Commonwealth Retirement Systems: Structure and Costs

A Report

of the

JOINT STATE GOVERNMENT COMMISSION

to the

GENERAL ASSEMBLY

of the

COMMONWEALTH OF PENNSYLVANIA

Session of 1951

The Joint State Government Commission was created by Act of 1937, July 1, P. L. 2460, as amended 1939, June 26, P. L. 1084; 1943, March 8, P. L. 13, as a continuing agency for the development of facts and recommendations on all phases of government for the use of the General Assembly.

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Letter of Transmittal

To the Members of the General Assembly of the Commonwealth of Pennsylvania:

Pursuant to the directive of the General Assembly expressed in House of Representatives' Concurrent Resolution No. 74, Session of 1949, the Joint State Government Commission has studied the retirement systems of the Commonwealth with a view of ascertaining the magnitude of the costs involved in their operation. Herewith is presented a report embodying the results of this study.

To assist in the survey of the Commonwealth's retirement systems, the Commission, under authority of Act of 1943, March 8, P. L. 13, Section 1, appointed a subcommittee. On behalf of the Commission, the coöperation of the subcommittee members is gratefully acknowledged.

BAKER ROYER, *Chairman.*

Joint State Government Commission
Capitol Building
Harrisburg, Pennsylvania

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INTRODUCTION

Section I of the report outlines the structural characteristics of retirement systems in general as well as the characteristics of the three Commonwealth retirement systems.

Section II shows the historical cost of these systems to the Commonwealth.

Section III presents estimates of the Commonwealth costs which would arise if changes in the State Employes' Retirement System suggested from time to time were enacted into law. Similar estimates cannot be made for the Public School Employes' Retirement System because of the extensive changes which were made in the system by the General Assembly of 1949. Basic data consequent upon these changes were not available in time to permit a report on their effects to the current session of the General Assembly.

A comprehensive comparative study of school and state employes' retirement systems was submitted to the General Assembly of 1949. See *School and State Employes' Retirement Systems—A Comparison,* Report of the Joint State Government Commission to the General Assembly of the Commonwealth of Pennsylvania, March, 1949.

Section I

THE STRUCTURE OF RETIREMENT SYSTEMS

A. *Structural Characteristics of Retirement Systems*—

Definition: A retirement system is a plan which provides for specified benefit payments to qualified employes upon termination of their employment, the payments usually being financed jointly or separately by employers and employes.

Basic Factors of Retirement Systems: Five basic factors enter into the structure of retirement systems:

1. Eligibility for membership.
2. Financial responsibility.
3. Eligibility for benefits.
4. Method of computation of benefits.
5. Method of benefit payment.

Although these factors are separate and distinct and can be modified individually, a change in any one factor usually changes some other factor.

1. Membership Eligibility—

Entry into a retirement system is generally restricted to some limited group of persons who become eligible for entry by virtue of their employment and/or the time period over which a given employer-employe relationship obtained.

2. Financial Responsibility—

Retirement systems are generally supported by contributions from employers or employes, or both. Systems may be operated on a pay-as-you-go basis, or on an actuarial basis.

When a retirement system is operated on an actuarial basis, the costs of *all* future payment obligations arising in connection with contemporary members is estimated and anticipated. Since most of these payments will not become due until future years, the contributions necessary to finance benefit payments can be spread over time. The specific amounts which must be periodically set aside depends upon estimated payment obligations and the rate of interest which the amounts set aside can earn.

3. Eligibility for Benefits—

A member of a retirement system may establish eligibility for benefits in one of three ways. "Superannuation benefits" may be made available either on the basis of the age of the member or his years of service. "Withdrawal benefits"—that is, benefits payable prior to the attainment of a certain age and/or before a specified number of years of service has been rendered—usually depend upon length of service. However, systems which require members to make contributions toward the financing of their retirement benefits usually provide that a member, on withdrawal from service, is entitled to a payment or a series of payments equivalent to his contribution plus accumulated interest. "Disability benefits" may be made available upon medical certification of disability; sometimes eligibility for this type of benefit depends upon completion of a given number of years of service.

4. Method of Computation of Benefits—

In actuarial systems, the value of benefits to the credit of any member at the time of his retirement equals the sum of all contributions to the accounts of that member made by the member and/or his employer, plus accumulated interest.

5. Method of Benefit Payment—

Benefit payments to retired members are usually made in equal monthly amounts. Some systems permit the retiree to select a benefit payment arrangement that will cover him and designated beneficiaries as well.

B. *Commonwealth Retirement Systems—*

The Commonwealth of Pennsylvania operates the Public School Employes' Retirement System, the State Employes' Retirement System and the Pennsylvania State Police Retirement System. The definitions of the basic factors for each of the three Commonwealth retirement systems are shown in Table I, page 7.

As regards the definition of the basic factors in the Commonwealth retirement systems, examination of the table shows with respect to:

1. Membership Eligibility—

All of the Pennsylvania systems recognize two classes of membership. The membership class of an employe depends, in general, upon the date on which he entered the service of the Commonwealth and the date of the establishment of the retirement system. In the Public School Employes' Retirement System, the groups are known as "present employes" and "new entrants." In the State Employes' and Pennsylvania State Police Retirement Systems, the two classes are known as "original members" and "new members."

2. Financial Responsibility—

The three Commonwealth retirement systems are operated on the actuarial basis, under which future obligations are estimated and anticipated, and periodic allocations are made to meet future obligations.

Specifically, the State Employes' Retirement System is supported by contributions of members and Commonwealth appropriations. The Public School Employes' Retirement System is financed by contributions of members and school districts, as well as Commonwealth appropriations. The Pennsylvania State Police Retirement System is supported by contributions of members, by appropriations from the Commonwealth, and by the allocation of a portion of the revenues from the state tax on foreign insurance companies.

3. Eligibility for Benefits—

Members of all three systems are eligible for benefits on:

a. Retirement for superannuation;

b. Withdrawal retirement;

c. Retirement for disability.

4. Method of Computation of Benefits and Method of Benefit Payment—

When a member retires, he is paid an annuity. An annuity is an amount payable each year (in these systems, in monthly installments) for a given period. The retiree receives a single life annuity unless he selects one of the options described below. In the case of a single life annuity, the period during which payments are made is the remainder of the life of the retiree. The present value of an annuity is the amount of money which would have to be on hand now so that, with interest accumulated over the years, each installment could be paid during the expected life of the retiree.

The annuity to be paid consists of two parts, a member's annuity and a state's annuity.

