Report and Recommendations
on
The Issues of Converting IPERS' Existing Defined Benefit Plan
to a
Defined Contribution Plan

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INTRODUCTION AND EXECUTIVE SUMMARY

The Iowa Public Employees' Retirement System (IPERS) has requested a review of the IPERS' system in order to assess the merits of converting its defined benefit plan structure to a defined contribution plan or, alternatively, to a hybrid plan containing elements of both. The consultant is also requested to make recommendations regarding "...the most equitable and feasible option for the future." (Request for Proposal August 26, 1996.)

IPERS currently administers a defined benefit plan providing retirement benefits to approximately 60,000 retirees and covering 150,000 active members across the State. It is a major institution in the State and has assets in excess of $10 billion. As a "statewide" public employee retirement system (PERS), IPERS covers a broad range of employees by occupation and location including State, county, and municipal employees. Approximately half of its members are employed in public schools. The System includes, among others, employees who are classified as "protection occupation classes" and police and firefighters in towns under 8,000 in population. These groups are provided with special benefit and contribution provisions within the IPERS defined benefit plan. Because of the diversity, size, and complexity of IPERS, a study of converting the core IPERS defined benefit plan to another type of pension plan, whether a defined contribution plan or a hybrid plan, must be done in a thoughtful and systematic manner, considering a multiplicity of factors.

In the RFP for this study, IPERS requested the study be conducted with the "..good of all its members..." as the first guiding principle and "... the financial soundness of the fund..." as the second guiding principle. Any proposed change, therefore, must be structured so it does not have a

detrimental effect on any classes of IPERS members; nor can a change adversely affect the financial soundness of the fund. It is important to note that IPERS is currently well-funded on an actuarial basis and, therefore, affords considerable retirement benefit security to its active and retired members. Accordingly, a starting point of the study is to recognize that the IPERS trust fund, providing assets for benefit payments to IPERS members under a qualified governmental plan pursuant to Section 401(a) of the Internal Revenue Code and Iowa Code Chapter 97B, must be maintained in a sound financial manner and should not be diverted to any purpose other than to pay benefits to its active and retired members. While any recommendation coming out of this study must not adversely affect the current financial soundness of the IPERS trust fund, the recommendation may call for a different form of pension plan in the future, applied either to current IPERS members or new hires, or both.

The extent of any grandfathering, of course, would depend upon the specific terms and conditions of a "defined contribution plan" or of a new "hybrid" plan that might be offered to IPERS members. The framework in which this Report is offered is stated here in order that the reader -- and, indeed, the consultant-- will not lose sight of the fact that even if IPERS were to convert its defined benefit plan to a defined contribution plan, the current IPERS defined benefit plan will, most likely, be maintained well into the future, perhaps for the next 50 years, albeit in the form of a "closed" plan. Such a plan would be closed to new entrants, but would provide benefits to current retirees and to current active members upon their retirement, providing them with benefits based on service accrued to date and perhaps benefits based on future service. In order to insure that a "closed" IPERS benefit plan be "fully funded" in the future, additional employer (and employee) contributions would be required. Accordingly, any recommendation for conversion of the IPERS defined benefit plan should be

accompanied by an actuarial study estimating the cost of maintaining the defined benefit plan under alternative scenarios over the next several decades.

With respect to legal limitations applicable to conversions, we have referenced, where appropriate, requirements of the Internal Revenue Code. Unless otherwise noted, the reader should assume each alternative plan can be designed to conform to applicable law.

With this background in mind, we also want to restate the fact that IPERS has requested an "objective" study and a thorough analysis of the issues. IPERS does not desire a report with a predetermined conclusion. As discussed below, several statewide PERS have either converted to a defined contribution or a hybrid plan or are currently considering a change. IPERS has, therefore, requested the consultant to assess these developments and report on their progress.

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The Report that follows is divided into three parts:

- Part I contains a discussion of plan options and defines the terminology. Pension literature is replete with articles and commentaries on the pros and cons of various alternative plans, and our Report references many of these publications.

- Part II of the Report considers the application of alternative plans to IPERS. This is the heart of the study because it considers how a conversion would affect IPERS members. Just as

significantly, the analysis considers the financial impact of alternative conversion arrangements on the employees, employers and the retirement system itself.

- Part III of the Report includes a discussion of conversion developments in other PERS, including systems that have converted to a defined contribution or hybrid plan, or are currently considering conversion.

- Part IV of the Report prioritizes our findings and recommendations. They are summarized as follows:

In our study we have considered the pros and cons of converting a defined benefit plan into a defined contribution plan or hybrid pan. We have also considered how each of these plans would affect benefits of IPERS members at various points in their public service in terms of age and years of credited service.

From the application of our analytical program to the IPERS defined benefit plan and to the demographics of the IPERS population, it is apparent that a defined benefit plan generally provides greater retirement income security and, indeed, benefit progressivity, to IPERS employees who have devoted a career to public service and who are nearing early or normal retirement than does a defined contribution plan or hybrid plan. Of course, this conclusion depends upon the plan designs entered into analytical programs for comparative purposes. The IPERS defined benefit plan, it should be noted, is

both progressive in its benefit provisions and provides a great deal of retirement benefit security to IPERS members.

A defined benefit plan, like IPERS, generally provides an overall sound retirement program with a high degree of retirement benefit security and supplemental features including disability and death benefits and post-retirement cost-of-living adjustments. Significantly, a defined benefit plan places the investment risk on the employer whereas a defined contribution plan places this risk on employees. Keeping in mind these basic characteristics and other differentiating features of the various plans discussed in the Study, it is, nevertheless, possible that IPERS could establish a defined contribution plan or hybrid plan arrangement that meets its retirement goals. It is also possible that the solution for IPERS is not to convert to a defined contribution plan or hybrid plan, but to strengthen its current core defined benefit plan.

In order not to prejudge the final outcome of this debate and discussion, we recommend that if IPERS concludes, based on this study, that it is in the best interest of all of its members not to convert its defined benefit plan to a defined contribution or hybrid plan, then IPERS should consider strengthening its core defined benefit plan. We have made several recommendations for such benefit enhancements in our May, 1997 Report to IPERS.

On the other hand, the current study, while providing considerable information on the relative merits of the different types of plans and on their application to the IPERS population does not address the question of the costs of conversion both to employers and IPERS plan members, nor does it model

various alternative plans. For this reason, IPERS may wish to continue the study to consider the application of alternative plan designs and the costs thereof. The modeling included in this Report provides the foundation for further study.

In conclusion, this study could be the first phase of an inquiry on the road to considering the pros and the cons of conversion of the IPERS defined benefit plan. Our analysis suggests which IPERS members would benefit and which would not from such a change. It also discusses overall financial considerations-- both obligations and risks-- that could result from a conversion. Our study does not suggest, nor was it intended to do so, the specifics of implementation of a new pension plan arrangement. Such an implementation phase would require the development of a detailed plan design and an in-depth actuarial funding analysis on the impact of a conversion on the current defined benefit plan, considering retirement benefit security and required future employee and employer contributions. Implementation would also require that a new plan document be written (amendments to Iowa Code setting forth the provisions of a new plan and related amendments to existing plan provisions). IPERS, in due course, would be required to redesign its administrative and data systems to accommodate a new plan. Depending upon the plan selected, the IPERS actuary would be required to undertake individual benefit and actuarial reserve calculations, possibly for many of the current 150,000 active members, in order to "quantify" each member's vested and accrued financial interest in the current plan. Other work required would include developing communications materials on the changes, holding employee and employer education sessions, providing counseling and designing systems and administrative set up. Depending upon the alternative plan selected, its terms and conditions, we estimate that the cost of implementation steps, as outlined above, could range from $400,000 to $2

million and could take two or more years to complete based on our company's experience working on such projects. It should be noted that implementation costs are to be distinguished from the ultimate costs of conversion over time in funding a new plan, as well as maintaining an existing (frozen) defined benefit plan on a sound actuarial basis.

Under our assignment we have been requested to report our findings and make written recommendations as to whether or not IPERS should convert its core defined benefit plan to a defined contribution plan, or to a hybrid plan including elements of both models. As suggested above, it would be premature for IPERS to abandon its current defined benefit plan for an alternative plan without testing the costs and benefits of alternatives and their impact on IPERS members and employers. Based on our research and analysis set forth in this Report, we do not recommend that IPERS convert its defined benefit plan to a defined contribution plan. We recommend instead that IPERS strengthen its defined benefit plan along the lines we recommended in our May, 1997 Report to IPERS.[1]

[1] Report and Recommendations on Enhancements to the Core Benefit Structure and Supplemental Plans and Features of the IPERS Defined Benefit Plan, Buck Consultants, Inc., May 21, 1997.

Part I: Discussion of the Nature and Purpose of a Defined Benefit Plan and Alternative Defined Contribution and Hybrid Plans

A. Defined Benefit Plan

An inquiry into a conversion from a defined benefit plan to alternative plans should begin with a thorough discussion of the characteristics of each type of plan, to be followed by a comparison of the features of each and a consideration of relative strengths and weaknesses.

In one of the early works on governmental pension plans entitled Retirement Systems for Public Employees (1972), Thomas F. Bleakney, FSA, noted that "For a substantial majority of employees covered by public retirement systems in the U.S. and Canada, retirement benefit formulas are computed on the basis of defined benefit formulas.[2] The prevalence of defined benefit plans among large public employee retirement systems (PERS) continues to be the pattern 25 years later. As explained by Professor Dan M. McGill, a leading scholar in the pension world and long-time director of the Pension Research Council, the Wharton School: "A defined benefit plan is one in which the benefits are established in advance by a formula, and employer contributions are treated as the variable factor."[3]

2 Bleakney, Thomas. Retirement Systems for Public Employees. The Wharton School. Richard D. Irwin, Inc.: Homewood, Ill., 1972, p. 35.

3 McGill, Dan M. Fundamental of Private Pensions. Seventh Edition. Pension Research Council. The Wharton School, University of Pennsylvania Press: Philadelphia, p. 201.

In order to illustrate the primary components of a defined benefit plan in operation, each component is described and how it applies to general employees in the IPERS defined benefit plan:

Component of Defined Benefit Plan	Application in IPERS DB Plan
1. Unit Benefit Formula In a unit benefit formula, an explicit unit of benefit is credited for each year of recognized service with the employer. The unit of benefit may be expressed as a percentage of compensation or a specific dollar amount	A service fraction of 2% for each year of service is multiplied times final average compensation
2. Compensation Final average formula benefits are accrued on the basis of the participant's average compensation during a specified period	Highest 3 years
3. Pattern of Benefit Accruals A pension plan need not provide the same benefit accrual for each year of service. Depending upon the employer's conception of the equities involved or the personnel to be served, the plan may provide one scale of benefits for the first portion of total service, and a higher or lower scale for service thereafter	Provides same benefit accrual for first 30 years of credited service, and effective 7/1/96, additional accrual of 1% for each of the next 5 years of credited service..
4. Normal Retirement Age The normal retirement age has traditionally been considered to be the earliest age at which eligible participants are permitted to retire with full benefits.	Age 62/30 years Age and rule of 88 Age 65

Component of Defined Benefit Plan	Application in IPERS DB Plan
5. Early Retirement It is customary to provide that an employee may retire earlier than the normal retirement age, subject to attaining a specified age, and possibly fulfilling a minimum period of service with a reduction in the accrued benefits for early retirement.	Age 55 with actuarial reduction.
6. Manner of Payment The implicit promise of most pension plans is that they will pay a retirement benefit throughout the remaining lifetime of the retired employee. A series of annual or monthly payments is referred to as an annuity or annuity benefit.	Benefits paid for remaining lifetime.
7. Normal and optional forms under Pension Plans Pension plans have traditionally given the participant the option of electing, before or at retirement, and at his own expense, an annuity form different from the normal form prescribed in the plan document. It has been customary to offer some form of join and survivor annuity so the participant might assure his or her spouse a life income in some amount.	Provides joint and survivor options and 10 year certain and life option.
8. Cash Option at Retirement A perennial issue in plan design is whether participants upon reaching retirement should be permitted to take the actuarial value of their retirement benefit in a lump sum, rather than in monthly payments spread over their remaining lifetime.[4]	Does not provide.

[4] McGill states there are several primary arguments against lump-sum option, among them: Employees might squander the lump sum or invest it unwisely and thus be left dependent upon society. Employees would give up the benefit of a life annuity that would protect them against outliving their retirement resources.

Component of Defined Benefit Plan		Application in IPERS DB Plan
9.	Vesting A minimum number of years of service is usually required before employees are vested in their accrued benefit	Four years of service.
10.	Ancillary Benefits Although the primary goal of a pension plan is to provide for income during retirement, most public defined benefit plans also provide certain ancillary benefits. These can include preretirement death benefits and disability benefits.	Provides disability and death benefits.
11.	Funding Characteristics The cost associated with providing pension benefits can be determined by different methods, which range from simply paying for the benefits as they arise (pay-as-you-go) to prefunding or actuarial funding.	Prefunded on a sound actuarial basis.

The foregoing recitation shows how a defined benefit plan, in McGill's words, enables employers "...to remove superannuated employees from the payroll in a manner that is morally and socially acceptable..." by providing a life income to an employee who has reached the end of his or her economic productive life.[5]

The strength of a defined benefit plan, as is the case with the IPERS defined benefit plan, is the implicit "promise" it makes to pay a retirement benefit throughout the remaining lifetime of an employee. This promise, in turn, is made possible by the existence of a trust fund, as in IPERS,

5 McGill, op.cit., p. 201.

which has been established and maintained solely to pay benefits to active and retired members. Actuarial funding makes fulfillment of the promise possible and is the second key feature of a defined benefit plan. As explained by Joseph Metz and Arnold DeMonte in The Role of Pension Funding Policy, actuarial funding has a dual purpose:

- to insure benefit payments regardless of plan sponsor's capacity to make contributions over a period of time;
- to allow sponsors to level out pension costs even when benefit payments vary from year to year.[6]

In addition to providing retirement benefit security to employees, an actuarially funded (defined benefit) plan provides considerable flexibility to the employer, as plan sponsor, in shaping the particular funding pattern required to achieve the asset accumulation target set by the plan trustees. Actuarial funding also allows the plan trustees to prefund needed benefit enhancements so that the money will be on hand to pay for them when the employee retirees.

Benefit security is a primary concern in setting funding policy. In addressing this issue, trustees must ask the question: just how much assets should a pension plan hold? According to Metz and DeMonte:

> The direct answer is the amount sufficient to fulfill the two purposes of asset accumulation: benefit security and contribution flexibility. Experience has shown that assets sufficient to serve the former purpose will generally also cover the latter purpose. Hence benefit security can be considered as a primary criteria for establishing the asset accumulation target.[7]

6 Joseph Metz and Arnold DeMonte, The Role of Pension Funding Policy. National Education Association. Research Division. Washington, D.C. 1992, p 9.

7 Ibid., p.9.

IPERS, as a defined benefit plan, has followed this pattern by insuring retirement benefit security through a soundly funded system using generally accepted actuarial methods to achieve its asset accumulation target.

B. Defined Contribution Plan

A defined contribution plan is entirely different from a defined benefit plan 1) in the way in which its assets are accumulated during the employee's working lifetime, 2) in the retirement benefit security promised, and 3) in the form of benefit payments it usually provides. Professor McGill writes: "...a defined contribution plan ... or individual account plan ... in sharp contrast to the defined benefit plan ... provides an individual account for each participant and bases benefits solely on the amount contributed to the participant's account and on any expenses and investment earnings allocated to the account."[8] The primary feature of a "DC" plan, accordingly, is its "individual account" component. Each plan member has an account, in his or her name, and a vested right to receive the account balance (contribution plus investment earnings). At what point in time an individual is vested and when the account balance is payable is a matter of plan design.

Contributions to a DC plan may be added by the employer, or by the employee, or by both. The contribution may be a specified percent of pay, or may be completely at the discretion of the employer or the employee, as the case may be.

[8] McGill, op.cit., p.248.

DC plans vary widely in terms of allocations of investment returns to individual accounts. Some DC plans allocate investment returns quarterly, monthly and, in recent times, often on a daily basis. Assets generally fluctuate in "market value" although some, for example, held in a bank certificate of deposit, are maintained on a book value and hence do not drop in value. In most cases individual account balance continually fluctuate.

At eligibility for retirement, or at a time otherwise specified in the plan, such as at separation from service (as is the case, for example, with a nonqualified deferred compensation plan under Section 457 of the Internal Revenue Code), the benefit a participant receives is simply an amount equal to his or her account balance.

The benefit payable from a DC plan usually takes one of two forms: either a lump sum distribution or, like a defined benefit plan, an annuity payable for the lifetime of the participant. Other forms of distribution, such as a series of periodic payments, may also be available, depending on plan provisions.

