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COLA Provisions in the 5 Ohio Retirement systems

April 21, 2000

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Mr. Aristotle L. Hutras
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Re: COLA provisions in the 5 Ohio Retirement Systems

Dear Aris:

As requested, we have prepared an analysis of the COLAs provided by the five Ohio Retirement Systems. This report will first review the operation of the COLA provisions for the systems under current law and then discuss several types of changes, which could be made in those provisions, and the costs associated with them.

A proposal regarding COLAs has been enacted as part of SB 190 for the State Teachers Retirement System, STRS. In addition, proposals are currently under consideration with respect to the Ohio Police and Fire Pension Fund, OP&F, the Public Employees Retirement System, PERS, and the School Employees Retirement System, SERS, as part of HB 655, HB 628 / SB 277 and SB 270, respectively.

<u>Operation of COLAs under current law</u>

A common cost-of-living adjustment formula currently applies to all Ohio Retirement Systems (except that the effective dates are different for the Highway Patrol Retirement System). All systems currently provide cost-of-living adjustments equal to the lesser of:

(a) the actual rate of increase in the CPI-W index during the most recent calendar year; or,

(b) 3%.

(Under current law, an adjustment is made in the event that the cost-of-living adjustment made in a prior year was limited by the 3% maximum if actual inflation falls below 3% during a subsequent year.)

The exact operation of the current provision is quite complex due to two factors. They are:

(1) years during which the CPI-W index declines (deflation) are ignored since neither benefits nor "banks" are reduced; and,

(2) years during which inflation exceeds the 3% limit results in the creation of a "bank" which can be drawn on to increase the COLA otherwise payable during years when the rate of inflation falls short of 3%.

Historical illustrations of the current formula

The current cost-of-living formula provides an adjustment less than full inflation when inflation exceeds 3% and may provide more than the current rate of inflation when inflation falls below 3%. To illustrate this effect, we have indicated on the attached Exhibit A a summary of the cost-of-living increases which would have been provided to a 1933 retiree under the current formula if the current cost-of-living adjustment formula had been applicable. We picked this year of retirement because the inflation averaged exactly 3.0% over the subsequent 30 years and that period included years with deflation (negative inflation).

Exhibit B summarizes the results of similar calculations for hypothetical retirees since the creation of the CPI-W index in 1913. We have based these calculations on both an assumed life expectancy of 30 years and 40 years. These results compare the actual average cost-of-living adjustment that would have been provided under the current cost-of-living adjustment formula with the actual average rate of inflation during the historical periods.

As indicated on those exhibits, the current formula would have generally provided adjustments in excess of inflation when inflation averaged 2% or lower and less than actual price inflation when inflation averaged 2-1/2% or higher.

Stochastic (or statistical or mathematical) Modeling of the current formula

An alternative way of analyzing the current formula is to mathematically model the level of cost-of-living adjustments provided based on historical statistics regarding the variability in the rate of inflation from year to year (i.e., inflation's standard deviation) and the relationship of inflation in the current year to inflation in the preceding year (i.e., inflation's serial correlation). A summary of such projections is indicated in the table below.

Estimated Average Cost-of-Living Adjustments Provided Under
Alternative Assumptions Regarding Average Inflation

Assumed Average Future Price Inflation	Estimated Average Cost-of-Living Adjustment Under Current Formula
2.0%	2.2%
2.5%	2.4%
3.0%	2.6%
3.5%	2.7%
4.0%	2.8%

As indicated above, the level of cost-of-living adjustments provided by the current formula can be expected to average within a relatively narrow range of between 2.2% and 2.8% if future price inflation averages between 2% and 4% per year. Thus the current cost-of-living adjustment formula can be expected to pay less than 3% per year in cost-of-living adjustments to retirees when inflation averages even as much as 4%.