The member's annuity is calculated in the following way: the sum of the member's contributions together

Table 1

The Retirement Systems of the Commonwealth, as of December 31, 1950

System	*Membership*[1]	*Financial Responsibility*	BENEFITS								
			Withdrawal Benefits			*Disability Benefits*			*Superannuation Benefits*		
			Qualification for Benefits	*Amount of Benefits*	*Method of Payment*	*Qualification for Benefits*	*Amount of Benefits*	*Method of Payment*	*Qualification for Benefits*	*Amount of Benefits*	*Method of Payment*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Public School Employes' Retirement System	Full time employes of the public schools, State Teachers' Colleges and similar institutions. Teachers, nurses, other professional employes; clerical help, janitors, etc. Present employes: employed before July 1, 1919; contributed for time since July 1, 1919. New entrants: contributions start after July 1, 1919.	Responsibility for member's annuity: contributions by member plus 4% interest paid by the State. Responsibility for State's annuity divided between: (a) the Commonwealth (b) the school district.	(a) An employe may withdraw, without option of state annuity, after leaving state employment, regardless of age or length of service. (b) An employe of the 1/140 class of membership only may withdraw after 25 years' service with an option of a state annuity. (c) Death of employe.	(a) Total accumulated deductions (including interest) or an annuity or deferred annuity which is the actuarial equivalent of the accumulated deductions. (b) Withdrawee may take either: (i) Full accumulated deductions (including interest); (ii) or annuity purchasable with deductions plus a state annuity having the present value of the superannuation retirement annuity for which he would be eligible if he had reached superannuation age. (c) Total accumulated deductions (including interest) paid to estate or named beneficiary.	(a) Lump-sum payment, single life annuity, or equivalent. (b) Same as (a), above. (c) Lump-sum payment.	Eligibility attained after 10 years' service, upon certification of disability by medical board.	A state annuity is added to the member's annuity so that: (a) the annual allowance is 1/90 of the final salary for each year of service; (b) generally it is at least 30% of the final salary.[2]	Single life annuity or a reduced annuity with balance from contributions to be paid on annuitant's death to a named beneficiary.	Sixty-two (62) years of age or older or "a member of the 1/140 class" who has completed thirty-five (35) years of service.[3] Compulsory retirement at age seventy (70).	(a) *State's Annuity*[4] *Allowance granted before 1949:* An annuity whose annual payment is: (i) 1/160 part of the final salary for each year of service; (ii) plus 1/160 part of the final salary for each year of *prior* service. May be drawn under various options. (For Member's Annuity, see (c).) (b) *Alternate benefit granted in 1949:* An annuity whose annual payment is: (i) 1/140 part of final salary for each year of service; (ii) plus 1/140 part of final salary for each year of prior service; (iii) an amount necessary to make minimum total annual allowance $1,200 after 40 years' service, or a proportionate amount after lesser service; (iv) special benefit for old members. (For Member's Annuity, see (c).) (c) *Member's Annuity* An annuity purchasable by the member's accumulated deductions (including interest). Act of 1949 provides state funds if necessary, so that for members of the 1/140 class, member's annuity matches state's annuity for service since July 1, 1919.	Single life annuity or choice of options.
State Employes' Retirement System	Holders of a state office or position, paid on a yearly, monthly, per diem or hourly basis. Must be employed 100 days or 750 hours per year. Also certain county employes paid by State. Original members: employed before Jan. 1, 1925; contributed for time since Jan. 1, 1925. New Members: Contributions start after Jan. 1, 1925.[5]	Responsibility for member's annuity same as school employes' system. State's annuity: Commonwealth responsibility.	(a) Same as school employes' system. (b) A member may withdraw: (i) on involuntary separation after 10 years' service; (ii) on voluntary separation after 25 years' service; (iii) after 5 regular sessions of the General Assembly. (c) Same as school employes' system.	(a) Same as school employes' system. (b) Same as school employes' system. (c) Same as school employes' system.	(a) Lump-sum payment, single life annuity, or equivalent option. (b) Same as (a), above. (c) Lump-sum payment.	Eligibility attained after 5 years' service upon certification by physician of disability.	Same as school employes' system.	Single life annuity. Payment made to estate if annuitant dies and there is a difference between the amount he has received and his accumulated deductions at time of retirement.	Sixty (60) years of age or older.	(a) *State's Annuity Regular benefits:* An annuity whose annual payment is: (i) 1/100 part of the final salary for each year of service; (ii) plus 1/100 part of the final salary for each year *prior* service. May be drawn under various options. (b) *Alternate rate withdrawn in 1937.* Before 1937 members had the choice of an annuity on the rate of 1/160 part per year, instead of the regular 1/100 part. Since 1937 all new employes entered on the 1/100 rate. Total State's annuity not to exceed 50% of final salary. (c) *Member's Annuity* An annuity purchasable by the member's accumulated deductions (including interest).	Single life annuity or choice of equivalent options.
Pennsylvania State Police Retirement System	Pennsylvania State Police. Original members: employed prior to Jan. 1, 1925. New members: employed subsequent to Dec. 31, 1924.	Responsibility for member's annuity same as school employes' system. Responsibility for state's annuity divided between: (a) The Commonwealth appropriation. (b) Part of the tax on foreign casualty insurance premiums.	(a) Same as school employes' system. (b) An employe may withdraw: (i) on involuntary separation after 10 years of service; (ii) on voluntary separation after 25 years of service. (c) Same as school employes' system.	(a) Same as school employes' system. (b) Same as school employes' system. (c) Same as school employes' system.	(a) Lump-sum payment, single life annuity, or equivalent. (b) Same as (a), above. (c) Lump-sum payment.	Immediate eligibility on disability.	An annuity which is the sum of: (a) member's annuity; (b) plus state's annuity of 2/100 of final salary for each year of service; (c) in any case not less than 30% or more than 50% of final salary.	Single life annuity.	Fifty (50) years of age or older.[6]	(a) *State's Annuity* (i) An annuity of 2/100 of final salary for each year of service; (ii) plus annuity of 2/100 final salary for each year *prior* service; (iii) plus annuity equal to member's annuity. Total of (i), (ii), and (iii) shall not exceed 50% of final salary. (b) *Member's Annuity* Annuity purchasable by the member's accumulated deductions. Rate of contribution is the same as that required by members of the State Employes' System.	Single life annuity or choice of options.

[1] The two classes of membership in each of the systems has brought special terminology into use. The term *prior service* is used to designate service before July 1, 1919 for Present Employes; or service before January 1, 1925 for Original Members.

A member transferring between the State System and the School System may leave his funds in the system from which he separated, and upon superannuation age may receive retirement benefits from that system, in addition to the benefits of the system he entered.