The principal types of defined contribution plans are 1) profit sharing plans, 2) money purchase pension plans and 3) thrift and savings plans.[9] Profit sharing plans are primarily intended to permit an employer to have discretion as to when and how much will be contributed to participants' accounts. Today they are usually associated with a "cash or deferred

[9] For a detailed discussion see McGill, op.cit., p. 247-296.

arrangement" provided under Section 401(k) of the IRC – the "401(k)" plan so popular in the private sector and no longer available to governmental employers for their employees.

In a money purchase plan, the employer makes contributions to the individual accounts of plan participants based on a fixed formula specified in the plan document. Since it is a "pension plan," a money purchase plan is subject to the IRC requirement that contributions be fixed – the so-called "definitely determinable rule."[10] Thus, if an employer contributed 10% of pay to a money purchase plan, that amount would be specified in the plan document and the employer would not have the discretion to vary it. According to Professor McGill, "...money purchase plans are more common among small employers who want to offer their employees the benefit security of a pension plan but do not want to assume the financial responsibility of a defined benefit plan."[11] If IPERS were to offer its members a defined contribution plan as its "core" deferred compensation plan, it would most likely be a "money purchase plan." If IPERS were to adopt a money purchase plan, choices would be available, for example, between a "traditional" money purchase plan where IPERS employers might be required to contribute 5 or 10 percent of pay for each participant, and a target benefit plan, a defined contribution plan with a benefit formula used to determine a "target benefit." The resulting benefit IPERS members would receive the would be sum of contributions and earnings thereon at retirement.

Alternatively, IPERS could provide a "target benefit" money purchase plan, designed to more closely follow the features of a defined benefit plan. In a "target benefit plan," employer

10 See Section 401(a)(1)et.seq., Internal Revenue Code.
11 Ibid., p.258.

contributions are actuarially determined to achieve a pre-determined account balance at normal retirement age, e.g., a lump sum at retirement that would be sufficient to provide an employee with 30 years of credited service a lifetime annually approximately equal to 60% of final average salary. However, unlike a DB plan, the employer contributions are fixed and the actual benefits provided will depend on experience under the plan. Thus, even in a target benefit plan, it must be noted that the employee still carries the risk of investment loss.

Target benefit plans are relatively rare and have gained little favor among employers of any size. According to Professor McGill "...a large employer who desires to provide a specified retirement income for employees is more likely to adopt a defined benefit plan.[12]

The third generic type of defined contribution plan is the "thrift and savings plan." This plan permits employees to make voluntary contributions to the plan. The employer may make contributions, typically determined by the amount the employee contributes; the plan may have an employer "match" applied to all or a portion of employee contributions. A thrift plan is primarily used as a supplemental plan and not as a "core" pension plan.

C. *Defined Benefit vs. Defined Contribution Plan*

In spite of the fundamental differences between a defined benefit and a defined contribution plan, each is recognized as a "qualified contribution deferred compensation arrangement under the Internal Revenue Code, Section 401(a). Each qualified arrangement allows for a tax-free

12 Ibid., p. 260.

build up of contributions, plus investment earnings, including both employer and employee contributions and the earnings thereon.[13] Each type of plan if properly designed can provide retirement benefit security to employees and their beneficiaries. However, one fundamental distinction between the two plans must be underscored: in a defined benefit plan the employer, or "plan sponsor," bears the investment risk; in a defined contribution plan, the risk of poor investment performance is shifted to the employee.

In terms of retirement benefit security, it is often said, and correctly so, that in a defined benefit plan the employer bears the risk—guaranteeing a pension, for example, calculated as a fixed percentage of the employee's "final average salary." Regardless of the earnings on investments or the level of unanticipated inflation, the employer promises to provide a fixed benefit based on the employee's service and salary. There is another aspect of retirement benefit security provided under a defined benefit plan. A defined benefit plan, like IPERS, if funded on a proper actuarial basis, will have sufficient assets on hand when an employee retires to pay promised benefits for the remainder of his or her lifetime. In a defined contribution plan, the employee, not the employer, bears the risk for poor investment performance, even if the employer makes the investment decisions for the plan, and sufficient assets may or may not be on hand to pay benefits at retirement.

Final average pay formulas, primarily used in defined benefit plans, are based on pay close to retirement and, therefore, can be designed with relative ease to target a certain income

[13] Each is covered by separate limitations on contributions and benefits under Section 415, IRC.

replacement level for the retiree. Providing a percentage of preretirement final average salary allows the career employee (60% of final average salary with 30 years of service in IPERS, for example) to maintain a standard of living immediately after retirement approximately equal to the one immediately before retirement. A defined benefit plan that uses pay at the end of the employee's career to calculate benefits is automatically able to take into account preretirement inflation. After retirement, public employees covered by a defined benefit plan are typically provided with some post-retirement cost-of-living adjustments (COLAs).

There are, of course, disadvantages to defined benefit plans. For example, a member of a defined benefit plan who leaves the system prematurely may face a dramatic loss of pension accrual. Many years later, upon receipt of benefits, the value of the benefit may be eroded by inflation. It is acknowledged that one of the strengths of the defined contribution plan is its orientation to shorter service and younger employees.

Let us consider, on the other hand, the features of a defined contribution plan. Because of its simplicity, a defined contribution plan is easily understood and appreciated. There are no complex formulas, and the employees can know the exact contributions to their accounts and the exact value of the account balances at most points in time. Significantly, employees have "ownership" of their account balances and may even be able to take their benefits in a lump sum upon separation from service prior to retirement, or at retirement. As stated above, DC plans generally provide good benefits to employees terminate service early in their careers.

Defined contribution plans may be particularly attractive to public and private sector employers alike for several reasons. From the employer's viewpoint, they provide stability of costs and predictability in the budgetary process. They remove the obligation of actuarial funding and the possibility of underfunded plans, experience gains and losses and the need for unanticipated additional employer contributions associated with defined benefit plans.

Looking at the disadvantages of defined contribution plans, defined contribution plans may not be flexible in meeting the needs of those who at retirement age have relatively short service and of older employees, especially if employee benefits become inadequate after retirement due to erosion in value from inflation. Cost-of-living adjustments (COLAs) do not generally fit well into defined contribution plan arrangements. In the public sector, COLAs have been the hallmark of retirement benefit security. This is true of IPERS which recently strengthened its COLA. As previously discussed, the investment risk is shifted to the plan participant from the employer in a defined benefit plan to the employee in a defined contribution plan.

A summary of features of DB and DC plans follows on the next page.

Summary of Features of DB and DC Plans

Defined Benefit Plan	Defined Contribution Plan
Employer assumes investment risk and reward	Employee assumes investment risk and reward
Plan assets commingled: employer directs investment	Plan assets divided into individual accounts; participants or employer directs investments
Actuarially funded	Financed on a pay-as-you-go basis
Employee after tax contributions permitted	Employee after tax contributions permitted
Employee pretax contributions permitted	Employee pretax contributions permitted
In-service withdrawals not permitted	In-service withdrawals if plan permits
Loans permitted	Loans permitted
Definitely determinable benefits: benefit formula stated in plan	Benefits not definitely determinable: contribution formula stated in plan but benefits dependent on investment performance of plan assets
Fixed benefit related to pay and/or service	Benefit based on account balance
Easy to target income-replacement objective	Difficult to target income-replacement objective
Past service, retroactive improvements and subsidized early retirement easy to recognize	Past service, retroactive improvements and subsidized early retirement difficult or impossible to recognize
Final pay benefit accrual favors older, longer service employees	Age-neutral benefit accrual favors younger, shorter service employees
Communication of projected retirement benefit	Communication of account balance
Annuity payable at retirement	Lump sum or annuity payable at retirement

D. Hybrid Plans and Other Alternatives

IPERS has asked us to consider "full conversion" to a defined contribution plan as well as "partial conversion" to a hybrid plan. During the past decade, some employers have adopted new, innovative pension plans designed to be more attractive to employees than their existing defined benefit plans while reducing future benefit accruals and the cost of these accruals. These hybrid plan designs can also be used to attract and keep young, mobile, fast-track

employees and often benefit shorter service employees. Traditional defined benefit pension plans, like IPERS, that reward long-term employment frequently are not attractive to younger employees. The value of benefits under these plans, in some instances, may be unappreciated by employees whose benefits will not materialize for 20 years or more.

Responding to these issues, some employers, primarily in the corporate sector, are using hybrid pension plans. Three types that will be discussed below in terms of their possible application are "cash balance," "floor offset," and pension equity or "retirement bonus" plans.

Hybrid plans have features both of defined benefit and defined contribution plans. However, they are fundamentally defined benefit plans . As explained below, each of the hybrid plans has relative advantages and disadvantages. Moreover, in each case, an employer would have to make a fundamental decision as to whether a hybrid plan, if adopted, would apply only to new hires or also to current active participants, either on a prospective basis, with respect to future accruals, or retroactively. A decision would also be required as to whether the alternative benefit would be voluntary or mandatory.

1. *Cash Balance Pension Plan*

A cash balance pension plan is a hybrid defined benefit plan that looks more like a defined contribution plan. The most distinguishing feature of the cash balance pension plan is its use of a hypothetical account for each participant. Generally, the employer credits a certain amount to each account and also credits each

account with interest earned. Although the employee's account looks like an account in a defined contribution plan, the employees are sheltered from investment losses.

The amount an employer contributes to a cash balance pension plan is actuarially determined, the same as for a traditional DB plan. Based on certain assumptions regarding mortality, interest, turnover, and similar factors, an actuary determines how much the employer must contribute in order to provide sufficient funds to cover the benefits required by the plan.

Cash balance plans appeal to employees because they see their accounts growing and can easily understand the lump sum value shown. One advantage of the cash balance pension plan is that investment risks are borne by the employer. The employer is exclusively responsible for investment decisions; employees do not direct the investments of their individual accounts. A discussion of key features follows.

a. Account Balance

As the name indicates, a cash balance pension plan features an "account balance" for each participant. However, a cash balance pension plan should not be confused with a typical defined contribution plan in which actual individual accounts are maintained. Under a cash balance plan, there only are "phantom accounts," which exist as a communications device.

The funds are not segregated into individual accounts, but instead, as in a traditional defined benefit plan, all monies are available to provide benefits to all participants. However, participants in a cash balance plan are kept informed – usually on a quarterly basis – of the ever-increasing lump sum value of their accrued benefit. This is a dramatic means of making participants aware of the value of their pension benefits.

b. Accrual rates

A participant's cash balance typically is equal to an amount based on annual allocations, e.g., 5% of the year's compensation which also is credited with interest each year at a rate specified in the plan. Many plans used an interest rate tied to a published index, e.g., prime rate, one-year T-bill rate.

The ultimate benefit is determined based on the total annual allocations plus the total interest credited to the participant. The allocation rates might be level over an employee's career or they might vary by age and/or length of service.

Some practitioners have proposed a cash balance plan in which annual allocations are not a function of compensation. Instead, the plan sponsor

amends the plan document before the start of each plan year to provide for a lump sum allocation to each participant on an individual basis. While such a flexible nonformula arrangement would appeal to employers that would like to anticipate and control their pension contributions, this type of plan would, among other things, have to be amended annually in order to satisfy the definitely determinable benefit requirements.

Regardless of the manner in which contributions are allocated to accounts, employers may adjust the interest rates used to credit balances. For example, in a high interest rate environment, an employer might increase the interest credited by an additional one or two percent to protect the value of account balances or to provide additional benefits. However, any future adjustment to that type of improvement would have to be made with a plan amendment.

If one of the primary reasons for establishing a cash balance plan is to attract young, fast-track, shorter service employees, the rate of allocation could be set to favor the earlier years of plan participation. Thus, the plan would be relatively frontloaded as opposed to traditional defined benefit plans which often are backloaded (i.e., provide greater benefit accruals to older and longer service employees). Of course, any defined benefit plan could be designed to be frontloaded if the plan sponsor so desired.

A higher accrual rate for longer service employees would help to compensate for the fact that a cash balance plan with a single rate is less favorable in terms of replacement ratios for longer service employees than for employees with less service.

c. Funding

Because a cash balance plan is a qualified defined benefit plan, it is subject to certain funding requirements. As with a traditional defined benefit pension plan, contributions must be actuarially determined taking into account expected fund earnings and forfeitures. Any of the approved actuarial funding methods may be used.

d. Nondiscrimination Testing

A cash balance plan must satisfy the IRS nondiscrimination requirements. Governmental plans are currently exempt from IRC Section 401(a)(4) testing. It is unclear at this time how or if these rules will be applied in the future. Legislation has been introduced in Congress to exempt governmental plans from these complex rules on a permanent basis.

2. *The Pension Equity Retirement Bonus Plan*

The retirement bonus plan is a defined benefit plan that states the amount payable at retirement as a single sum that is a multiple of pay. While payable as a lump sum, it must also be offered as an annuity for life. This type of plan is an attempt to combine the best features of the three most popular vehicles for providing retirement benefits:

- traditional final average pay pension plans,
- defined contribution plans, and
- cash balance plans.

The retirement bonus plan can be thought of as a traditional pension plan that can be both understood and appreciated. It includes elements of a defined contribution plan in which the "account balance" increases each year to keep up with "salary-related" growth and a cash balance plan in which benefits are based on average final salary.

a. Plan Design

The basic concept behind the retirement bonus plan is that each year the employee is granted retirement credits. These credits are called retirement bonus credits.

At retirement, death or vested termination, the employee's benefit can be paid as a lump sum, calculated as a percentage of average final salary based on the number of retirement bonus credits earned, or as an annuity based on the value of the account.

For example, assume 4 credits are granted per year of credited service. If the employee works 20 years, the number of retirement bonus credits at retirement or termination would be 80 and the benefit would be 80% of the employee's average final salary.

b. Transition Credits

Any accrued benefit earned under a defined benefit plan prior to the effective date of the retirement bonus plan can be preserved as transition credits. These transition credits are added to the regular retirement bonus credits in calculating the lump sum benefit.

c. Extensions of the Basic Concept

Plan sponsors can tailor the retirement bonus plan structure more closely to their objectives by providing higher credits for older employees, integrating with Social Security covered compensation, reducing benefits on payment before retirement eligibility, and coordinating with other retirement benefits.

d. Communications

The retirement bonus plan is easy to communicate. For example, the plan sponsor can periodically report the employee's total credits earned. The employee can easily estimate the total benefit by multiplying his or her credits by his or her current "average final salary."

e. Comparison to Defined Benefit and Defined Contribution Plans

As compared with traditional defined benefit pension plans, the retirement bonus plan retains many of the positive aspects of the traditional plan, including the relationship of benefits to average final salary within the government-imposed limits. Importantly from an employee's perspective as compared with most cash balance programs, the benefits for the retirement bonus plan are calculated based on average final compensation.

f. Legal Requirements

The requirements that apply to qualified governmental defined benefit plans apply to retirement bonus plans under IRC Section 401(a) and other applicable provisions of the Code.

3. *Floor Offset Retirement Plan*

A floor offset plan is composed of two plans, a defined benefit and a defined contribution plan.

Under a floor offset plan, a member at retirement receives the greater of the benefit calculated under a defined benefit plan or his/her account balance. Thus, a minimum benefit level, or "floor", of protection is provided to members. Any shortage between the floor plan's targeted level and the amount provided by the defined contribution plan is compensated for in the defined benefit plan.

An important element is that for many employees, the benefit provided by the defined contribution plan will actually exceed the defined benefit formula's targeted benefit level. In such a case, the floor plan does not provide a benefit. Again, the employee does not bear the investment risk because of the floor protection. The employee does benefit from investment reward.

To calculate a retirement benefit under a floor offset plan, benefit levels between the defined benefit and defined contribution plans are coordinated through the defined benefit plan. Basically, the plan must target a minimum benefit level, or floor. This floor, which depends on the employer's objectives, is normally expressed as a lifetime annuity commencing at normal retirement age or at early retirement age with the appropriate actuarial reduction.

4. *Strengthening the Defined Benefit Plan as an Alternative to Adopting a Defined Contribution or Hybrid Plan*

Another alternative IPERS can consider is to incorporate features into the current IPERS defined benefit plan of a defined contribution nature which would help strengthen the IPERS DB core plan. As recommended in our May, 1997, report IPERS could strengthen the vested benefit for employees who terminate employment at an early age so that their benefit is not eroded by inflation by the time they reach retirement age. There may be other features of the core plan, as well, that could be augmented by a DC feature, for example, the creation of a supplemental fund to assist retirees in meeting the costs of post-retirement health core coverage. This is also discussed in our May, 1997, Report and could be added to the current IPERS defined benefit plan.

