REPORT OF THE
JOINT SUBCOMMITTEE TO STUDY
RETIREMENT BENEFITS TO THE
HOUSE APPROPRIATIONS COMMITTEE
AND THE
SENATE FINANCE COMMITTEE
TO
THE GOVERNOR
AND
THE GENERAL ASSEMBLY OF VIRGINIA

House Document No. 25

COMMONWEALTH OF VIRGINIA

Department of Purchases and Supply

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Report of the

Joint Subcommittee to Study

Retirement Benefits to the

House Appropriations Committee

and the

Senate Finance Committee

To

The Governor and the General Assembly of Virginia

Richmond, Virginia

January, 1978

To: Honorable John N. Dalton, Governor of Virginia

and

The General Assembly of Virginia

INTRODUCTION

House Joint Resolution No. 204 adopted by the 1977 General Assembly directed the Committee on Appropriations of the House of Delegates and the Committee on Finance of the Senate "... to undertake a joint study of benefits paid to retirees by the Virginia Supplemental Retirement System to determine whether, given the retirement benefits available to these same retirees under the federal Social Security System, amendments of the Virginia Supplemental Retirement Act are needed; ..." The joint subcommittee designated to make this study was essentially a continuation of the same committee which recommended legislation passed by the 1977 Session of the General Assembly to initiate an early retirement program for members with actuarily determined benefits, to expand and liberalize options for purchase of prior service credit, to provide for annual rather than biennual cost of living adjustments, to increase employee proportion of representation on the VSRS Board and other improvements in the Retirement System.

All meetings of the joint subcommittee were open to the public and representatives from the various employee groups were in attendance at the meetings. From the outset the subcommittee tried to make it clear that no recommendation would be made which would result in any reduction in the amount of retirement benefits now being paid to retired members of VSRS, and that there would be no reduction in accrued benefits for any employee presently covered by VSRS. Notwithstanding these restrictions on the deliberations of the subcommittee, numerous employees were given the impression through news reports and communications from employee groups that a recommendation had been made by this subcommittee to reduce accrued benefits when no such recommendation had in fact been made.

The members of this committee met ten times since the adjournment of the legislature in 1977 to study and evaluate the retirement benefit structure. One of these meetings was a public hearing to receive information from employees and employee groups whose comments focused on a willingness to increase employee contributions to maintain present benefit levels, a requirement for matching employee and employer contributions and a concern for availability of health insurance coverage after retirement.

HISTORY

The subject matter before this subcommittee is not new. The VSRS Board recognized as early as 1971 that the benefit structure of the Virginia Supplementary Retirement System was being significantly affected by increases in Social Security benefits over which the VSRS Board had no control. The Virginia Retirement System is a supplement to the federal Social Security System and must be evaluated in light of combined benefits available from the two systems. Both employers and employees contribute to both systems. Recommendations for action were made by the VSRS Board to the General Assembly in February, 1972, and a maximum limit on benefits was set by the Legislature at that session to become effective in 1974. The limitation adopted would have limited combined benefits to career employees under VSRS and Social Security to a sum not to exceed the total of 90% of the first $5,000 of final average compensation and 75% of the amount above that sum. However, this limitation was repealed in 1973 and never became effective. Thus, no remedial action was taken in response to the request of the Board and the issue remained unresolved. Requests submitted to the Legislature by the VSRS Board in 1972 and 1973 are included as Appendix III.

The upward drift in combined benefits has become a problem for nearly every State and local pension system which utilizes Social Security as a part of their benefit structure. A number of states have already made adjustments in their benefit structure to account for changes in Social Security benefits and several others are currently conducting studies to determine what action should be taken. A concise general survey of the issues involved with public retirement systems based in part on Social Security is provided in the publication entitled State and Local Employee Plans: Watching for Problems, by Bernard Jump, Jr., which is set forth in Appendix IV.

SCOPE OF PROBLEM

The Virginia Supplementary Retirement System and the Social Security System are interrelated. The 200,000 active public employees who are members of VSRS are also covered by Social Security, are eligible for benefits from both, and both the employees and their employer make contributions to both systems. An initial report was prepared and presented to the committee by Martin E. Segal Co. in July, 1977, which provided an analysis of VSRS and Social Security benefits. This report is included in Appendix V. A subsequent report was prepared and presented by the same firm dealing with combined benefit objectives and alternative benefit formulas. This report is set forth in Appendix VI. A careful analysis of these two reports is essential for an understanding of the issues considered by the committee in its deliberations and proposed recommendations.

In the course of its work the committee received numerous comments concerning the proportion of retirement benefits paid into the system by a participating employee. There is included herein as Appendix VII a table showing actual data for certain employees retiring in 1977 under VSRS with more than thirty years service. Based on normal life expectancy, retirees contributed generally less than 7% of the aggregate sum which will be paid out to them by the VSRS in benefits.

Numerous comments were also made about how VSRS benefits compare to private industry. There is set forth in Appendix VIII a comparison of the benefits available under VSRS with benefits available under eleven other prominent systems in the private sector. This table shows that the

benefits under VSRS compare quite favorably with those of private retirement systems.

A long-range projection of the cost to the Commonwealth for the present benefit structure was prepared by Heidinger and Associates and is summarized in Appendix IX. While such long-range projections are subject to the validity of the assumptions necessary to make the computations, the projected increase from $208 million in 1978-80 to $956 million by 1986-88 is cause for concern. The funding requirements for VSRS will grow substantially faster than the projected growth in the General Fund budget which means that a progressively smaller proportion of the increase in General Fund dollars will be available for new programs and expansion of existing programs other than retirement, unless revenues are increased by additional taxes.

ANALYSIS OF ISSUE

Based on the various reports and data submitted to the subcommittee, all of which are included in this report, the subcommittee proceeded with the following analysis:

A. To determine whether or not as presently structured combined benefits of Social Security and VSRS after a normal work career result in an economic income in retirement which exceeds preretirement economic income for a significant number of employees covered by the system.

B. If the answer to (A.) is in the affirmative, to determine whether or not it is sound public policy from the viewpoint of the employee, the employer and the taxpayers to fund such a benefit structure.

C. If it is determined that such a benefit structure is not good public policy, to determine what alternatives are available to bring the benefit structure into conformity with sound public policy.

D. Of the several alternatives available, to determine which is the most logical, sound and fair method to use to modify the benefit structure.

The committee found that the benefit objective of a retirement system is actually comprised of several factors.

The factors which the committee believes should comprise the benefit objective of VSRS are as follows:

1. A full working career is 30 years of service.

2. Normal retirement age is 65 (age 60 for law enforcement officers).

3. Provision for early retirement commence at age 60 after 30 years of service (age 55 after 30 years of service for law enforcement officers).

4. Benefits vest after 5 years of covered employment.

5. Contribution to the system required of both employer and employee.

6. The amount of VSRS benefit combined with the Social Security benefit should provide to a career employee at normal retirement a retirement benefit of economic income equivalent to such retired employee's economic income immediately prior to retirement, and combined benefits should not be allowed to significantly exceed this objective.

CONCLUSION AND RECOMMENDATION

The committee believes that it is appropriate and necessary for the General Assembly of Virginia formally and specifically to adopt benefit objectives for the combined VSRS and Social Security benefits available to employees covered by VSRS. Your committee recommends for adoption as a basis for the benefit objective of the VSRS the six factors outlined above.

Time did not permit your committee to make an adequate study of the benefit structure to determine specifically whether or not any changes are necessary in order to bring the benefit structure into agreement with the proposed benefit objective. Because there is a strong indication from information available to this committee that the combined benefit structure is now out of line with the proposed combined benefit objective, it is recommended that a retirement study commission be created composed of representatives from employee and employer interest groups as well as Legislative and Executive representatives, to study the existing benefit structure and determine whether or not the benefit structure results in combined benefits

which are in conformity with the proposed benefit objective. If it determines that the benefit structure is not in accord with the benefit objective, then to make recommendations for modification of the benefit structure to the 1979 Session of the General Assembly which will bring the combined benefits into conformity with the proposed benefit objective.

There is attached to this report proposed legislation which in the opinion of your committee would carry into effect the committee's recommendations.

The members of this committee are keenly and acutely aware of the integrity and stability of VSRS and are committed not to recommend or take any action which would in any way impair or bring into question the ability of VSRS to carry out its mission on behalf of Virginia public employees. Each member is firmly and thoroughly dedicated to the objective that the Virginia system be a fair and sound one and that it be so structured that it will pay off in money and not in promises.

Respectively submitted,

Owen B. Pickett

Lewis A. McMurran, Jr.

Thomas J. Rothrock

Jerry H. Geisler

Edward E. Willey

William B. Hopkins

Hunter B. Andrews

Willard J. Moody

J. Harry Michael, Jr.

William A. Truban

APPENDIX I

HOUSE JOINT RESOLUTION NO. 204

Requesting the Committee on Appropriations of the House of Delegates and the Committee on Finance of the Senate jointly to study benefits paid by the Virginia Supplemental Retirement System.

WHEREAS, in certain instances, the amount of retirement allowances payable to retirees by the Virginia Supplemental Retirement System, when combined with allowances payable to those same retirees under the federal Social Security System, exceeds the disposable income earned by those same persons prior to their retirement; and

WHEREAS, retirement benefits which are greater than earnings during active employment may be excessive; and

WHEREAS, the cost of providing such benefits through the Virginia Supplemental Retirement System must eventually be borne in large part by the Commonwealth and by other employers whose employees are members of the Virginia Supplemental Retirement System; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Committee on Appropriations of the House of Delegates and the Committee on Finance of the Senate are hereby requested to undertake a joint study of benefits paid to retirees under the federal Social Security System to determine whether, given the retirement benefits available to these same retirees under the federal Social Security System, amendments of the Virginia Supplemental Retirement System Act are needed; and, be it

RESOLVED FURTHER, That such technical assistance as may be required for the conduct of the study shall be provided by the staff and officers of the Virginia Supplemental Retirement System is hereby authorized to expend, from moneys appropriated to it by the General Assembly, a sum not

to exceed thirty thousand dollars for the purpose of hiring any such consultant or consultants as may be deemed necessary to the proper conduct of this study.

APPENDIX II

A BILL to amend the Code of Virginia by adding a chapter numbered 2.3 in Title 51, consisting of a section numbered 51-29.20, stating a declaration of benefit objectives for certain public employee retirement systems.

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a chapter numbered 2.3 in Title 51, consisting of a section numbered 51-29.20, as follows:

CHAPTER 2.3.

PUBLIC EMPLOYEE RETIREMENT SYSTEMS GENERALLY.

§ 51-29.20. Declaration of benefit objectives of the Virginia Supplemental Retirement System, the State Police Officers Retirement System and the Judicial Retirement System.--It is hereby declared the policy of this Commonwealth that the Virginia Supplemental Retirement System, the State Police Officers Retirement System and the Judicial Retirement System be structured to provide for a career service of thirty years with provisions for normal retirement at the age of sixty-five except for members of the State Police Officers Retirement System, which shall be at age sixty. Provisions for early retirement with regular benefits shall commence at age sixty after thirty years of service, except for members of the State Police Officers Retirement System which shall commence at age fifty-five.

after thirty years of service.

It is further declared that contributions to these systems be required on behalf of both the employer and employee and that benefits granted through such system vest after five years of covered employment. Benefits derived through such systems when combined with the Social Security benefit should be so structured as to provide to a career employee at normal retirement, a retirement benefit of economic income equivalent to such retired employee's economic income immediately prior to such retirement. The benefits should also be structured so that such combined benefits do not significantly exceed the benefit objective.

The purpose of this section is to provide a general policy statement to be adhered to by the Commonwealth and its political subdivisions and any adjustments, modifications and amendments to the Virginia Supplemental Retirement System, the State Police Officers Retirement System or the Judicial Retirement System shall conform as near as reasonably practicable to such policy; provided, however, this section shall not be construed as to grant a cause of action to any member of such systems to whom this policy is not being currently applied. The specific provisions of the Virginia Supplemental Retirement System, the State Police Officers Retirement System and the Judicial Retirement System shall determine under any and all circumstances the specific retirement benefits of any such member and no benefits or claim to benefits shall accrue to any such member by reason of the provisions of this section.

HOUSE JOINT RESOLUTION NO.....

Creating the Virginia Retirement Study Commission to review and evaluate the present combined benefits structure of the Virginia Supplemental Retirement System, State Police Officers Retirement System, and Judicial Retirement System and make recommendations to conform same to the benefit objectives; allocation of funds therefor.

WHEREAS, the Committees designated to make the study required by House Joint Resolution No. 204 of 1977 concluded that any evaluation of the Virginia Supplemental Retirement System, State Police Officers Retirement System, and Judicial Retirement System benefit and contribution provisions should include present and anticipated Social Security benefits which are a part of and interrelated with the benefits of these systems; and

WHEREAS, the Committees also concluded that the combined benefit objective for the systems should be to provide to a career employee at normal retirement a retirement benefit of economic income equivalent to such retired employee's economic income immediately prior to retirement; and

WHEREAS, a thorough examination of the alternative methods of achieving a combined benefit structure consistent with such benefit objective is necessary; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Virginia Retirement Study Commission is

hereby created which shall be composed of fifteen members. Five of the members shall be members of the House of Delegates, appointed by the Speaker thereof; three shall be members of the Senate, appointed by the Senate Committee on Privileges and Elections; two shall be from the public at large appointed by the Governor. In addition, the following shall be members: President, Virginia Education Association; President, Virginia Governmental Employees Association; Executive Secretary, Virginia Municipal League; Executive Secretary, Virginia League of Counties and the Chairman of the Board of the Virginia Supplemental Retirement System.

The Commission shall make a thorough examination of the alternative methods of achieving a combined benefit structure consistent with the benefit objective enacted into law during the 1978 Session of the General Assembly.

The members of the Commission shall be paid their necessary expenses incurred in the performance of their duties and legislative members shall receive such compensation as set forth in § 14.1-18 of the Code of Virginia.

The staff of the House Committee on Appropriations and the Division of Legislative Services shall provide such assistance as is necessary. In addition, all agencies of the State and the governing bodies and agencies of all political subdivisions of the State shall cooperate with and assist the Commission in its study.

The Commission may employ such financial consultants as

are necessary for the conduct of the study, for which there is hereby allocated fifty thousand dollars from the contingent fund of the General Assembly.

The Commission shall report its findings and recommendations to the Governor and General Assembly no later than December one, nineteen hundred seventy-eight.

Appendix III

"VSRS Benefit and Contribution Structure"

"Proposed Retirement Legislation for Consideration by the
1973 Session of The General Assembly of Virginia"

Prepared for the VSRS Board of Trustees by the
Martin E. Segal Company in 1972

VSRS BENEFIT AND CONTRIBUTION STRUCTURE

Background

In February, 1972 the Board of Trustees proposed the following major changes in the benefit and contribution structure of VSRS for consideration by the General Assembly:

1. Reduce the employee contribution rate from 5½% of annual salary over $1,200 to 4% of total annual salary;
2. Eliminate the $1,200 exclusion so that both benefits and employee contributions are based on total annual salary; and
3. Establish a maximum limit on retirement benefits paid from VSRS and SPORS such that those benefits plus primary Social Security benefits may not exceed 90% of the first $5,000 of average final compensation and 75% of the excess -- this maximum limit will apply to employees with 35 or more years of service and will be pro-rated in the case of employees with less than 35 years of service.

The Board also proposed that benefits accrued as of the effective date of the changes be "guaranteed," i.e., that in no event will benefits payable for service up to July 1, 1973 be less than the amount payable under the benefit formula in effect immediately prior to July 1, 1973.

Retirement legislation enacted by the 1972 General Assembly incorporated items 2 and 3 above and the benefit guarantee. In addition, the legislation provided an across-the-board increase of 10% for all pensioners and beneficiaries receiving benefits on July 1, 1973.

Basis for Proposed Changes

The proposed reduction in the employee contribution rate combined with the elimination of the $1,200 exclusion, if enacted, would have resulted in both a reduction in contributions and an increase in benefits for a substantial majority of VSRS members. The schedule below shows the percentage changes in contributions and benefits, excluding the effects of the maximum limit inclusive of the primary Social Security benefits:

Annual salary	% change in contributions	% change in benefits
$ 4,000	+ 3.9%	+ 42.8%
6,000	9.1	+ 25.0
9,000	- 16.1	+ 15.4
12,000	- 19.1	+ 11.1
15,000	- 21.0	+ 8.7
18,000	- 22.1	+ 7.1

The major factors considered by the Board in proposing a 90% - 75% maximum for employees with 35 or more years of service, inclusive of primary Social Security, were:

1. Changes in Social Security are beyond the State's control.
2. Changes in Social Security may result in the provision of combined benefits (Social Security plus State Retirement System benefits) substantially different from the intended objective.
3. The combined benefits may prove to be inconsistent with sound employment and retirement practices.

4. Retirement systems are regarded as long-term commitments on the basis of which employees form expectations; once a certain level of benefits is enacted, downward adjustments of any kind are most difficult.

5. An overriding maximum incorporated in the State retirement law would give the General Assembly the flexibility to deal with the State system benefits in the light of changes in Social Security.

6. The proposed 90% - 75% maximum was considered generous in view of the following:

   (a) a retirement system that provides combined benefits of 80% of final salary at age 65 can in fact be thought of as providing an undiminished standard of living, i.e., continuance of 100% of disposable income,

   (b) the maximum takes no account of Social Security benefits paid to an employee's wife or child, and

   (c) any post-retirement increases in State system or Social Security benefits granted after age 65 would not be affected by the maximum.

1972 Social Security Changes

Significant changes in Social Security have been enacted since the 90% - 75% maximum was approved on April 7, 1972. A brief discussion of the role of Social Security is presented below, followed by a summary description of the major 1972 Social Security amendments.

Social Security has been thought of as a plan which provides the employee whose salary is equal to the full Social Security base with roughly 30 to 35% of his final pay. For someone at the $9,000 maximum in 1972, the Social Security benefit was 29% at the beginning of the year but 34.5% at the end of the year. The percentage varies with the salary level. With terminal salary of $20,000, the percentage, as of 1973, is only 16%. With a terminal salary level of $7,000, the primary Social Security benefit will amount, as of 1973, to about 36 or 37% of terminal pay.

A benefit, such as Social Security, which is based on average career earnings bears no necessary relationship to an employee's terminal pay. However, the succession of benefit increases enacted for the Social Security program has managed in the past to provide, in the aggregate, about 30 to 35% of final pay for the person who has always worked at the maximum of the Social Security wage base. For persons at lower salary levels, Social Security has always been a higher percentage.

The general approach on pension planning has been that, for the employee with a salary equal to the Social Security tax base, Social Security will produce, in round terms, 30% of final earnings. It might be somewhat more but if one were to choose a single figure and avoid the risk of over-estimating Social Security benefits, 30% seemed to be the safest figure to use.

The changes in Social Security just enacted (July, 1972) are among the most sweeping in the history of the Federal program:

1. Beginning September 1, 1972, all benefits, both for those retired and those not yet retired, will be increased by 20%.

2. The tax base will be increased from $9,000 currently to $10,800 for 1973 and $12,000 for 1974.

3. The tax rate will rise to 5.5% on January 1, 1973. For employees earning $10,800 or more in 1973 the total tax will be $594, up from the present $468; for those earning at least $12,000 in 1974 the total tax will be $660. Of course, the same amounts must be paid by employers.

4. All benefits, both for those retired and those not yet retired, will be increased automatically when the Consumer Price Index rises 3% or more. The automatic increase will be tied to the average CPI of the second quarter of the calendar year (April through June).

5. Benefit increases will be financed by raising the wage base. After 1974, the wage base will be automatically tied to changes in the national average wage level. In any year in which a benefit increase is provided, the wage base will be increased by the ratio of average earnings on which Social Security taxes are paid during the first calendar quarter of such year to the average earnings during the same quarter in the last year in which the wage base was increased.