[2] The minimum annual allowance is 30% of final salary or 8/9 of the annual allowance to which the member might have been entitled had the retirement been deferred until the superannuation age, whichever is smaller.

[3] For Public School Employes, the option of electing the retirement fraction of 1/140 and thereby obtaining the privilege of retirement after 35 years' service with a full annuity was granted by the Session of 1949, (1949, April 25, P. L. 752).

[4] A special fund provides annuities of 1/80 of the final salary per year of service, to retirees before July 1, 1919, with 20 years of service; also to disabilitants with 14 years of service. Minimum $300 per year.

[5] Judges in service the 2nd Monday of January, 1930, and members of the General Assembly who were members September 1, 1947, may elect to become original members.

[6] For Pennsylvania State Police, the original act provided retirement at age 60 during the first year the system was in operation. The age was reduced one year for each calendar year the system was in existence, until, in 1948, the retirement age had become 50 years.

SOURCES: Act of 1917, July 18, P. L. 1043, as amended and supplemented up to January 1, 1951; Act of 1923, June 27, P. L. 858, as amended and supplemented up to January 1, 1951; and Act of 1937, June 29, P. L. 2423, as amended and supplemented up to January 1, 1951.

with the interest paid by the State on these contributions is determined. Knowing the attained age of the retiree at the time of retirement, the actuary can estimate the life expectancy of the retiree. The size of the retiree's annuity is then determined so that the present value of his annuity, paid over the expected life of the retiree, will equal the amount of the member's contributions plus interest.

The state's annuity consists, in general, of a specific fraction of the "final salary" for each year of service (exceptions are outlined in Table II, page 15). "Final salary" means the average salary over the last ten years of service for members of the Public School Employes' Retirement System, and the average salary over the last five years of service for members of the other two systems.

The member's annuity and the state's annuity are then added together to determine the total annuity payable to the retiree.

A retiree may wish to leave some portion of his claims to one or more other persons. In this case, certain alternatives are available. These alternatives are computed on an actuarial basis so as to represent the same total expected claim as the single life annuity, had that been selected. The alternatives are given below:

Option 1—a single life allowance reduced in amount by virtue of the proviso that upon the death of the member any balance remaining in the member's account is to be paid to a beneficiary designated at the time of retirement.

Option 2—a life allowance payable to the member throughout his life and continuing in the same amount to a beneficiary designated by the member.

Option 3—a life allowance payable to the member throughout his life and continuing in one-half the amount to a beneficiary designated by the member.

Option 4—any arrangement of benefits designated by the member which is certified by the actuary and approved by the retirement board. The actuarial value of the arrangement of benefits under this option may not exceed the actuarial value of the single life annuity.

The numerical calculation of an annuity may be illustrated by reference to a public school employe who took advantage of the 1949 option to change to the 1/140 class. Suppose the employe began work in 1917. Under the circumstances, the teacher will be considered a "present employe" with two years of prior service. If this teacher retires in 1951, having attained the minimum superannuation retirement age of 62, and if the final salary (the average of salaries over the last ten years) is $2,800, his annuity will be computed as follows:

(a) Member's annuity: This will depend upon the member's contributions. Suppose that to his account there are sufficient funds to provide an annuity of $400 per year.

(b) State annuity for over-all service:

$$34 \cdot \$2{,}800 \cdot \frac{1}{140} = \$680$$

(c) State annuity for prior service:

$$2 \cdot \$2{,}800 \cdot \frac{1}{140} = \$40$$

(d) State annuity consisting of the difference between the state annuity for service since 1919 and the member's annuity:

$$32 \cdot \$2{,}800 \cdot \frac{1}{140} - \$400 = \$640 - \$400 = \$240$$

TOTAL ANNUITY:

Member's annuity	$=$	\$400
State's annuity $= \$680 + 40 + 240$	$=$	960
		\$1,360

Section II

THE COSTS OF COMMONWEALTH RETIREMENT SYSTEMS

A. *Introduction*

Any change in the factors which determine the structure of a retirement system is usually accompanied by a corresponding change in the expected monetary cost of the system to the employer, the employe, or both. A liberalization of the membership eligibility requirements results in increased expected costs, inasmuch as more persons are expected to receive benefits. If the division of financial responsibility is modified, the cost to the various participating parties will be altered. Any reduction in the eligibility requirements for benefits of a given size will be accompanied by increased costs, insofar as additional members qualify for and claim such benefits. Costs will also rise as a result of an increase in the amount of benefits paid under given circumstances, since larger payments will be made to the same number of recipients. Benefits, paid by different methods, could be made actuarily equivalent, so that a change in the method of payment may affect only administrative expenses.

B. *Monetary Costs to Employer and Employes*

In the three Commonwealth retirement systems, monetary or dollar costs are borne by both the employe and the employer, inasmuch as the employe pays for the member's annuity and the school district and/or the Commonwealth pays for the state's annuity. When a change in the definition of a factor is effected, the monetary cost of the change may fall upon the employe, the employer, or both, depending on the provisions of the law.

C. *Annual or Biennial Payments in Relation to the Present Value of Total Costs*

The present value of total dollar costs means the total amount of money which would have to be on hand now so that, with interest accumulated over the years, each commitment could be liquidated as it comes due. Annual or biennial payments could be made in any number of ways. In general, the practice in Commonwealth systems has been for the State and the school districts to make contributions in terms of a percentage of the payroll for the members of each system. This percentage is such that under current conditions it is expected to remain constant, but, in the past, it has been revised as conditions changed. The biennial contributions (except for overhead) by the Commonwealth to each of the three systems during the period 1935-1949 are listed in Columns (2), (4) and (6) of Table II, page 15. In the case of the Public School Employes' Retirement System, the school districts make additional contributions on behalf of their employes.

Table II

Commonwealth Contributions to the Retirement Systems Exclusive of Commonwealth Administrative Expenses

	School System		*State System*		*Police System*	
Biennium	*State Contributions*	*Contribution per employed member**	*State Contributions*	*Contribution per employed member**	*State Contributions*	*Contribution per employed member**
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1935-37	$5,985,000.00	$88.46	$1,550,000.00	$124.37	....	.....
1937-39	6,050,000.00	85.14	1,500,000.00	58.91	$100,000.00	$62.97
1939-41	5,950,000.00	82.38	2,324,970.00	75.29	150,000.00	98.04
1941-43	5,950,000.00	83.08	2,347,000.00	85.68	150,000.00	97.47
1943-45	6,450,000.00	90.45	2,800,310.00	111.19	150,000.00	103.88
1945-47	8,192,000.00	117.64	4,457,050.00	166.80	325,970.18	229.72
1947-49	13,291,400.00	192.50	6,022,497.00	169.01	393,490.97	235.91

SOURCES: Pennsylvania Budget Circulars 49, 57, 68, 76, 84, 87, 94 and 100; Office of the Auditor General, Biennial Reports, 1935 through 1949; Public School Employes' Retirement System, published and unpublished reports of Actuarial Evaluations, 1935-1949, and State Employes' Retirement Board, unpublished reports of Actuarial Evaluations, 1935-1949.