Part II: Application of Alternative Defined Contribution and Hybrid Plans to IPERS

As discussed above, defined benefit (DB) and defined contribution (DC) plans have very different natures. Therefore, even if the employer and member were to contribute the same amount of funds to each type of plan, different groups of members will fare better under one type of plan than under the other. The following section discusses the impact of different types of plans on IPERS' members by aggregates of various characteristics. After this discussion of impact, the next section presents a series of graphs to show the impact on hypothetical members of various DB, DC and hybrid benefit plans.

A1. Impact By Income:

The current IPERS benefits (after the covered wage ceiling is totally eliminated) are a flat percentage of three-year average compensation independent of the level of income. The benefits are not integrated with Social Security. Under an integrated plan, the plan provides higher benefits to higher paid members, e.g., those earning over the Social Security taxable wage base, since Social Security benefits are weighted in favor of lower paid members. Similarly, a DC or hybrid plan can be based on a flat percentage of compensation regardless of income level (subject to Section 415 IRC limits) or can be integrated to provide lower contributions below the taxable wage base than above it.

Although DB and DC plans can be designed both to treat all income the same or to be integrated with Social Security, the plans may ultimately provide different levels of

benefits based on the actual pay progression during a member's career. Current IPERS benefits are based on the high three-year average compensation. The pattern of earnings during the member's career is thus not directly used. In a DC plan or a cash balance plan, on the other hand, the pattern of earnings directly impacts the amount of the account accumulation and the ultimate benefits which are available upon retirement. Each year's contribution grows with the credited investment return, so accruals during the early years of a member's career can have more impact. A "fast track" member (i.e., one who has rapid salary increases) will generally be better off under a final average compensation DB plan than under a DC plan, because the salary increases apply to benefits based on all service.

In a regular DC plan, the member makes the investment decisions and bears the investment risk. Thus, two members with the exact same compensation and service histories can have very different account balances upon retirement. A member's investment decision for the DC plan may be affected by his/her income level and the level of other savings. If a member does not have other savings and is relying on the plan (together with Social Security) for his/her retirement needs, the member might choose overly conservative investments, like bank certificates of deposit, and thus, in fear of losing principal, might not accumulate adequate funds. Similarly, if a member does not have other investments, he/she is probably not knowledgeable about more aggressive investments such as equities and might therefore shy away from investments that can result in a higher return over time. Investment education thus becomes extremely important with

a DC plan. Of course, if a member of a DC plan selects more aggressive investments, he/she also increases the risk of loss.

A2. Impact By Age:

In general, a member who joins a DC plan at a younger age will fare better than a member who enters at an older age. Contributions to a DC plan become valuable as they grow over time with good investment return. In other words, the power of compound interest needs time to work. Thus, someone who becomes a member at mid-career will generally do better in a DB plan than in a DC plan (assuming the same overall level of employer and member contributions).

Employer contributions to a DB plan are based on the group as a whole; separate contributions are not allocated to each member. The cost of providing benefits increases as the member ages and gets closer to retirement. Through the actuarial funding method, employer funding for DB plans is smoothed and averaged, but the averaging is not possible in a DC plan with individual accounts.

Certain types of DC plans, e.g., age-weighted profit sharing plans, are designed to adjust for some of these deficiencies. By making larger contributions for older members, the value of the accumulated accounts can be leveled for different age groups. Age-weighted hybrid plans are also a possibility.

A3. Impact By Employer:

There are over 2,400 separate employers who participate in IPERS. Within these employers, there are also different categories of employees. While most of the employees are regular members of IPERS, some employees belong to special subgroups including sheriffs/deputy sheriffs and airport firefighters or protection occupations which have different retirement eligibility provisions and different levels of contributions. The type of plan design may thus affect one employer differently from another employer, based on the categories of employees and the demographics of each employer's workforce.

A4. Impact By Gender:

Federal law requires that neither benefits nor contributions can vary by gender. Thus, member contributions and option factors are on a unisex basis. Any conversion of an account balance in a DC or hybrid plan to an annuity form of payment must be made on a unisex basis. These requirements can result in a different impact on men and women. On average, women live longer than men. The normal form of benefit from IPERS is a life annuity. The amount of each month's payment is the same for a similarly situated man and woman. However, if the woman lives longer than the man, the value of her benefits is larger. In a DC plan, the account balance at retirement is the same for the man and the woman. If the DC plan offers a life annuity option, that life annuity amount will be the same for both. However, if they take the account balance as a lump sum, on average, the man will be better off than the woman.

A5. Impact By Longevity of Covered Employment:

In general, a DB plan is designed to provide retirement benefits to career employees. While members who terminate with at least four years of service in IPERS are vested in their benefits, the focus of the system is to provide retirement income, not termination benefits. A short service (young) employee thus will usually fare better under a DC plan. A DC plan is generally viewed as more portable, i.e., the member has an account balance which he/she can take upon termination of employment and invest in another qualified plan or an IRA. A DB plan is less portable; a vested member who terminates is entitled to his/her vested accrued benefit at normal retirement, but generally not earlier. In most plans, this is a fixed benefit which is not increased to make up for inflation during the deferral period. A person who works at several different jobs in his/her working career, all covered under separate DB plans, will generally earn much lower retirement benefits than one who stays in one DB plan for the entire career. The same situation is not true for a person covered under a succession of DC plans.

B. Impact on Career Employees:

The impact on career employees is the same as the impact by longevity of covered employment, discussed in the preceding paragraph.

C. Impact on Those Who Retire Under IPERS:

Most DB pension plans, like IPERS, are designed to provide adequate retirement income to those people who retire under the plan. A lifetime benefit is guaranteed and there is no

way the member can outlive his/her pension. Where the benefit is based on final average compensation, the benefit formula automatically adjusts for inflation (measured by salary growth) during active service and the benefit replaces a certain amount of pre-retirement income. Furthermore, especially in the public sector, cost-of-living adjustments are often provided to insure that the buying power of the pension is not diminished by inflation.

In a DC plan, on the other hand, the member generally is entitled to a lump sum benefit upon retirement. The account balance can be converted into a monthly lifetime benefit, but in most DC plans, lump sums are offered and most members elect them. It thus becomes the member's responsibility to continue to invest the funds during retirement and not to spend them too rapidly. There is always the risk that the member (and/or spouse) will outlive the retirement account.

D. ***Impact on Those Who do not Retire Under IPERS:***

As noted above, short service members who terminate before eligibility for retirement might do better under a DC plan. This is especially true of young short service members. Since a DC plan is generally portable, the member can take the account balance and keep it growing in another tax-deferred retirement vehicle until ready to retire. Sometimes people fail to retire for reasons beyond their control, e.g., death or disability. In a DC plan, the death or disability benefit is simply the account balance. A DB plan can provide a larger benefit upon death or disability.

E. Financial Impact on, and Risk Borne By, IPERS Members:

In a DB plan the employer makes the investment decisions and bears the investment risk. The member is promised a specific retirement benefit. In a DC plan the member makes the investment decisions (within a range of options) and bears the investment risk. This is a two-way street. In a DC plan, the member can benefit from outstanding investment performance but must also bear the risk of poor performance (including a possible loss of principal). The investment responsibility in a DC plan often continues into the retirement years, since most members in DC plans take lump sum payouts. While some members will want to take the responsibility for investing, others will not be ready or able to do so. Frequently employees invest their retirement savings too conservatively and thus do not earn the same return as a professionally managed fund like IPERS.

F. Financial Impact on the System and Its Employers:

In a DB plan, the system promises a certain level of benefits, and it is the employer's responsibility to make adequate contributions (together with any fixed contributions required from members) to insure that there are adequate funds available to pay the promised benefits. The employer's contributions will generally fluctuate from year to year. The employer will benefit from good investment performance but will need to increase contributions if investment performance suffers (or if other experience differs from that expected in the actuarial valuation). While IPERS has a fixed statutory employer contribution rate of 5.75% for employers of general employers, this is not the usual situation for DB pension funds.

In an actuarially funded DB plan, experience gains often occur when members terminate before retirement. This happens because the funding has been geared towards a final average compensation benefit which will not be paid. These "savings" on short service employees help pay for the ultimate retirement benefits paid to career members. In a DC plan, the full account balance is typically paid out upon termination (after a short vesting period). This in effect increases the cost of the plan.

In a DC plan, the employer's contribution is fixed and the employer bears no investment risk. This simplifies planning and budgeting. However, the ultimate cost may be higher than for a DB plan. There are two reasons for this. As noted above, employees often invest more conservatively than a typical large DB plan. As a result, employer contributions may need to be relatively higher to provide the same level of benefits. Second, in a DB plan with good investment performance, employer contributions can ultimately be reduced since investment income is paying for a larger part of the benefits. In a DC plan, the employer gives up this investment opportunity (while similarly giving up the investment risk).

***

In the next section of this report, we present a series of graphs showing hypothetical members under the current IPERS system and under various DC and hybrid plan alternatives. Since these alternatives are set up in terms of account balances (and are communicated that way even if benefits are ultimately paid as annuities), we do our

comparisons by looking at the present value of each type of plan instead of looking at dollars of payout on a monthly basis. The graphs show the benefits as a lump sum to salary ratio, i.e., at each age, the graph shows the value of the benefit as a multiple of the projected salary at that age. The IPERS benefit is converted to a value using the assumptions used by the IPERS actuary for the annual valuations. The mortality table is the 1977 IPERS Unisex Mortality Table (based on actual experience under the system) and the interest rate is 7.5%.

Graphs were prepared for hypothetical employees who enter IPERS at four different ages: 25, 30, 40 and 50. As a point of reference, the average entry age for current active members is age 33.

Each graph shows four types of plans:

- Current defined benefit plan
- A pension equity plan (PEP), where the point schedule increases with age in order to better approximate the current plan
- A cash balance plan, where the annual allocations increase with age in order to better approximate the current plan
- A defined contribution plan, where the annual contributions to each members' account are the same as the total employee and employer contributions to IPERS

The first five sets of graphs are for regular employees of IPERS, i.e., those who accrue the 60% benefit after 30 years of service. Each set has graphs for the four entry ages. In each, the current pay is assumed to be $25,000, but the patterns shown are independent of the actual salary. The following comments apply to all five sets:

- The current IPERS plan is based on the plan provisions which will become effective July 1, 1997 (unreduced retirement at rule of 88 as well as at age 62 with 30 years' service or age 65). For purposes of these graphs we assumed there is no limit on projected pay when calculating benefits. The steep jump in the line graph at age 55 shows the point at which subsidized early retirement is available. There is a second jump (which varies by entry age) at the point at which the member is eligible for unreduced retirement. The decline in the line after 35 years of service (age 60 for the age 25 entrant) shows that the value of the benefit declines after that point (even though the dollar amount grows with salary increases).

- The pension equity plan shown grants credits each year which vary by age. It is an illustrative design, not a recommendation for any particular PEP formula. It is a rich design which is shown to demonstrate that even with a hybrid plan of the final average salary variety, it is hard to duplicate the current defined benefit structure. At the younger entry ages, this PEP plan provides significantly higher values than the current IPERS plan. However, after age 55 (when unreduced or subsidized reduced early retirement benefits are payable), this PEP plan provides lower values than the current IPERS plan until close to age 65.

In the PEP plan shown, the older entrants (age 40 and 50) do better than under the current IPERS plan. This occurs because the PEP design being illustrated grants credits based on age. Another approach is to vary the credits by length of service.

If IPERS wishes to pursue consideration of a PEP plan, the next study would consider numerous alternative formulas with different types of credit allocations in order to design a plan which best meets the needs of the different groups of employees covered by the system.

- The cash balance plan shown also varies its allocations based on age. In a cash balance plan, one needs to establish both the allocation percentages for each year (which can be flat or vary by age and/or service) and the interest rate to be credited on the cash balance accumulation. In the design shown on the graphs, we have used a 6% interest rate for point of illustration. As with the PEP plan, these specific provisions are illustrative only and are not a recommendation for any specific cash balance formula. For entry ages 25, 30 and 40, the cash balance accounts are more valuable than the current IPERS plan prior to age 55. In most cases, the cash balance accounts are less valuable than the current plan after that age for the younger entrants. Once again, this shows the many tradeoffs involved in replacing a traditional defined benefit plan with a hybrid plan (either PEP or cash balance). Some employees will be better off and some will be worse off.

- The defined contribution (DC) plan shown for regular employees has a 9.45% annual contribution rate. This rate was chosen because it is the sum of the employer and employee contribution rates to IPERS. The assumed investment return is varied in the different sets to show the impact of the return when the contributions are unchanged. As with the hybrid plans, the younger employees generally do better with the DC plan if they terminate before retirement age. The crossover after that point is a function of the investment return as well as the ages at entry and retirement.

The differences between the five sets for regular employees are as follows:

- The first of the five sets uses assumed annual salary increases of 5.5% and assumed investment return for the DC plan of 7.5% (which was chosen since it is the valuation interest rate).

- The second set is the same as the first, except that the investment return for the DC plan was lowered from 7.5% to 5.0%. A comparison of the two sets shows the impact of the lower investment earnings. For example, for someone who enters at age 25 and earns 7.5% on the DC account, the DC plan has roughly the same value as the current plan if the member retires at age 65. However, if the member earns only 5.0% on the account, the graph shows a dramatic shortfall at age 65.

- The third set is the same as the first two, except the investment return for the DC plan was increased to 10.0%. A comparison shows the impact of the higher investment earnings.

- The fourth set is the same as set 1, except that the assumed annual salary increases have been reduced from 5.5% to 4.0%. With the lower salary increases, the cash balance and DC plans fare relatively better because of their greater weighting towards the early years of the career.

- The fifth set is the same as the third, except that the current IPERS plan is shown including a 3% per year automatic COLA. While the automatic COLA is currently available only to those members who retired prior to July 1, 1990, proposals have been

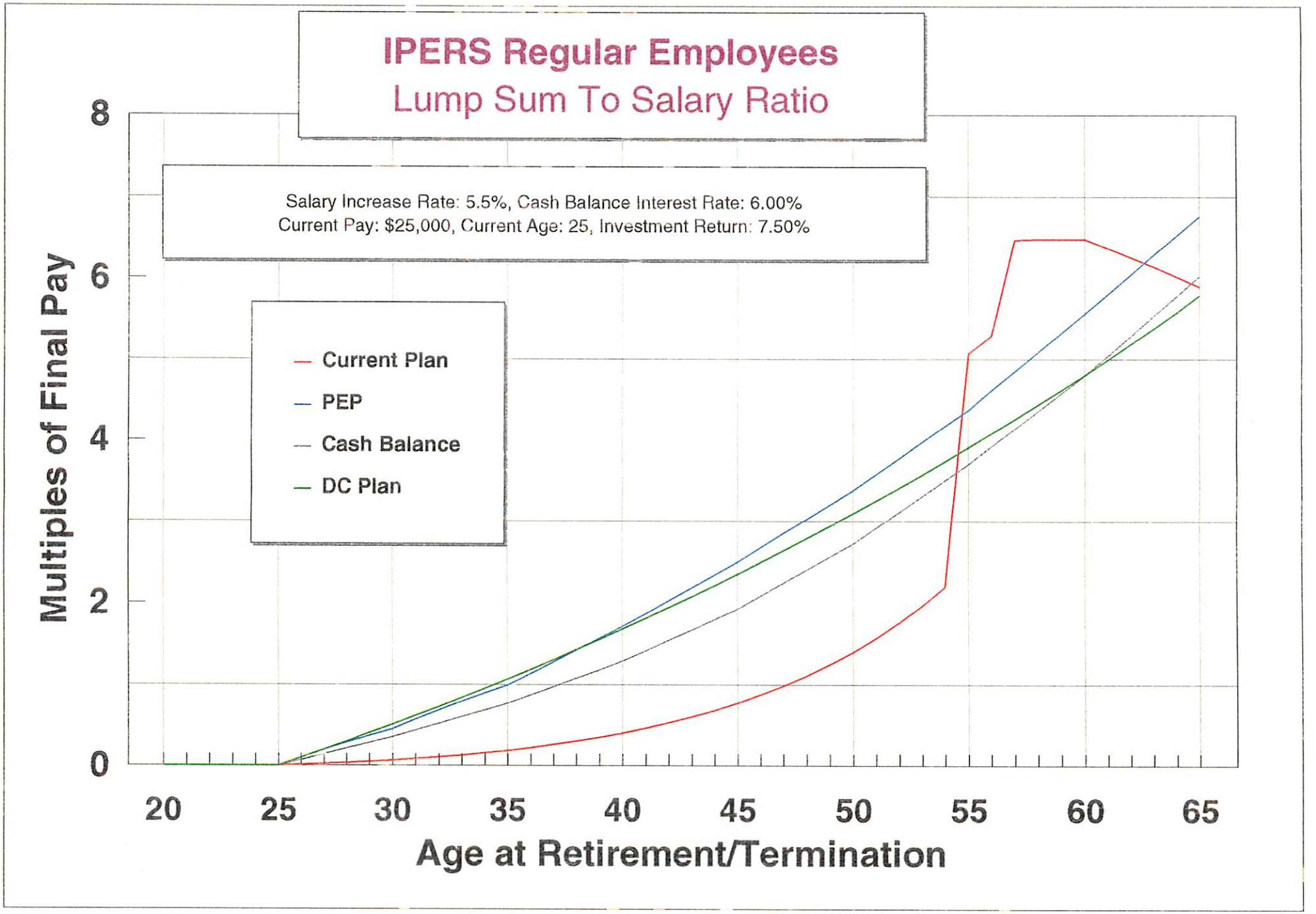
made to make the COLA available automatically to all retirees. A comparison of the current plan lines in the graphs in the first and fifth sets shows the value of the COLA. The third set was used as the point of comparison so that the reader can see that even with 10% annual investment return, the current IPERS plan with COLA provides greater value upon retirement in most situations (the same is not true for terminations before retirement eligibility, even with COLA).