Cost of current formula

Each of the five Ohio Retirement Systems includes the cost of providing COLA adjustments to retirees in its actuarial calculations of the cost of the system. We have roughly estimated the portion of the total cost of providing pension benefits that is attributable to the COLA benefits and summarized those estimates below. The costs are based on the current law, including the enactment of SB 190 and a valuation interest rate of 7.75% for STRS. The costs are based on the provisions of the most recent actuarial valuations, which are December 31, 1998 for HPRS and PERS, January 1, 1999 for OP&F, June 30, 1999 for SERS and July 1, 1999 for STRS.

	HPRS	**PERS-State**	**PERS-Local**	**PERS-LE**	**OP&F**	**SERS**	**STRS**
Normal Cost as % of payroll attributable to:							
COLAs	5.1%	2.6%	2.6%	3.9%	4.2%	2.3%	3.0%
Other Benefits	19.9	12.1	12.1	16.0	15.8	11.5	12.1
Total Pensions	25.0	14.7	14.7	19.9	20.0	13.8	15.1
Portion due to COLAs	20%	18%	18%	20%	21%	17%	20%
Actuarial Liabilities *(in billions)* attributable to:							
COLAs	$0.11	$2.76	$3.73	$0.25	$1.17	$1.24	$9.93
Other Benefits	0.42	12.52	17.28	1.04	7.28	6.29	42.46
Total Pensions	0.53	15.28	21.01	1.29	8.45	7.53	52.39
Portion due to COLAs	21%	18%	18%	19%	14%	16%	19%

As indicated in the above table, between 17% and 21% of the normal costs and 14% to 21% of the actuarial liabilities of the five systems are attributable to COLAs. The portion of the costs attributable to COLAs is higher for the public safety groups due to their earlier retirement ages. The COLA costs for STRS are higher than for the other non-uniformed groups due to their retiree's very favorable life expectancies and their relatively younger average retirement ages.

Possible Changes

Change to a fixed COLA adjustment such as 3%

Several bills under current consideration by the legislature (HB 655 for OP&F, HB 628 / SB 277 for PERS and SB 270 for SERS) would amend the current COLA formula to provide for fixed 3% cost-of-living adjustments without regard to the actual rate of inflation.

As indicated in the above discussion regarding the operation of the current formula, the current formula over-adjusts for inflation during a period during which prices decline (negative inflation or deflation) and under-adjusts for inflation whenever inflation exceeds 3%. During the 88 years since the CPI-W index was created, prices declined 12 times and increased by more than 3.0% 38 times. During the other 38 years, the current formula would have produced the correct % adjustment for inflation.

Moving to a 3% fixed COLA would produce a formula which would either over-adjust or under-adjust retirees benefits unless the rate of inflation were exactly 3.0%. During the 88 years since the CPI-W index was created, this has happened only once – in 1982-3. In 49 of those years, inflation was less than 3.0% and in the other 38 it exceeded 3.0%.

Moving to a fixed 3% annual COLA adjustment would increase benefit payments under each of the five systems relative to current law. Thus this change would serve to increase their actual costs over time. The fact that the actuarial assumptions assume that a 3% COLA will be paid each year does not mean that increasing the COLA adjustments to 3% will have no cost. To the extent that future benefit payments under a fixed 3% COLA would exceed benefit payments under current law, the provision will increase long-term costs.

Some of the recent discussion regarding this issue may seem confusing to non-actuaries. The current actuarial valuations are based on the assumption that a 3% COLA will be paid each year in the future. Thus moving to a fixed 3% COLA in practice would not affect the current actuarial status of any of the systems. But if actual future COLA payments were lower than the assumed level of 3%, actuarial gains would be created. These gains would be available to offset adverse experience in other areas or speed the amortization of the UAL.

In fact, such gains have accrued over the past 7 years for each of the retirement systems. The estimated magnitude and growth in these gains over the past 7 years is summarized in the table below. (We did not estimate these gains for HPRS because HPRS is much smaller than the other Ohio Retirement Systems and the COLA calculation for HPRS differs from the calculation applied to the other systems. The added cost of estimating these gains for HPRS did not seem justified in the context of this report.)