* Using membership at mid-point of biennium.

D. *Changes in Factors, 1935-1949*

Table III, page 17, shows the number of members and their average salaries for each of the three systems from 1935 to 1949. While the numbers of employed members in the school system and police system have remained nearly constant during the period considered, the employed membership of the state system has nearly trebled, largely by virtue of the liberalization of the eligibility requirements. The increases in the average salaries of the school and police employes have been more pronounced than the increase in the average salary of the members of the state system. Increases in salary have increased retirement costs for both the employer [1] and the employe, since the state's annuity depends upon the size of the "final salary," and since each member's contribution remains a constant percentage of his salary.

[1] The term "employer" as used here includes both the Commonwealth and the school district in the case of members of the Public School Employes' Retirement System.

Table III

Membership and Average Salary in State, School, and Police Systems, 1935-1949

Year	*School System*		*State System*		*Police System*	
	Members in Active Service *	*Average Salary*	*Members in Active Service* †	*Average Salary*	*Members in Active Service* †	*Average Salary*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1935	65,840	$1,538	13,360	$1,588	(Not yet created)	
1936	67,655	1,572	12,463	1,640		
1937	69,647	1,594	17,077	1,592		
1938	71,056	1,624	25,463	1,568	1,588	$1,608
1939	71,509	1,634	27,979	1,577	1,611	1,696
1940	72,223	1,638	30,881	1,548	1,530	1,787
1941	71,939	1,642	29,101	1,613	1,577	1,823
1942	71,616	1,691	27,394	1,676	1,539	1,873
1943	71,255	1,749	25,763	1,897	1,507	2,230
1944	71,308	1,953	25,184	1,964	1,444	2,306
1945	70,575	1,997	27,237	2,056	1,387	2,490
1946	69,639	2,070	26,721	2,135	1,419	2,490
1947	68,276	2,266	30,603	2,300	1,590	2,543
1948	69,045	2,592	35,635	2,419	1,668	2,741
1949	70,370	2,751	36,602	2,550	1,635	2,996

SOURCES: Public School Employes' Retirement Board, published and unpublished reports of Actuarial Evaluations, 1935-1949, and State Employes' Retirement Board, unpublished reports of Actuarial Evaluations, 1935-1949.

* As of June 30. † As of May 31.

Table IV, page 19, lists the legislative changes in factors, exclusive of changes in membership and salary levels, which were made during the period 1935-1949. All legislative changes made during a given biennium are shown in a single column and the changes relating to a given system are shown in a single row.

Table IV

Statutory Modifications of the Factors of Commonwealth Retirement Systems

System	*Legislative Session*							
	1935	*1937*	*1939*	*1941*	*1943*	*1945*	*1947*	*1949*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public School Employes' Retirement System	123*—Extended retirement fraction election for present employes. 268*—Special exceptions made in law for persons employed 1932-33. 318*—State annuity for certain employes who separated from school service before the retirement system became operative.	314*—Regulated retirement of certain employes. 488*—Extended time for return to service.	190*—Retirement fraction election time for present employes extended. 273*—Power given to certain districts to reduce salaries in some cases, provisions for retirement and options while in effect.	294*—Fourteen years' employment sufficient for disability retirement. 278*—Increased requirements for disability benefits for ex military personnel. 282*—Provided for payments by school district of member's contributions for member in military service.	None	167*—Minimum of $20/month for persons who left the school service before July 1, 1919, and taught not more than two years thereafter. 168*—Raised minimum to $25/month. 204*—Extended retirement fraction election time for present employes. 331*—Terminated interest on accumulated deductions on the date of separation from service. 371*—Extended time for rejoining after military service.	120*—Provided State contributions on behalf of new members. 127*—Provided credit for military service for persons who resigned but returned within one year after discharge, on payment of member's contributions. 533*—Extended service allowance of certain employes. 540*—Validated transfer from School to State system.	185*—Fraction changed from 1/160 to 1/140. Retirement benefits after 35 years' service. Withdrawal benefits after 25 years' service. 535*—Increased allowances for certain persons already retired. 541*—Provided retirement minimum $1,200 for 40 years' service or proportionate amount for lesser service, for members in 1/140 class. 560*—Extended time for withdrawing and transferring membership in certain cases.
State Employes' Retirement System	173*—Annuities regulated.	179*—1/160 class closed. All new members on 1/100 rate; further regulated retirement rights, benefits, etc.	None	312*—Further defined "New Member." 116*—Provided for credit for military service if member's contributions are paid; increased requirements for disability benefits for ex military personnel.	None	370*—Extended time for rejoining after military service. 376*—Terminated interest on accumulated deductions on the date of separation from service.	465*—Defined "years of service," and "accumulated deductions." 172*—Persons loaned to U. S. to be credited for such service. 488*—Validated transfer from State to School system.	181*—Provided that disability allowance, if able to be gainfully employed, not to be greater than an amount which, added to salary, equals $300/month. 445*—Allowed return to system with credit within 20 years. 503*—Extended time of transfer from 1/160 to 1/100. 561*—Permitted transfer from School system to State Employes' system.
State Police Retirement System		453*—System established.	None	117*—Provided for credit for military service if member's contributions are paid; increased requirements for disability benefits for ex military personnel.	None	72*—New formula for computing amount of foreign casualty insurance tax to go to the State Police Fund. 336*—Extended time for making up payments for time in military service.	267*—Increased amount of the State annuities and payments. Death benefits and disability benefits changed. 315*—Credited money from the foreign casualty insurance tax to the State annuity.	567*—Raised participation factor amount of foreign casualty insurance tax paid into State Police Fund.

* Act number.

Table V, below, presents a classification of the 1935-49 legislative modifications of retirement system factors on the basis of their effects upon monetary costs and the distribution of these costs between employers and employes. The classifications are made on the assumption that the contemplated beneficiaries take advantage of the modification.

Table V

Distribution of Selected Factor Changes Made During the Period 1935-1949, by Expected Effect on Costs to Employer and Employe *

Increased or Changed Monetary Costs Accruing to:	*Number of Changes Providing:*	
	Increased Monetary Costs	*Decreased Monetary Costs*
(1)	(2)	(3)
Employer only	13	5
Employe only	None	None
Both	19	2

SOURCE: Table IV, page 19.