The next two sets of graphs are for sheriffs (including deputy sheriffs and airport firefighters) and protection occupations. These groups are shown separately since they have unreduced benefits at age 55 and accrue the full 60% benefit after 22 years and 25 years. Their plans are thus more valuable than those for regular employees. There is one set with four entry ages for sheriffs and another set for protection occupations. The general assumptions are the same as in the first set of graphs for regular employees. However, somewhat different PEP, cash balance and DC formulas are used to better approximate the value of the enhanced benefits for these groups. Both PEP and cash balance formulas illustrated are age-weighted as were the similar formulas for the regular employees. In each case, however, the accruals are higher. The current employer and employee contributions for these two groups vary from year to year. The DC formulas shown are based on 15% annual contributions for sheriffs and 14% for protection occupations.

GRAPHS

Please note that the next 28 pages consists of the graphs mentioned above.

IPERS Regular Employees
Lump Sum To Salary Ratio



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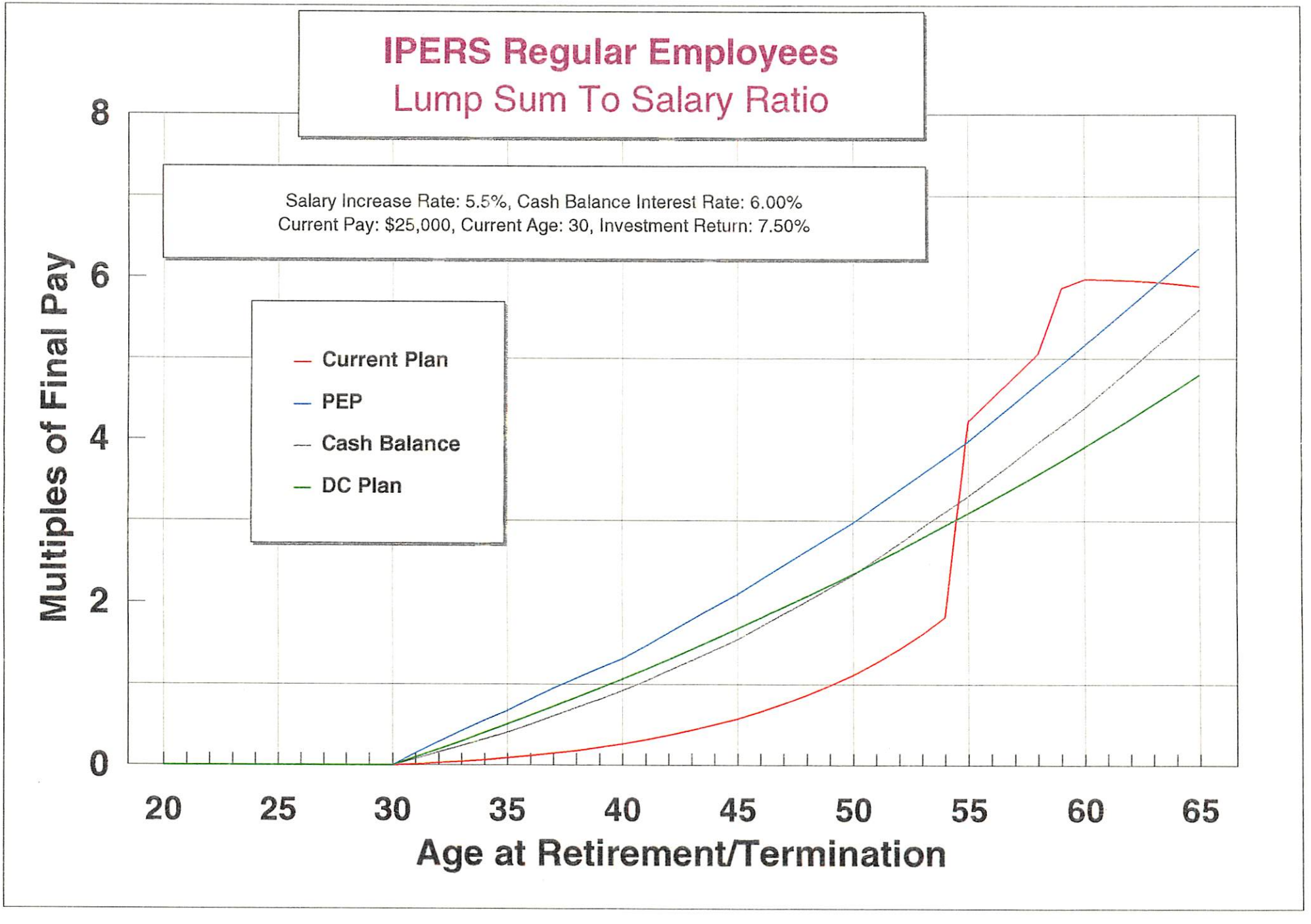
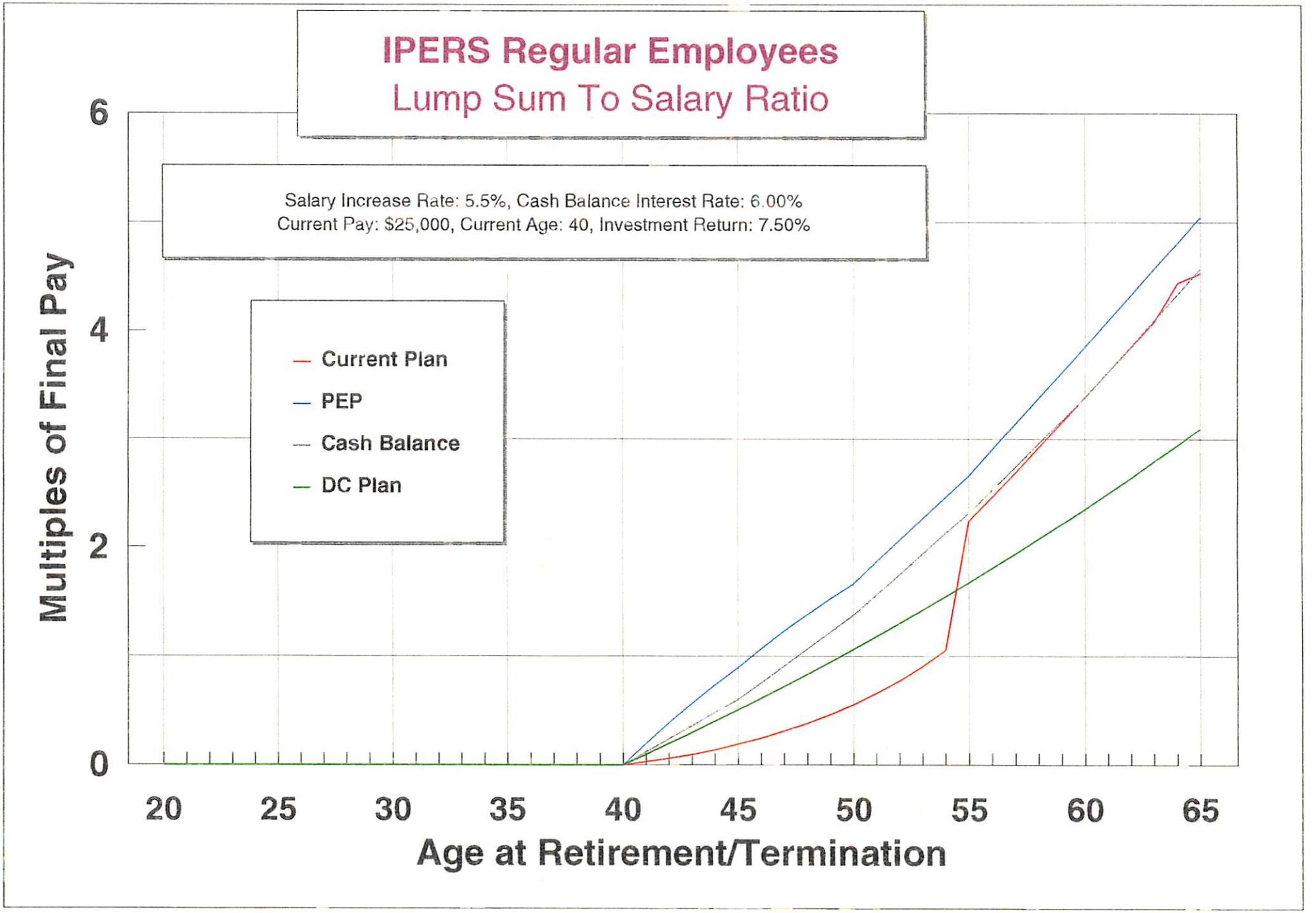

IPERS Regular Employees
Lump Sum To Salary Ratio
Salary Increase Rate: 5.5%, Cash Balance Interest Rate: 6.00%
Current Pay: $25,000, Current Age: 30, Investment Return: 7.50%
Current Plan
PEP
Cash Balance
DC Plan
Multiples of Final Pay
0
2
4
6
8
20
25
30
35
40
45
50
55
60
65
Age at Retirement/Termination

IPERS Regular Employees
Lump Sum To Salary Ratio



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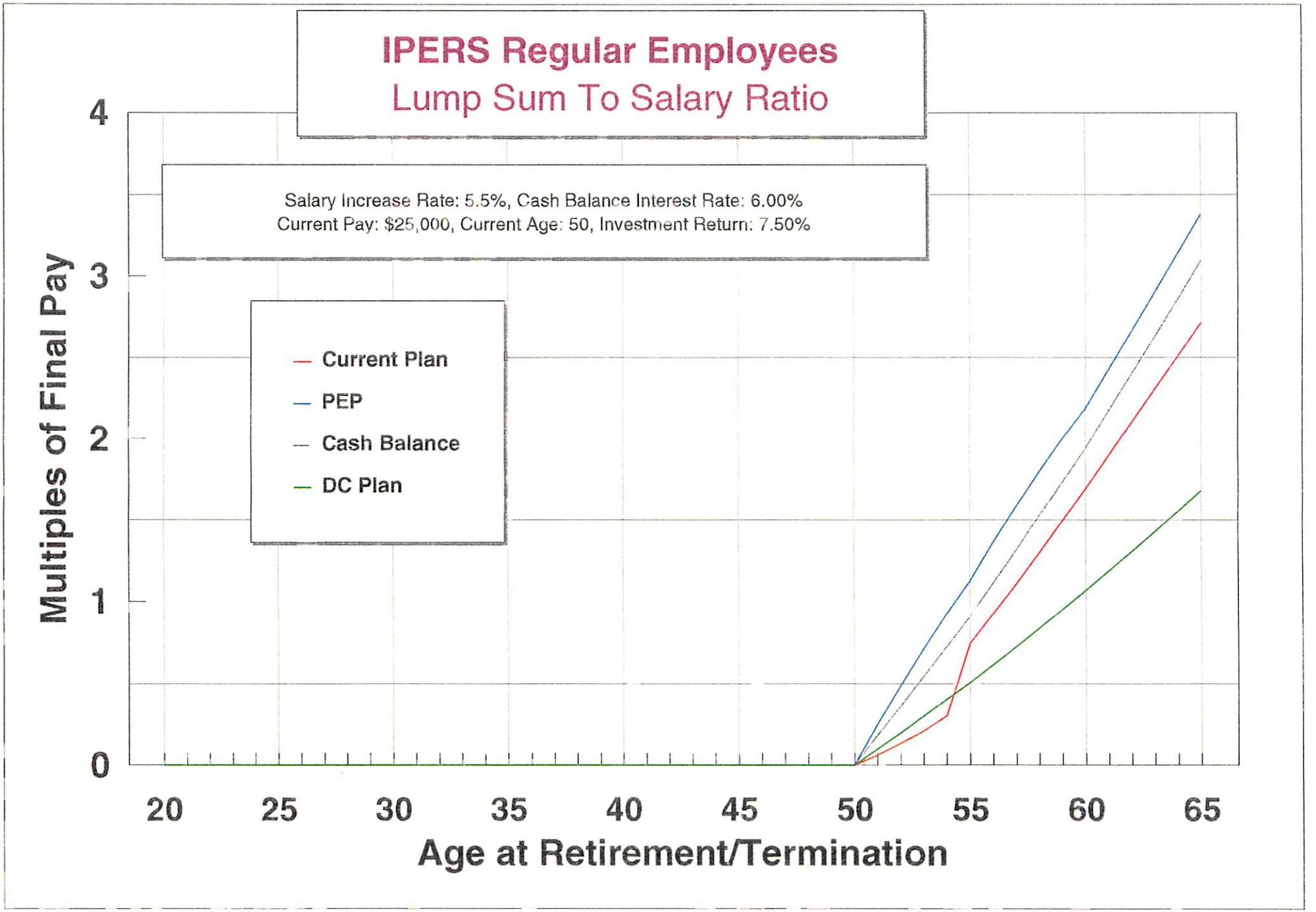

Set 1 - Current Plan without COLA

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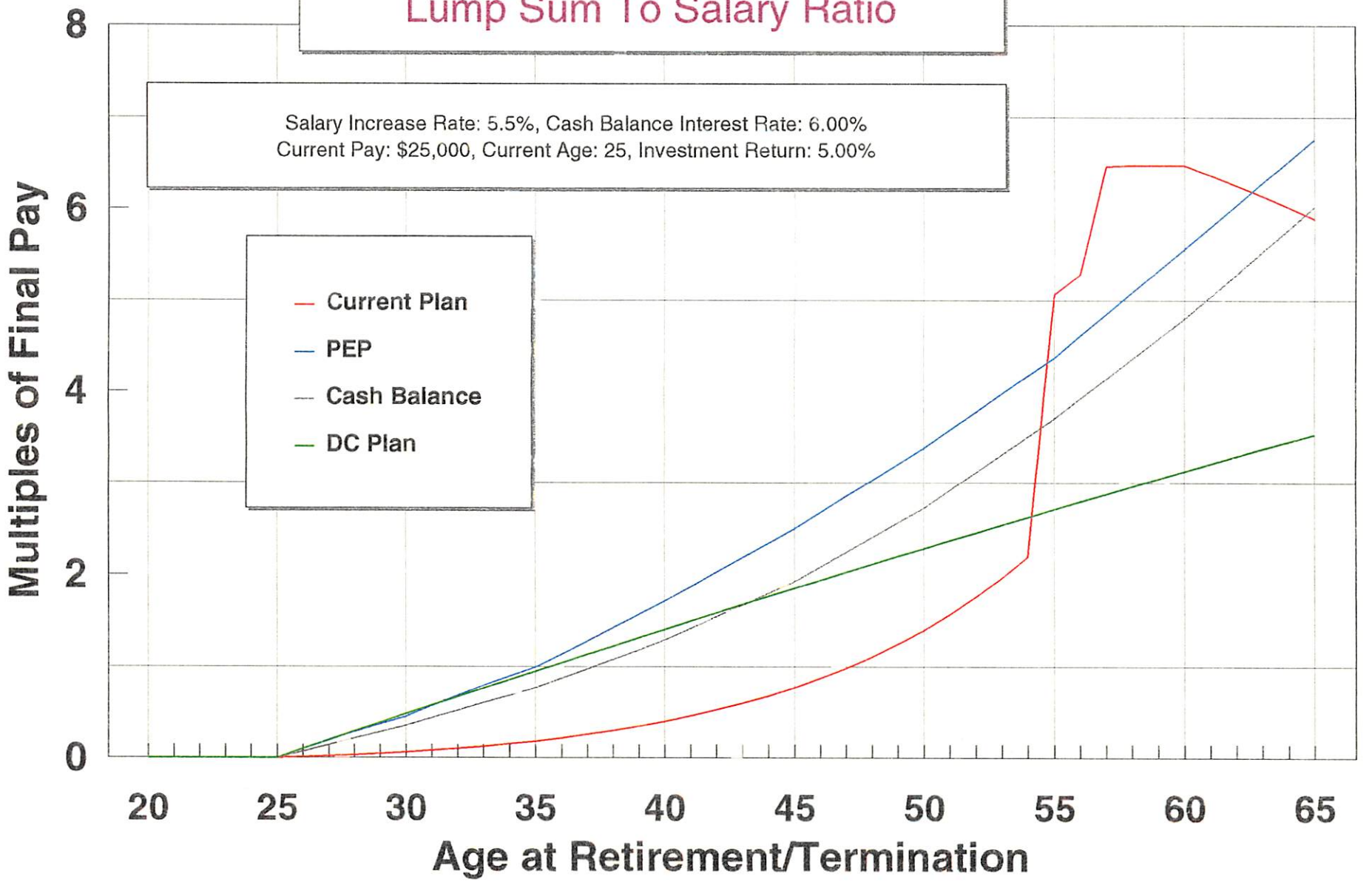
IPERS Regular Employees
Lump Sum To Salary Ratio