What the new law will produce as a percentage replacement of final pay cannot be related with certainty at this point. The results will depend on an interplay of three factors: (1) the individual's salary history, (2) future changes in national wage levels, and (3) future increases in the cost of living. The answer to this complex question could not be secured from the Social Security Administration in time for this report. Some highly tentative calculations indicate that in the future Social Security might replace from 30 to 40% of the final pay of the worker earning maximum Social Security wages and from 34 to possibly 50% of the final pay of the worker earning median wages (currently, $7,072).

None of the new escalation formulas guarantees, of course, against further changes in Social Security. Very significant changes in Social Security are in fact likely to occur if the federal government enacts some form of minimum income plan.

The Social Security benefit has always been based on a "bent" formula which heavily favors the person with low earnings. This bent formula is the result of a deliberate policy of utilizing the Social Security system to help eliminate poverty. If, however, the attack on poverty in old age takes the form of a minimum income program, financed by general revenue, then it may radically shift the logic of Social Security over to benefits that will be more directly proportionate to earnings. This may result in a benefit formula that will provide considerably more than 30% for a person whose salary is equal to the Social Security tax base.

Effects of Maximum Limitation

Examples of combined benefits developed in early 1972 indicated that the proposed 90% - 75% maximum would apply primarily to two groups of VSRS members: those with low salaries and those with very long periods of service. It was expected that the maximum limit would affect a considerable number of employees only when Social Security benefits were increased substantially.

In its memorandum to the Governor and members of the General Assembly, the Board of Trustees stated:

> "If future developments in Social Security are such as to invoke implementation of the maximum limit with respect to a large proportion of retirees, the General Assembly will then have an opportunity to review policy in that regard. The inclusion of such a maximum in the respective statutes would then have avoided a situation in which a future General Assembly would find that its hands were virtually tied and that the total retirement benefits provided for current employees could not be modified."

The "future developments" referred to by the Board did occur, with the result that the intended objective of the maximum was realized much sooner than originally anticipated.

Tables 1A and 1B, which follow, show the VSRS benefits payable to male retirees at age 65 in 1973, both as dollar amounts and as percentages of final average salary. The tables indicate that the 90% - 75% maximum will apply to almost all such retirees with final average salaries of $10,000 or less, and that the reduction from the formula benefit increases as salaries decrease and as years of service increase.

The combined benefits payable from VSRS and Social Security to male retirees at age 65 in 1973 are illustrated in Tables 2A and 2B. As the tables clearly indicate, the combined benefits are substantial, particularly for the lower-salaried and longer-service employees.

Table 1A

V.S.R.S. Annual Benefit Amounts Payable
to Male Retirees at Age 65 in 1973

Final Average Salary	Years of service at retirement					
	15	20	25	30	35	40
$ 4,000	$ 900 (560)	$1,200 (747)	$1,500 (934)	$1,800 (1,120)	$2,100 (1,307)	$2,400 (1,307)
6,000	1,350 (1,069)	1,800 (1,425)	2,250 (1,782	2,700 (2,138)	3,150 (2,495)	3,600 (2,495)
8,000	1,800 (1,569)	2,400 (2,092)	3,000 (2,616)	3,600 (3,139)	4,200 (3,662)	4,800 (3,662)
10,000	2,250 (2,167)	3,000 (2,890)	3,750 (3,612)	4,500 (4,334)	5,250 (5,057)	6,000 (5,057)
12,000	2,700	3,600	4,500	5,400	6,300	7,200
15,000	3,375	4,500	5,625	6,750	7,875	9,000
20,000	4,500	6,000	7,500	9,000	10,500	12,000
30,000	6,750	9,000	11,250	13,500	15,750	18,000

Note: Amounts in parentheses are maximums payable where less than basic formula.

General note to benefit tables:

In Tables 1A through 2B, Social Security benefits for employees with final average salaries of $10,000 and over are based on the maximum Social Security average wage for retirement at age 65 in 1973. The Social Security average wages assumed for employees with final average salaries of $4,000, $6,000 and $8,000 are $3,528, $4,704, and $5,586, respectively.

Table 1B

V.S.R.S. Benefits Payable to Male Retirees
at Age 65 in 1973 as a Percentage of Final Average Salary

Final Average Salary	Years of service at retirement					
	15	20	25	30	35	40
$ 4,000	22.5% (14.0)	30.0% (18.7)	37.5% (23.4)	45.0% (28.0)	52.5% (32.7)	60.0% (32.7)
6,000	22.5 (17.8)	30.0 (23.8)	37.5 (29.7)	45.0 (35.6)	52.5 (41.6)	60.0 (41.6)
8,000	22.5 (19.6)	30.0 (26.2)	37.5 (32.7)	45.0 (39.2)	52.5 (45.8)	60.0 (45.8)
10,000	22.5 (21.7)	30.0 (28.9)	37.5 (36.1)	45.0 (43.3)	52.5 (50.6)	60.0 (50.6)
12,000	22.5	30.0	37.5	45.0	52.5	60.0
15,000	22.5	30.0	37.5	45.0	52.5	60.0
20,000	22.5	30.0	37.5	45.0	52.5	60.0
30,000	22.5	30.0	37.5	45.0	52.5	60.0

Note: Percentages in parentheses are maximums payable where less than basic formula

Table 2A

Combined Benefit Amounts from V.S.R.S. and Social Security
Payable to Male Retirees at Age 65 in 1973

Final Average Salary	Years of service at retirement					
	15	20	25	30	35	
$ 4,000	$ 2,853	$ 3,040	$ 3,227	$ 3,413	$ 3,600	$ 3,600
6,000	3,824	4,180	4,537	4,893	5,250	5,250
8,000	4,657	5,180	5,704	6,227	6,750	6,750
10,000	5,360	6,083	6,805	7,527	8,250	8,250
12,000	5,893	6,793	7,693	8,593	9,493	10,393
15,000	6,568	7,693	8,818	9,943	11,068	12,193
20,000	7,693	9,193	10,639	12,193	13,693	15,193
30,000	9,943	12,193	14,443	16,693	18,943	21,193

Note: Amounts shown include Social Security Primary Insurance Amount for a full working career.

Table 2B

Combined Benefits from V.S.R.S. and Social Security Payable to Male Retirees at Age 65 in 1973 as a Percentage of Final Average Salary

Final Average Salary	Years of service at retirement					
	15	20	25	30	35	
$ 4,000	71.3%	76.0%	80.7%	85.3%	90.0%	90.0%
6,000	63.7	69.7	75.6	81.6	87.5	87.5
8,000	58.2	64.7	71.3	77.8	84.4	84.4
10,000	67.0	60.8	68.0	75.3	82.5	82.5
12,000	49.1	56.6	64.1	71.6	79.1	86.6
15,000	43.8	51.3	58.8	66.3	73.8	81.3
20,000	38.5	46.0	53.2	61.0	68.5	76.0
30,000	33.1	40.6	48.1	55.6	63.1	70.6

Note: Percentages shown include Social Security Primary Insurance Amount for a full working career.

Possible Modifications of Maximum

When considered in conjunction with the recent changes in Social Security and the increase in VSRS contributions resulting from elimination of the $1,200 exclusion and continuance of the 5.5% rate, the maximum incorporated in the 1972 retirement legislation raises fundamental questions of equity. As shown in Tables 1A through 2B, the 90% - 75% maximum is weighted heavily in favor of the higher-salaried employees and, in relative terms, also favors the shorter-service employees.

The maximum, as enacted, incorporates a number of variables, all of which can be modified to achieve a desired objective. These variables include:

1. the percentage limitations (90% and 75%),
2. the amounts of average final salary to which the maximum percentages are applied (90% to first $5,000 and 75% to excess),
3. the number of years of service at which the full maximum limits are applied (35 years graded down for employees with less than 35 years), and
4. the age at which the maximum will be applied (age 65 or upon retirement if later).

The 35-year breakpoint incorporated in the maximum means that a large number of VSRS members (those with final average salaries of $10,000 or less in 1973) accrue no additional benefits for years of service in excess of 35, even though they are required under the existing VSRS law to continue making contributions of 5.5% of salary. As noted by Ken Campbell in his July 12, 1972 letter, one method of modifying the effects of the maximum on long-service employees would be "to grade up the ceiling above 90%/75% for members retiring with more than 35 years of service, corresponding to the grading down provided for members with less than 35 years."

In our judgment, it would not be appropriate to grade the already generous maximum upward for members with more than 35 years of service. Such a change would make it possible for an employee with 40 years of service to receive combined benefits of 103% of the first $5,000 of average final salary and 86% of the excess. Since combined benefits of roughly 80% of final salary represent the continuance of 100% of pre-retirement disposable income, we believe that the combined benefits permitted under a maximum graded upward for more than 35 years of service would be excessive.

Other methods which might be considered to modify the effects of the maximum on long-service employees include:

1. limiting contributions and benefits to a maximum of 35 years of credited service (or the breakpoint incorporated in the maximum if other than 35 years), and
2. refunding an employee's contributions for years of service in excess of 35 for which he accrued no additional benefits.

Both of the above alternatives raise a number of questions. For example, what final average salary would be used to determine the VSRS benefit payable to members with more than 35 years of service, assuming that creditable service is limited to 35 years? What administrative problems would be involved in attempting to refund contributions on an equitable basis for years of service for which no additional benefits were realized?

Perhaps more significant than the effect on long-service employees is the effect of the maximum on lower-salaried employees. Because Social Security benefits are heavily weighted in favor of the lower-paid, a maximum inclusive of primary Social Security benefits will generally apply to a larger proportion of the lower-salaried employees (unless the percentage limitation is considerably lower for higher-salaried employees). Since the 1972 retirement legislation incorporates both the 90% - 75% maximum limit and a uniform 5.5% contribution rate for members at all salary levels, the new VSRS law effective July 1, 1973 specifically discriminates against the lower paid.

Employee Contributions

The most direct method of achieving rough equity between the contributions and benefits of all members would be to amend the VSRS contribution structure to take account of the greater impact of the maximum on lower-salaried employees. Table 3 shows the employee contributions to VSRS and VSRS and Social Security combined in 1973 under various alternatives. The average contribution to VSRS and Social Security combined as a percentage of an employee's 1973 salary will vary depending on both the salary level and the contribution basis, as shown below:

Contribution basis	$10,800 or less	$12,000	$15,000	$20,000	$30,000
New Law - 7/1/73	11.0%	10.4%	9.5%	8.5%	7.5%
4% VSRS	9.5	9.0	8.0	7.0	6.0
7½% inclusive	7.5	7.5	7.5	7.5	7.5
9½% inclusive	9.5	9.5	9.5	9.5	9.5
8½% on salary subject to Social Security taxes and 5½% on excess	8.5	8.2	7.7	7.1	6.6

Table 3

Member Contributions to VSRS
and to VSRS and Social Security Combined
Under Various Contribution Rates
Calendar Year 1973

	New Law - 7/1/73		Existing Law		4% VSRS	
Salary	VSRS	Total	VSRS	Total	VSRS	Total
$ 4,000	$ 220	$ 440	$ 154	$ 374	$ 160	$ 380
6,000	330	660	264	594	240	570
8,000	440	880	374	814	320	760
10,000	550	1,100	484	1,034	400	950
12,000	660	1,254	594	1,188	480	1,074
15,000	825	1,419	759	1,353	600	1,194
20,000	1,100	1,694	1,034	1,628	800	1,394
30,000	1,650	2,244	1,584	2,178	1,200	1,794

	7 1/2% inclusive		9 1/2% inclusive		8 1/2% SS - 5 1/2% over	
Salary	VSRS	Total	VSRS	Total	VSRS	Total
$ 4,000	$ 80	$ 300	$ 160	$ 380	$ 120	$ 340
6,000	120	450	240	570	180	510
8,000	160	600	320	760	240	680
10,000	200	750	400	950	300	850
12,000	306	900	546	1,140	390	984
15,000	531	1,125	831	1,425	555	1,149
20,000	906	1,500	1,306	1,900	830	1,424
30,000	1,656	2,250	2,256	2,850	1,380	1,974

The approximate percentage changes in 1973 employee contributions that would result from the four alternative contribution bases shown in Table 3, as compared with the contributions required under the new VSRS law, are summarized below:

Contribution basis	$10,800 or less	$12,000	$15,000	$20,000	$30,000
4% VSRS	- 14%	- 14%	- 16%	- 18%	- 20%
7½% inclusive	- 32	- 28	- 21	- 11	+ 0
9½% inclusive	- 14	- 9	+ 0	+ 12	+ 31
8½% SS - 5½% over	- 23	- 22	- 19	- 16	- 12

If a policy decision is made to the effect that the overriding maximum should be retained (perhaps in a modified form), we believe that a contribution basis can be selected so that contributions bear an equitable relationship to benefits at all salary levels. The contribution structure ultimately proposed will, of course, depend on the resulting increase in employee contributions.

Alternative Benefit Formulas

The Board of Trustees may also decide to authorize a comprehensive study of the implications of alternative benefit formulas. In our judgment, the broad alternatives which should be considered, with a number of specific designs for each, include:

1. All-inclusive formulas from which the primary Social Security benefit, when payable, would be subtracted in determining the payment from the retirement system.

2. A formula based on a single percentage of final average salary per year of service, calculated independently of Social Security, but incorporating an overriding maximum inclusive of the primary Social Security benefit.

3. A formula based on a single percentage of final average salary per year of service, calculated independently of Social Security.

4. A step-rate "integrated" formula, calculated independently of Social Security but comprised of a fixed percentage of final average salary up to the Social Security maximum for contributions and a higher percentage for the remainder of final average salary.

5. A 50% offset formula, that is, a formula benefit from which 50% of the primary Social Security benefit, when payable, would be deducted in determining the retirement system payment.

We look forward to reviewing the major advantages and limitations of alternative benefit formulas with the members of the VSRS Study Committee at the August 2, 1972 meeting.

Proposed Retirement Legislation
for consideration by the
1973 Session of the General Assembly of Virginia

Since enactment of Chapter 568 of the Acts of Assembly of 1972 (approved April 7, 1972), the Board of Trustees has conducted a comprehensive review and analysis of the benefit and contribution structure of Virginia retirement systems. Based on intensive study and detailed consideration of a number of alternative approaches, the Board submits this report which evaluates 1972 retirement legislation and outlines proposed changes in the provisions of Virginia retirement systems for consideration by the 1973 Session of the General Assembly.

1972 Retirement Legislation

The retirement legislation enacted in 1972 provides for the following major changes effective July 1, 1973:

1. Eliminates the $1,200 exclusion so that both benefits and employee contributions are based on total annual salary.
2. Continues the employee contribution rate at 5½% of salary (to be applied to total salary effective July 1, 1973).
3. Establishes a maximum limit on State retirement benefits plus primary Social Security benefits equal to 90% of the first $5,000 of average final compensation plus 75% of the excess for employees with 35 or more years of service, with the resultant maximum benefit from the

State system pro-rated in the case of employees with less than 35 years of service. (For judges with 35 or more years of credited service, the maximum benefit inclusive of primary Social Security benefits is 85% of average final compensation.)

4. Provides a 10% increase in retirement benefits for all pensioners and beneficiaries.

5. Guarantees that benefits payable for service credited up to July 1, 1973 will never be less than the amount payable under the benefit formula in effect immediately prior to July 1, 1973, and that the total benefit payable will never be less than this amount increased by 10%.

The retirement legislation enacted by the 1972 General Assembly incorporates all of the changes proposed by the Board in February, 1972, with the exception of the reduction in the employee contribution rate. The Board is of the opinion that a reduction in employee contributions is essential to ensure the maintenance of an equitable relationship between the benefits and contributions of all employees at all salary levels.

Rationale for Maximum Limit

Recent changes in Social Security confirm the basic soundness of the decision to establish a maximum limit on retirement benefits paid from Virginia systems plus Social Security benefits. The fundamental principles underlying the concept of a maximum limit on total retirement benefits may be summarized as follows:

1. Changes in Social Security are beyond the State's control.

2. Changes in Social Security may result in the provision of combined benefits (Social Security plus State Retirement System benefits) substantially different from the intended objective.

3. The combined benefits may prove to be excessive in relation to an employee's pre-retirement take-home pay, and in many cases would substantially exceed 100% of take-home pay.

4. Retirement systems are regarded as long-term commitments on the basis of which employees form expectations; once a certain level of benefits is enacted, downward adjustments of any kind are most difficult.

5. The 90%-75% maximum incorporated in the State retirement law precludes an automatic drift into excessive benefits and costs.

The significance of the maximum in precluding an automatic drift into excessive benefits and costs is clearly demonstrated by recent events, particularly the 20% increase in Social Security benefits enacted in July 1972 (effective September 1, 1972).

Without the maximum limitation, for example, an employee retiring at age 65 on July 1, 1973, with 35 years of service and an average final salary of $8,000, would receive annual combined benefits of $7,200 -- $4,200 from the State system plus a primary Social Security benefit of about $3,000. The combined benefit payable to this employee would have represented 90% of his average final salary and about 125% of his pre-retirement take-home pay. (These percentages would be higher for employees with average final salaries of less than $8,000 and lower for employees with average final salaries of more than $8,000.)

As a result of the 90%-75% maximum, however, this employee's combined benefit would be limited to $6,750 and the benefit payable from the State system would be $3,750. This is the benefit that would be paid by the State system if the maximum applied to accrued benefits as well as to benefits earned after July 1, 1973. However, because the 1972 legislation guarantees that benefits payable for service credited up to July 1, 1973 will never be less than the amount payable under the benefit formula in effect immediately prior to July 1, 1973 plus 10%, the State system benefit actually payable to this employee is $3,927. His actual combined benefit of $6,927 represents approximately 87% of his average final salary and 120% of his pre-retirement take-home pay.

Table 1 shows the State system benefits payable to employees with average final salaries ranging from $7,500 to $15,000 and service periods ranging from 20 to 40 years, under both the present formula and the formula to become effective on July 1, 1973.

The Board is of the opinion that the 90%-75% maximum is generous in view of the following:

1. Since an employee's take-home pay is, in round terms, 65% to 75% of his total salary (see Table 2), the maximum has the general effect of limiting the combined retirement benefits for higher-paid career employees to 100% of pre-retirement take-home pay. For lower-paid career employees, the benefits paid from the Virginia Supplemental Retirement System plus primary Social Security benefits will continue to exceed 100% of pre-retirement take-home pay.

2. Income tax laws contain special provisions for persons 65 or older, including: double personal exemptions under Federal and State laws, nontaxability of Social Security benefits under Federal law, and nontaxability of State system benefits under State law.

3. The maximum takes no account of Social Security benefits paid to an employee's wife or child.

4. The maximum does not apply until age 65.

5. Any post-retirement increases in State system or Social Security benefits granted after age 65 will not be affected by the maximum; such benefit increases will be paid in full to the retiree.

Effects of Maximum Limit

The maximum limit incorporated in the 1972 retirement legislation has no effect on the benefits earned by employees up to July 1, 1973. In fact, employees are guaranteed that benefits payable for service credited up to July 1, 1973 will never be less than the amount payable under the benefit formula in effect immediately prior to July 1, 1973 plus 10%.

In the future, the maximum is likely to apply primarily to two groups of employees: those with low salaries and those with very long periods of service.

The Social Security benefit has always been based on a "bent" formula which heavily favors the person with low earnings. This formula is the result of a deliberate policy of utilizing the Social Security system to help eliminate poverty.

Because Social Security benefits are heavily weighted in favor of the lower paid, a maximum inclusive of primary Social Security benefits will apply to a larger proportion of the lower-salaried employees. The Board believes that the most direct method of achieving rough equity between the contributions and benefits of all employees is to reduce the employee contribution rate in a manner which takes account of the greater impact of the maximum on lower-salaried employees. The Board proposes that, effective January 1, 1974, the employee contribution rate be reduced to 3% of that portion of annual salary subject to Social Security taxes ($12,000 in 1974) and 5½% of any excess salary.