* Four acts in Table IV are expected to have no effect or an indeterminate effect on costs.

Columns (3), (5) and (7) of Table II, page 15, list the biennial Commonwealth contributions per employed member for the three systems during the period 1935-1949. Changes in per-member contributions reflect the combined results of all factor changes other than changes in membership, as well as changes in expected monetary costs, resulting from the revision of estimates on the basis of the most recent data.

The effect upon costs of isolated statutory changes is here illustrated with reference to Acts No. 503, No. 560 and No. 561, Session of 1949.

Act No. 503 (1949, May 23, P. L. 1654) granted present contributors of the State Employes' Retirement System the privilege of transferring from the 1/160th contribution class to the 1/100th contribution class if this transfer was made during the time period June 1, 1949, to December 31, 1949. Provision was made that, if a member so transferring pay in full (in lump sum or in installments through payroll deductions) to the retirement system a sum equal to the difference between the sum of the amounts that would have been deducted had the member been in the 1/100th class at the time of joining the system and the sum of the amounts actually deducted, then the state annuity of that member should be the same as though the member had elected to contribute in the 1/100th class at the time of joining the system. This statute further provided that members who had previously transferred from the 1/160th class to the 1/100th class should also have this privilege of making back payments. The costs occasioned by the provisions of this statute are estimated to be $230,000 for the biennium 1951-53. The present value of total cost is estimated to be $1,285,000.

The provisions of Acts No. 560[2] and No. 561[3] extend to officers and employes of the Department of Public Instruction, state teachers colleges, Thaddeus Stevens Trade School, Pennsylvania State Oral School for the Deaf and the Pennsylvania Soldiers' Orphans School the privilege of withdrawing from the Public School Employes' Retirement Fund and transferring their membership to the State Employes' Retirement Fund, on the condition that they pay back dues at rates applicable to members of the State Retirement System.

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[2] 1949, May 27, P. L. 1888.

[3] 1949, May 27, P. L. 1890.

The additional cost to the State Employes' Retirement System occasioned by Acts No. 560 and No. 561 is estimated as $480,000 for the biennium 1951-53. The additional cost to the State for this biennium is $280,000 since State contributions on account of these employes would otherwise be made to the Public School Employes Retirement Fund. The present value of additional total costs to the State Employes' Retirement System, on the basis of current membership, is estimated to be $2,656,000, and the present value of additional cost to the State, on the basis of current membership, is estimated as $1,559,000.

Section III

ESTIMATED COSTS OF PROPOSED CHANGES IN THE STATE EMPLOYES' RETIREMENT SYSTEM

A. *Past Proposals*—

Bills introduced between 1941 and 1949 contemplating changes (except in membership and salaries) in the State Employes' Retirement System are classified in Table VI with respect to their elements and legislative history. The table does not include those bills embodying changes which were enacted into law.

Table VI

Number of Bills Contemplating Changes in Elements of State Employes' Retirement System, 1941-1949

Element to Be Changed	*Number of Bills*	*Not Reported from Committee*	*Passed Second Reading in House of Introduction*	*Passed Third Reading and Final Passage in House of Introduction*	*Recommitted or Dropped from Calendar*
(1)	(2)	(3)	(4)	(5)	(6)
Amount of Superannuation Benefits	7	6	1	. .	. .
Superannuation Age	3	2	. .	1	. .
Loans to Contributors from own Contributions	5	2	. .	2	1
Withdrawal of Accumulated Deductions, Age 60-65	1	1	. .	. .	. .
Total	16	11	1	3	1

SOURCE: Histories of Senate and House Bills, 1941 to 1949.

Examination of the table shows that, during the period 1941 to 1949, seven bills were introduced which contemplated a change in the amount of superannuation benefits; of these seven bills, only one passed second reading in the house of introduction. Three bills were introduced which contemplated changes in the superannuation age; of these, one passed third reading and final passage in the house of introduction.

The as-yet-unenacted proposals have dealt with a small number of elements, although they have varied somewhat in detail.

Among the seven bills proposing changes in the amounts of superannuation benefits, two bills—H. B. No. 210 (1947) and S. B. No. 749 (1949)—proposed a minimum superannuation annuity (member's annuity plus state's annuity) of $1,200. One of these bills—H. B. No. 210 (1947)—proposed that this minimum should apply to all superannuation retirees with twenty-five or more years of service. No change in the members' rates of contribution was provided for in either bill. Subsection C, below, presents an estimate of the cost, to the state, of providing a minimum annuity of $1,200 for twenty-five or more years of service and a proportionate part of $1,200 for lesser years of service.

Two of the three bills dealing with a change in the superannuation age—S. B. No. 175 (1943) and H. B. No. 983 (1945)—proposed a reduction of the minimum superannuation age for honorably discharged war veterans only. The other bill—S. B. No. 38 (1949)—proposed optional superannuation retirement for any member with thirty-five years of service. This bill makes no provision for increased members' contributions. Inasmuch as data with respect to the veteran status of employes were not available, the cost of the latter proposal only has been estimated and is discussed in Subsection D, below.

The cost of the adoption of both the minimum annuity proposal and the superannuation with thirty-five years of service proposal is slightly greater than the sum of their separate costs, inasmuch as a few persons retiring under the thirty-five years of service proposal would have annuities below the minimum amounts in the absence of the $1,200 minimum. Estimates of the total cost of making both changes are presented in Subsection E, page 32.

The State Employes' Retirement System would not be expected to incur additional costs by permitting withdrawal of accumulated deductions by persons aged 60-65, nor by permitting loans to contributors from their own contributions.

B. *Procedure Adopted in Estimating the Monetary Costs of Proposed Changes—*

One approach to estimating the monetary costs of changes in a retirement system calls for prediction, on the basis of past rates, of the number of the current members who will receive benefits of various sizes during the coming years. From this prediction, the annual costs for the coming years and the present value of total costs can be estimated for different interest rates.

The second approach calls for the computation of costs both for current membership and for all future members. The annual monetary cost for the coming years cannot be expected to remain constant from year to year, even if the total membership, salary distribution, and exit rates (in terms of proportions by attained age) remain constant, due to the fact that the system is still in the developmental stages and to the variation in employment policies. For example, 250 members might retire in one year, and only 150 the next year. In order to determine a representative annual cost which can be expected to remain constant, if the present total membership, salary distribution, and exit rates remain constant, a hypothetical stable membership distribution by age and years of service was constructed on the basis of the withdrawal, death, disability, and superannuation rates found to be characteristic of the membership.