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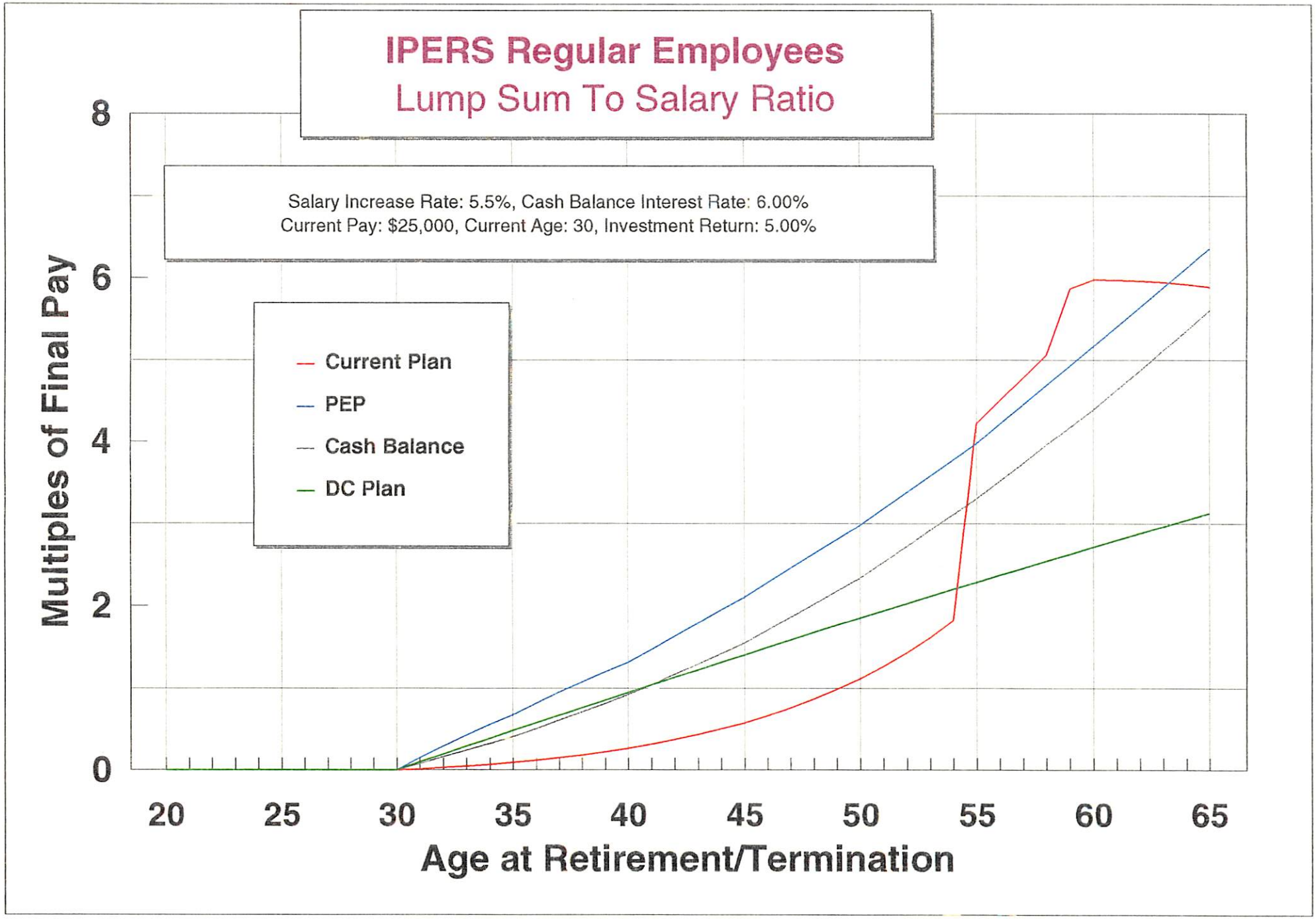

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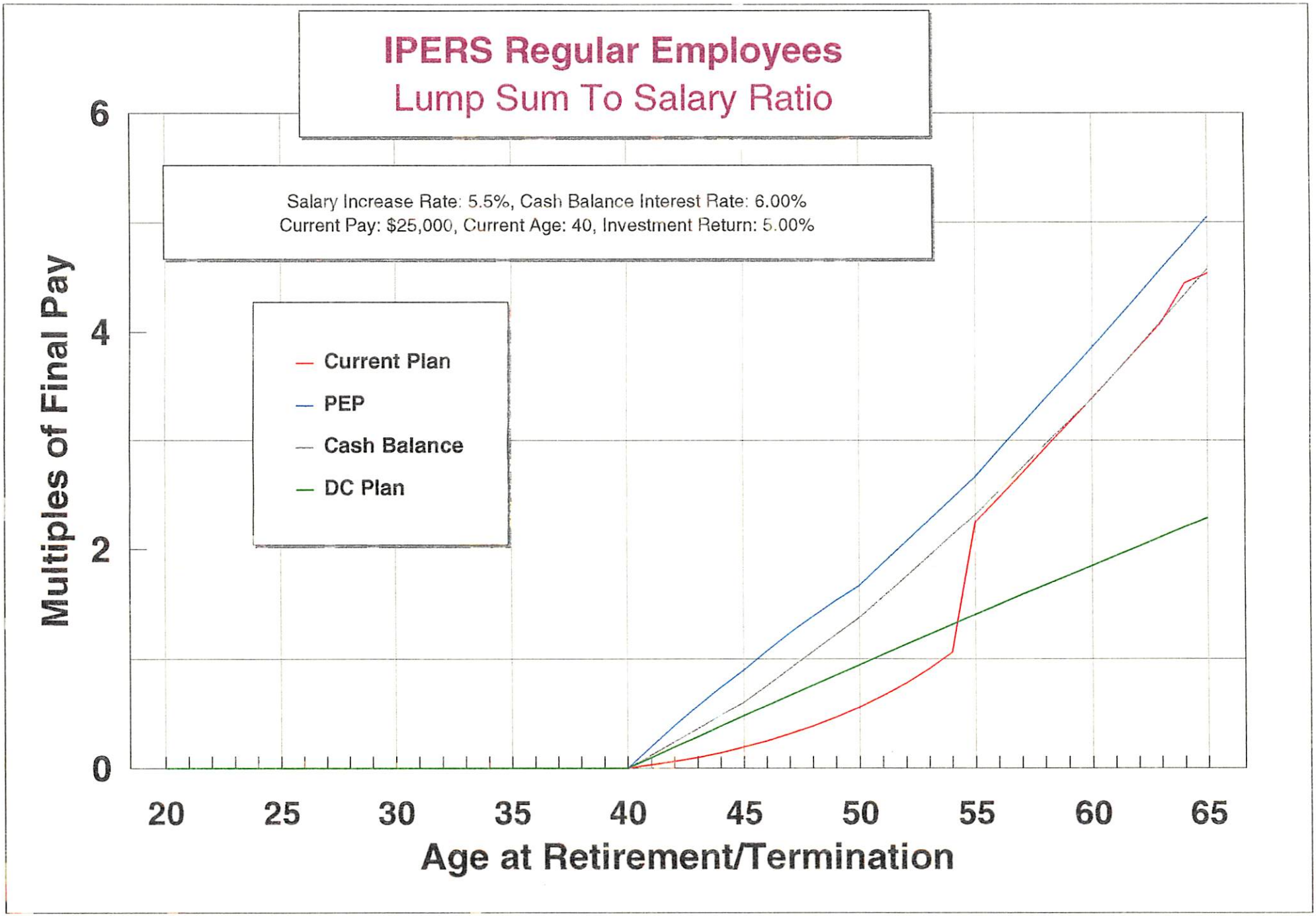
IPERS Regular Employees
Lump Sum To Salary Ratio



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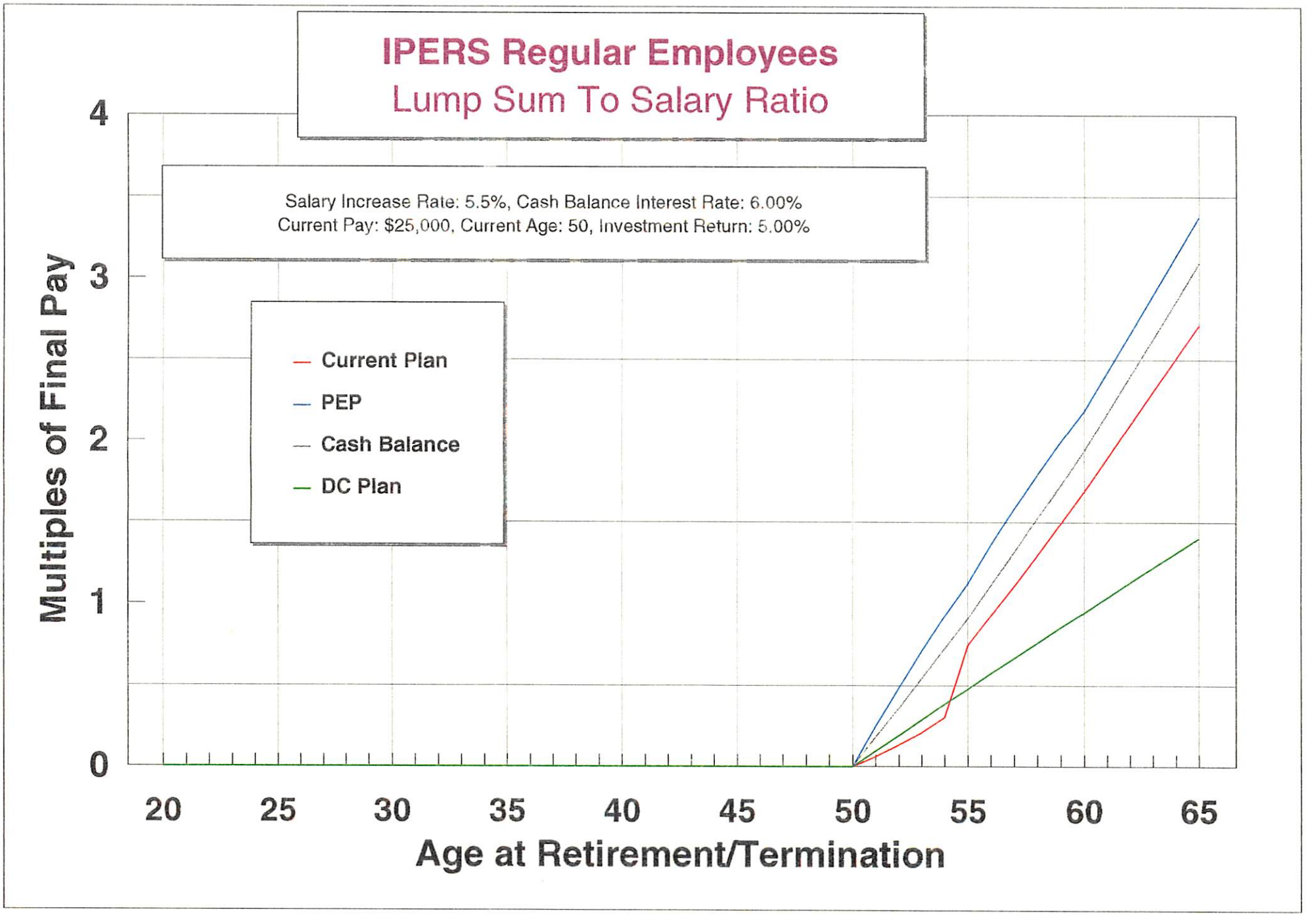
Lump Sum To Salary Ratio



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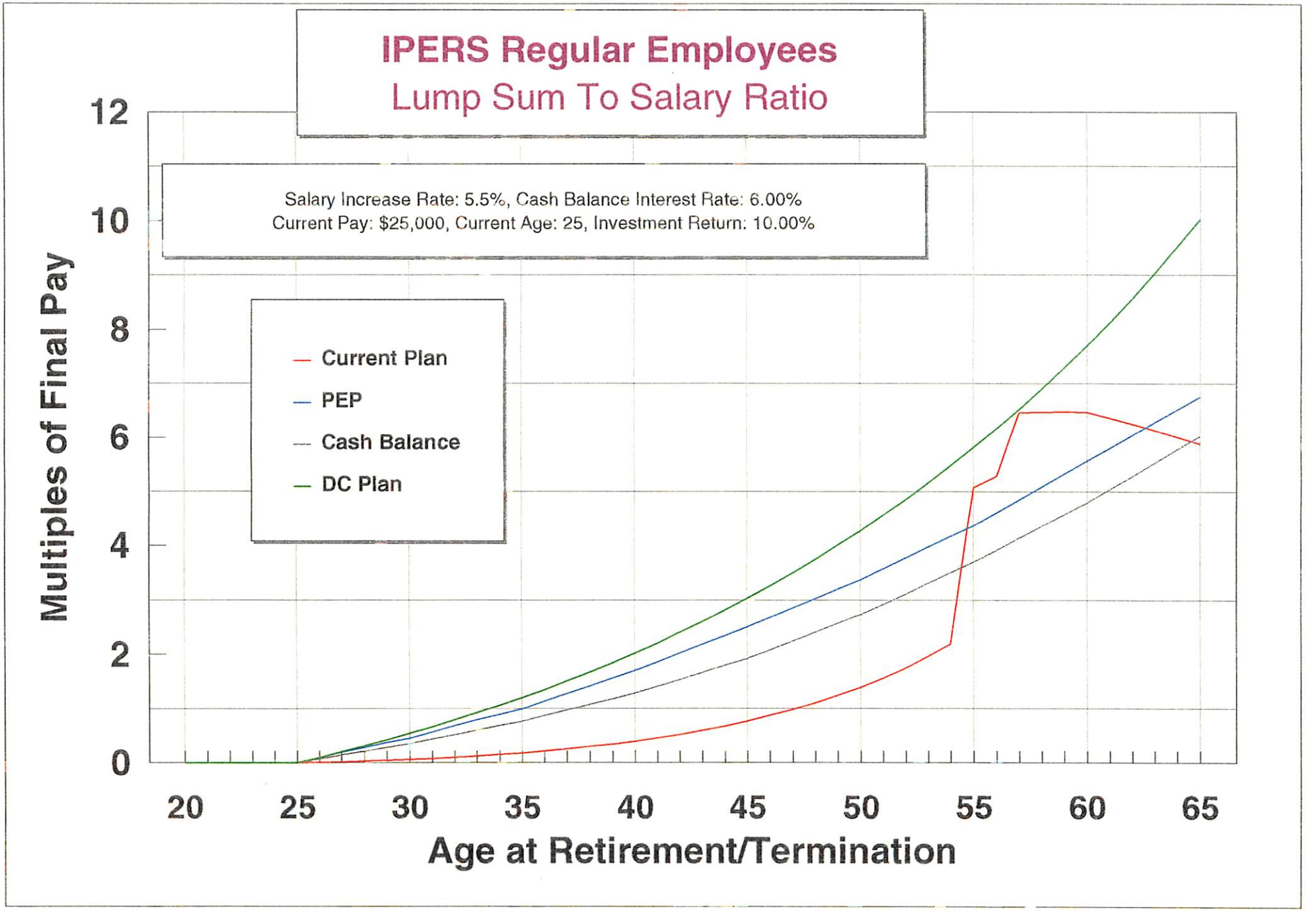