($ Amounts in millions)

FY ending	PERS	OP&F	SERS	STRS
1993	$22.4	$4.8	$4.2	$31.1
1994	20.9	4.7	5.0	36.4
1995	20.7	5.3	5.3	41.9
1996	0.9	0.1	0.2	1.6
1997	1.8	0.2	0.4	3.9
1998	21.5	1.5	4.7	45.4
1999	57.6	7.2	12.4	120.7
Total	**$145.8**	**$23.8**	**$32.2**	**$281.0**

The gains shown in the above table reflect the savings over the remaining lifetime of the retirees and beneficiaries.

While these gains have not been the major cause of the dramatic improvement in the funded status of each of the systems over the past decade (relatively high investment returns and low salary growth have been much more significant factors), they have contributed to the improvement in funded status. Moreover, if inflation remains at or below 3% (as most professional forecasters surveyed by the Federal Reserve Bank of Philadelphia predict it will over the next decade), gains from COLA payments lower than the 3% level assumed will be a growing source of future gains.

These gains can be expected to increase in the future as an increasing portion of retirees exhaust their COLA banks and receive COLAs of less than 3% if inflation continues at a rate lower than 3%. The banks for members who retired between July 1, 1990 and June 30, 1995 were exhausted this year. As a result, COLA adjustments effective July 1 2000 and beyond will be less than 3% for members who retired on or after July 1, 1990 so long as the rate of inflation is less than 3%. Thus the magnitude of these gains could grow significantly over the near term.

Retirees prior to July 1, 1990 still have accumulated balances in their banks. As the years pass, additional cohorts of retirees may exhaust their accumulated banks and contribute to future gains if inflation remains under 3% and the COLA structure is not changed.

Thus, we do not believe that it is appropriate to represent a fixed 3% cost-of-living adjustment as having no additional cost. But it is accurate for supporters of this change to assert that fixing the COLA at 3% will have no effect on the *current* actuarial status of the systems. Such a change would serve to eliminate the possibility of future gains, but not affect the current actuarial status.

Simple vs. Compounded COLA Adjustments

Under current law, COLA adjustments are made on what is called a “simple” basis. This means that the additional COLA benefit is calculated by applying the COLA rate to the initial benefit at retirement instead of the retirees’ current benefit (the initial benefit plus all COLA adjustments made to date). Since the rate of CPI increase is calculated on a “compounded” basis, applying the COLA rate in the way required by current law has the effect of providing less than a full adjustment for inflation even when the rate of inflation is less than the 3% cap. Moreover it provides less than a 3% increase in a retirees’ current income after they have been retired for a number of years.

Modifying the current COLA provision to provide adjustments on a compounded basis would provide the greatest benefit to retirees whose pensions have been eroded the most by past inflation. In contrast, adopting a fixed 3% COLA would increase the COLA adjustment the most for recent retirees who have received a full, or almost full, inflation adjustment while inflation has been less than 3%. The fixed 3% COLA would continue to do this during the initial years of retirement to the extent that 3% exceeds the rate of inflation. But after a retiree has been retired for a number of years, even a simple 3% fixed COLA would provide less than a full inflation adjustment even if inflation continues to average less than 3%. This would happen because the adjustments would continue to be made on a simple, rather than a compounded, basis. Providing an excessive COLA adjustment to retirees during their initial years of retirement while providing less than a full adjustment to others who have been retired longer and subject to more erosion in the purchasing power of their pension seems inequitable.

Of the 62 statewide retirement systems included in the Public Pension Coordination Council’s 1999 PENDAT database, 39 provide a compounded COLA and 23 provide a simple COLA. Among those systems providing a compounding COLA, 13 provide a fixed rate and 26 provide an adjustment based on the CPI. Among those systems with a simple COLA, 7 provide a fixed rate and 16 provide an adjustment based on the CPI.