On the basis of this stable membership pattern, the expected change in annual cost to the Commonwealth was determined for each of the proposals. The annual cost to the State of the adoption of the minimum annuity proposal, for example, is the amount the State would have to pay in a given year to cover the cost of the increases in annuities payable, to all persons retiring in that year, for the remainder of their lives. An estimate of annual cost depends, in part, on the interest rate assumed to be earnable on investments. It appears that a rate of 4 per cent was used in the determination of the table of the cost of annuities used by the actuary. This table was used to obtain a conditional estimate of the annual cost. A chart was constructed which shows how the annual cost would vary if the earnable interest rate was less than 4 per cent.

The present value of the total cost of the change is the amount which would have to be on hand now, so that, with the interest which is earned on this amount, the annual cost due to the change could be met every year in the future.[4] This present value has been expressed for different interest rates. If a given interest rate is expected to prevail through future years, the corresponding present value of the total cost of the change in the system is given by the appropriate chart.

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[4] Since these estimates are based upon future membership, they are not identical with ordinary actuarial estimates.

C. *Estimated Monetary Cost of Establishing a Minimum Superannuation Retirement Annuity of $1,200 After Twenty-five Years of Service—*

The estimated annual monetary cost of establishing a minimum superannuation annuity of $1,200 after twenty-five years of service, and a proportionate part of $1,200 for lesser years of service is given in Chart I, page 30, for different interest rates. The estimate is based on a constant membership and salary structure. If the membership and/or salary levels continue to increase, the annual cost of establishing a minimum annuity will also increase.

The estimated present value of total costs due to the establishment of such a minimum annuity is presented in Chart II, page 31, for different interest rates. Again, if membership and/or salaries increase, the present value of total costs will also increase.

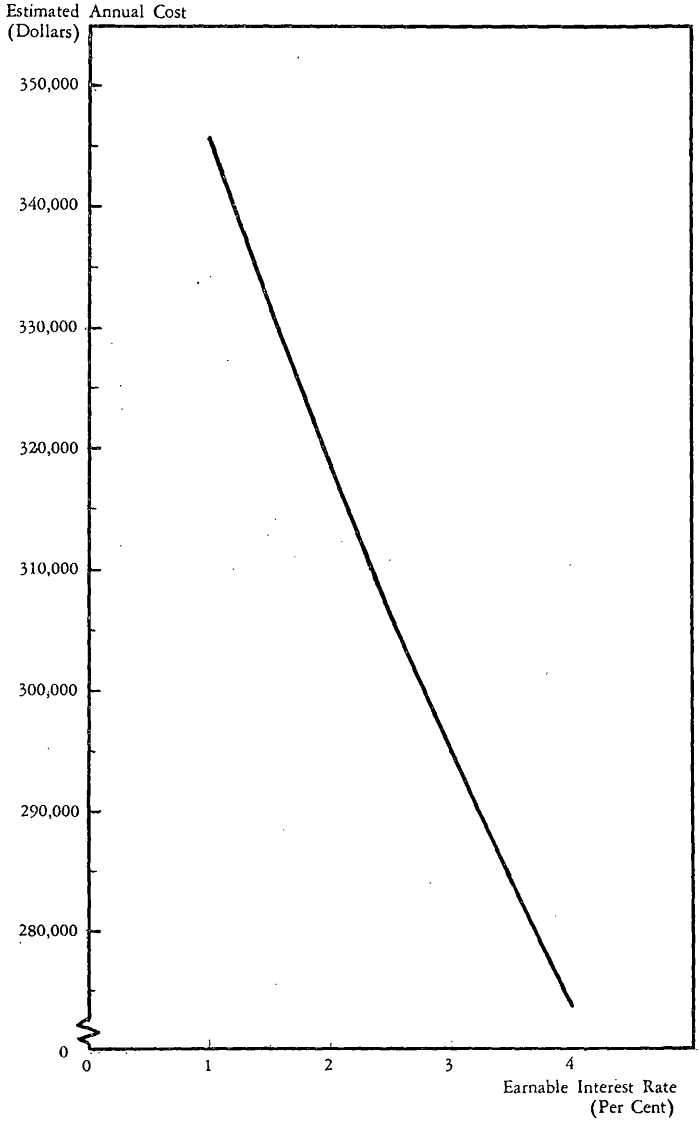
The estimates shown in Chart II are based on the assumption that the minimum annuity would be available to members already retired as well as to future superannuation retirees, but not to persons who withdraw before reaching the superannuation age.

D. *Estimated Monetary Cost of Permitting Superannuation Retirement After Thirty-five Years of Service—*

The minimum age for superannuation retirement is now sixty years for members of the State Employes' Retirement System. However, a member under sixty years of age, with twenty-five or more years of service may withdraw voluntarily with a state's annuity having the same present value as the superannuation state's annuity to which the member would be entitled, were he sixty years of age. The effect of permitting superannuation retirement after thirty-five years of service would be to increase the size of the state's annuity

Chart I

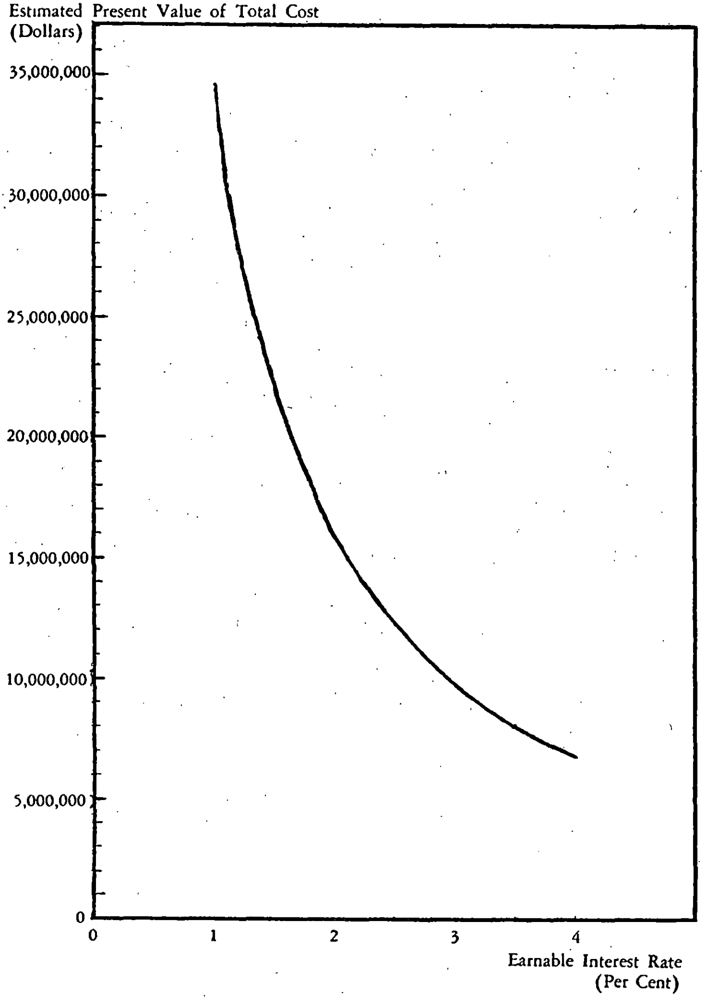
Estimated Annual Monetary Cost of Establishing a Minimum Superannuation Annuity of $1,200 After Twenty-five Years of Service



SOURCE Unpublished records of the State Employes' Retirement Board and its actuary.