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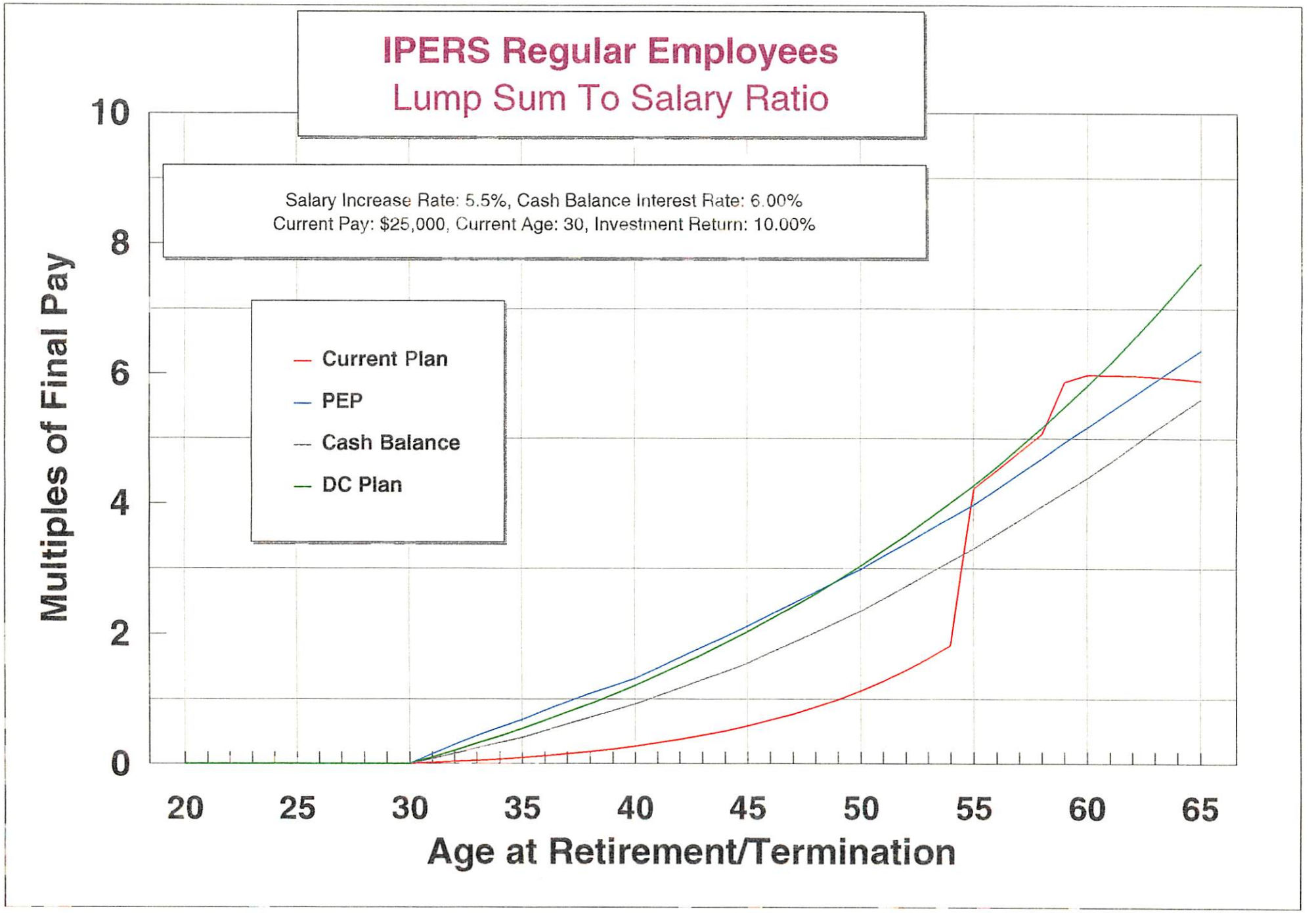

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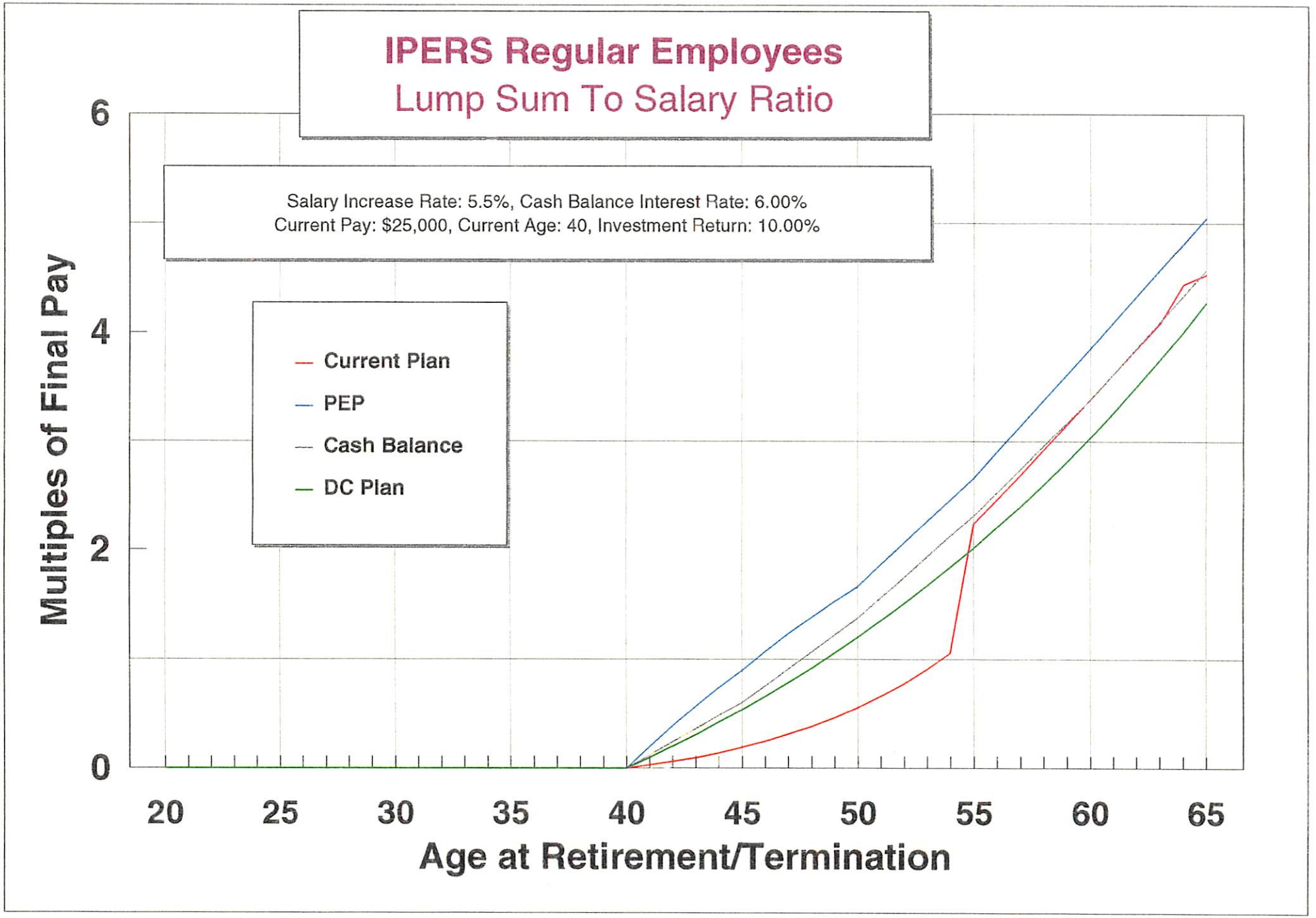
Lump Sum To Salary Ratio



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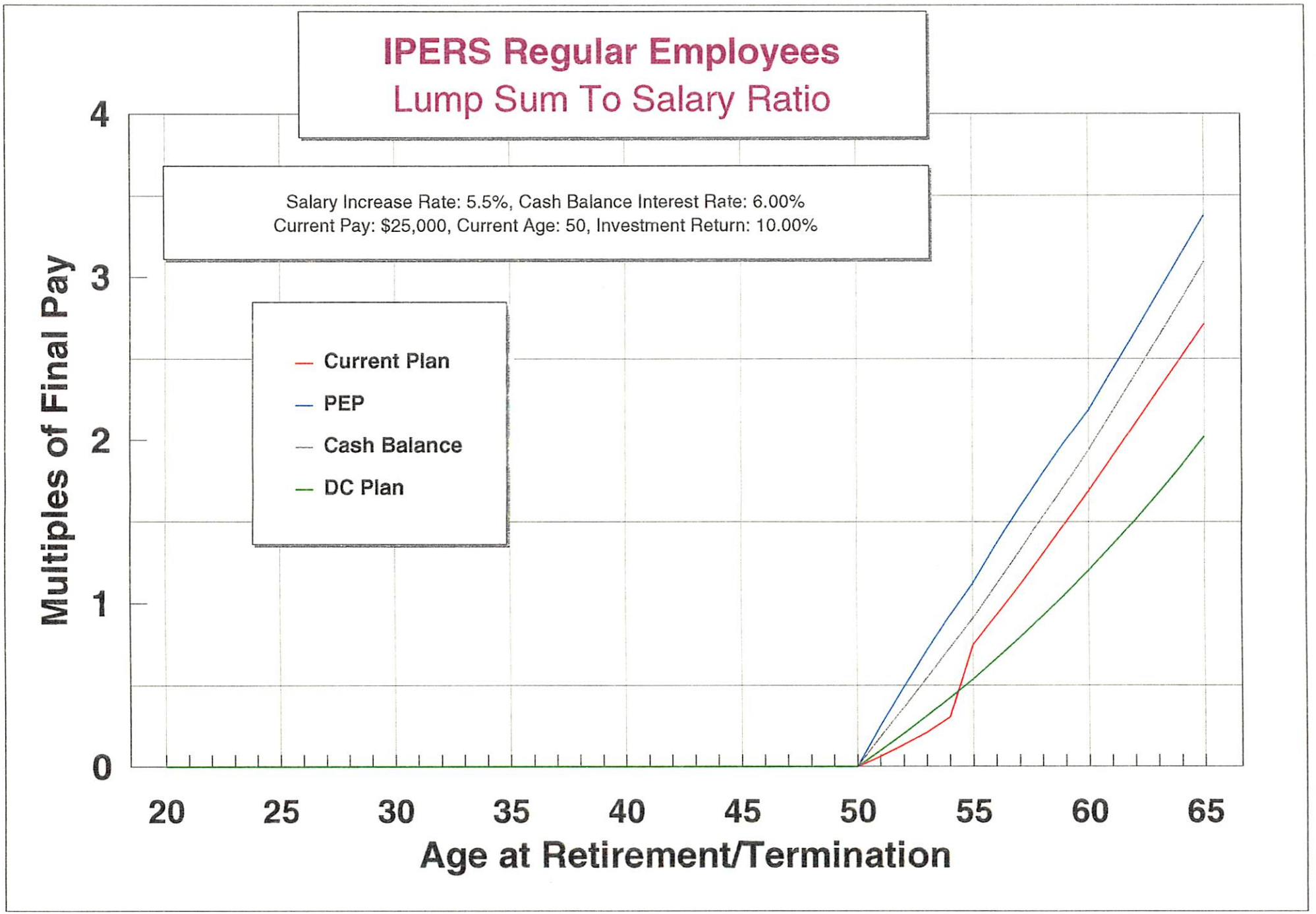
Lump Sum To Salary Ratio



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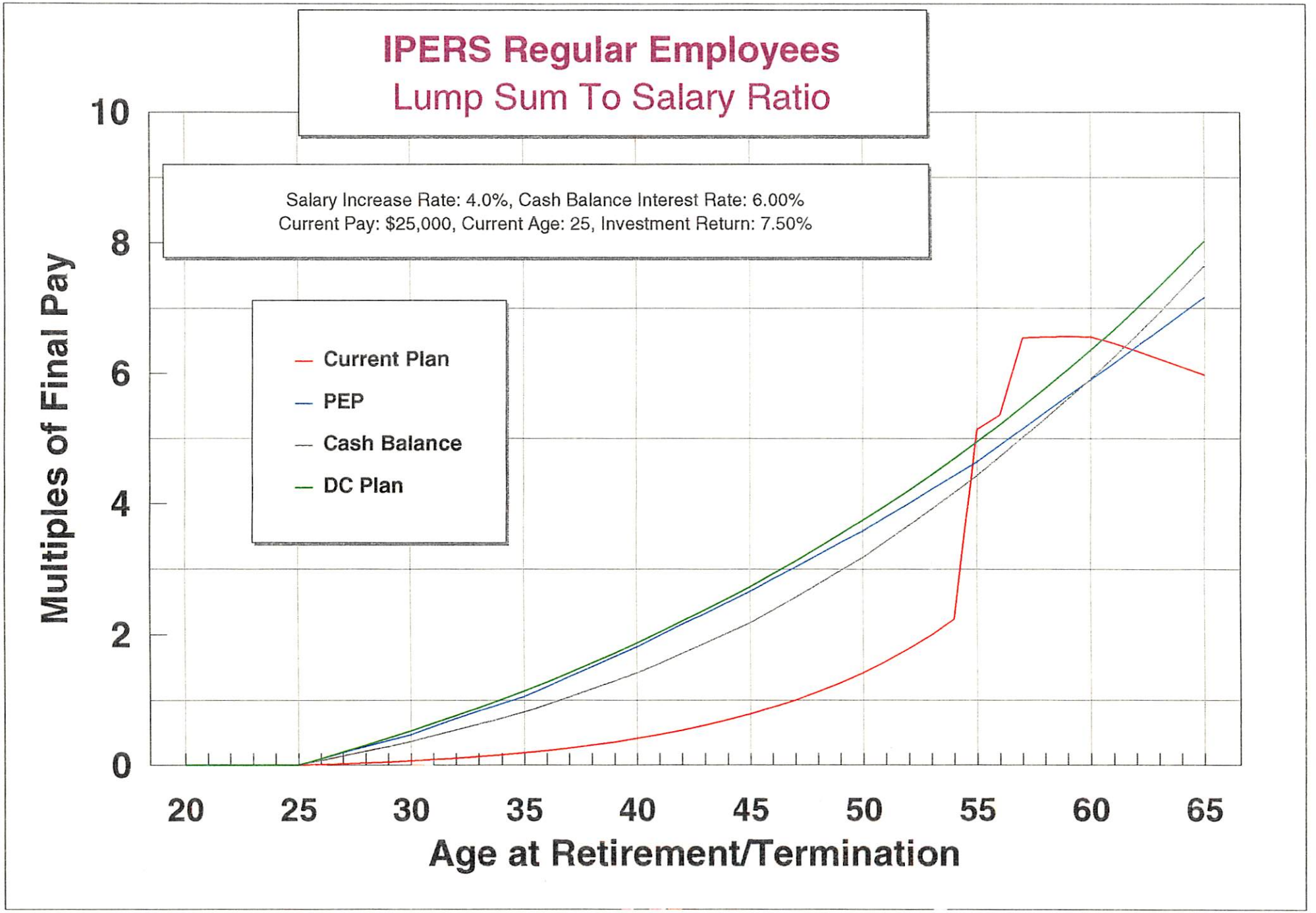