The 90%-75% maximum applies to employees with 35 or more years of service and is pro-rated downward for employees with less than 35 years of service. Consequently, a number of employees will accrue no additional credit for years of service in excess of 35 rendered after 1973. It is important to recognize, however, that such employees will earn additional benefits for such service, because benefits are based on average final salary at retirement and not at the time an employee reaches the 90%-75% maximum. For example, an employee who enters service at age 25 may reach the 90%-75% maximum at age 60 when his average final salary is $8,000; however, his combined benefit will not be limited to $6,750 if he continues in service until age 65 and his salary increases during his last 5 years of service. If his salary increases 5% each year, his average final salary at retirement will be $9,283, and he will have earned an additional annual retirement benefit of $962 for his last 5 years of service.

Under existing retirement laws, all employees are required to contribute to the System regardless of whether they are accruing additional service credit. As noted above, however, employees who do not receive additional credit for years of service rendered after reaching the 90%-75% maximum do earn additional benefits as a result of salary increases during such period of service.

The Board is of the opinion that legislation should be enacted which recognizes that all employees are required to contribute to the System, but that certain employees accrue no additional credit for years of service in excess of 35 (even though they earn additional benefits as a result of salary increases during such period). To modify the effect of the maximum on long-service employees, the Board proposes that contributions made by any employee for years of service in excess of 35, rendered after 1973 and after reaching the 90%-75% maximum, be refunded with interest in a lump sum at retirement if no additional credit is accrued as a result of such service.

Proposed Reduction in Employee Contributions

The Board proposes that, effective January 1, 1974, the employee contribution rate be reduced to 3% of that portion of annual salary subject to Social Security taxes ($12,000 in 1974) and 5½% of any excess salary. The Board further proposes that the employee contribution rate through December 31, 1973 remain at 5½% of annual salary in excess of $1,200.

Because the 1972 legislation provides that the employee contribution rate effective July 1, 1973 will be 5½% of total salary, enactment of the proposal will result in a reduction in employee contributions equal to 2½% of salary for all employees with an annual salary of $12,000 or less in 1974. The reduction as a percentage of salary is slightly lower for higher-paid employees: for example, 2.0% for a $15,000 employee and 1.5% for a $20,000 employee.

A basic economic fact, which is frequently overlooked, is that a reduction in employee contributions results in a greater-than-proportionate increase in take-home pay. This is because present tax laws provide for the deduction of employee contributions after the appropriate amount of Federal and State income taxes has been deducted from total salary. Thus, reducing employee contributions results in a "tax savings" -- take-home pay goes up but the amount of income taxes remains unchanged.

The economic advantage of reducing employee contributions is illustrated in the schedule below, which compares the reduction in contributions as percentages of total salary and take-home pay, assuming the proposed 3%-5½% employee contribution rate is enacted:

1974 salary	Reduction in contributions*	Reduction in contributions as % of: Total salary	Take-home pay**
$ 7,500	$187.50	2.5%	3.4%
10,000	250.00	2.5	3.5
15,000	300.00	2.0	2.9

* Equals contributions based on 5.5% rate to become effective July 1, 1973 minus contributions based on proposed 3%-5.5% rate.

** Take-home pay amounts are shown in Table 2.

Employer Cost

Because of the 20% increase in Social Security benefits effective September 1, 1972, the 90%-75% maximum incorporated in the 1972 retirement legislation will have a much greater effect on System benefits than was anticipated when the original estimates of the State contribution rate under the revised System were made. The result would be a substantial decrease in the required State contribution rate, if no other changes were made. In lieu of so decreasing the State's contribution rate, the Board is of the opinion that the employee contribution rate should be reduced as proposed above. Actuarial cost computations indicate that the State's total contributions to the Systems for the 1974-76 biennium, as previously computed, would remain adequate to support the Systems in that biennium if the amendments proposed in this report are adopted by the General Assembly in 1973.

Summary of Proposed Changes

The Board believes that the rationale underlying the benefit changes enacted in 1972 is fundamentally sound, and that enactment of the following changes is essential to ensure the maintenance of an equitable relationship between benefits and contributions for all employees:

1. Effective January 1, 1974, reduce the employee contribution rate to 3% of that portion of annual compensation subject to Social Security taxes ($12,000 in 1974) and 5⅓% of any excess compensation. The employee contribution rate through December 31, 1973 should remain at 5⅓% of annual compensation in excess of $1,200.

   The January 1 effective date will greatly simplify the administration of State Retirement Systems, because Social Security taxes are paid on compensation earned during a calendar year (for example, 5.5% of the first $12,000 earned in calendar year 1974).

2. Provide that contributions made by any employee for years of service in excess of 35, rendered after 1973 and after reaching the 90%-75% maximum, be refunded with interest in a lump sum at retirement if no additional credit is accrued as a result of such service.

   This proposal recognizes that it is inequitable to require all employees to contribute to the Retirement System at the same rate, when certain employees accrue no additional credit for years of service in excess of 35 (even though they earn additional benefits as a result of salary increases during such period).

3. For employees who terminate service with a vested benefit, provide that the maximum will be applied after adjusting average final salary by the percentage change in the Consumer Price Index between the year of termination and the year of attainment of age 65.

The maximum benefit payable from the State Retirement Systems depends on a number of factors, including the amount of an employee's primary (or age 65) Social Security benefit. Under the existing law, an employee who terminates service with a vested benefit has his maximum combined benefit determined on the basis of his average final salary at the time of termination. The proposed change takes account of the period between termination and attainment of age 65, by providing that a vested employee's average final salary will be adjusted by the percentage change in prices during such period, and that the maximum combined benefit (inclusive of his primary or age 65 Social Security benefit) will be based on his adjusted average final salary.

Table 1

Annual Retirement Benefits Payable by VSRS
to Male Members Retiring at Age 65

Average final salary	Years of creditable service	Annual VSRS benefit under: Present formula*	New formula** with retirement at - 7-1-73	7-1-75
$ 7,500	20	$1,890	$2,079	$1,886
	25	2,362	2,599	2,391
	30	2,835	3,119	2,911
	35	3,308	3,638	3,430
		3,780	4,158	3,950***
10,000	20	2,640	2,904	2,795
	25	3,300	3,630	3,494
	30	3,960	4,356	4,193
	35	4,620	5,082	4,892
		5,280	5,808	5,518***
12,500	20	3,390	3,750	3,750
	25	4,238	4,688	4,688
	30	5,085	5,625	5,625
	35	5,932	6,562	6,562
	40	6,780	7,458	7,085***
15,000	20	4,140	4,554	4,500
	25	5,175	5,692	5,625
	30	6,210	6,831	6,750
	35	7,245	7,970	7,875
		8,280	9,108	8,653***

* 1½% of average final salary minus $1,200 for each year of service.

** 1½% of average final salary for each year of service subject to 90%-75% maximum inclusive of primary Social Security and benefit guarantee (present formula plus 10%) as enacted in 1972.

*** Plus refund of all contributions made by member after 1973 with interest, if contribution refund proposal is enacted.

Note: Members receive Social Security benefits in addition to VSRS benefits shown.

Table 2

Relation Between Total Salary and Take-Home Pay
For Selected Single Employees

Total salary (1974)	$ 7,500	$10,000	$15,000
Personal exemption:			
Federal	750	750	750
State	600	600	600
Standard deduction (Federal and State)	1,300	1,500	2,000
Taxable income:			
Federal	5,450	7,750	12,250
State	5,600	7,900	12,400
Income tax:			
Federal	995	1,530	2,703
State	150	265	493
Social Security tax (5.85% to $12,000)	439	585	702
VSRS contribution (5.5% eff. 7-1-73)	413	550	825
Take-home pay*	$ 5,503	$ 7,070	$10,277
Take-home pay as percent of total salary**	73.4%	70.7%	68.5%

* Take-home pay amounts do not take account of deductions for such items as life insurance and hospital and medical insurance.

** These percentages, which are based on a VSRS contribution rate of 5.5% of total salary, will increase if the VSRS contribution rate is reduced.

Appendix IV

State and Local Employee Pension Plans: Watching for Problems

by Bernard Jump, Jr.

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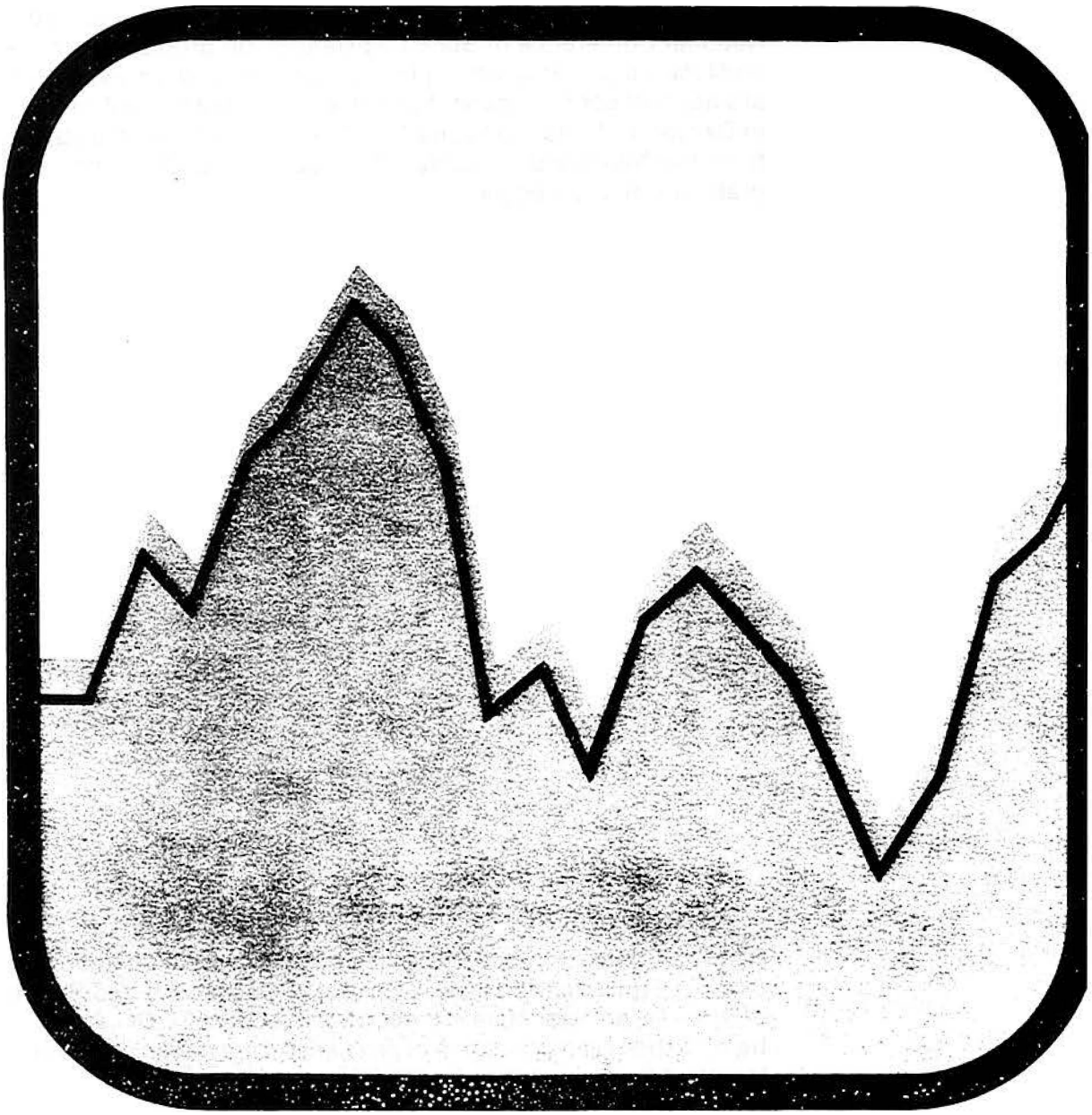
Public Finance Series No. 1



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This is the first in a series of papers prepared at the request of the National Conference of State Legislatures on problems in state and local employee pension plans. It was prepared for discussion at a national conference on the subject convened by the Academy in Denver, Colorado, on June 17, 1976, with financial assistance from the Nationwide Foundation of Columbus, Ohio, which is gratefully acknowledged.

The Author

Bernard Jump, Jr., is a Professor of Public Administration at Syracuse University's Maxwell School of Citizenship and Public Affairs. As an Associate Fellow of the Academy, Dr. Jump is helping to lead an evaluation of problems in the nation's state and local public employee retirement systems.

STATE AND LOCAL EMPLOYEE PENSION PLANS: WATCHING FOR PROBLEMS

BY

BERNARD JUMP, JR.

October 1976

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SUMMARY

Why are state and local public employee pension plans often said to be financial "time bombs" in our system of public finance?

Are their benefits way out of line with those in the private sector?

Are there guidelines or tests that can alert us to pension problems before a financial crisis results?

What steps need to be taken to help ensure their integrity?

Public Retirement Benefits vs. Private Retirement Benefits

Strict comparison between public retirement benefits and private retirement benefits is a complex task. Most public employees contribute to their retirement plans, most private employees do not. And only about half of the employees in private industry are under a pension plan, but:

- Should public retirement systems encourage retirement earlier than age 62?
- Should state and local governments be allowed to participate or not participate in Social Security as they choose? Is this fair to private organizations and employees who are compelled to participate?
- Should total retirement benefits be permitted to exceed 100 percent of preretirement income as is the case in many public systems?
- Or, would it be wise to link public employee retirement plans to a dynamic Social Security system in a way that controls the total retirement income paid to retired public employees?
- And while some adjustment for increases in the cost of living may be a desirable feature in any plan, should not the public be protected from unwarranted expansion in costs by imposition of a "cap" on the amount of such increases?
- Is it in the public interest for police and fire pension plans to be so much "richer" than those for other employees?

Signals of Funding Trouble

The closer a fund progresses toward being fully funded, the better its condition. If a fund is making little or no progress toward being fully funded, it may be in trouble. If its progress is backward — away from being fully funded — there is good cause for concern. Actuaries and accountants should be able to develop a means for flashing these danger signals in a way that public officials can understand.

Few public employee retirement systems are actually operated on a dangerous "pay-as-you-go" basis, but some are precariously close to such a practice because their governmental sponsors have skipped payments into the fund in order to balance their own budgets during difficult years.

While the idea of full funding is useful, and certainly distinguishes the exceptionally well-financed system, there are often good and necessary reasons for the existence of unfunded accrued liabilities. If they are founded on sound actuarial assumptions and there is steady progress toward full funding of obligations as they are incurred, there is probably little cause for concern. However, actuarial assumptions are by definition uncertain and subject to change and should be constantly evaluated.

Conclusions

(1) It is probably not unreasonable for the combination of a public pension and Social Security to provide a retirement income for the long-service employee that is approximately equal to preretirement incomes. But it is imperative that public pension systems be designed to take Social Security payments into account.

(2) Full funding should not be the single guiding standard in evaluating the fiscal soundness of a pension system.

(3) Fiscal prudence dictates that communities endeavor to err on the conservative side in their funding and thus accumulate pension assets rapidly.

(4) Budgetary planning is facilitated by a funding method that maintains pension contributions as a constant percentage of payroll.

(5) Whatever the funding method used, it should yield accurate estimates of the costs of proposed benefit changes.

(6) As noted by the Advisory Commission on Intergovernmental Relations, underfunded pension systems of local governments may be a threat to their financial health. In view of the political obstacles at the local level connected with achieving adequate funding, it might be wise to bring these systems under state operation.

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INTRODUCTION

As a broad generalization, it is fair to say that until quite recently the subject of public employee pensions was one of the lesser publicized aspects of governmental affairs.[1] With the obvious exceptions of pension system administrators, actuaries, and other professionals involved in the operation and management of public pension systems, few in state and local government had more than a superficial acquaintance with or interest in such matters. True, most public employees — including legislators — were aware that they could look forward to a lifetime public pension starting sometime after their public careers ended. But few observers saw public pensions as more than a "fringe" benefit. Nor did many see pensions as being responsible for more than a miniscule share of the budgets for state and local governments.

Now, however, things are much different. Hardly a week passes without the appearance in some mass circulation publication of another article describing the "disaster" that awaits some city or state and its taxpayers because of what are said to be the extravagant pensions being provided to the jurisdiction's employees. Governors, mayors, and state and local legislators are expressing alarm about mounting pension liabilities. They bemoan the fiscal burden said to be caused by their predecessors' alleged predilections to approve pension benefit improvements with carefree abandon and without attention to their budgetary implications. Taxpayer watchdog groups, too, are turning their attention to these matters as they become aware that public employee pensions can account for a sizable portion of government outlays. Citizens are becoming hostile and resentful as claims are made that public employee pensions, pensions paid for with their tax dollars, are far more generous than those they receive themselves. Even public employees are beginning to question whether the money will be there when they retire.

Federal officials and members of Congress also are concerned about the growing cost of state and local public pensions and the way in which public retirement systems are managed. For example, both the President and the Secretary of the Treasury, during the course of their efforts to keep New York City from bankruptcy, have commented disapprovingly about the generosity and the cost of that city's pensions. United States Senators speak to gatherings representing the financial community and warn about the "financial time bombs" created by public employee pension commitments. Indeed, some observers think the matter is serious enough to justify federal legislation to regulate state and local pension systems in much the same way as private pension systems are regulated. Clearly, any issue that might lead to federal supervision of a state or local government instrumentality is sufficiently important to deserve close examination.

The Level of Public Employee Pension Benefits

On the benefit side, more needs to be known about the level of public pensions than can be gleaned by reviewing the anecdotal and perhaps atypical reports that garner the major publicity. A host of fundamental questions require answers. For example:

- Are public pension benefits usually higher than those awarded to private industry employees?
- And if public pensions are higher, does this necessarily mean that they are *too* high?
- How good is the retired public employee's income relative to his earnings prior to retirement?
- What is the proper minimum age for retirement?
- Should police and firemen receive pensions while in their forties and fifties?
- Is public policy best served by exempting state and local governments from mandatory Social Security participation?
- Should retirees be eligible to receive cost of living adjustments?
- What are the objectives or purposes of pensions?

The Cost of Public Employee Pensions

Why just now is there so much concern about pension cost and financing? If public pensions are as generous and expensive as alleged, why did this not

[1] One of the first, if not the first, comprehensive treatments of the conceptual aspects of public employee retirement systems was Thomas P. Bleakney, *Retirement Systems for Public Employees* (Homewood: Richard D. Irwin, Inc. for the Pension Research Council, 1972). This book, along with Robert Tilove, *Public Employee Pension Funds*, A Twentieth Century Fund Report (New York: Columbia University Press, 1975) is essential reading for anyone who is seriously concerned with understanding public pension issues.

show up long ago in the form of expenditure and tax increases? After all, public pensions are not a new invention. What is it about pension benefits and their financing that leads to metaphors like "financial time bomb"? Has the problem been that pension costs and financing are largely in the domain of actuaries, and is this a domain where the layperson has no business being? Are we, in effect, captives of the occult?

Captives or not, cannot public officials and others who are concerned be equipped with guidelines or tests that would alert them to incipient pension finance problems in time to prevent fiscal crises? If, as some argue, pension commitments have usually been made with little consideration for their cost implications, what can be done now to assure that this does not happen again?

Objectives of the Paper

This paper is concerned with some pressing issues in state and local pension benefits and their financing. Its primary objectives are to identify some matters that deserve the careful attention of policymakers; to suggest appropriate lines of inquiry for those who are evaluating a jurisdiction's pension benefit package and its method of financing the benefits; and to clear up some of the confusion that makes it so difficult to comprehend pension issues.

The first section looks at the benefit side of public pensions. Its central concern is the often-expressed allegation that public pension benefits are too high. It surveys several of the major problems that are encountered in evaluating the level of pension benefits, and it raises questions concerning the objectives that pension plans ought to serve.