Chart II

Estimated Present Value of the Total Monetary Cost of Establishing a Minimum Superannuation Annuity of $1,200 After Twenty-five Years of Service



SOURCE: Unpublished records of the State Employes' Retirement Board and its actuary to which a member, who withdraws with thirty-five or more years of service, is currently entitled.

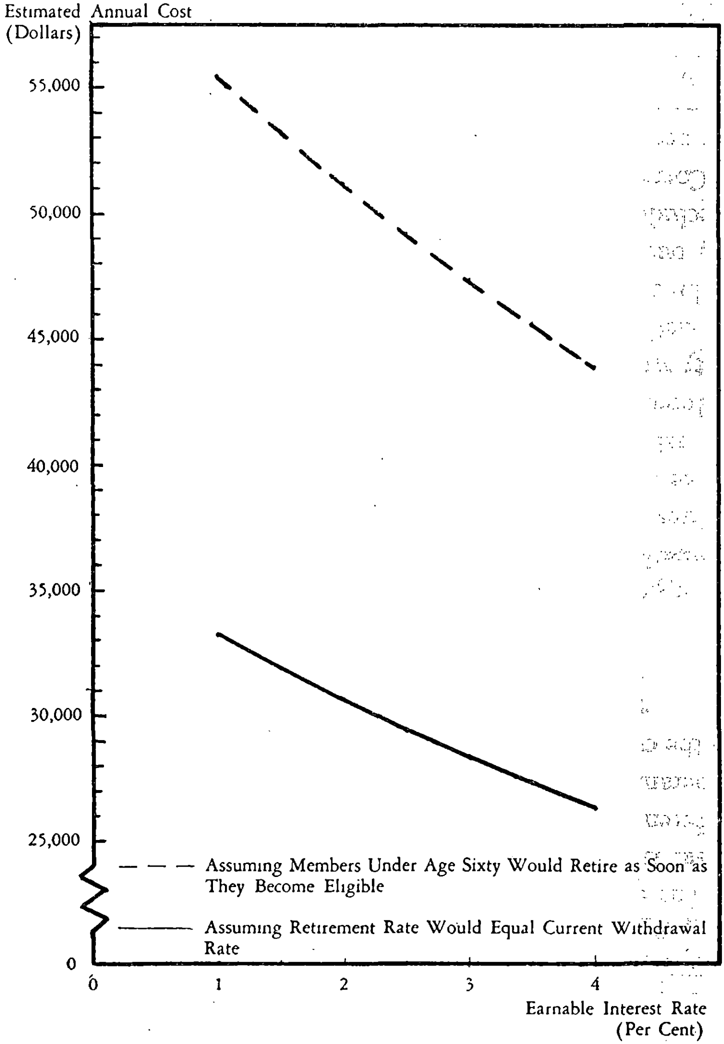
The estimated annual monetary cost of adopting this proposal is shown by the solid line on Chart III, page 33, for different interest rates, on the assumption that the rate of superannuation retirement before age sixty would be the same as the current withdrawal rate for persons with thirty-five or more years of service.

Additional members might be induced to discontinue their employment before reaching age sixty as a result of the psychological effect of knowing that they are eligible for *superannuation* retirement and/or as a result of the increased annuities attributable to the adoption of this proposal. The broken line on Chart III, page 33, presents the estimated annual monetary cost of making the proposed change, for different interest rates, assuming that all members below age sixty would retire as soon as they become eligible for superannuation retirement. The annual cost is expected actually to lie somewhere between the two lines presented on Chart III, but the absence of experience under the proposed plan precludes a more precise estimate.

Corresponding estimates of the present value of total costs are presented in Chart IV, page 34.

Chart III

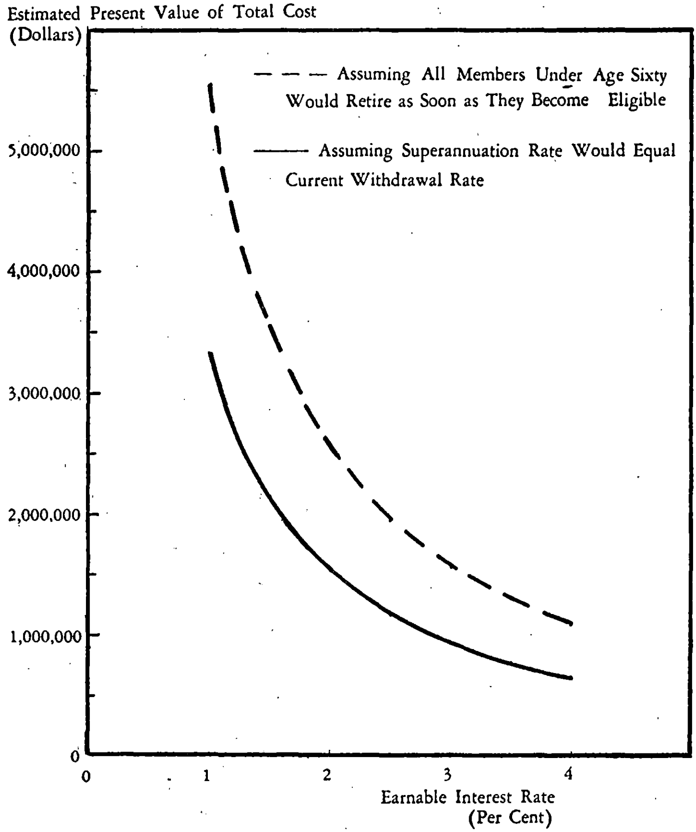
Estimated Annual Cost of Permitting Superannuation Retirement After Thirty-five Years of Service



SOURCE: Unpublished records of the State Employes Retirement Board and its actuary.