We have roughly estimated the impact of changing from a simple to a compounded COLA on the costs for pension benefits shown on page 3. This change would increase the normal costs by approximately 4% to 6% and the actuarial liabilities by approximately 5% to 11%. The estimates are summarized in the following table. Note that we assumed that the OP&F current and future surviving spouse's benefits of $550 per month, which increase each year by the COLA adjustment, would also change to be increased on a compounded basis. We also assumed that the COLA increases under HPRS would continue to be delayed as under the current plan.

	HPRS	**PERS-State**	**PERS-Local**	**PERS-LE**	**OP&F**	**SERS**	**STRS**
Normal Cost for Pension Benefits with:							
Simple COLAs	25.0%	14.7%	14.7%	19.9%	20.0%	13.8%	15.1%
Compounded COLAs	26.5	15.3	15.3	20.9	21.2	14.3	15.8
% Increase	6%	4%	4%	5%	6%	4%	5%
Actuarial Liabilities (*in billions*) for Pension Benefits with:							
Simple COLAs	$0.53	$15.28	$22.01	$1.29	$8.45	$7.53	$52.39
Compounded COLAs	0.57	16.13	22.15	1.36	9.42	7.90	55.31
% Increase	8%	6%	5%	5%	11%	5%	6%

We have also roughly estimated the impact on the funding period as of the most recent actuarial valuation of the Ohio Retirement Systems if the COLA was changed from a simple to a compounded basis, assuming the current benefit provisions in the law. Only the State and Local Government Divisions of PERS could afford this change within the 30-year funding period limitation in SB 82. In the chart below, we summarized the estimated increase in the employer contribution rate allocated to pension benefits needed to bring the funding period within the 30-year funding requirements of SB 82.

Additional contributions required if Compounded COLAs were adopted

	HPRS	**PERS-State**	**PERS-Local**	**PERS-LE**	**OP&F**	**SERS**	**STRS**
Increase in ER Rate	2.00%	0.00%	0.00%	0.70%	5.70%	1.50%	0.75%

We have also roughly estimated the impact on the funding period for PERS and SERS if the COLA was changed from a simple to a compounded basis along with the enactment of Package 1B (HB 628 / SB 277, SB 144 for the State and Local Government Divisions, and SB 93) for PERS and SB 270 for SERS. In the chart below, we summarize the estimated increase in the employer contribution rate allocated to pension benefits needed to bring the funding period within the 30-year funding requirements of SB 82.

If Compounded COLAs were adopted along with Package 1B and SB 270

	PERS-State	PERS-Local	PERS-LE	SERS
Increase in ER Rate	0.80%	0.75%	2.30%	1.55%

Ad Hoc COLAs

The Legislature might prefer to consider Special Ad Hoc cost-of-living adjustments in circumstances when the current formula provides inadequate COLA adjustments (i.e., when inflation is high) rather than a fixed COLA to all retirees even when inflation is low. In this way, affordable adjustments could be enacted by the Legislature whenever deemed appropriate.

Alternatively, the systems could be authorized to provide a compounded COLA adjustment on an ad hoc basis each year on a discretionary basis to avoid the continued erosion of purchasing power of pensions due to the use of the simple method provided for in current law.

Purchasing Parity Adjustments

It is possible to provide an adjustment to restore some portion of the purchasing power of a retiree's initial benefit at the time of retirement that has been eroded due to inflation. This is typically done by establishing a "target ratio" based on the ratio of:

1. a retiree's current total pension benefit (the initial benefit plus the total COLA adjustments to date) to

2. the fully inflation adjusted benefit (the initial benefit adjusted to reflect 100% of the increase in the CPI since retirement).

If that ratio for a retiree falls below some target, such as 85% or 75%, the retiree would receive an additional COLA adjustment to restore the ratio to its target. Such an adjustment is often referred to as a "purchasing parity" adjustment or a "purchasing power" adjustment. This type of an adjustment could be provided either on an ad hoc basis or automatically whenever a retiree's ratio falls below the target. (If an automatic purchasing power adjustment were enacted, it would effectively provide an uncapped COLA of 100% of the increase in the CPI to retirees after inflation erodes their pension to the target threshold.)