In the second section, the focus moves to issues involving pension cost measurement and pension finance. Since it is frequently claimed that public pensions have been permitted to become so generous because legislators do not understand the full budgetary implications of what they are asked to approve, this section provides an introductory guide to pension cost measurement and funding. In addition, several of the major issues involved in devising a prudent plan for financing pension benefits are enumerated.

Finally, brief attention is given to some evidence that poorly funded local retirement systems are threats to the financial stability of the governments responsible for them, and that the threats are sufficiently serious to justify intervention by a higher level of government.

ARE STATE AND LOCAL GOVERNMENT PENSION BENEFITS TOO HIGH?

It would be useful if one could speak of the "typical" pension benefit package provided to a state or local government employee. But since public employee retirement systems number in the thousands and provide such a diverse array of pension plans, any attempt to depict the typical plan runs the risk of providing a picture that is suitable to very few plans.

Acknowledging these problems and qualifying his descriptions accordingly, Robert Tilove has reviewed large state and local pension plans and developed a profile of the typical benefit package.[2] Among the features of Tilove's package are:

- A normal retirement benefit at age 60 after 10 years of service;
- A normal retirement benefit equal to 50 percent of final average salary (the best five salaries during the last 10 years) after 30 years of service;
- An early retirement benefit at age 55 after 10 years of service that is the actuarial equivalent of the normal retirement benefit paid at age 60;
- A disability benefit after 10 years of service (no service requirement if disability is job-related) equal to the greater of 25 percent of final salary or the normal retirement benefits;
- Death benefits if death occurs before retirement;
- Options that permit a retiring employee to reduce his own annual benefit in exchange for a benefit payable to his survivor;
- Cost of living adjustments to retirement benefits of up to 3 percent annually;
- Required employee contributions equal to 5 percent of salary; and
- Social Security coverage in addition to any pension system benefits.

Despite the value of this general profile, it is sometimes necessary or desirable to compare a particular jurisdiction's benefit package with the packages furnished in other jurisdictions that have similar characteristics (e.g., all states, a group of large cities, a group of governments whose employees are unionized, governments in a geographic region). While such comparisons are valuable, there

[2] Tilove, *Public Employee Pension Funds*, ch. 2.

are several reasons why they may not yield categorical conclusions on the relative "richness" of each of the several plans compared.

Hazards in Comparing Pension Plans

For example, since pension plans contain so many separate features and elements, it is likely that comparisons will not reveal any one plan that is best (or worst) in terms of every element. Hence, the most that may be possible in some cases is to reach a qualified judgment about a plan's relative richness on the basis of arbitrary decisions about those benefits that are most important from the employee's perspective.

Of course, it does not necessarily follow that the preferred plan as seen by the employees is also the most costly. For example, suppose that one retirement system (with benefits otherwise identical to those offered by a second system) provides a superior benefit for a job-related disability. Further, suppose that only a very small percentage of employees in the system with the superior disability benefit qualify for disability benefits, while jobs of members of the second system are sufficiently hazardous that a substantial proportion of employees qualify for disability pensions. Then, assuming there is no cost difference between any of the other elements of the two pension packages, the plan with the inferior disability benefit would cost more. Which plan provides the highest benefits?

As another example of the potential ambiguities that arise in benefit comparisons, consider two plans with identical job-related disability benefits, say 75 percent of salary earned at the time of disability, and with members subject to similar degrees of risk. Assume that an employee in each system has a job-related permanent injury and that each applies to his respective system for disability retirement. Each employee must present medical evidence satisfactory to a review board to qualify for a disability pension. Suppose one plan's review board establishes a much less rigorous standard for disability. One employee may be granted his disability pension while the second may be forced either to return to work, perhaps at a physically less demanding task, or to quit without any benefits.[3] A comparison of plan descriptions would have led to the false conclusion that both plans provided equivalent benefits.

[3]The example is not farfetched. Disability review boards in New York City and Was ngton, D.C., are notorious for their willingness to approve disability pensions for police and firemen.

Regular (Normal) Service Retirement Benefit Replacement Rates

Hazards and ambiguities notwithstanding, it is reasonable to want to know how plans compare in terms of what they offer to eligible employees. And with appropriate qualifications, elements of pension plans can be compared.

The central element of a pension plan is the regular service retirement benefit. Determination of when an employee first becomes eligible may be based strictly on age, on years of service, or on some combination of age and service. Given the wide diversity in eligibility requirements found among public employee pension plans, it is useful in making comparisons to consider a variety of ages and/or years of service and to determine what benefits, if any, a particular plan provides in each situation.

Moreover, since most normal retirement benefits in public plans are a function of years of service and a percentage of final average salary, it is helpful to make comparisons on the basis of the percentage of salary replaced by the benefits. By convention, this percentage is called the replacement rate or ratio.

To illustrate, replacement rates for four age/years of service combinations have been computed for general employees in eight major cities (see Table 1). These replacement rates equal gross retirement benefits divided by an assumed final year gross sal-

TABLE 1

REGULAR SERVICE RETIREMENT BENEFITS AS A PERCENTAGE OF FINAL YEAR'S SALARY

	20 Years' Service, Age 60	25 Years' Service, Age 55	25 Years' Service, Age 60	30 Years' Service, Age 60
Atlanta		34.9%	38.7%	46.5%
Chicago	33.2%	30.1	43.0	52.8
Dallas	38.1		47.7	57.2
Detroit	32.6		40.6	48.5
Los Angeles	40.0	N/A	50.0	60.0
New York City†	33.3	43.0	48.2	57.5
Philadelphia	45.5	52.3	52.3	59.1
Washington, D.C.	34.5		44.1	53.6

NOTE: Estimates are based on $15,000 salary in final year and past salary increases of 5 percent annually.

N/A - Information not available.

*Not possible — does not meet age and/or service requirements.

†Estimates are for Career Pension Plan members. Benefits for sanitation and transit workers are generally higher.

ary of $15,000. The rates show that a city's ranking varies depending on the particular age/years of service combination. No city is first for all combinations, and none is last in every instance.

Pension Replacement Rates and Disposable Income

Replacement rates measured as the ratio of gross pension benefits to gross salary are useful indicators of the relative amount of gross salary produced by pension plans. But it is necessary to make several adjustments to both pre- and postretirement gross income in order to obtain an accurate measure of the net or disposable income available to the retiree relative to his disposable income at the time of retirement. Preretirement gross salary must be reduced to reflect deductions for employee pension contributions, income taxes, and Social Security taxes (where applicable). Postretirement gross income (i.e., pension benefits) must be reduced for income taxes and increased for Social Security benefits (where applicable).

Again using general employees of the eight cities included in Table 1, *net* replacement rates have been computed for an employee at age 62 and age 65 with 30 years' service (see Table 2). Gross replacement rates have also been computed for comparative purposes.

TABLE 2

ANNUAL SERVICE RETIREMENT BENEFIT (AFTER TAX) AND SOCIAL SECURITY BENEFIT* ‡

	Age 62††		Age 65††	
Atlanta**	53%	(46%)	54%	(46%)
Chicago**	61	(53)	62	(53)
Dallas**	64	(57)	64	(57)
Detroit	106	(48)	116	(48)
Los Angeles**	67	(60)	68	(60)
New York City	118	(58)	127	(58)
Philadelphia	118	(59)	129	(59)
Washington, D.C.**	63	(54)	64	(54)

*Disposable income before retirement for employees with 30 years of service based on $15,000 gross salary less federal income taxes, pension contributions and social security contributions (where applicable). Estimates for New York City and Washington also reflect deductions for state and/or local income taxes.

Both before-and-after-retirement disposable income based on assumption of married couple with no children, joint return, standard deduction, and extra exemption at age 65.

‡Social Security payments are estimates for employees who work during 1976 and begin collecting benefits in 1977. Payments are inclusive of both primary and spouse's benefit.

**Employees are not covered by Social Security.

††Percentages in ( ) are gross pension benefits divided by $15,000.

Ignoring the effects of all adjustments except Social Security payments, it is obvious that Social Security coverage is enormously important in determining the adequacy of a retiree's disposable income. Indeed, the retired public employee who also receives Social Security coverage is likely to have more purchasing power as he begins retirement than before he retired. Without Social Security coverage, a retiree's disposable income is going to fall drastically short of the amount required to maintain parity with his disposable income just prior to retirement.

Determining the Adequacy of Retirement Income

The contrast just observed between net replacement rates for public employees with Social Security coverage and those without such coverage raises an issue about plans to provide retirement income: What objectives should a good retirement program accomplish?

It was suggested earlier that a pension plan could (should?) be viewed as more than a mere gratuity or a form of deferred compensation. A pension plan might be viewed as serving an important social objective; namely, to ensure that a long-service employee (and any employee who is physically incapable of continuing to work) will be able to live as well after retirement as before. Presumably, few would object to such a goal, at least in its general form.[4]

Yet it is one thing to agree on the general standard and quite another to decide exactly how close retirement income should come to replacing preretirement income. Should retirement income be expected to do the entire job? Or should retirees be expected to pay a portion of their living costs out of personal savings? One might argue that it depends on how much was earned during a person's working career, the assumption being that the higher the earnings history the greater the likelihood of accumulated resources to draw upon. But would such a test identify many who did not "deserve" a retirement income that replaced 100 percent of preretirement income? After all, the majority of public employees in most jurisdictions have not been earning and probably never will earn salaries at a level that would enable them to accumulate any substantial nest egg.

[4]This objective has been endorsed by New York State's Permanent Commission on Public Employee Pension and Retirement Systems. See the Commission's *Report* issued in January 1973.

Perhaps the operational standard could be that net replacement rates (inclusive of any Social Security benefits) not exceed 100 percent and that a replacement rate much below 80 percent for employees earning less than $15,000 (in 1976) would be one indication that the retirement plan had deficiencies. Such a standard has the virtue of allowing some flexibility on the lower side of 100 percent. It also has the virtue of suggesting that taxpayers not be expected to provide a public employee with an extra reward for retiring.

Some might suggest that a better standard is the net replacement rate prevailing in private industry. Why should the public employee do better than the private sector employee? Despite its appeal to some observers, this view has its shortcomings. First, since only about 50 percent of private industry employees are covered by pension plans (in contrast to almost all full-time public employees), it is not clear what the prevailing rate in private industry means. Second, most public employees contribute toward the cost of their pension plans while most private industry employees do not. Hence, an accurate comparison of benefits would require some adjustments in the nominal replacement rates. Third, should any public plans found to be below the private industry prevailing rate be raised accordingly? This might be very costly for the state and local governments involved. Finally, if there is a valid case for at least *aiming* toward 100 percent replacement rates for long-career employees, then the emphasis should be on raising private industry replacement rates instead of trying to lower those public plan replacement rates that do not exceed 100 percent.

When Should Public Employees Be Eligible to Retire?

Even if there were a consensus about the appropriate replacement rate for a long-career employee's retirement income, the question would remain of when an employee should become eligible for regular (or reduced) benefits. Tilove's examination of prevailing practices in the public sector revealed, among other facts, that age 60 as a minimum age is the norm ("The most common single age . . . ")[5] and that there was a trend toward awarding benefits at any age to employees with 30 or more years of service.

It is not clear what, if any, policy objective is served by encouraging employees to retire below age 62 when reduced Social Security benefits can be collected. Perhaps this is an aspect of the public employee pension package that amounts to no more than a sweetener in the terms of employment.

Of course, it is sometimes said that the incentive (by way of early age pensions) to retire early is good public policy because it clears out employees whose productivity is diminished. Yet it is virtually impossible to find objective support for the view that the typical employee in a nonhazardous job suffers significant impairment of abilities when he reaches the 55-to-60 age range.

The Public Employee and Social Security

Unlike private industry, where participation in the Social Security program is mandatory, state and local governments can choose whether to participate. Moreover, having participated, they have the additional option of withdrawing from System membership. This special treatment has always been a source of controversy among specialists. Now, the matter has reached a new level of prominence with New York City's announcement of its intention to withdraw from the Social Security program as a way to reduce expenditures. There has been speculation that New York's move would trigger a multitude of withdrawals, perhaps impairing the basic financial structure of the System. Congress has already held hearings to explore the ramifications, public employee groups in New York City are vigorously opposing the city's planned withdrawal, and informed observers feel that some modification in current law is required if chaos is to be avoided.

The reason why some state and local governments decline Social Security participation is its cost. Some claim they cannot afford it. Others argue that they can provide equivalent coverage at lower cost. Obviously, the "cannot afford it" argument is not one that can be evaluated objectively. Whether the other argument has any validity is difficult if not impossible to determine, given the enormous variety of benefits included under Social Security and the uncertainty as to what future changes will be made in the program.

To allow state and local governments to participate or not as they prefer and to withdraw after a period of participation is grossly unfair to those who are compelled to participate. The unfairness comes because mammoth loopholes in the Social Security program enable employees of nonparticipating jurisdictions to gain eligibility for Social Security

[5]Tilove, *Public Employee Pension Funds*, p. 13.

benefits at disproportionately low cost. For example:

- By moonlighting, or by virtue of a brief period of private sector employment, present or former employees of nonparticipating governments can gain eligibility for Social Security benefits that are disproportionately large relative to the contributions they make;

- Employees who have Social Security coverage for only a comparatively short period before their government employer withdraws from the System remain eligible for benefits that are far better per dollar of contribution than those provided to persons in the System for their entire careers;

- Public employees whose employers no longer participate may have their ultimate benefits enriched even after the date of withdrawal — at no additional cost to them.

As an aside, it should be noted that the opportunity to withdraw — that is granted exclusively to state and local governments — provides them with a one-time, ace-in-the-hole budget balancing device that probably would have kept many private firms out of the bankruptcy courts had they had the same privilege.

Whether the above inequities can and will be tolerated much longer is an issue that is certain to be debated with increasing intensity. It is possible that the Congress will decide to settle the issue by mandating full coverage for all public employees. Or, Congress could decide to enact measures that will close some of the loopholes favoring employees of state and local governments who never participate or who withdraw from participation. Additionally, it has been suggested that some of the financial burden of the Social Security program be financed out of general tax revenues. Were this latter change to be made, it would mean that the federal income taxes paid by nonmembers would help finance Social Security benefits. Suffice to say that some informed observers view the optional arrangement for state and local governments as socially undesirable. Perhaps state and local governments would do well to admit to the inevitability of change in the Social Security program and then prepare to participate in the deliberations that will determine the nature of that action.

Relating a State or Local Pension Plan to Social Security

Notwithstanding the very cogent arguments in favor of a universal Social Security System, it must be recognized that *any* participating employer must be concerned about the rapidly mounting costs of Social Security. In short, the employer's pension plan must be accommodated to the Social Security benefit program. Otherwise, the cost of a significant portion of the total retirement package furnished to employees will literally be out of the employer's control. Furthermore, the effect of coupling a steadily richer Social Security benefit package to the employer's pension package would be to lose control of the size of the total replacement rate.

If, as was suggested above, total retirement benefits should not exceed preretirement income, the failure of most participating governments to tie their pension plans to Social Security is already having undesirable consequences. The effects will become even more serious as the full impact of Social Security benefits enrichment is realized. Irrespective of what a jurisdiction's policymakers think the desirable replacement rate should be, they must bring it under control if they are to be able to do anything about the growth in a significant expenditure item. *It is essential to connect their pension plan's benefits with those furnished under the Social Security program.*

Linking a pension plan to a dynamic Social Security program is a complex undertaking, and a variety of approaches have been and are now being designed. One of the most recent approaches to the problem is a central feature of a major pension benefit package recommended for New York's public employees by the state's Permanent Commission on Public Employee Pension and Retirement Systems.[6] A review of that proposal should be instructive to others facing the problem.

The New York Pension Commission has recommended a benefit formula that explicitly coordinates the public pension element of the total retirement package with the Social Security element. The key feature is the automatic subtraction of 50 percent of any Primary Social Security benefit from the gross benefits provided by New York's own pension plan. Thus, as Primary Social Security benefits increase in the future, the share of any total retirement benefit to be provided by state and local retirement systems in New York would decline.

[6]See the Commission's *Recommendation for a New Pension Plan for Public Employees: The 1976 Coordinated Escalator Retirement Plan*, March 1976.

The basic benefit formula proposed by the Commission is:

(2 percent x years of service) less (50 percent of Primary Social Security attributable to New York earnings) plus (100 percent of Primary Social Security) plus (100 percent of spouse's benefit).

To illustrate, consider a single employee who retires in 1977 at age 65 after 30 years of service and whose highest consecutive 3-year average salary is $15,300. His benefit would be:

Total Benefit	*$11,507*	= 75 percent of final average salary
New York Pension	6,853	= 45 percent of final average salary
Social Security	4,654	= 30 percent of final average salary

The total benefit of $11,507 or 75 percent of final average salary is approximately equal to after-tax income immediately prior to retirement. If the employee has a spouse, the spouse's Social Security benefit of $2,327 (50 percent of the Primary Social Security amount) would raise the total benefit to 90 percent of final average salary.

Whether the New York approach is the one for other public retirement systems remains to be determined. But it does offer a solution for jurisdictions providing dual coverage (i.e., a pension plan and Social Security).

Postretirement Cost of Living Adjustments

The inflationary surge of the early 1970s has triggered appeals from and on behalf of retirees who maintain they, too, need insulation from rising costs. And one might reasonably question whether it makes much sense to worry about goals for pension plans, replacement rates, and the like if no provision is going to be made for offsetting increases in the cost of living subsequent to the time when an employee retires. Given the choice, there must be many current and prospective retirees who would willingly accept a lower initial benefit than that now provided in exchange for some guarantee of automatic benefit escalation when prices rise. Despite the merits of the principle that retirees deserve some protection from inflation, it does not follow that state and local governments can be expected to insulate totally their retired employees. The few state and local governments that have provided full insulation are certainly paying dearly now.

A premise that must control all aspects of pension plan design is that no government should make commitments for future expenditures that cannot be accurately estimated. Logically then, postretirement benefit adjustment provisions should include a limit or cap on the maximum yearly percentage increase that might have to be made.[7] But once such a limitation is included, there seems to be no reason why a cost of living adjustment provision should not be an element of a pension plan.

Special Problems in Police and Fire Pension Benefit Plans

Up to now, this discussion has omitted any reference to police and fire pension plans. However, it is important to devote some attention to these plans because of their rich benefits and high cost.

Usually police and firemen are permitted to retire at early ages and after short work careers. Some plans simply require that police and firemen serve for 20 or 25 years, after which time they are eligible for 50 percent or more of their final salary. Other plans may also attach an age minimum, though the age is usually below that required for other employees in the jurisdiction.

Although equity issues between public and private employees could be raised in connection with police and fire pensions, the more immediate issue involves the high cost of these pensions — it is not unusual for such pensions to cost a jurisdiction 40 to 50 percent of police and fire payroll expenditures. In view of the high costs, it would seem appropriate for public officials to review their jurisdiction's police and fire pension plans and to determine whether the conventional rationale for the plans' rich benefits is appropriate in the context of their community.[8] Among the issues to be considered:

- Are there sound reasons for encouraging police and firefighters to retire at ages when most employees have yet to reach the peak of their careers?
- Are there differences between police work and firefighting in the inner city and in the suburb and rural village that justify drastically dissimilar pension arrangements?
- If there are valid reasons for not having police and firefighters who are in their late forties and fifties on

[7]See Edward H. Friend, "Hidden Bombshells in Cost-of-Living Adjusted Pension Benefits and Postretirement Health and Welfare Plans," *Annual Conference Proceedings of the International Foundation of Employee Benefit Plans (1974)*, pp. 92-99.

[8]See Tilove, *Public Employee Pension Funds*, pp. 234-237; and Edward H. Friend, "An Approach to the Rising Costs of Police and Fire Fension Systems," in National League of Cities et al., *Pensions for Policemen and Firemen*, LMRS Special Report, 1974.

standard patrol duty and manning the firehouses, is it most economical to give them a pension and send them on their way?