Chart IV

Estimated Present Value of the Total Monetary Cost of Permitting Superannuation Retirement After Thirty-five Years of Service



SOURCE: Unpublished records of the State Employes Retirement Board and its actuary.

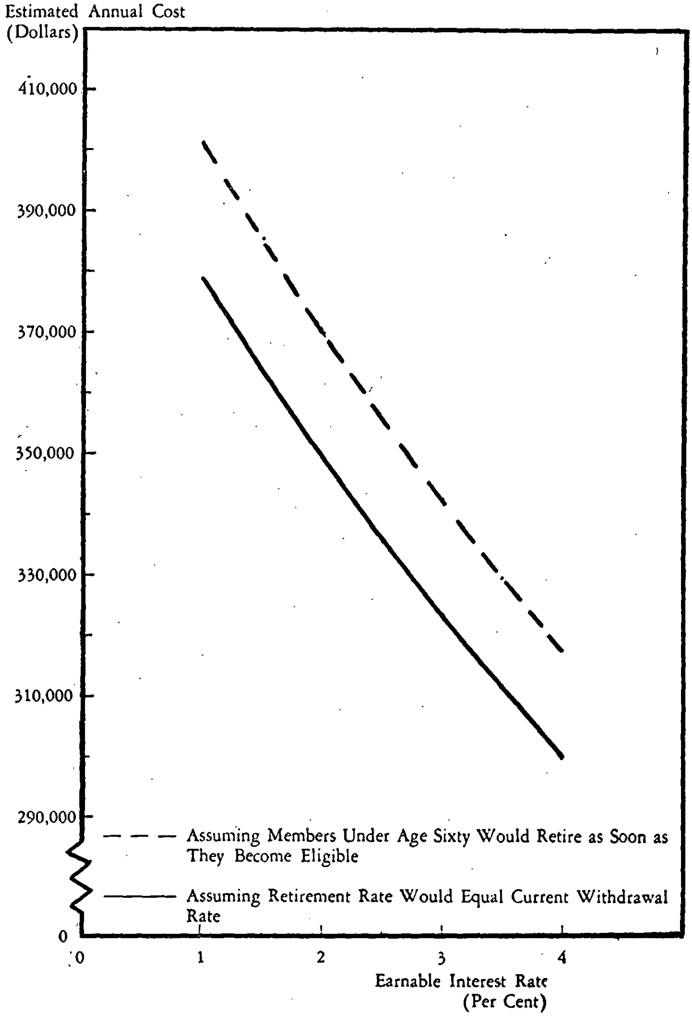
E. *Estimated Total Monetary Costs Consequent Upon Optional Superannuation Retirement After Thirty-five Years of Service and Providing for Minimum Annuities*—

The estimated total annual monetary cost of instituting both of these changes is presented in Chart V, page 36, for different interest rates. The solid line gives the estimate based on the assumption that the rate of superannuation for persons under age sixty would be the same as the current withdrawal rate for persons with thirty-five or more years of service. The broken line represents the estimate based on the assumption that members under age sixty will retire as soon as they become eligible for superannuation retirement. These two lines may be regarded as minimum and maximum estimates based on the assumptions outlined in Subsection B, above.

Corresponding estimates of the present value of total monetary costs of instituting the two changes are presented in Chart VI, page 37, for different interest rates.

Chart V

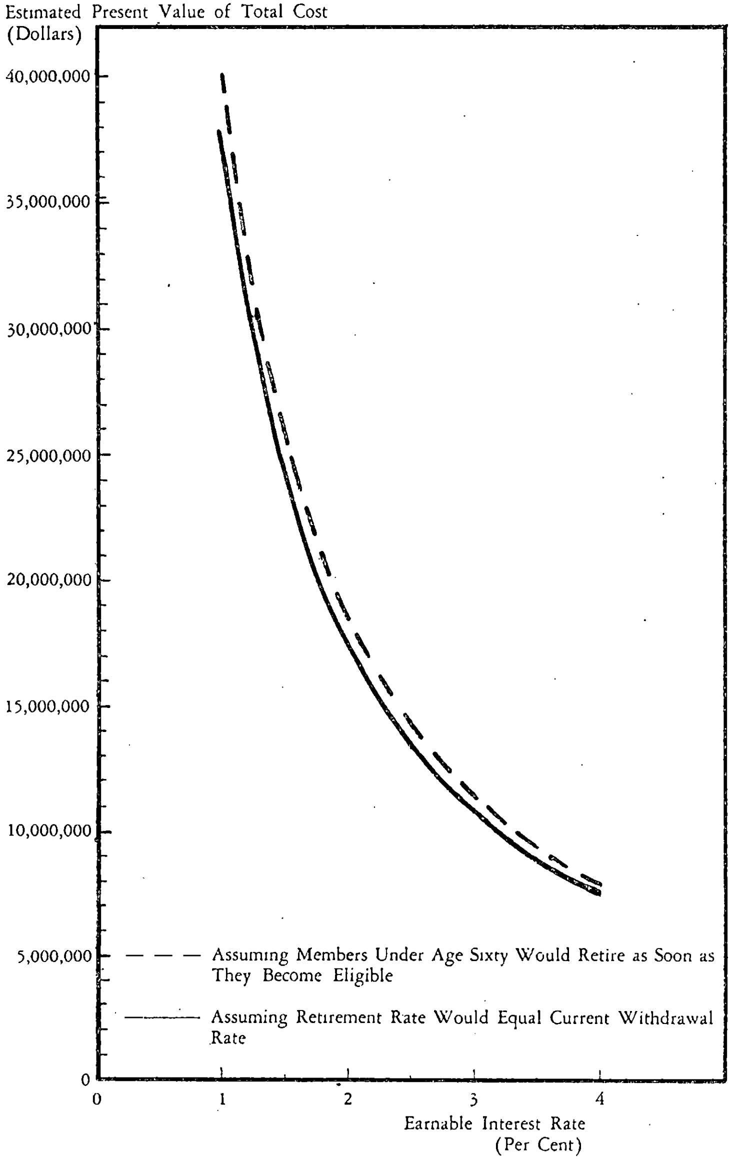
Estimated Annual Monetary Cost of Establishing a Minimum Superannuation Annuity and Permitting Superannuation Retirement After Thirty-five Years of Service



SOURCE: Unpublished records of the State Employes Retirement Board and its actuary.

Chart VI

Estimated Present Value of the Total Monetary Cost of Establishing a Minimum Superannuation Annuity and Permitting Superannuation Retirement After Thirty-five Years of Service



SOURCE Unpublished records of the State Employes Retirement Board and its actuary