroll for KPERS 3 reaches half of the entire KPERS payroll by 2025 for both State/School and Local groups, 10 years into KPERS 3.
- For the current design of KPERS 3, the KPERS 3 State/School actuarial liability will not equal 50% of total State/School actuarial liability for 30 years, until 2045. (The Local Group reaches that point in 2044.)

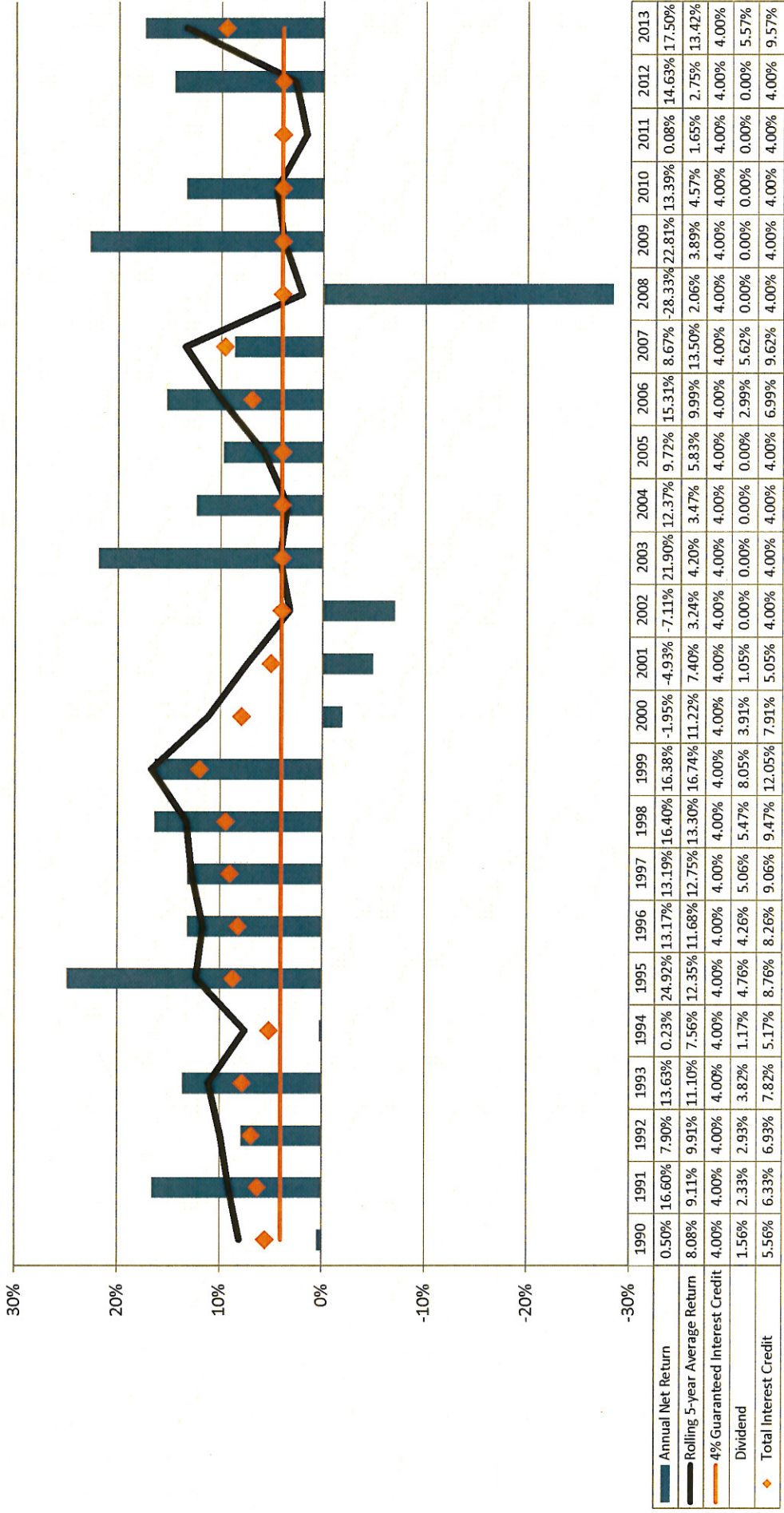
Therefore, liabilities for KPERS 3 generally and the dividend specifically have limited impact on KPERS' funding for an extended period of time.

I hope this information is helpful and would be happy to respond to any questions the Committee may have.

Attachment



Illustration of HB 2533 Dividend Formula Using Actual KPERS Returns



Annual Net Returns prior to 1993 were estimated to be 0.60% less than gross returns.