• Are the comparatively generous police and fire pensions in a particular community just another form of compensation for hazardous duty and physically taxing work? If this is the case, is there any reason why the compensation should not be provided up front as salary?

FINANCING STATE AND LOCAL GOVERNMENT RETIREMENT SYSTEMS[9]

Pay-As-You-Go vs. Actuarial Funding

The retirement benefit component of employee compensation costs is unique among the various elements that make up a jurisdiction's current operating expenditures. The uniqueness results from the deferred nature of the obligations or liabilities being accrued by the employer. Employees accrue claims to benefits (sometimes absolute and sometimes conditional on the event taking place) gradually throughout their working careers, but they do not begin collecting them until sometime after their careers have ended.

Thus, it is possible for an employer to avoid making any *expenditure* for an employee's accruing retirement benefits until the benefit payments begin. If this procedure, known as pay-as-you-go, is followed from the inception of a retirement plan, it would distort cost allocations over time (no costs show up in the annual operating budget until someone retires, is disabled, or otherwise becomes eligible to collect benefits) and set the stage for sudden sharp increases in operating costs when the first large wave of employees reaches retirement age.

Although deliberate and formal pay-as-you-go arrangements are thought to be rare now, at least for the major state and local government retirement systems, many systems fall victim to what are in effect modified versions of pay-as-you-go. The scenario has many variations but a general pattern can be described.

[9]Excellent summaries of the basics of actuarial funding are found in Bleakney, *Retirement Systems for Public Employees* and Tilove, *Public Employee Pension Funds*. A more technical discussion appears in Dan M. McGill, *Fundamentals of Private Pensions*. 3rd ed. (Homewood: Richard D. Irwin, Inc. for the Pension Research Council, 1975).

The Genesis of Underfunding in a Nominally Full-Funded System

Assume that a jurisdiction agrees to provide a pension plan for employees whose average age is well below the earliest age for retirement. The plan is a standard defined benefit plan where annual retirement benefits are the product of some percentage of an employee's final average salary and his years of service, with service prior to plan inception to be counted. At the outset, the jurisdiction annually contributes into a fund amounts equal to the present value of the liabilities estimated to have accrued during the year. In addition, it makes an annual contribution to amortize the liabilities — the unfunded accrued liabilities — attributable to the initial members having been granted credit for service years prior to plan inception. During the plan's early years, few employees retire, contributions accumulate rapidly, and the total fund is further enhanced because the surplus contributions are invested.

However, in time the jurisdiction's fiscal situation deteriorates and its budget threatens to become unbalanced. The drain on the pension fund has grown as more employees have reached retirement age, but accumulated reserves remain well in excess of benefit payments. So it is decided to skip this year's pension contribution or at least to reduce it below the amount that reflects the present value of pension liabilities accrued this year. The community has departed from its pension funding plan, unfunded accrued liabilities rise, and the pension contribution (or, rather, its omission) has become the budget-balancing mechanism.

It may be possible to continue pension underfunding for several years without any adverse effects being detected. Retirement system reserves may remain adequate to cover all benefit payments due; indeed, reserves may actually continue to grow because some contributions are still flowing in (perhaps from active employee members) and investment returns are being realized. Someone may even suggest that further accumulation of retirement system reserves is inappropriate in a period of budgetary stress and rising taxes, and it may be decided to further reduce the government's contribution for the still growing employee pension liabilities. (Or, in a variant of this scenario, the growing reserves of the pension fund may be taken as *prima facie* evidence that the community can afford to grant additional benefit improvements without affecting the current operating budget.)

Usually, the more enlightened officials will sense that something is not quite right, but the subtleties

of the situation may be more than they can convey to others. Alternatively, there may be no dispute about the undesirability of the practice, and all may agree that the community will return to its original funding plan when the community's financial situation returns to "normal." Unfortunately, normality in fiscal affairs usually means more demands on the fisc than it can accommodate. Thus, those items that are most easily deferred continue to be deferred. If pension costs become a regular deferrable, the jurisdiction may discover one day that it has worked itself into a pay-as-you-go arrangement.

Fundamentals of Actuarial Funding

The case against pay-as-you-go, whether *de jure* or *de facto,* is compelling. (If one remains unpersuaded, it would be well to review the situation in Massachusetts or Washington, D.C. — to name two places that are currently facing major crises because of their long use of pay-as-you-go.) Or, to state the matter positively, the canons of sound fiscal management make actuarial funding essential.

Actuarial funding refers to a procedure where the estimated cost — *the actuarial present value* — of pension benefits accruing to active employees is systematically paid by the employer into a fund (perhaps with a share paid in by the employee as well). In turn, the retirement fund makes payments to retirees and invests surplus funds.

The *actuarial* in actuarial funding reflects the fact that the exact cost of an employee's retirement benefits cannot be known with certainty until he dies, quits, or otherwise loses eligibility for benefits. Hence, costs of pension benefits that are to be allocated or attributed to each year of an employee's work career must be estimated on the basis of *actuarial assumptions* that reflect the actuary's (and others') best guesses about the probabilities that a variety of contingencies will occur. Among the required actuarial assumptions are: whether and when the employee will quit; whether and when he will retire; whether and when he will become disabled; the age when he will die; his career salary progression; and the rate of interest earned on invested funds.

At the inception of a pension plan or at a time when a benefit improvement is being contemplated, an actuary — equipped with a set of actuarial assumptions and an actuarial cost method — can estimate the cost of the benefits and allocate that cost among the years during which each plan member will be accruing benefit claims. But, based as they are on assumptions about future events, actuarial cost estimates are never precisely correct and must be revised from time to time as experience unfolds.

The Inexact Nature of Actuarial Assumptions

Although there are better and worse actuarial assumptions in terms of the quality of the analysis and data used to derive them, even the best actuaries cannot predict future events with certainty. Thus, actuarial assumptions have to be monitored against unfolding experience and modified when they are found to depart substantially and consistently. When a new assumption about a relevant event replaces an old assumption, the cost estimate for a particular pension plan and set of participants is likely to change. As such, these changes are the inevitable product of uncertainty about the future and not a weakness of the general procedure.

Barring major and frequent improvements in the pension plan, these inevitable cost adjustments that result from changed actuarial assumptions should not be large enough to have a major impact on a jurisdiction's annual budget — if the unfolding experience is monitored closely. But if there are major benefit improvements or if actuarial assumptions are too liberal (i.e., financially more favorable than actual experience), the actuary's *plan valuation* or *valuation of liabilities* will reveal an increase in accrued liabilities for which the funding plan has made no provision. When this occurs, contributions will have to be increased if the jurisdiction is to continue funding (making provision for) liabilities at the rate contemplated when the funding plan is adopted.

The Measurement of Pension Plan Liabilities

The nuances of pension plan liability measurement are widely misunderstood and often unrecognized by nonspecialists. They lead to a great deal of confusion about a retirement system's condition and about the fiscal implications for the governmental unit responsible for meeting the liabilities. However, a mastery of the basics of liability measurement is worth the effort to anyone concerned with understanding the fiscal condition of a retirement system.

The first essential point is that liability growth is what an expanding retirement system is all about. An employee is added to the jurisdiction's work force and immediately begins accruing retirement benefits which are conceptually, if not always legally, his assets. The concomitant of this asset creation process is a liability creation process affecting the

employer. An employee's pension assets are his employer's pension liabilities. Assuming the governmental unit recognized the full cost implications when it agreed to the pension plan and determined that it could afford to meet the cost, the growth of pension liabilities should not be a cause for alarm. If an appropriate funding plan has been adopted, the employer's annual contributions to the retirement system will assure the availability of sufficient funds to meet the full pension liability owed to the employee. In effect then (and with some oversimplification), a fund is built up during an employee's working years and the value of the fund at any moment is equal to the present value of the liabilities accrued by the employer on behalf of the employee.

As a practical matter, almost every plan will have some *unfunded accrued liabilities* (i.e., liabilities for which there are as yet no assets) at various points in its history. For example, when a pension plan is launched, it is customary to make the benefits retroactive for service prior to plan inception. Hence, there will immediately be an unfunded accrued liability that must eventually be provided for. But since not all of the employees on the payroll at the plan's inception will retire immediately, full funding of the initial unfunded accrued liability does not have to occur at once. (Indeed, to ensure equity between generations of taxpayers might require that some portion of the initial liability be borne by future taxpayers.) Rather, a sound funding plan will include provision for amortizing the unfunded accrued liability over several years in much the same way that a person pays off a mortgage on a home. If all unfunded accrued liabilities are ever totally amortized, the pension plan is described as *fully funded*.

Measures of Funding Progress

While the notion of full funding is valuable as an attribute to distinguish the exceptionally well-financed pension system, its operational utility is limited because there are good, or at least acceptable, reasons for the existence of unfunded accrued liabilities. All of which suggests the need for some other measures or techniques to distinguish systems in trouble from those following sound funding plans.

One such measure is the *funded ratio* — the ratio of a pension plan's assets to its accrued liabilities. Obviously, a fully funded plan would have a ratio of 1. But what can be concluded about a plan whose ratio is 3/4? 1/2? 0? One generalization is that a funded ratio within striking distance of 1 indicates that the plan has been soundly financed so far. Predictably then, warning bells should go off if any but a brand new plan has a ratio close to 0. This is not to say that calamity is imminent. Nevertheless, a ratio indicating little or no funding progress is a signal that the situation should be reviewed carefully, because a system without assets and no immediate prospect for having any is equivalent to a "pay-as-you-go" operation.

Few other generalizations about a plan's condition can be made on the basis of no more than the funded ratio for a single year. The careful analyst will want to look at the ratio's trend. If examination of the trend reveals a history of increasing ratios and few instances of declines, the system is probably being soundly financed. Conversely, there would be grounds for concern if the ratio has deteriorated steadily during recent years. Obviously then, it must be recognized that retirement systems with identical funded ratios may not have equally favorable (or unfavorable) financial prospects.

A variation on the funded ratio technique involves comparing a system's assets with the several components that comprise accrued liabilities. In effect, this approach distributes assets among claimants: current retirees and other beneficiaries, active and former members with vested rights to benefits, and active employees with accrued but not yet vested rights. Since the sum of the total claims of these groups equals the accrued liability, a system that is fully funded would have assets in an amount sufficient to cover all of the claims. Consequently, the conclusions that can be reached by this approach are not unlike those that can be inferred when funded ratios are studied. The special value of this approach is that it provides more refined information, and it may be helpful to think of funding in terms of accumulating assets for identifiable groups of claimants. Here again, however, the technique only relates one kind of information to another; the job of drawing conclusions remains for the analyst.

The typical retirement system and its actuaries and accountants could do a great deal more in providing information about funding progress in a form that is meaningful to the nonprofessional. Many systems' annual financial reports are devoid of the data required to perform analyses like those just described. Some systems officials and staff actuaries — but probably not consulting actuaries — will argue that computation of accrued liability data involves a needless expense because their actuarial funding technique does not require such information in order to develop contribution rates. Such reasoning is feeble and should be treated accordingly. Indeed, the actuarial and accounting professions would per-

form a valuable public service if they promulgated a model set of financial and actuarial reports that contained the variety of data described here.

A few systems produce (at least for internal purposes) long-term projections of pension costs, system cash flows, accrued liabilities, and the like. Some systems even perform sensitivity analyses on these important variables by introducing alternative values for volatile actuarial assumptions (e.g., salaries, rate of interest) and measuring the effects on system costs, cash flow, assets, and liabilities. When properly used, the projections are enormously valuable to system administrators and jurisdiction finance officials in developing and modifying their financial planning models. Such projections show in tangible form the *future* fiscal consequences of a great many contingencies—some of which are controllable. Unfortunately, there is little evidence that these techniques are used by many systems.

Actuarial Funding Methods

Reference has been made to the desirability of allocating, over the period of each employee's service, the total cost of providing his pension benefits. This process produces a cost estimate for each year's accruing benefit liability that should be charged against the jurisdiction's general budget. By appropriating for these costs as they accrue, assets can be accumulated by the time an employee retires that are equal to the then-present value of all benefits he will collect. If this is done and if the accumulated assets are managed safely,[10] the employee can be confident that the benefits will be paid.

Despite its conceptual clarity, the allocation process presents some difficulties that make it confusing to the nonspecialist. One difficulty is that there is no universally recognized "best" or "correct" actuarial funding or cost method, although certain methods are inappropriate for a given type of pension plan. By substituting one appropriate funding method for another, the actuary can produce dramatically different costs for any given year or series of years. Equally dramatic changes in the rate of asset accumulation can also result. Similarly, the discretion permitted in adopting an actuarial cost method can mean that the reported annual costs of two pension plans will not be identical, even though they are identical in every material way.

As a further complication, the same funding method can produce different costs, depending on the duration over which accrued liabilities are being funded or amortized — that is if the liabilities are being amortized at all. The details behind these complications are sufficiently involved that their exegesis is best left to an actuarial treatise. However, their flavor can be sensed by looking briefly at two funding methods in wide use by state and local government systems.

Entry-age normal funding involves an annual contribution (cost) consisting of a *normal cost* and a *supplemental cost*. Normal cost is the level amount or percentage of an employee's salary that would be required yearly during an employee's entire work career. If normal cost were actually contributed each year beginning with the year of entry, and if no unfunded accrued liabilities (supplemental liabilities) were created along the way, the present value of accumulated contributions at the time of retirement would equal the actuarial present value of all benefits owed to the retiree. In other words, the employee's pension would be fully funded when he retired. A corollary of entry-age normal's leveling of costs is that contributions in the early years of an employee's career are higher than the accruing value of his benefits and lower than accruing values in the years near the age of retirement.

Since unfunded supplemental or accrued liabilities will almost certainly be created at various points during a plan's operation, a supplemental cost contribution may be made to amortize them. Unfortunately, actuaries don't always agree on the proper period for amortizing liabilities. Some argue that the period should not be longer than the average remaining work life of current employees. Others argue that the period can be 40 to 50 years or longer. Some even see no reason to amortize at all. In any event, the fact that the amortization period can vary according to who makes the choice explains, in large part, why different actuaries using the same actuarial cost method can arrive at widely different cost estimates for the same plan.

Although a close relative of entry-age normal funding, *aggregate funding* requires an annual contribution, measured as a percentage of payroll, that is the ratio of the actuarial present value of all unfunded future benefits to be collected by current employees and retirees to the actuarial present value of all future salaries of the same group. Initial contributions required with aggregate funding will be higher than those required with the usual approach to entry-age

[10] The risk that assets won't be managed prudently is a matter that deserves the close attention of policymakers. Such attention is especially important now that governments (e.g., New York State and City) have rediscovered the "virtues" of borrowing from their own retirement systems. See Louis M. Kohlmeier, *Conflicts of Interest: State and Local Pension Fund Asset Management*, Report to the Twentieth Century Fund, 1976.

normal funding or with practically every other method of funding. This is because aggregate funding effectively allocates the costs connected with a group's pension benefits over its average remaining work life. If no subsequent accrued liabilities are created, contributions as a percentage of payroll will decline over time, a result of the rapidity with which this approach builds up assets.

To reiterate, alternative ways exist by which the costs of a pension plan can be estimated and distributed over time. This means that there can be a faster or slower rate of asset accumulation, depending on the actuarial funding method selected. And since asset accumulation is what funding is about, it is important that the actuarial funding method be selected with some predetermined funding objectives in mind.

Criteria for Choosing a Funding Plan

Some may find it hard to accept the idea that funding objectives are judgmental matters, arguing instead that the proper objective is axiomatic — a retirement system should be fully funded. However, as this paper has demonstrated, even the notion of full funding is not without ambiguities. Widely used and quite respectable funding methods can yield very different estimates of pension liabilities and costs. Similarly, a single-funding method can yield differing estimates, depending on the amortization period selected and the actuarial assumptions used, and not even the expert may be able to say which estimate is the correct one. Under these circumstances, one is well-advised not to make full funding the single guiding standard.

A related source of difficulty in setting funding objectives is the troublesome matter of paying off supplemental liabilities such as those incurred when a pension plan is launched or when benefits are enriched. To require immediate funding might mean that a community could never afford a respectable pension plan. Additionally, there is reason to question whether the pension plan's entire "start-up" costs should be borne by only one set of taxpayers. Perhaps it is fairer to spread the cost between present and future taxpayers.

Within limits, which are also open to dispute, communities (or states only?) should decide how rapidly to provide for their pension liabilities. Some may prefer to err on the conservative side and to accumulate assets rapidly, perhaps because present conditions are good and it seems prudent to bear the cost burden while it can be handled with comparative ease. Alternatively, the choice to fund rapidly may be deemed proper because the jurisdiction has a record of intermittent pension difficulties, difficulties that were attributable to inadequate attention to the burden of pension benefits. In this latter case, rapid funding serves as a form of fiscal discipline and a barrier to excessive pension improvements.

Another advantage of a method that accumulates assets rapidly is that it provides a cushion and therefore the flexibility necessary to defer a contribution safely if the community is hit by a severe but temporary economic downturn. But this advantage may disappear if every year's budget crisis is deemed a qualifying emergency.

Having agreed in principle on the desirability of funding in a fiscally responsible fashion, a choice must be made among several funding methods that fit the general criterion. Hence, other criteria must be established. One that might meet with the approval of legislators and finance officials who do not welcome surprises when they are trying to manage the annual budget-balancing hurdle is that the method should produce pension costs that remain a constant percentage of payroll.

Some actuaries and other specialists argue that it is not necessary for all jurisdictions to set funding objectives as if they are going out of business. If a community has reasonable prospects for long-term economic growth, it might decide to pay only normal costs and interest on unfunded accrued liabilities. Unfunded liabilities themselves would remain unfunded into perpetuity, just as the jurisdiction itself is expected to have perpetual life. However, even if the jurisdiction does not become a ghost town, it is almost certainly going to stop growing someday, its workforce will mature, and it could face the need to make sharp increases in contributions to forestall a negative cash flow (i.e., benefit payments in excess of retirement system income). Thus, despite its superficial soundness, *interest-only funding* carries its share of risks.

Recognizing the potential drawbacks of interest-only funding while still feeling that some governmental units ought not to build up assets as if every year might be their last, some suggest any one of a number of methods that provide for partial amortization of unfunded accrued liabilities. In short, they consider full funding an unnecessarily demanding goal.

A final criterion, that allows for no exceptions, requires a funding method that yields accurate cost estimates for proposed benefit changes. (This criterion is equally apt as a standard for selecting actuarial assumptions.) Some funding methods that have

their attractions for other reasons (e.g., interest-only funding) do not always lend themselves well to this criterion.

A CONCLUDING NOTE ON THE NEED FOR REGULATION OF STATE AND LOCAL RETIREMENT SYSTEMS

Several years ago, in the course of examining the financial conditions of major cities, the Advisory Commission on Intergovernmental Relations (ACIR) determined "that underfunded, locally administered retirement systems pose an emerging threat to the financial health of local governments."[11] The ACIR also found the costs of most cities' retirement systems to be rising rapidly and sharply for three reasons: large increases in salaries, large improvements in pension benefits, and a trend toward retirements at earlier ages.

Especially notable among the ACIR's other conclusions were the "serious lack of information about the solvency of locally administered retirement systems . . ." and "the inherent local political problems in providing adequate funding from either employee or city contributions. . . ."[12] After considering the full implications of its findings, the ACIR made two very strong recommendations. First, it suggested that states "require an accurate and current valuation of all local systems" and, second, that states then "require realistic funding based on such valuation."[13] Moreover, the ACIR recommended that the best solution to the problem might be absorbing local systems into state-operated systems — though it did not make a formal recommendation to this effect.