SB 190, which was recently enacted, and HB 628 / SB 277, which are currently under consideration by the legislature, have contained ad hoc purchasing parity adjustments for STRS and PERS, respectively, based on a target of 85%.

The effect of such an adjustment is illustrated for the Ohio Retirement Systems based on the current law and a target of 85% in the following graph. (This graph doesn't accurately reflect the COLA for HPRS since HPRS retirees would have to wait until age 57 to receive their first COLA adjustment.)

The key advantage of this type of an adjustment is that it provides general equity among retirees with regard to maintaining the purchasing power of their pensions. This is especially advantageous in situations, such as in Ohio, where COLAs are provided that may be less than a full inflation adjustment due to:

1. a cap on the COLA adjustment, such as 3%, or

2. the use of a methodology, such as the simple COLA provided under Ohio law (as opposed to a compounded COLA).

Adjustments based on favorable investment returns

Some retirement systems provide COLAs based on favorable investment results in excess of the actuarial assumption or some other investment return target or hurdle. At times a restriction is placed on the otherwise automatic COLA adjustment to prevent the payment of a COLA from increasing the cost of the system when favorable investment returns are not available to cover the full cost of the COLA increase.

Indexing pension benefits based on wage inflation rather than price inflation

All of the above examples have been based on COLA adjustments based on increases in some price inflation index such as the CPI. But some systems choose to adjust pension payments based on wage increases granted to active workers. Such adjustments are not the norm, but may be adopted for employee groups where there are relatively few positions and all employees in a given position receive substantially the same salary. For example, appointed officials such as judges may all receive substantially the same compensation.

Adjusting pension benefits based on pension formula increases applicable to active members

Some retirement systems provide pension increases to retirees when the pension formula is improved for active members. If such an adjustment were made, it would normally occur when the improved formula is provided without increased contributions from members. When members have to increase their contributions to partially or fully pay for the increase, the improved benefit formula would not be applied to retirees.

This type of an adjustment was recently enacted as part of SB 190 which provided an increase to all retirees based on the pension formula in effect immediately prior to the enactment of SB 190. HB 628 / SB 277 contains a similar provision with respect to PERS and would adjust retirees benefits based on the pension formula that would go into effect upon the enactment of these bills.

Supplemental Benefits

Some retirement systems, including STRS, pay a "thirteenth check" to retirees as a supplement to offset for increases in the cost of living, but the magnitude of this payment may only roughly reflect the effect of inflation on the retirees benefit. At times this payment may be merely the amount of the normal monthly pension check. – literally a 13th check during the year. At other times, it may be based on a special formula that reflects factors such as length of service before retirement, the period of retirement, a minimum amount, etc. Moreover, such payments may be made on an ad hoc basis or based on favorable investment or other actuarial experience.

Uniformity among the Systems

The Legislature and the ORSC should consider the appropriate public policy regarding any changes in the COLA. Any changes granted to the retirees of one retirement system may create pressure for making a similar change in the other retirement systems. If, for example, one system changes to a fixed 3% COLA or a compounded COLA and the other four do not, pressure may develop for similar changes to be made to the other retirement systems.

Health Insurance

The Legislature and the ORSC may want to consider the appropriateness of the Retirement Boards allocating more of the employer contribution rate to providing health insurance benefits instead of COLAs. The COLA adjustments tend to benefit the higher paid and longer service members relatively more than other members (since they will have higher benefits and thus larger COLA increases) but a significant portion of the increased benefit will be lost due to taxes. Health insurance benefits are of equal value to both the high and low paid employees and are not subject to income taxation.

Please let us know if you have any questions or if you need any additional information.

Sincerely,

Katherine A. Dill William A. Reimert