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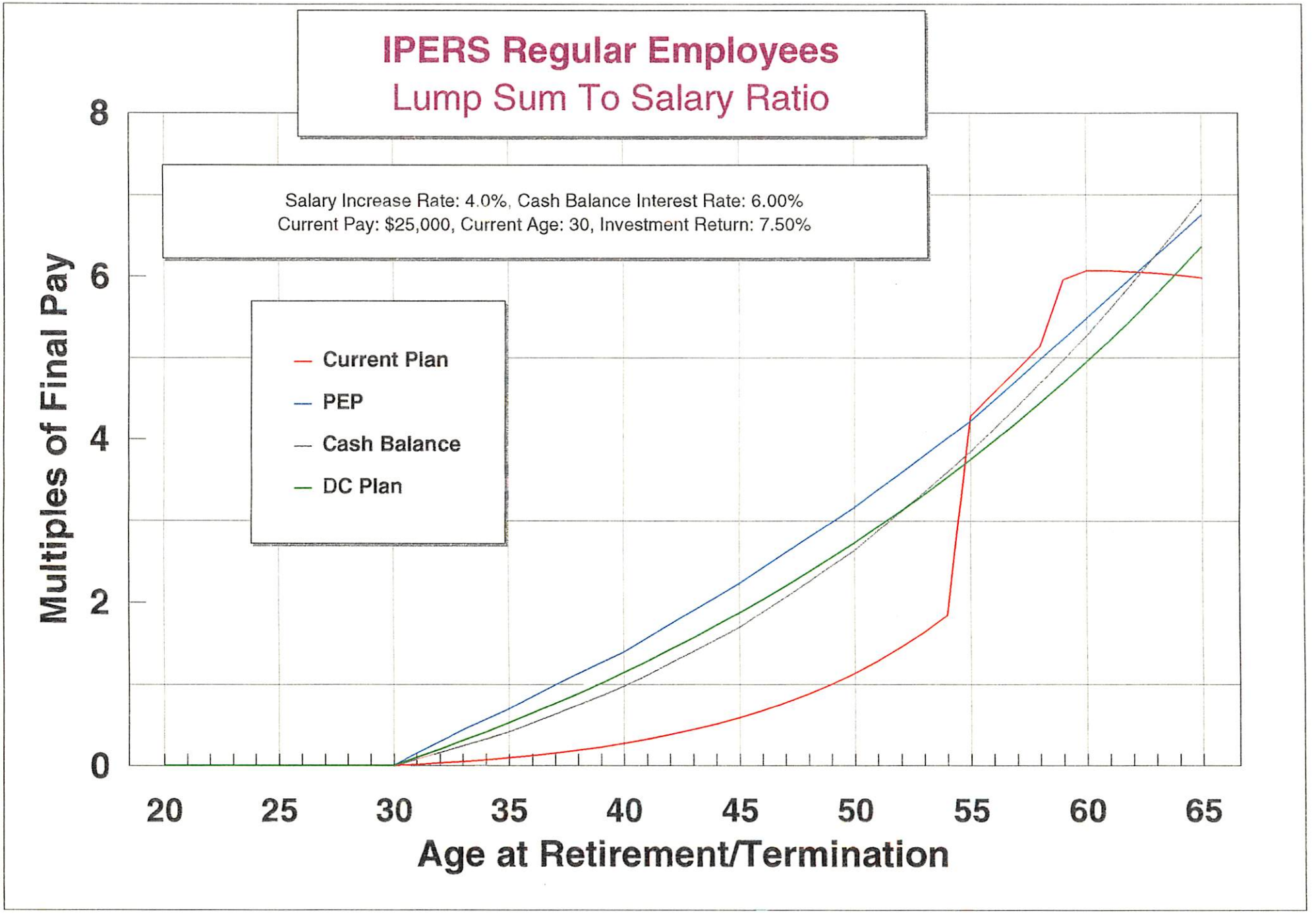
IPERS Regular Employees
Lump Sum To Salary Ratio



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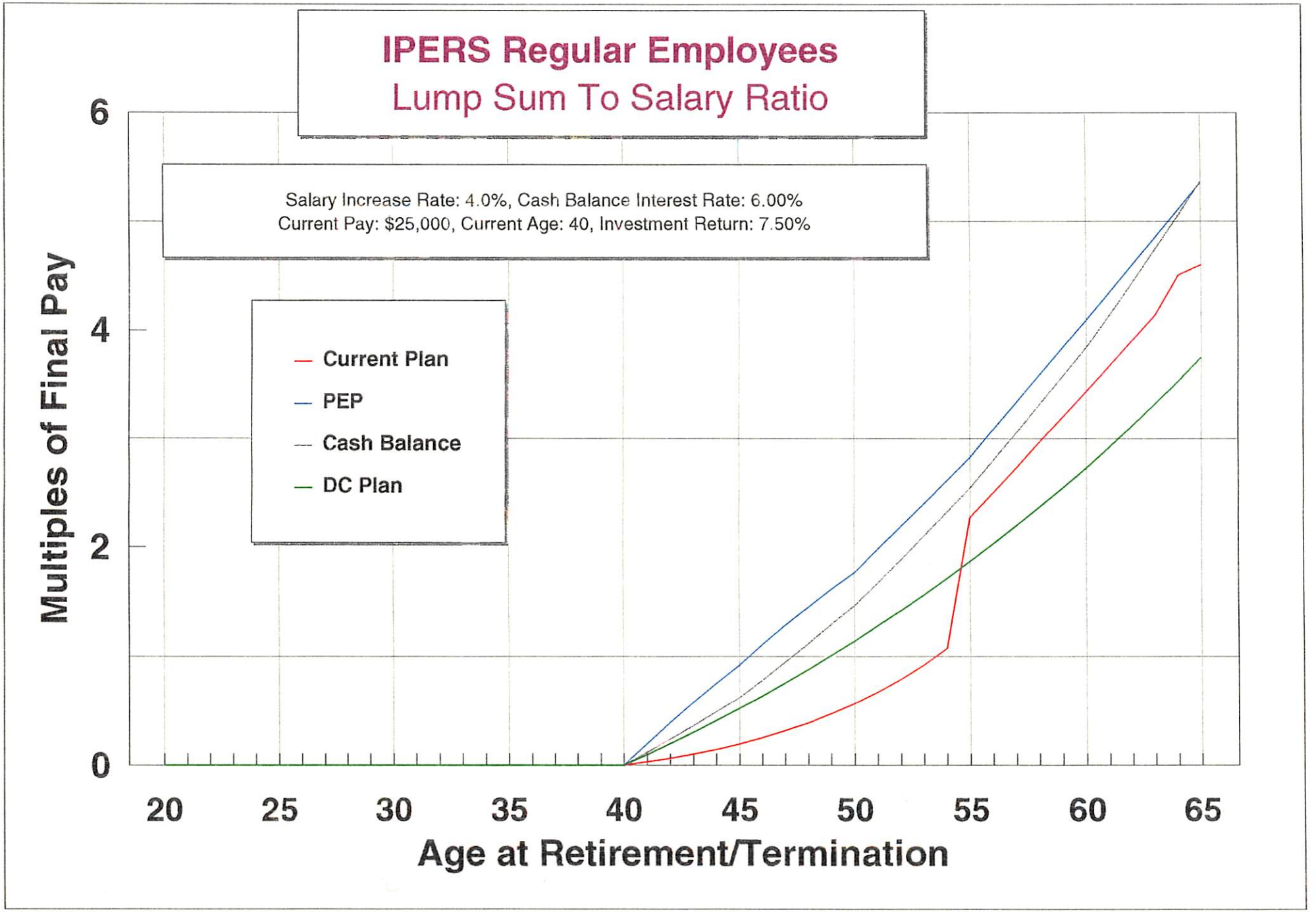
Lump Sum To Salary Ratio



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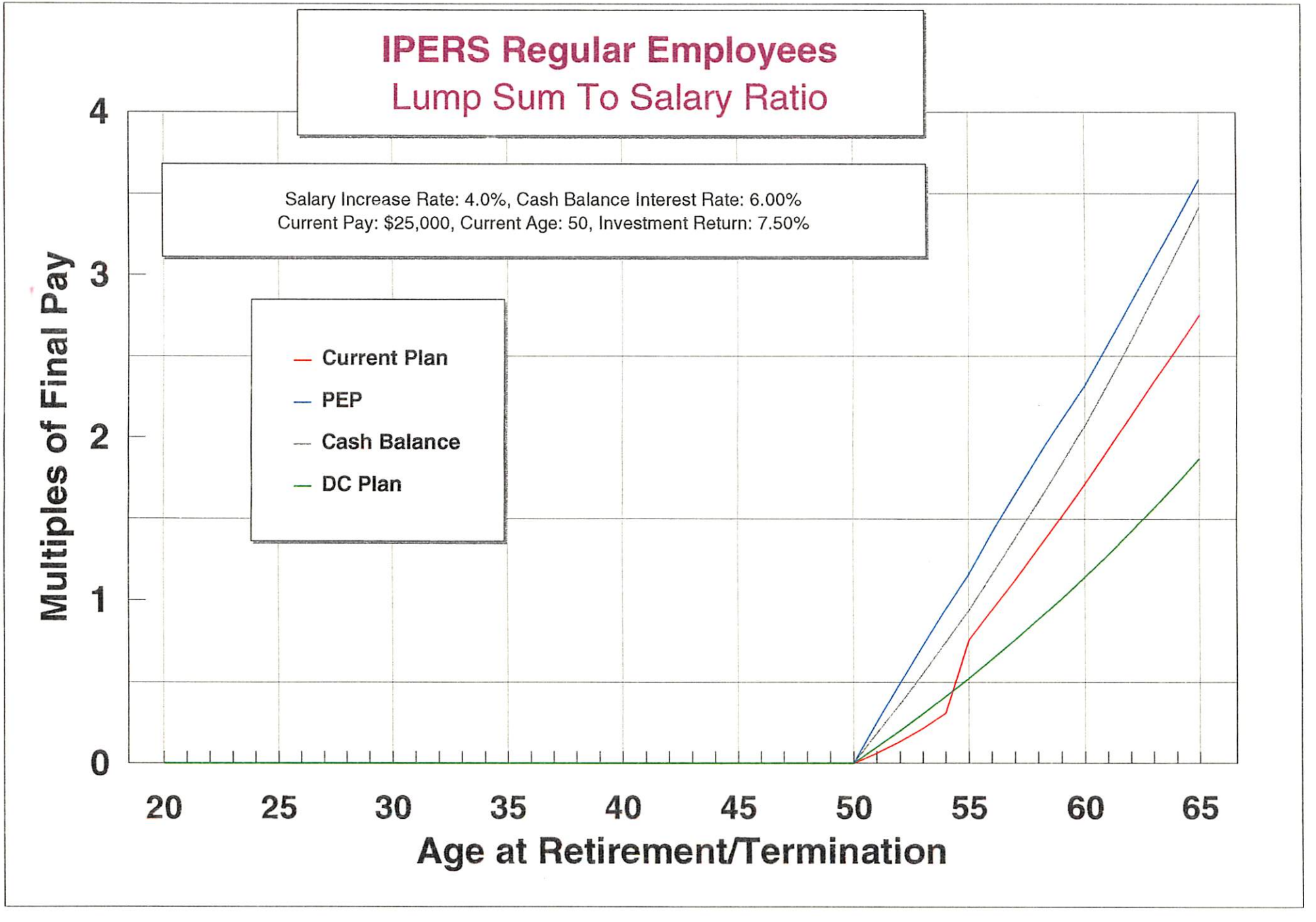

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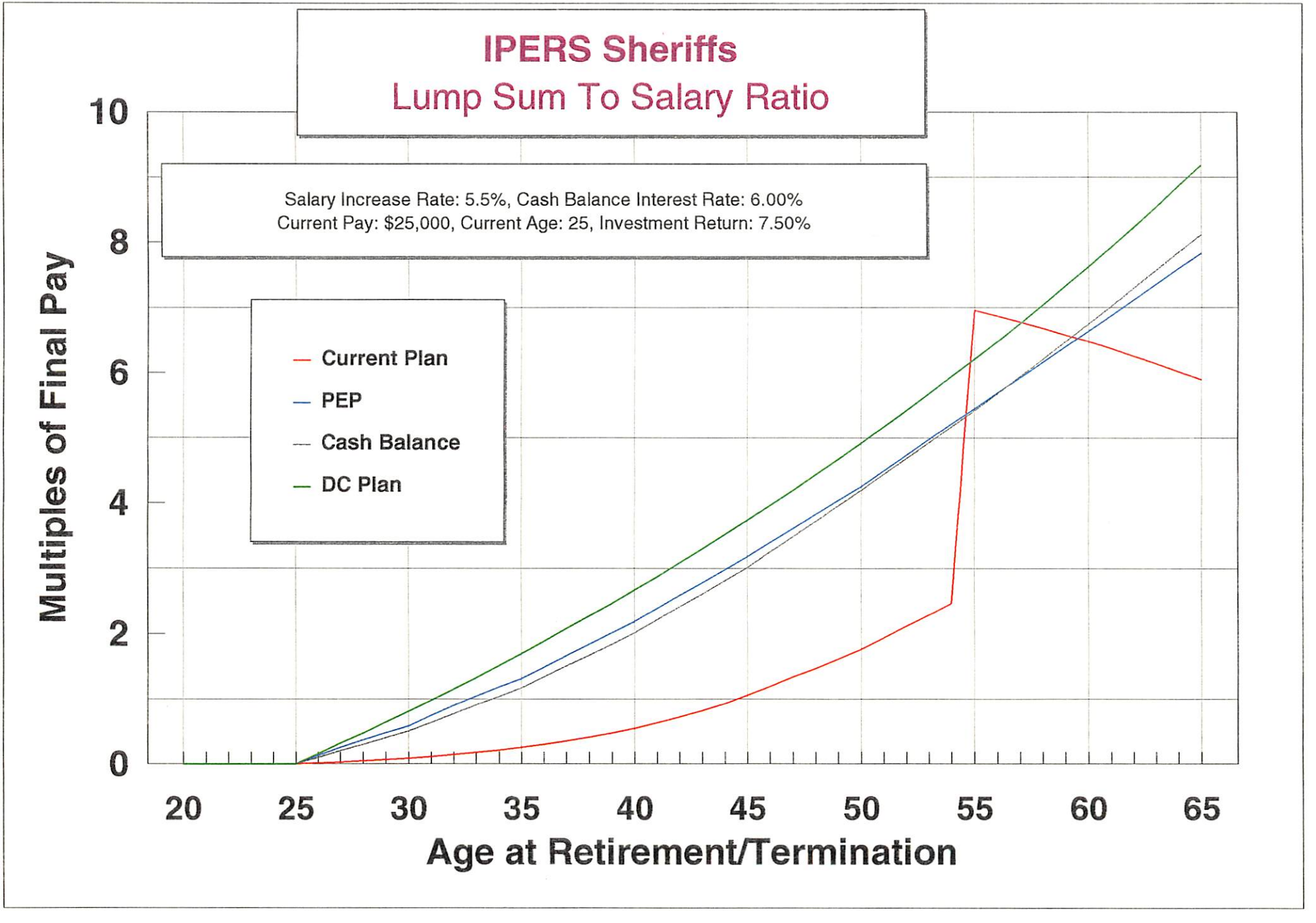

Current Plan without COLA

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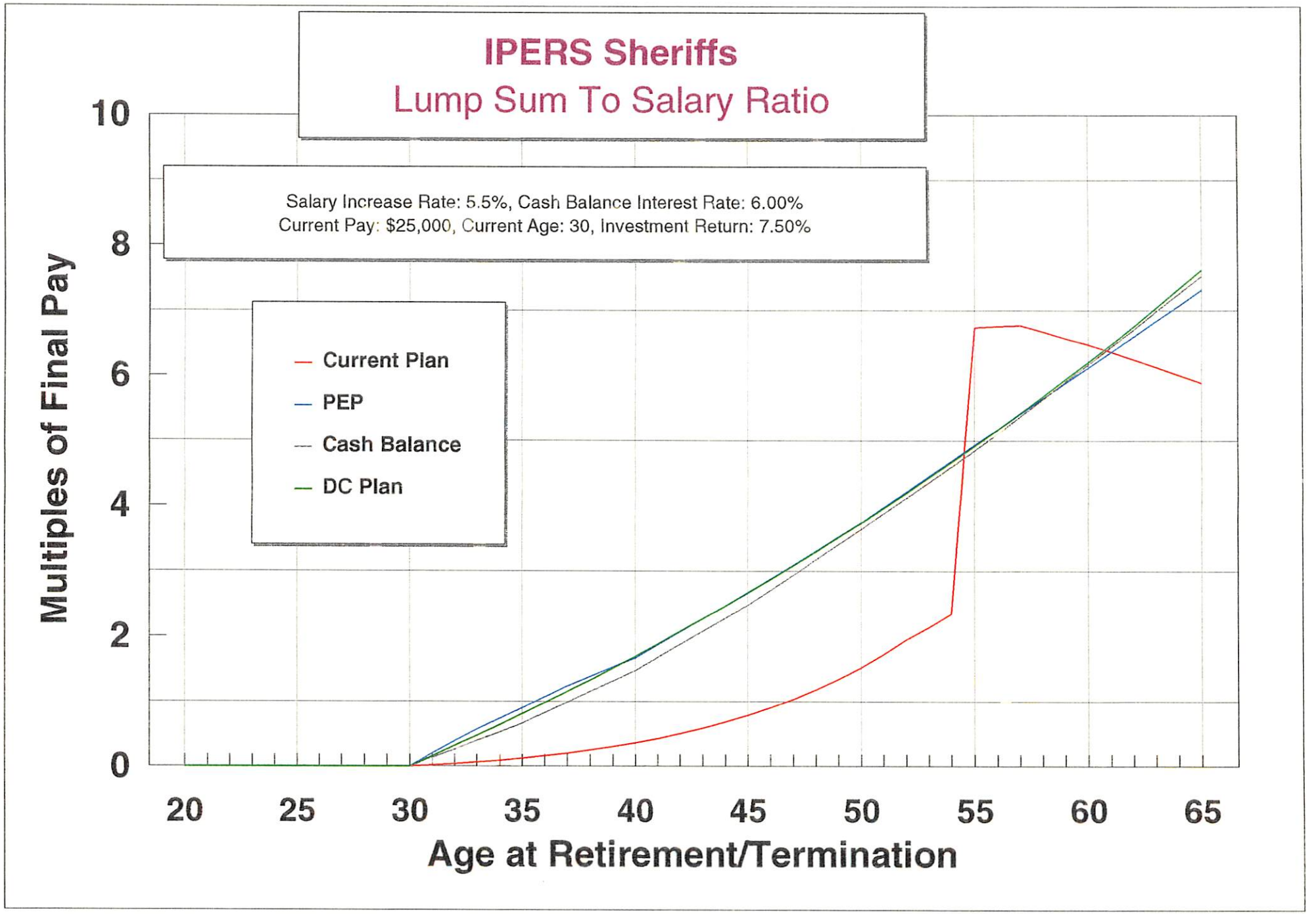