There is little evidence that many states have heeded the ACIR despite mounting evidence that its warnings were well-founded. This inaction is all the more surprising since there is the very real threat that Congress is prepared to make regulation and supervision of state and local pension plans a federal responsibility.[14]

And though subnational governments speak with one voice in opposing federal intervention and in arguing that public employee pension problems are better handled by themselves, they have failed to take on even the fundamental task of finding out how bad the problems are. So, now, the federal government is conducting its own investigation.[15]

With the record to date as best evidence, one wonders whether we dare leave the job of dealing with "the public employee pension problem" to state and local governments.

[11]Advisory Commission on Intergovernmental Relations, *City Financial Emergencies: The Intergovernmental Dimension* (Washington: Government Printing Office, 1973), p. 6.

[12]*Ibid.*

[13]*Ibid.*, p. 7.

[14]H.R. 13685 (May 11, 1976) would "provide for pension reform for state and local public service employees."

[15]The initial findings are contained in U.S., Congress, House, Committee on Education and Labor, *Interim Report of Activities of the Pension Task Force of the Subcommittee on Labor Standards*, 94th Cong., 2d sess., March 1976.

Appendix V

VSRS AND SOCIAL SECURITY RETIREMENT BENEFITS PROVIDED FOR VIRGINIA PUBLIC EMPLOYEES

Report to:

JOINT LEGISLATIVE RETIREMENT STUDY COMMITTEE
COMMONWEALTH OF VIRGINIA GENERAL ASSEMBLY

Submitted by:
Martin E. Segal & Company, Inc.
July, 1977

MARTIN E. SEGAL COMPANY

730 FIFTH AVENUE • NEW YORK, N. Y. 10019 (212) 586-5600

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July 22, 1977

Joint Legislative Retirement Study Committee
Commonwealth of Virginia General Assembly
State Capitol
Richmond, Virginia

Gentlemen:

We are pleased to submit this report on the combined retirement benefits currently being provided for Virginia public employees under the Virginia Supplemental Retirement System and the federal Social Security program. The sections of the report are as follows:

I. INTRODUCTION

II. VSRS RETIREMENT BENEFITS

III. SOCIAL SECURITY BENEFITS

IV. GROSS SALARY AND TAKE-HOME PAY

V. COMBINED VSRS AND SOCIAL SECURITY BENEFITS

APPENDIX - Summary of Social Security Benefits

This initial analysis of VSRS and Social Security benefits is intended to assist the Joint Committee in making decisions regarding appropriate levels of combined retirement benefits for VSRS members who retire in the future. Once combined benefit objectives are determined, the Joint Committee can proceed to evaluate various basic benefit formulas and the extent to which each formula produces combined benefits in line with the established objectives.

We look forward to reviewing this report with you at your next meeting.

Sincerely,

MARTIN E. SEGAL COMPANY

By: John P. Mackin
John P. Mackin, Ph.D.
Senior Vice President

JPM:ns

I. INTRODUCTION

This report reviews the benefit structures of VSRS and Social Security, and presents data on the levels of combined retirement benefits currently being provided for Virginia public employees.

The recent increases in Social Security benefits and costs have major implications for the design and development of public employee retirement systems. They raise a significant question: Should VSRS be designed to meet the intended benefit objectives despite future changes in Social Security? Because changes in Social Security (either legislated or resulting from the operation of the automatic escalators) are beyond the control of the Commonwealth of Virginia, they may result in the provision of combined retirement benefits substantially different from the intended objectives.

For most VSRS members with a full career of public service, combined VSRS and Social Security benefits exceed final take-home pay. If one accepts the criterion that continuance of full take-home pay is an appropriate maximum limit on combined benefits for a public employee retiring at the normal retirement age after a full working career, it will be necessary to redesign the VSRS benefit formula to avoid providing combined benefits in excess of the stated maximum.

In evaluating the far-reaching implications of reshaping the structure of VSRS, we expect that the Joint Committee will take full account of present and prospective Social Security benefits and costs. The rationale for taking Social Security into account in reaching decisions regarding the benefit and contribution provisions of VSRS may be summarized as follows:

> When Social Security benefits are added to the benefits now provided under VSRS, the combined retirement income generally exceeds final take-home pay.

The present total cost of VSRS and Social Security is, in round terms, about 20% of total payroll; it is projected to increase considerably if present VSRS and Social Security benefit structures are not modified.

Changes in Social Security are beyond the control of the Commonwealth of Virginia.

Recent increases in Social Security benefits and costs have been substantial and confirm the advisability of taking Social Security into account in the design of public employee retirement systems.

The possibility exists that future Social Security benefits will replace even higher percentages of VSRS members' final take-home pay, thereby increasing the gap between combined benefit levels and full take-home pay.

Providing combined retirement benefits in excess of full take-home pay may be viewed as inconsistent with sound employment and retirement practices, particularly when such benefit levels cause employees to retire at ages when VSRS should continue to offer an incentive to remain in public employment.

Designing VSRS benefit and contribution provisions with full recognition of Social Security will preclude an automatic drift into excessive benefits and costs.

II. VSRS RETIREMENT BENEFITS

The Virginia Supplemental Retirement System is a large state-administered retirement program which covers about 200,000 active public employees and is currently paying benefits to some 25,000 retired members and their beneficiaries. Approximately 37% of the employees covered by VSRS are State employees, 41% are employed by local school boards as teachers and other school employees, and the remaining 22% are general employees of political subdivisions. VSRS members are also covered by the federal Social Security program; they therefore receive total retirement income comprised of VSRS and Social Security benefits.

Eligibility

VSRS members are eligible for normal retirement at age 65 or at age 60 with 30 years of service.

House Bill 1627 passed by the 1977 Session of the General Assembly liberalized the eligibility requirements for early retirement. VSRS members may now retire on reduced early retirement benefits at age 55 with 5 years of service; the percentage reduction in the formula benefit is .5% for each of the first 60 months plus .4% for each additional month between early retirement and the date of full eligibility for normal retirement.

Benefit Formulas

Normal retirement benefits payable to eligible VSRS members are based on the member's final average salary - average of highest 36 consecutive months salary - and years of creditable service.

The basic formulas used to compute VSRS normal retirement benefits (before adjustment for any option elected by the retiring member) are as follows:

> For members with a final average salary of less than $13,200 - 1.5% of FAS times years of service.
>
> For members with a final average salary of $13,200 or more - 1.65% of FAS minus $1,200 times years of service.

The schedule below shows VSRS normal retirement benefits as percentages of final average salary for selected service periods and salary levels.

Years of service	Final Average Salary		
	less than $13,200	$15,000	$30,000
10	15.0%	15.2%	15.8%
15	22.5	22.8	23.8
20	30.0	30.4	31.7
25	37.5	38.0	39.6
30	45.0	45.5	47.5
35	52.5	53.1	55.4
40	60.0	60.7	63.4

Under present VSRS benefit formulas, members with final average salaries above $13,200 receive somewhat higher benefits as a percentage of FAS than members with final average salaries below $13,200. As the amount of FAS increases above $13,200, the VSRS normal retirement benefit also increases as a percentage of FAS; for example, the benefit percentage for a member with 30 years of service is 45.5% if FAS is $15,000 and 47.5% if FAS is $30,000. This slight favoring of higher paid members was incorporated in amendments to the basic benefit formula effective July 1, 1974. The alternative formula of 1.65% of FAS minus $1,200 was adopted to ensure that members with final average salaries above $13,200 would not receive benefits after July 1, 1974 which were less than the amount they would have received before that date.

Maximum Limit

VSRS formula benefits are subject to the following maximum limit: the benefit payable under VSRS may not exceed the amount determined by subtracting 50% of the member's primary Social Security benefit from 100% of his or her final average salary.

Although this maximum limitation currently applies to only a very few VSRS members, it does represent a partial recognition of the fact that members receive retirement benefits from both VSRS and Social Security. Moreover, if Social Security benefits are increased substantially as a percentage of FAS (as a result of either statutory amendments or the operation of the automatic escalation formulas), a considerable number of members could receive VSRS benefits which when added to half the primary Social Security benefit would exceed the existing maximum limit.

In studying the relationship between VSRS and Social Security, one of the issues to be considered by the General Assembly is the "appropriateness" of the existing maximum limit. Because it takes account of only half of the primary Social Security benefit, VSRS members affected by the maximum limit would still receive total retirement benefits substantially in excess of 100% of final average salary.

Post-Retirement Supplements

Under House Bill 1627 of 1977, VSRS retirees receive post-retirement cost-of-living supplements equal to the first 3% increase in the Consumer Price Index plus half of each percentage increase from 3% to 7%. The maximum annual benefit increase is limited to 5% if the CPI rises by 7% or more. Beginning July 1, 1978, post-retirement supplements will be provided annually rather than biennially as in the period from 1970 to 1976.

III. SOCIAL SECURITY BENEFITS

Social Security retirement benefits depend primarily on an individual's age at retirement and his or her average monthly earnings.

The "primary insurance amount", which is the benefit payable at age 65, is reduced by 5/9ths of 1% for each month the worker is younger than 65 at retirement. This amounts to a 20% reduction in the primary benefit for workers who retire at age 62, the earliest age you can qualify for reduced Social Security retirement benefits. A worker's primary benefit is increased 1/12th of 1% for each month he or she postpones retirement after age 65, up to a maximum increase of 7% at age 72.

The primary benefit is usually based on an individual's average monthly earnings covered by Social Security after 1950. (See the Appendix for a description of the determination of average monthly earnings.) In computing the average, the five years of lowest covered earnings - 1951 through 1955 in most cases - are disregarded. In addition, only covered earnings up to the Social Security wage base in effect during any particular year are used to compute the average. The Social Security wage base has increased as follows since 1950:

Period	Maximum Wages for Social Security Benefits and Taxes
1951-54	$ 3,600
1955-58	4,200
1959-65	4,800
1966-67	6,600
1968-71	7,800
1972	9,000
1973	10,800
1974	13,200
1975	14,100
1976	15,300
1977	16,500

For a man retiring at age 65 in late 1977, the maximum average monthly earnings is $634 (or $7,608 on an annualized basis); the maximum for a woman retiring at age 65 in late 1977 is $652 (or $7,824 on an annualized basis). Beginning in 1978 the maximum average monthly earnings will be the same for both men and women reaching age 65 that year, because men will no longer be required to include any years after attainment of age 62 in determining the number of years in the averaging period.

SS Benefits as a Percentage of FAS

Because Social Security benefits are based on career average covered earnings, the benefit amount depends on the individual's salary progression during his or her working career. For this study we computed Social Security benefits payable to employees with final average salaries (average of highest 36 consecutive months salary) ranging from $3,000 to $30,000, based on assumed salary progressions of 4% and 5% per year. The resultant benefits are shown in Tables 1 and 2 both as dollar amounts and as a percentage of final average salary.

Table 1, which shows primary Social Security benefits payable to employees retiring at age 65 in late 1977, illustrates the following:

1. Social Security is heavily weighted in favor of lower paid employees. As a percentage of FAS, primary benefits decrease from 76%-79% for an employee with a $3,000 FAS to 17%-18% for an employee with a $30,000 FAS. Employees with a $15,000 FAS - which approximates the average FAS of VSRS members retiring in 1977 - receive primary Social Security benefits of about 35% of FAS.

2. For any given salary history, women receive larger benefits than men (as noted, however, men and women reaching age 65 in 1978 and thereafter will receive the same benefits if they have identical covered earnings histories).

3. For employees with final average salaries of less than $15,000, primary benefits calculated on the basis of an assumed salary progression of 4% per year are higher than the benefits based on an assumed salary progression of 5% per year. (This is because the career average earnings of employees with the same FAS decreases as the assumed salary progression rate increases.)

4. In late 1977 the maximum annual primary benefit is $5,245 for men and $5,368 for women.

Table 2 shows Social Security benefits payable to employees who retire at age 62 in late 1977, based on the same salary progressions and FAS amounts. As percentages of FAS, age 62 benefits range from about 60% at the $3,000 FAS level to 13% at the $30,000 FAS level. For an employee with a $15,000 FAS, the age 62 benefit is approximately 27% of FAS, compared to about 35% for an employee with the same FAS who retires at age 65 in late 1977.

Future Benefit Levels

Social Security has traditionally provided the employee whose salary is equal to the full Social Security wage base with a primary benefit of roughly 30% to 35% of final average salary. The benefit percentage has always been higher for employees with lower salary levels, and lower for employees whose salaries exceed the Social Security wage base.

In designing benefit formulas for retirement plans, the general approach has been to assume that: (1) primary Social Security benefits will continue to replace 30%-35% of FAS for the employee with a salary equal to the maximum amount taxable under Social Security; and (2) the Social Security benefit formula will continue to be "bent" in favor of the employee with low earnings, as a result of the deliberate policy of utilizing Social Security to help eliminate dependency. Although experience confirms the historical validity of these assumptions, the automatic escalators now incorporated in the Social Security system increase the probability that Social Security replacement percentages will fluctuate more widely in the future than in the years before 1977.

Under the present Social Security Act, all benefits are increased automatically in June of each year if the Consumer Price Index rises 3% or more. Following any year in which benefits are increased by the automatic cost-of-living escalator, the maximum amount of wages subject to Social Security taxes (the tax and benefits base) is automatically increased by the percentage rise in the national average wage level. The operation of the automatic benefit and wage base escalators can cause Social Security replacement percentages to fluctuate widely, either up or down, depending on increases in prices and wages and the relationship between them.

The existing escalator mechanism tends to overcompensate for inflation. Whenever a cost-of-living benefit increase is provided for retirees, that same percentage factor is also used to increase future benefit levels for current employees. Congress is now considering various proposals to "decouple" or separate the computation of benefit increases for retirees from the computation of initial benefits for employees who retire in the future. These decoupling plans are

generally intended to stabilize future Social Security replacement percentages and to cause future benefit levels to be less sensitive to fluctuations in wage and price increases. If the Social Security benefit structure is decoupled, as expected, the assumptions which have been made in the past regarding Social Security replacement percentages at various salary levels (for example, 30% to 35% of FAS for a maximum wage base employee) will continue to be relevant in the future.

Table 1

Social Security Benefits Payable to Employees
Retiring at Age 65 in Late 1977
(based on salary progressions of 4% and 5% per year)

Final Average Salary	4% Salary Progression		5% Salary Progression	
	Annual SS Benefit	SS Benefit as % of FAS	Annual SS Benefit	SS Benefit as % of FAS
		MEN		
$ 3,000	$2,365	78.8%	$2,282	76.0%
4,000	2,747	68.6	2,639	65.9
5,000	3,129	62.5	2,995	59.9
6,000	3,511	58.5	3,346	55.7
7,000	3,885	55.5	3,702	52.8
8,000	4,224	52.8	4,034	50.4
9,000	4,510	50.1	4,349	48.3
10,000	4,735	47.3	4,629	46.2
11,000	4,889	44.4	4,854	44.1
12,000	5,000	41.6	4,979	41.4
13,000	5,091	39.1	5,084	39.1
14,000	5,182	37.0	5,168	36.9
15,000	5,238	34.9	5,238	34.9
16,000	5,245	32.8	5,245	32.8
20,000	5,245	26.2	5,245	26.2
25,000	5,245	21.0	5,245	21.0
30,000	5,245	17.5	5,245	17.5
		WOMEN		
$ 3,000	$2,384	79.4%	$2,307	76.9%
4,000	2,772	69.3	2,670	66.7
5,000	3,161	63.2	3,027	60.5
6,000	3,549	59.1	3,390	56.5
7,000	3,927	56.1	3,753	53.6
8,000	4,272	53.4	4,094	51.1
9,000	4,570	50.7	4,409	48.9
10,000	4,819	48.1	4,700	47.0
11,000	4,972	45.2	4,945	44.9
12,000	5,098	42.4	5,077	42.3
13,000	5,196	39.9	5,182	39.8
14,000	5,287	37.7	5,273	37.6
15,000	5,350	35.6	5,350	35.6
16,000	5,364	33.5	5,364	33.5
20,000	5,368	26.8	5,368	26.8
25,000	5,368	21.5	5,368	21.5
30,000	5,368	17.9	5,368	17.9

Table 2

Social Security Benefits Payable to Employees
Retiring at Age 62 in Late 1977
(based on salary progressions of 4% and 5% per year)

Final Average Salary	4% Salary Progression		5% Salary Progression	
	Annual SS Benefit	SS Benefit as % of FAS	Annual SS Benefit	SS Benefit as % of FAS
$ 3,000	$1,861	62.0%	$1,795	59.8%
4,000	2,157	53.9	2,065	51.6
5,000	2,452	49.0	2,335	46.7
6,000	2,743	45.8	2,610	43.5
7,000	3,041	43.4	2,880	41.1
8,000	3,303	41.2	3,146	39.3
9,000	3,527	39.1	3,384	37.6
10,000	3,684	36.8	3,603	36.0
11,000	3,782	34.3	3,760	34.1
12,000	3,866	32.2	3,855	32.1
13,000	3,933	30.2	3,928	30.2
14,000	4,000	28.5	3,989	28.4
15,000	4,039	26.9	4,039	26.9
16,000	4,051	25.3	4,051	25.3
20,000	4,051	20.2	4,051	20.2
25,000	4,051	16.2	4,051	16.2
30,000	4,051	13.5	4,051	13.5

IV. GROSS SALARY AND TAKE-HOME PAY

The appropriateness of a particular benefit structure can be evaluated in terms of the percentage of final average salary provided for various periods of service. However, this approach ignores a basic economic fact: a VSRS member's final average salary is essentially the average of his or her highest gross salary during 36 consecutive months, whereas his or her take-home pay is substantially less than gross salary. If the objective of VSRS is to continue the standard of living attained by certain career employees into the period of retirement, the level of total retirement benefits should replace 100% of take-home pay and not 100% of gross salary.

Table 3 illustrates the relationship between gross salary and take-home pay for a selected group of State employees - the staff of VSRS. Based on payroll data provided to us by Glen Pond, Director of VSRS, we determined the percentage of gross salary represented by the take-home pay of each of the 55 VSRS employees. Take-home pay for this purpose is the amount computed by subtracting from each employee's gross salary the deductions made for the following:

1. Federal income taxes.
2. Commonwealth of Virginia income taxes.
3. Social Security (FICA) - 5.85% of salary up to $16,500 (maximum tax of $965.25 in 1977).
4. VSRS - 5% of gross salary.
5. VSRS Group Life Insurance Program.
6. Employee Health Care Program - Blue Cross/ Blue Shield.

(Many employees have additional amounts deducted from their gross salary for deposits to the Credit Union, U.S. Savings Bonds, etc., but such additional deductions were not subtracted from gross salary to determine take-home pay for purposes of this study.)

As shown in Table 3, the take-home pay of most VSRS employees falls within a range of 65% to 75% of gross salary. The average ratio of take-home pay over gross salary, which is close to 70% for all employees with gross salaries below $12,000, tends to decrease slightly as gross salary levels increase above $12,000.

Table 3

Relationship Between Gross Salary and Take-Home Pay
Employees of VSRS

Annual Gross Salary	Number of employees	Take-Home Pay as Percent of Gross Salary	
		Range	Average
$ 6,000 - $ 6,999	7	64% - 82%	72%
7,000 - 7,999	8	64 - 78	73
8,000 - 8,999	11	64 - 75	71
9,000 - 9,999	5	66 - 71	69
10,000 - 10,999	9	67 - 73	70
11,000 - 11,999	2	71 - 72	72
12,000 - 12,999	4	63 - 71	67
13,000 - 15,999	2	66 - 70	68
16,000 - 19,999	3	64 - 69	67
20,000 - 29,999	2	66 - 67	66
30,000 and over	2	49 - 69	59

V. COMBINED VSRS AND SOCIAL SECURITY BENEFITS

The combined retirement benefits payable under VSRS and Social Security to members retiring in late 1977 at ages 65 and 62 were determined for hypothetical individuals with periods of creditable VSRS service ranging from 10 to 40 years and with the following assumed characteristics:

Final average salary	Final 3-year average take-home pay		Social Security benefits as a % of FAS**	
	Amount	% of FAS*	Age 65	Age 62
$ 6,000	$ 4,200	70%	56%	44%
10,000	7,000	70	47	36
15,000	10,200	68	35	27
30,000	18,000	60	17	13

* Based on data shown in Table 3.
** Based on data shown in Tables 1 and 2.

Table 4 shows the resultant combined benefits as percentages of final average salary and take-home pay. In reviewing the combined benefit percentages shown in the table, the Joint Committee should take account of the following factors:

1. All employees are assumed to have a full career under Social Security, regardless of the years of creditable service under VSRS.

2. The combined benefit percentages shown are for a single retiree and, therefore, do not include the Social Security benefits payable to the wife or husband of a married retiree.

3. VSRS benefits are the "no option" amounts computed on the basis of present VSRS benefit formulas. The VSRS no option benefit is reduced if the retiring member elects either a 50% or 100% joint and survivor option.

4. The present maximum limit on VSRS benefits - VSRS plus half Social Security may not exceed 100% of FAS - would not apply to any of the salary levels or service periods included in the table. (For example, the combined benefit percentage for a member with a $6,000 FAS would have to exceed 128% of FAS before VSRS benefits would be reduced because of the present maximum limit.)

5. If a member has had a full career of employment under Social Security, the approximate years of creditable VSRS service required to produce a combined benefit percentage of 100% of take-home pay vary as follows depending on the level of FAS:

FAS	Approximate years of VSRS service to produce combined benefits of 100% of THP	
	Age 65	Age 62
$ 6,000	10	20
10,000	15	26
15,000	22	29
30,000	27	30

6. If a member receives combined benefits of 100% of pre-retirement take-home pay, this does not necessarily mean that the member's after-tax income after retirement will be the same as his take-home pay before retirement. (This is because a portion of the VSRS benefit may be taxable, depending on the individual's personal circumstances, even though persons 65 and over have a double exemption and Social Security benefits are non-taxable.)

Table 4 confirms that the combined VSRS and primary Social Security benefits currently being paid to Virginia public employees who retire at age 65 generally exceed 100% of take-home pay. The table also indicates that a VSRS member with a $15,000 FAS and 30 years of service can now retire at age 62 and receive combined retirement benefits in excess of take-home pay.

Table 4

Combined VSRS and Social Security Benefits
Payable to Single Members Retiring in Late 1977
as Percentages of Final Average Salary and Take-Home Pay

Years of creditable service under VSRS	FAS = $6,000		FAS = $10,000		FAS = $15,000		FAS = $30,000	
	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP
				RETIREMENT AT 65				
10	71%	101%	62%	89%	50%	73%	33%	55%
15	78	111	69	99	58	85	41	68
20	86	123	77	110	65	95	49	82
25	93	133	84	120	73	107	57	95
30	101	144	92	131	80	118	64	107
35	108	154	99	141	88	129	72	120
40	116	166	107	153	96	141	80	134
				RETIREMENT AT 62				
10	56%	80%	48%	69%	39%	57%	26%	43%
15	62	89	54	77	46	68	32	53
20	69	99	61	87	52	76	39	65
25	75	107	67	96	58	85	45	75
30	89	127	81	116	72	106	60	100
35	96	137	88	126	80	118	68	113
40	104	149	96	137	88	129	76	127

APPENDIX

Summary of Social Security Benefits

The Social Security System is a comprehensive social insurance program designed to eliminate dependency. In addition to basic retirement benefits, Social Security provides benefits for workers who are permanently and totally disabled and for the survivors of workers who die before or after retirement. It includes a health insurance program which covers retirees, disabled workers, and persons who require costly special medical care such as kidney dialysis.

The broad scope of Social Security protection is highlighted in the following summary of benefit provisions.

Eligibility for Benefits

A worker whose job is covered by Social Security is eligible for various Social Security benefits, depending on his or her insured status. There are three kinds of insured status:

(a) "Fully insured": One quarter of coverage for each calendar year after 1950 or, if later, after year in which worker became 21; minimum required is 6 quarters of coverage; 40 quarters of coverage means fully insured for life.

(b) "Currently insured": At least 6 quarters of coverage during 13-quarter period ending with quarter in which worker (i) died, or (ii) became entitled to disability insurance benefits, or (iii) became entitled to retirement benefits.

(c) "Insured for disability benefits": Both (i) fully insured, and (ii) 20 quarters of coverage during 40-quarter period ending with quarter in which disability commenced (or if disabled before age 30 or blind other requirements apply).

The schedule below indicates the insured status required and the levels of various types of Social Security benefits:

Condition for Benefits	Insured Status Requirement for Worker	Benefit Amount
Retirement at 62 to 65	Fully insured	PIA (reduced if under 65)
Disabled before 65	Insured for disability benefits	PIA
Wife of retired or disabled worker 62 or over, or caring for child	Insured for retirement or disability benefits as applicable	50% PIA (reduced if under 65 and not caring for child)
Dependent child	"	50% PIA
Dependent husband 62 or over	"	50% PIA (reduced if under 65)
Widow or Widower 60 or over	Fully insured	100% PIA (reduced if under 65)
Widow caring for child	Either fully or currently insured	75% PIA
Surviving child	"	75% PIA
Dependent parents 62 or over	Fully insured	82½% PIA (75% each if two)
Lump sum death benefit	Either fully or currently insured	$255
Hospital insurance	65 and entitled to SS benefits; or under 65 and entitled to SS disability benefits for 2 years; or 65 and have 3 quarters of coverage for each year after 1966 up to age 65; or voluntarily enroll and pay required premium	Schedule of in-hospital, post-hospital extended care, and home health service benefits
Medical insurance	None - 65 or over and pay required premium	Schedule of medical benefits

Note: Dependent and survivor benefits subject to family maximum ($764.90 in late 1977 for male worker with maximum average monthly wage). Disabled widows and widowers may be entitled to benefits between ages 50 and 60, with a benefit reduced to 50% of the PIA at age 50, grading up to 71½% at age 60.

Benefit Amounts

The worker's primary insurance amount (PIA) is the basis for almost all Social Security benefit amounts. It is based on the worker's average monthly earnings (AME) over a number of years.

The period of years used to determine the AME include those calendar years after 1950 (or after attainment of age 21, if later) up to the year in which the worker:

(a) attains age 62 (for retirement benefit purposes); or

(b) dies (for survivor's benefit purposes); or

(c) begins the waiting period for disability benefits.

The total number of years obtained above is reduced by the 5 years of lowest earnings. The worker's "total earnings covered by Social Security" in the years selected are then added together and divided by the number of months in those years to produce the amount of his AME. "Total earnings covered by Social Security" means, for each of the years used in the computation, only wages from jobs covered by Social Security and only wages up to the Social Security wage base in effect during that particular year. The wage base has increased as follows since 1950:

Period	Maximum Wages for Social Security Benefits and Taxes
1951-54	$ 3,600
1955-58	4,200
1959-65	4,800
1966-67	6,600
1968-71	7,800
1972	9,000
1973	10,800
1974	13,200
1975	14,100
1976	15,300
1977	16,500

After the worker's AME is computed, the amount of his PIA is determined by utilizing tables developed by the Social Security Administration, on the basis of a statutory formula. Under present law the formula percentages are automatically increased whenever benefits are increased.

The Social Security System is heavily weighted to favor employees with lower earnings. As a percentage of average monthly earnings, larger benefits are provided for lower-paid workers than for higher-paid workers. This reflects the "social insurance" objective of the System. For example, a male whose career has been covered by Social Security and who retires in late 1977 at age 65 will receive a primary insurance amount as follows:

	Monthly PIA	Ratio of PIA to AME
Maximum AME - $634	$437.10	68.9%
3/4 of Maximum AME - $475	352.60	74.2
1/2 of Maximum AME $317	270.70	85.4

Social Security also provides a minimum benefit, currently $114.30 at age 65; a special minimum benefit of up to $180 for workers who have many years under Social Security at low wages; and special benefits for persons who became 72 before 1969 and are unable to meet the regular insured status test.

Social Security only recognizes earnings up to the Social Security wage base in determining average monthly earnings. To the extent that a covered worker's wages exceed the wage base, those earnings are not included in determining his or her PIA. Consequently, all workers whose career earnings average is greater than the average of the wage bases during the same period will receive identical Social Security benefits - the maximum benefit - regardless of the differences among their career average total earnings.

All Social Security benefits, both for those retired and those not yet retired, are increased automatically to reflect increases in the cost of living as measured by the Consumer Price Index. Automatic benefit increases are provided in June of each year if the CPI rises 3% or more; the most recent increase of 5.9% was included in benefit checks for June 1977 which were received in early July.

What future Social Security benefits will represent as a percentage of final salary cannot be identified with certainty because of the variables involved in the operation of the automatic escalators. Future replacement ratios will vary substantially depending on the interrelationship of three factors:

1. The individual's salary history.
2. Future changes in national wage levels.
3. Future increases in the cost of living.

Appendix VI

GENERAL COMMENTS ON BENEFIT OBJECTIVES AND BENEFIT FORMULAS

Report to:

JOINT LEGISLATIVE RETIREMENT STUDY COMMITTEE
COMMONWEALTH OF VIRGINIA GENERAL ASSEMBLY

Submitted by
Martin E. Segal & Company, Inc.
September, 1977

MARTIN E. SEGAL COMPANY

730 FIFTH AVENUE · NEW YORK, N. Y. 10019 · (212) 586-5600

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September 12, 1977

Joint Legislative Retirement Study Committee
Commonwealth of Virginia General Assembly
State Capitol
Richmond, Virginia

Gentlemen:

Our July, 1977 report to your Joint Committee - "VSRS and Social Security Retirement Benefits Provided for Virginia Public Employees" - showed that, under present VSRS provisions, members retiring after a full career of public service generally receive combined VSRS and Social Security benefits in excess of final take-home pay. That initial report also indicated that designing VSRS benefit and contribution provisions with full recognition of Social Security will preclude an automatic drift into excessive benefits and costs.

This report presents general comments on combined benefit objectives and alternative benefit formulas for VSRS. It is intended to assist the Joint Committee in considering benefit objectives and the extent to which various benefit formulas produce combined benefits in line with the established objectives.

We suggest that this report and the implications of alternative benefit formulas be thoroughly evaluated by the Joint Committee before any final policy decisions are made regarding proposed amendments to VSRS benefit or contribution provisions.

Sincerely,

MARTIN E. SEGAL COMPANY

By: John P. Mackin

John P. Mackin, Ph.D.
Senior Vice President

JPM:ns

COMBINED BENEFIT OBJECTIVES

Our initial report to the Joint Legislative Retirement Study Committee reviewed the benefit structures of VSRS and Social Security, and presented data on the levels of combined retirement benefits currently being provided for Virginia public employees. Table 1, which follows, reproduces Table 4 of our initial report; it shows combined VSRS and Social Security benefits payable to members retiring in late 1977 as percentages of final average salary and take-home pay.

To determine the relationship between gross salary and take-home pay, we computed the percentage of gross salary represented by the take-home pay of VSRS staff employees. Our analysis indicated that the take-home pay of most VSRS employees falls within a range of 65% to 75% of gross salary. The average ratio of take-home pay over gross salary, which is close to 70% for all employees with gross salaries below $12,000, tends to decrease slightly as gross salary levels increase above $12,000.

For most VSRS members, combined retirement benefits of 75% of final average salary would mean a full continuation of final year's take-home pay into the period of retirement. Because the benefit objective is defined in terms of final average salary (which under VSRS is the average of a member's highest 36 consecutive months salary), the percentage needs to be somewhat higher than the ratio of take-home pay over gross salary if the goal is to provide for the full continuance of a career employee's final take-home pay. In view of the existing relationship between take-home pay and gross salary, a combined benefit of 75% of final average salary may appear slightly high. However, we expect that a restructured VSRS may also involve lower employee contributions and, therefore, an increase in take-home pay as a percentage of gross salary.

Table 1

Combined VSRS and Social Security Benefits
Payable to Single Members Retiring in Late 1977
as Percentages of Final Average Salary and Take-Home Pay

Years of creditable service under VSRS	FAS = $6,000		FAS = $10,000		FAS = $15,000		FAS = $30,000	
	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP	Percent of FAS	Percent of THP
				RETIREMENT AT 65				
10	71%	101%	62%	89%	50%	73%	33%	55%
15	78	111	69	99	58	85	41	68
20	86	123	77	110	65	95	49	82
25	93	133	84	120	73	107	57	95
30	101	144	92	131	80	118	64	107
35	108	154	99	141	88	129	72	120
40	116	166	107	153	96	141	80	134
				RETIREMENT AT 62				
10	56%	80%	48%	69%	39%	57%	26%	43%
15	62	89	54	77	46	68	32	53
20	69	99	61	87	52	76	39	65
25	75	107	67	96	58	85	45	75
30	89	127	81	116	72	106	60	100
35	96	137	88	126	80	118	68	113
40	104	149	96	137	88	129	76	127

A combined benefit of 75% of final average salary may be an acceptable goal for the majority of VSRS members, but it is within the range of good public policy to provide somewhat less for those who are relatively well paid. A lower benefit objective for higher-paid members not only represents sound public policy but, in more fundamental terms, it recognizes the fact that take-home pay as a percentage of gross salary generally declines as gross salary increases. In addition, a lower benefit objective for higher-paid members can be justified on the grounds that the ratio of savings over total personal income generally increases as income increases.

One method of meeting the objective of providing for the full continuance of take-home pay for career employees at all salary levels would be to establish a lower benefit objective on that portion of salary in excess of the Social Security wage base. For example, the combined benefit objective for a VSRS member with 30 years of service might be 75% of final average salary up to the Social Security wage base (or the average of the Social Security wage bases in the three years immediately preceding retirement), plus 55% on that portion of salary above the base. An employee with a salary equal to twice the wage base would, therefore, receive combined benefits of 65% of final average salary.

Before specific formulas can be developed to achieve a certain combined benefit objective, a decision needs to be made as to what period of service will be deemed to constitute a full career. While a working lifetime is generally close to 40 years (from 25 to 65), we believe that 30 years of employment as a member of one retirement system is a realistic measure of a full working career. Those employees who complete 30 years of service before retirement could be permitted to discontinue making contributions. In addition, the formula could provide that benefits are based on final average salary at retirement and not at the time an employee completes 30 years of service. Thus, an employee who entered service at 25 and retired at 65 could be permitted to discontinue contributions at 55; between 55 and 65 his benefit would increase as a result of salary increases and this benefit increment would be provided at no cost to the employee.

Another factor that needs to be considered in establishing benefit objectives is the age at which the intended objective is to be achieved. A retirement plan provides for the payment of unreduced benefits at a certain age (or ages), and that age is usually referred to as the normal retirement age. The requirements for normal retirement establish the age or ages to which the average employee is encouraged to stay in employment and after which he or she is encouraged to retire. Under present VSRS provisions, the requirements for normal retirement are age 65 or age 60 with 30 years of service.

VSRS also makes early retirement available to members who want to retire before meeting the requirements for normal retirement and are willing to accept some reduction from the full formula benefits. The requirements for retirement on reduced early retirement benefits are currently age 55 with 5 years of service. Early retirement can be made relatively attractive or unattractive, depending upon the degree of reduction. Under VSRS the percentage reduction in the formula benefit is .5% for each of the first 60 months plus .4% for each additional month between early retirement and the date of full eligibility for normal retirement.

For purposes of our review of various types of benefit formulas, it is assumed that the normal retirement age will be fixed either at age 65 or at age 62. As a result, Social Security benefits will always help to fulfill the combined benefit objective defined by the Joint Committee. Providing full benefits before age 62 will result in significantly higher retirement costs because the total benefit objective would be met by VSRS up to age 62. If the objective is to encourage retirements before age 62, this could be accomplished by using early retirement factors that result in relatively high benefits for earlier-than-normal retirement.

ALTERNATIVE BENEFIT FORMULAS

The wide range of possible benefit formulas can be considered in terms of broad alternative types, and the extent to which each type produces combined benefits that meet a certain objective, despite future changes in Social Security.

To facilitate the identification of alternative formulas, we have assumed that the general objective is to provide combined benefits at age 65 with 30 years of service equal to 75% of final average salary (the term "salary" is used in the remainder of this section to refer to "final average salary"). For higher paid employees, we have assumed that the benefit objective will be tapered downward, perhaps to 60% or 65% for an employee with a salary equal to double the Social Security wage base.

Based on current Social Security benefit levels, the age-65 Social Security benefit is assumed to continue to approximate 50% of salary for an employee with a salary equal to half the wage base, 30% of salary for a wage base employee, and 15% of salary for an employee with a salary equal to double the wage base.

It should be emphasized that the general benefit objective outlined above was assumed simply to facilitate the description of different types of formulas. Before alternative formulas can be evaluated in detail, the Joint Committee will need to consider numerous policy questions, including (1) target benefit percentages or benefit objectives for employees with various salary levels, (2) the period of service deemed to constitute a full working career, (3) normal retirement age, (4) early retirement provisions, and (5) employee contribution rates.

Single Percentage Formula

A majority of public employee retirement systems, including VSRS, determine benefits by applying a fixed formula which is usually a specified percentage of salary for each year of service (such as the 1.5% formula in VSRS). Where members of the system are also covered under Social Security, the benefits payable under the federal program are usually fully in addition to the benefits provided by the state or local retirement system.

One possibility would be to leave the basic VSRS formula unchanged. VSRS would continue to provide a benefit of 45% of salary to members with 30 years of service (this disregards the somewhat higher benefits now provided for VSRS members with salaries above $13,200). If Social Security is assumed to produce an additional 30%, the combined benefits equal 75%. By limiting the maximum years of credited service to 30, the combined benefit would be limited to 75% for those employees who receive a 30% Social Security benefit.

However, the 75% objective would only be fulfilled for an employee whose salary approximates the Social Security wage base. For someone earning more, Social Security represents a progressively lower percentage of salary. Consequently, for an employee whose salary is twice the Social Security base, the system would pay 45% for 30 years and Social Security would pay another 15%, for a total of 60%.

For the large proportion of employees with salaries below the Social Security base, the combined benefits would be progressively greater than 75% -- for example, 95% for a 30-year employee with a salary equal to half the Social Security base. Accordingly, the VSRS formula would need to be reduced from 1½% to less than 1% per year if the intended objective was to provide combined benefits of 75% after 30 years for an employee whose salary was half the Social Security base.

A single percentage formula has the significant advantages of being simple, easily understood by the system members, relatively easy to administer, and independent of Social Security. On the other hand, the combined benefits produced by such a formula vary with salary, because Social Security heavily favors those with lower earnings. In addition, such a formula provides no assurance that future levels of combined benefits will meet the intended objectives.

Step-Rate Integrated Formula

A widely used approach in accommodating the design of a retirement plan to Social Security has been a "step-rate" formula. This is a formula that accrues two different percentages of pay for each year of service: one on the part of salary subject to Social Security contributions and the other -- a higher percentage -- on the remainder of salary. Social Security might be equated, for example, with 1% of salary for each year of service (30 years equals 30%). Therefore, a step-rate formula might be:

> 1½% of salary covered by Social Security,
> plus 2% of the excess.

The first part would provide, after 30 years, 45% of the Social Security salary base; with Social Security 75%. The second part would provide, after 30 years, 60% with no Social Security addable since that portion of salary does not give rise to a Social Security benefit.

Traditionally, step-rate formulas have been fixed on the basis of whatever taxable wage base was in effect, at the moment, under the Social Security Act. Generally speaking, once that salary "breakpoint" was fixed in a plan, it was not changed. That has meant that step-rate formulas have become increasingly obsolete; some of these formulas continue to be based on $4,800 or $7,800 breakpoints. With the new Social Security law, it has become more obvious that a step-rate formula based on a fixed salary breakpoint serves no purpose of continuing validity -- the Social Security earnings base and benefit level will be escalated automatically.

One could, theoretically, design a formula that would incorporate an automatic shift in the salary breakpoint to match the Social Security maximum. If the breakpoint moves up, it means that the benefit on the new piece of salary covered below the breakpoint goes down. Social Security moves up simultaneously, to be sure, but to a much lesser extent, since Social Security averages that additional piece of salary in with all past salary. This basic fault could be corrected. It would require, however, inventing a career average formula, such as Social Security's, with an adjustment of each year's benefit accrued by an index of wage change, so that the total benefit from the state system would not go down in time any more than Social Security would go up.

In our opinion, a step-rate formula with a breakpoint designed to take account of the career average Social Security formula would be unduly complicated, particularly for a large state retirement system. Moreover, step-rate formulas may appear to unduly favor the higher-paid employees, even if combined benefits for the higher-paid represent a smaller percentage of salary than the combined benefits provided for lower-paid employees. On the other hand, a step-rate formula has the major advantage of allowing the system to compute benefits independent of the individual's Social Security benefit.

50% Offset Formula

An example of an offset approach which was widely used in the early 1950's was to subtract from a defined benefit half of the Social Security benefit. Then, under pressure for higher benefits and for reflecting Social Security increases in full, provisions of this type almost disappeared. They have been reappearing now, however, as the combination of system benefits and Social Security has reached a high ratio of replacement of earnings by retirement income, and step-rate formulas have proven to be ineffective.

A relatively simple formula would be 2% of salary for each year of service, less 2% of Social Security for each year of service up to 25 (maximum offset 50% of Social Security). With 30 years of service, this would produce 75% of salary for the wage base employee, computed as follows:

30 years times 2%	60%
Less half of Social Security -	15
Payment from system	45%
Plus all of Social Security +	30
Combined	75%

If the objective was to produce combined benefits of 75% for a wage base employee with 40 years of service, a possible 50% offset formula would be 1½% of salary for each year of service less 1½% of Social Security for each year of service up to 40. With 40 years the system benefit would be 60% reduced by half of Social Security, for a combined benefit of 75%.

The rationale for a 50% offset plan has been that the employer and the employee share equally in the financing of Social Security and that the "employee financed" portion of Social Security is not taken into account in determining the benefits payable by the system.

An important point to note is that offset plans have generally been established so that the value of 50% of Social Security is subtracted even from the benefit payable in advance of Social Security. In other words, a plan of this type will typically calculate the normal retirement benefit, payable at age 65. Then it will subtract the offset amount (let us say, 50% of Social Security at 65) to determine the normal benefit payable from the plan. Then, if the employee is retiring before 65 or 62, it will apply to that net amount the reduction factor for early retirement.

If the employee is retiring at or after 62, exact Social Security amounts are available, but if retirement occurs before age 62 it becomes necessary to estimate the Social Security benefit payable. That means (a) getting his Social Security wage history, (b) making an assumption about whether or not he will work under Social Security coverage after his retirement, and (c) calculating his projected Social Security benefit and subtracting 50% to find the net amount for the system to pay. Where payments before normal retirement are reduced because of age, the net amount must also be multiplied by the system's early retirement factor.

Another question that has to be answered is whether the Social Security amount is to be determined by the Social Security formula in effect when the employee left system employment or by the Social Security formula that will be in effect when he reaches age 65. Obviously, the simpler and more certain calculation is to determine the projected Social Security benefit by the law in effect when the employee leaves system employment. (ERISA provides that this is the only acceptable method for private pension plans with offset formulas.)

However, to calculate the Social Security benefit amount at the point of severance without considering the escalation in the wage base and the benefit level to age 62 or age 65 is consistently to underestimate Social Security and the consequent offset, and to pay the early retiree on a more favorable basis (though not necessarily a greater amount) than the person who retires at age 62 or 65. The extreme case of such discrepancy might occur with a vested benefit deferred from perhaps termination at age 40 to age 65.

Clearly, an offset formula of this type ceases to be simple once it is applied to determine benefits payable before 62. Moreover, it subtracts a portion of Social Security even before Social Security is payable. To eliminate the complexities of offsetting before Social Security is payable, Social Security could be offset only when it is payable. That would mean applying the offset at age 62 or at retirement, whichever is later. That provides, of course, a much higher benefit for retirements before age 62.

A 50%-offset formula is essentially a compromise. The system benefit is reduced for long-service employees by half the Social Security benefit. Such a formula therefore gets involved in the argument that "benefits are being reduced" because of Social Security coverage. More important is the fact that only half of the Social Security benefit is deducted. The other half is additional, so the extent to which an intended benefit objective is fulfilled still varies with salary.

All-Inclusive Formula

The most direct method of accomplishing an overall benefit objective is to fix a benefit formula in all-inclusive terms. It would then be a benefit objective defined and guaranteed by state law but fulfilled through two instruments, namely, VSRS and Social Security.

Based on the assumed objective, the state law might provide that an employee with 30 years of service could retire at age 65 on 75% of salary. Social Security would make its payments and VSRS would pay whatever else was necessary to fulfill the defined benefit objective. For retirements before 65 the all-inclusive benefit would be in an amount reduced by whatever factor was fixed as appropriate for early retirement.

The all-inclusive benefit could be proportionately reduced for service of less than 30 years. One method of providing a benefit for relatively short-service employment is to subtract a proportionate share of Social Security for each year of service. For example, the benefit for each year of service up to 30 years could be 2½% of salary less 1/30th of the Social Security benefit.

An all-inclusive benefit formula can be readily modified to take account of decisions made with respect to various policy issues. For example, the age-62 Social Security benefit could be deducted in all cases, if the objective was to provide combined benefits somewhat higher than the target percentage for retirements after age 62. If the objective was to provide combined benefits of 60% of salary for a 30-year employee earning twice the wage base, the all-inclusive formula could be modified as follows: for each year of service up to 30 years - 2-1/3% of salary up to the Social Security base plus 1-2/3% of the excess, less 1/30th of the Social Security benefit. Another possibility would be to vary the percentages for various periods of service so as to provide higher or lower benefits for certain portions of an employee's total period of service.

Because an all-inclusive benefit formula is a new concept, it requires a reorientation of basic approach and a process of absorption. An important aspect of the all-inclusive formula is that it involves substantially different changes in benefits for employees at different salary levels. Although the all-inclusive benefit could be stated as 2½% of salary less 1/30th of Social Security for each of the first 30 years of service, the system benefit would vary substantially depending on the employee's salary level and Social Security benefit. For example, the system benefit for a 30-year employee with a salary equal to half the Social Security base would be 25%, compared to a system benefit of 60% for the employee whose salary was equal to double the base.

Maximum Limit on Combined Benefits

Another direct method of assuring that combined benefits do not exceed a certain objective, despite future changes in Social Security, is to add a maximum limit on combined benefits to the state retirement law. For example, the state law could provide that VSRS plus Social Security benefits may not exceed 75% of salary. As with an all-inclusive formula, however, a maximum limit on combined benefits results in widely varying system benefits depending on the employee's salary level and Social Security benefit.

VSRS presently incorporates the following maximum limit: the benefit payable under VSRS may not exceed the amount determined by subtracting 50% of the member's primary Social Security benefit from 100% of his or her final average salary. In our initial report to the Joint Committee, we noted that the present maximum applies to only a very few VSRS members (for example, it does not apply to any of the salary levels or service periods included in Table 1). For a member with a salary approximating the current Social Security base, combined benefits would need to exceed about 115% of salary (or 170% of final take-home pay) before VSRS benefits would be reduced on account of the present maximum.

Our initial report to the Joint Committee included these comments on the present maximum: "In studying the relationship between VSRS and Social Security, one of the issues to be considered by the General Assembly is the 'appropriateness' of the existing maximum limit. Because it takes account of only half of the primary Social Security benefit, VSRS members affected by the maximum limit would still receive total retirement benefits substantially in excess of 100% of final average salary."

The present maximum limit was added to the retirement law in 1974. It replaced the following maximum limitation, which was enacted in 1972 but never became operative:

> VSRS plus primary Social Security benefits were limited to 90% of the first $5,000 of final average salary plus 75% of final average salary above $5,000; the resultant maximum VSRS benefit was applicable to members with 35 or more years of service and pro-rated downward in the case of members with less than 35 years of service.

Although the 1972 maximum took partial account of the weighting of Social Security in favor of lower-paid employees (by providing for a higher percentage limitation on the first $5,000), it would still have applied mainly to lower-paid and long-service employees. Accordingly, proposals were made to reduce the employee contribution rate to VSRS from 5½% to 3% on that portion of salary subject to Social Security taxes. However, because the proposed reduction in employee contributions was not enacted, the 90%-75% maximum was viewed by some as unduly favoring the higher-paid; as noted, it was deleted from the retirement law in 1974.

The experience of VSRS indicates that a maximum limit on combined benefits can be designed to accomplish specific benefit objectives for employees at various salary levels. To produce an equitable relationship between benefits and contributions for all employees, a maximum limit can be combined with a reduction in contributions for lower-paid employees or with a minimum benefit guarantee for each year of service. One possibility would be to add a maximum limit on combined benefits (which could be similar to the 90%-75% maximum enacted in 1972), but also provide that no VSRS member will receive a system benefit of less than 1% of salary for each year of service. The minimum benefit guarantee should be designed to take account of both the employee contribution structure and employer cost considerations.

Independent Formula with Guaranteed Total

This approach would combine both a VSRS benefit computed independently of Social Security and a VSRS benefit inclusive of Social Security. The member would receive whichever benefit was more favorable.

An independent formula with a guaranteed total can be illustrated as follows:

> The basic VSRS formula might be 1% of salary for each year of service (or for each year after 1978 if it also applied to current employees). This formula benefit would be paid to members who meet the requirements for normal retirement and reduced for earlier-than-normal retirements, as under present provisions.
>
> The other major feature would be a guarantee that a member's total retirement benefit, including his or her primary Social Security benefit, would not be less than a certain percentage of salary beginning at age 65. The combined benefit percentage to be guaranteed from age 65 on would be fixed by statute, and would most likely vary with both years of service and salary level.

VSRS members who retired at or after age 65 would receive the greater of the basic formula benefit or the benefit computed under the guarantee. Those retiring before age 65 would receive the basic formula benefit up to 65, and the greater of the formula benefit or the "guarantee benefit" beginning at age 65. In other words, once benefit payments commence the benefit amount could never be reduced; however, the benefit would be increased beginning at 65 if a larger benefit was required to meet the combined benefit percentage guaranteed by the retirement law.

In view of the weighting of Social Security benefits in favor of employees with low earnings, the combined benefit percentage guaranteed under such a plan would most likely by tapered downward for higher-paid employees. For example, the combined benefit guarantee from age 65 on might be as follows for a career employee: 70% of salary up to the Social Security base plus 50% of any excess salary. The specific levels of combined benefits to be guaranteed will depend on cost considerations and the decisions made by policymakers with respect to appropriate benefit objectives for employees with various salaries and service periods.

Combining an independent formula with a guaranteed total benefit has the significant advantage of taking account of Social Security in a positive manner. Instead of reducing system benefits because of Social Security, this approach involves a potential increase in system benefits if total benefits do not meet the statutory guarantee. Although the basic formula benefit may be reduced under such a plan (possibly from 1½% to 1% of salary for each year of service), this reduction might be acceptable to employees if accompanied by a total benefit guarantee and a reduction (or elimination) of employee contributions.

Appendix VII

Selected Examples of Combined Benefits for Recently Retired Career Employees

Service	AFC	VSRS Annual	SS Annual	Last Salary	Total SS & VSRS	Total Benefit as % of Last Salary	VSRS Over Life Expectancy M=15.6y, F=19.7y	Career Contribution
32y 11m	9,664	4,808	4,316	10,512	9,124	86.8%	94,734	6,330
32y 3m	13,571	6,583	5,024	14,336	11,607	81.0	129,685	7,871
33y 8m	10,705	5,406	4,679	11,449	10,085	88.1	106,498	5,950
32y	11,208	5,381	4,064	11,500	9,445	82.1	106,005	5,290
34y 8m	13,057	6,792	5,123	14,371	11,915	82.9	97,125	7,289
41y	12,362	7,617	5,172	13,180	12,789	97.0	150,054	8,204
30y 4m	12,962	5,898	5,172	13,379	11,070	82.7	116,190	7,603
43y	10,306	6,685	4,652	10,400	11,337	109.0	131,695	6,664
47y	19,621	14,285	4,944	20,500	19,229	93.8	222,846	13,968
39y	22,303	13,580	4,944	24,309	18,524	76.2	211,848	15,978
38y 1m	21,862	12,983	4,944	24,620	17,927	72.8	255,765	6,949
32y 8m	46,252	24,314	4,417	47,797	28,731	60.1	379,298	36,161
42y 7m	21,433	14,217	4,944	22,400	19,161	85.5	221,785	14,425
39y 5m	32,194	20,158	4,944	34,600	25,102	72.6	314,464	22,025
39y 4m	24,902	15,383	4,944	27,808	20,327	73.1	239,975	22,942
31y 7m	23,762	11,763	4,558	27,829	16,321	58.7	183,503	14,453
31y 7m	32,583	16,355	4,944	34,900	21,299	61.0	255,138	27,656
44y 7m	28,971	20,448	4,944	30,300	25,392	83.8	318,989	19,248

Prepared by VSRS

Retirement Benefit Comparisons

RETIREMENT BENEFIT COMPARISONS

For Hypothetical Employees with Salary and Service as Indicated*

VSRS Benefit Comparisons
(Annual Benefits)

Annual Salary at 65	25 Years Service				30 Years Service				35 Years Service			
	$8,000	$15,000	$25,000	$50,000	$8,000	$15,000	$25,000	$50,000	$8,000	$15,000	$25,000	$50,000
(1)	$ 2,860	$ 5,400	$ 9,330	$19,160	$ 3,430	$ 6,480	$11,200	$23,000	$ 4,000	$ 7,560	$13,070	$26,830
(2)	1,440	3,620	7,410	16,880	1,730	4,340	8,890	20,260	1,730	4,340	8,890	20,260
(3)	1,000	2,980	6,620	15,710	1,490	3,890	8,130	18,740	1,970	4,800	9,650	21,770
(4)	2,500	5,630	10,180	21,540	3,000	6,760	12,210	25,850	3,000	6,760	12,210	25,850
(5)	1,730	4,340	8,890	20,260	1,910	4,680	9,460	21,390	2,090	5,030	10,030	22,530
(6)	820	2,870	7,420	18,780	1,740	4,430	9,890	23,530	1,740	4,430	9,890	23,530
(7)*	3,640	4,850	8,470	18,700	4,360	5,820	9,420	20,780	5,090	6,790	10,360	22,860
(8)*	900	2,640	6,050	14,570	1,360	3,660	7,750	18,290	1,910	4,690	9,770	22,840
(9)	2,000	3,800	7,980	18,440	2,400	4,620	9,350	21,160	2,800	5,440	10,710	23,890
(10)	2,360	5,160	9,250	19,480	2,550	5,650	10,200	21,560	2,730	6,140	11,140	23,640
(11)	2,350	4,400	7,330	14,960	2,760	5,180	8,750	17,960	3,180	5,970	10,210	20,950
(12)	1,180	3,320	7,190	16,850	1,800	4,480	9,120	20,710	1,800	4,480	9,120	20,710
	(7) $ 3,640	(4) $ 5,630	(4) $10,180	(4) $21,540	(7) $ 4,360	(4) $ 6,760	(4) $12,210	(4) $25,850	(7) $ 5,090	(1) $ 7,560	(1) $13,070	(1) $26,830
	(1) 2,860	(1) 5,400	(1) 9,330	(5) 20,260	(1) 3,430	(1) 6,480	(1) 11,200	(6) 23,530	(11) 4,000	(7) 6,790	(4) 12,210	(4) 25,850
	(4) 2,500	(10) 5,160	(10) 9,250	(10) 19,480	(4) 3,000	(7) 5,820	(10) 10,200	(1) 23,000	(11) 3,180	(4) 6,760	(10) 11,140	(9) 23,890
	(10) 2,360	(7) 4,850	(5) 8,890	(1) 19,160	(11) 2,760	(10) 5,650	(6) 9,890	(10) 21,560	(4) 3,000	(10) 6,140	(9) 10,710	(10) 23,640
	(11) 2,350	(11) 4,400	(7) 8,470	(6) 18,780	(10) 2,550	(11) 5,180	(5) 9,460	(5) 21,390	(9) 2,800	(11) 5,970	(7) 10,360	(6) 23,530
	(9) 2,000	(5) 4,340	(9) 7,980	(7) 18,700	(9) 2,400	(5) 4,680	(7) 9,420	(9) 21,160	(10) 2,730	(9) 5,440	(11) 10,210	(7) 22,860
	(5) 1,730	(9) 3,800	(6) 7,420	(9) 18,440	(5) 1,910	(9) 4,620	(9) 9,350	(7) 20,780	(5) 2,090	(5) 5,030	(5) 10,030	(8) 22,840
	(2) 1,440	(2) 3,620	(2) 7,410	(2) 16,880	(12) 1,800	(12) 4,480	(12) 9,120	(12) 20,710	(3) 1,970	(3) 4,800	(6) 9,890	(5) 22,530
	(12) 1,180	(12) 3,320	(11) 7,330	(12) 16,850	(6) 1,740	(6) 4,430	(2) 8,890	(2) 20,260	(8) 1,910	(8) 4,690	(8) 9,770	(3) 21,770
	(3) 1,000	(3) 2,980	(12) 7,190	(3) 15,710	(2) 1,730	(2) 4,340	(11) 8,750	(3) 18,740	(12) 1,800	(12) 4,480	(3) 9,650	(11) 20,950
	(8) 900	(6) 2,870	(3) 6,620	(11) 14,960	(3) 1,490	(3) 3,890	(3) 8,130	(8) 18,290	(6) 1,740	(6) 4,430	(12) 9,120	(12) 20,710
	(6) 820	(8) 2,640	(8) 6,050	(8) 14,570	(8) 1,360	(8) 3,660	(8) 7,750	(11) 17,960	(2) 1,730	(2) 4,340	(2) 8,890	(2) 20,260

*Assumed retirement as of January 1, 1977 and 5% salary scale.

Codes in parentheses to left of amounts in above chart refer to employers as follows:

(1) Virginia Supplemental Retirement System
(2) Dominion Bankshares
(3) United Virginia Bankshares
(4) Bank of Virginia
(5) Richmond Corporation
(6) Virginia National Bank
(7) Reynolds Metals
(8) Central National Bank
(9) City of Richmond
(10) VEPCO
(11) C&P Telephone
(12) Maryland National Bank

Prepared by Meidinger and Associates

9/77

Appendix IX

Long Range Retirement Cost Projections

PRESENT PLAN

	Total Payroll	AL + NC Cont. Rate	Basic Contribution	C/L Supplements	Total Cost
1978-80					
State Employees	$2216.4	2.61%	$ 57.85	$ 15.55	$ 73.40
Teachers	2275.4	4.25	96.70	38.26	134.96
Total	$4491.8		$154.55	$ 53.81	$208.36
1980-82					
State Employees	$2869.5	3.87%	$111.05	$ 21.72	$132.77
Teachers	2814.1	5.94	167.16	49.78	216.94
Total	$5683.6		$278.21	$ 71.50	$349.71
1982-84					
State Employees	$3689.7	4.83%	$178.21	$ 29.96	$208.17
Teachers	3492.5	7.31	255.30	68.26	323.56
Total	$7182.2		$433.51	$ 98.22	$531.73
1984-86					
State Employees	$4710.8	5.02%	$236.48	$ 40.51	$276.99
Teachers	4350.0	8.08	351.48	89.18	440.66
Total	$9060.8		$587.96	$129.69	$717.65
1986-88					
State Employees	$5972.3	5.28%	$315.34	$ 51.36	$366.70
Teachers	5437.4	8.79	477.95	111.47	589.42
Total	$11409.7		$793.29	$162.83	$956.12

* The dollar items in the above chart are in millions.