Current Plan without COLA

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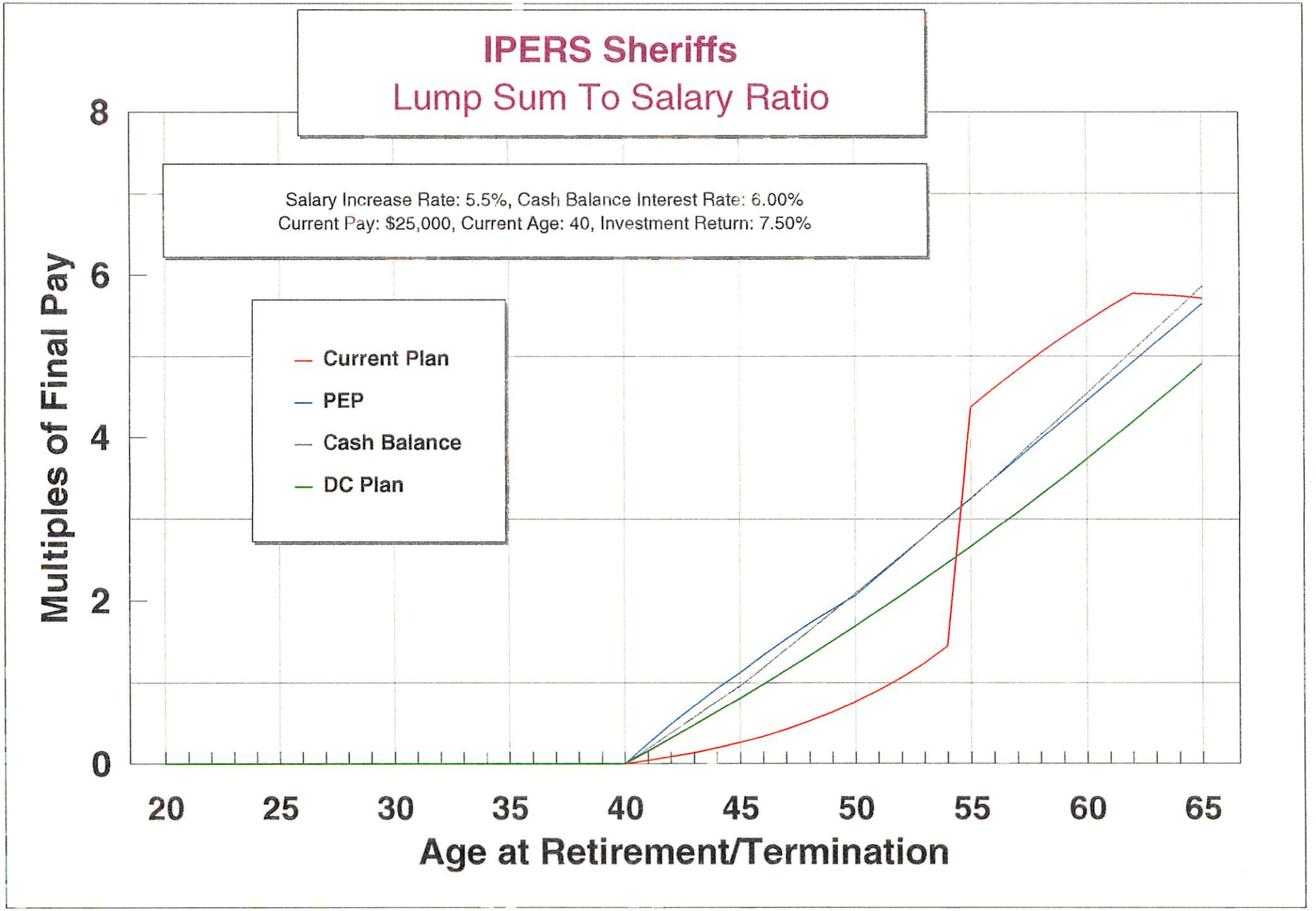
IPERS Sheriffs
Lump Sum To Salary Ratio



Current Plan without COLA

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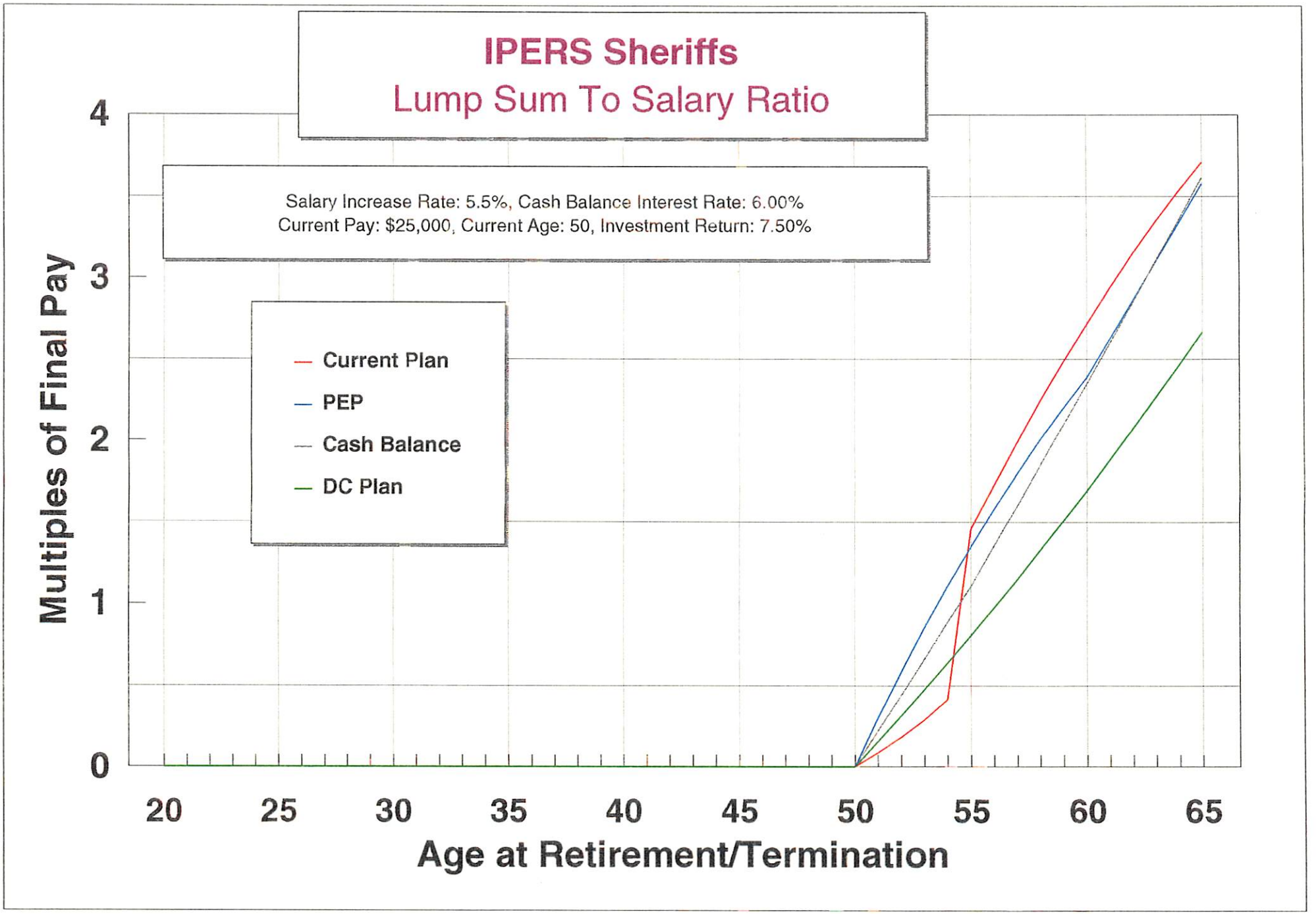
IPERS Sheriffs
Lump Sum To Salary Ratio



Current Plan without COLA

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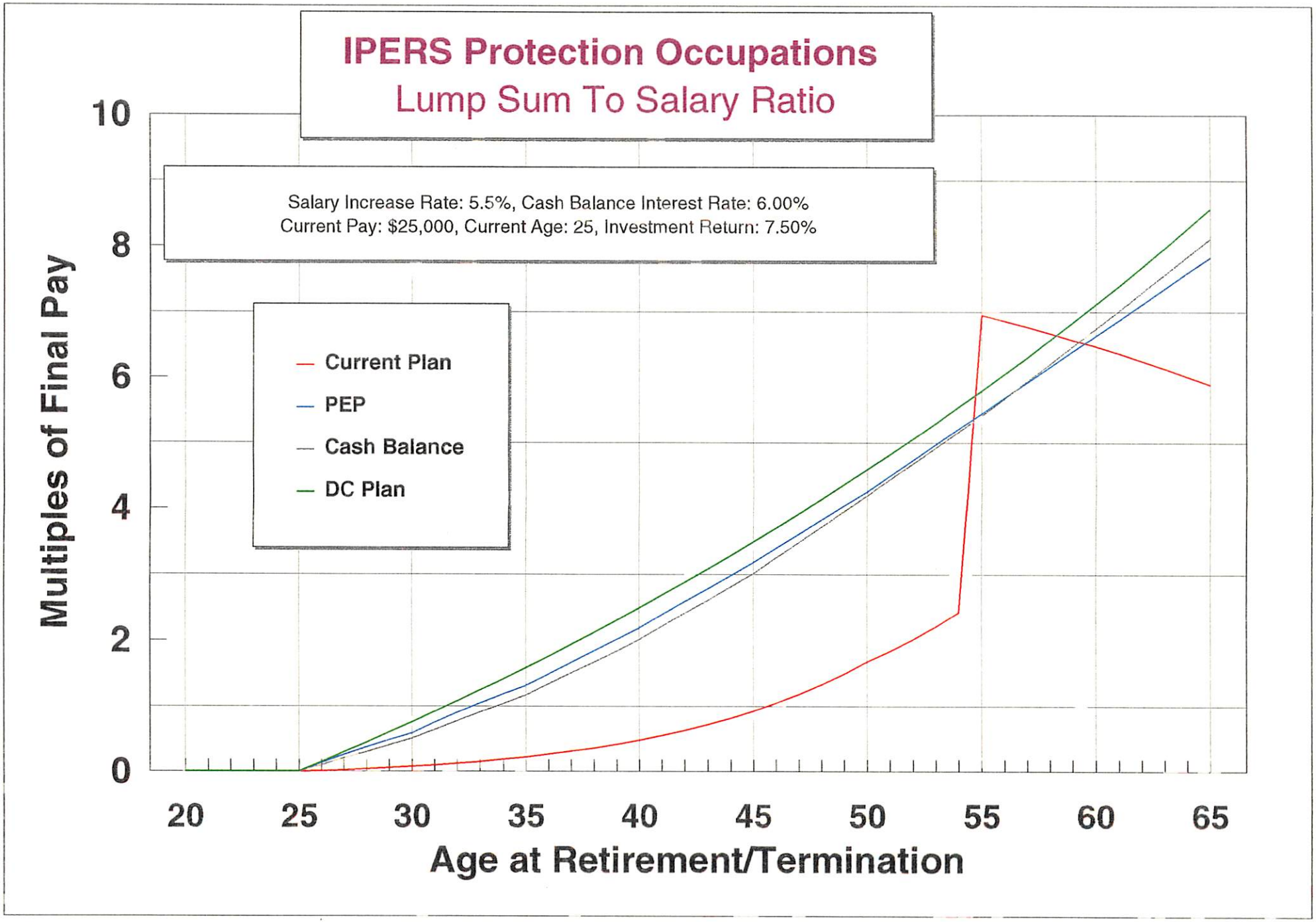

Current Plan without COLA

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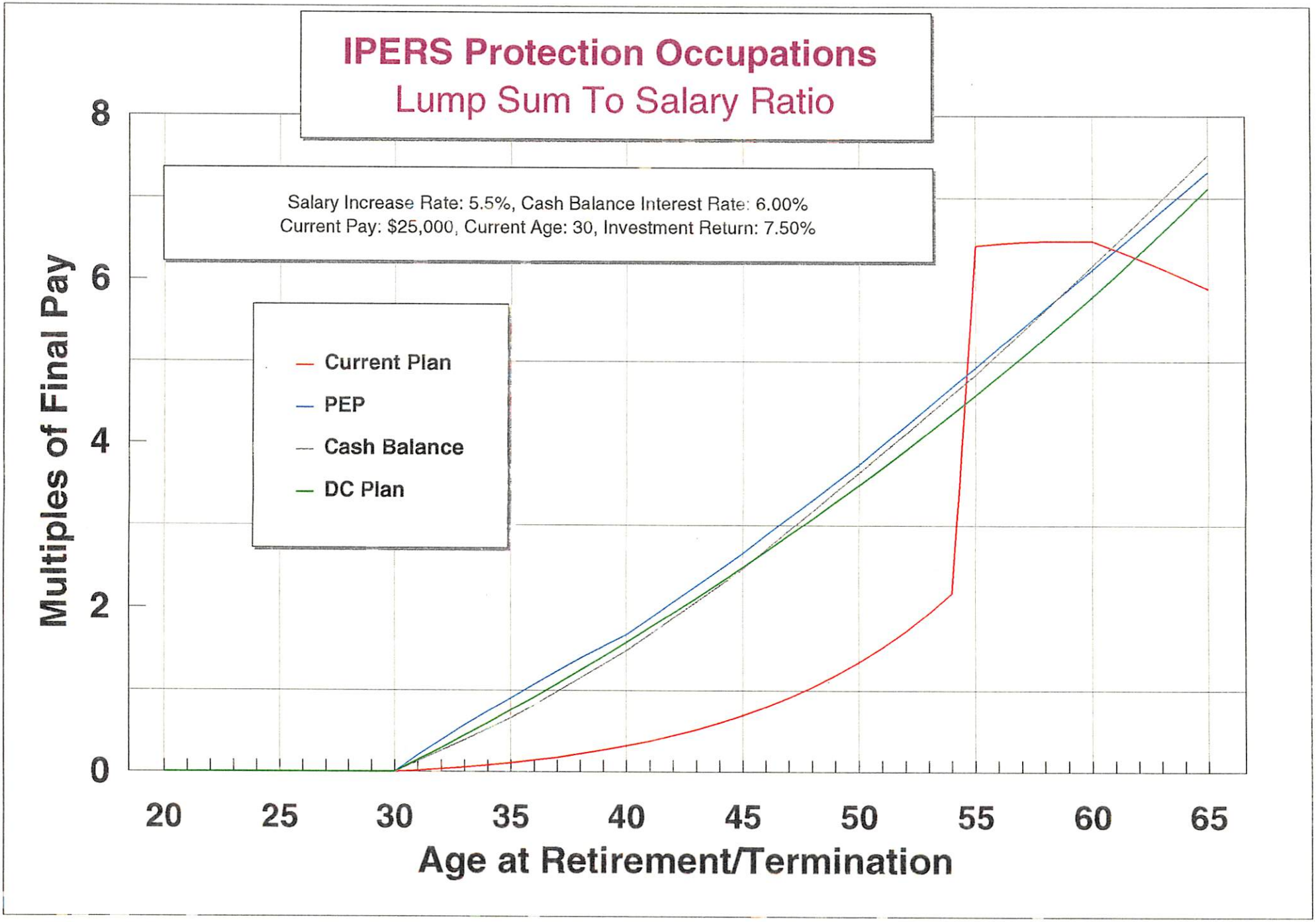
IPERS Protection Occupations
Lump Sum To Salary Ratio



Current Plan without COLA

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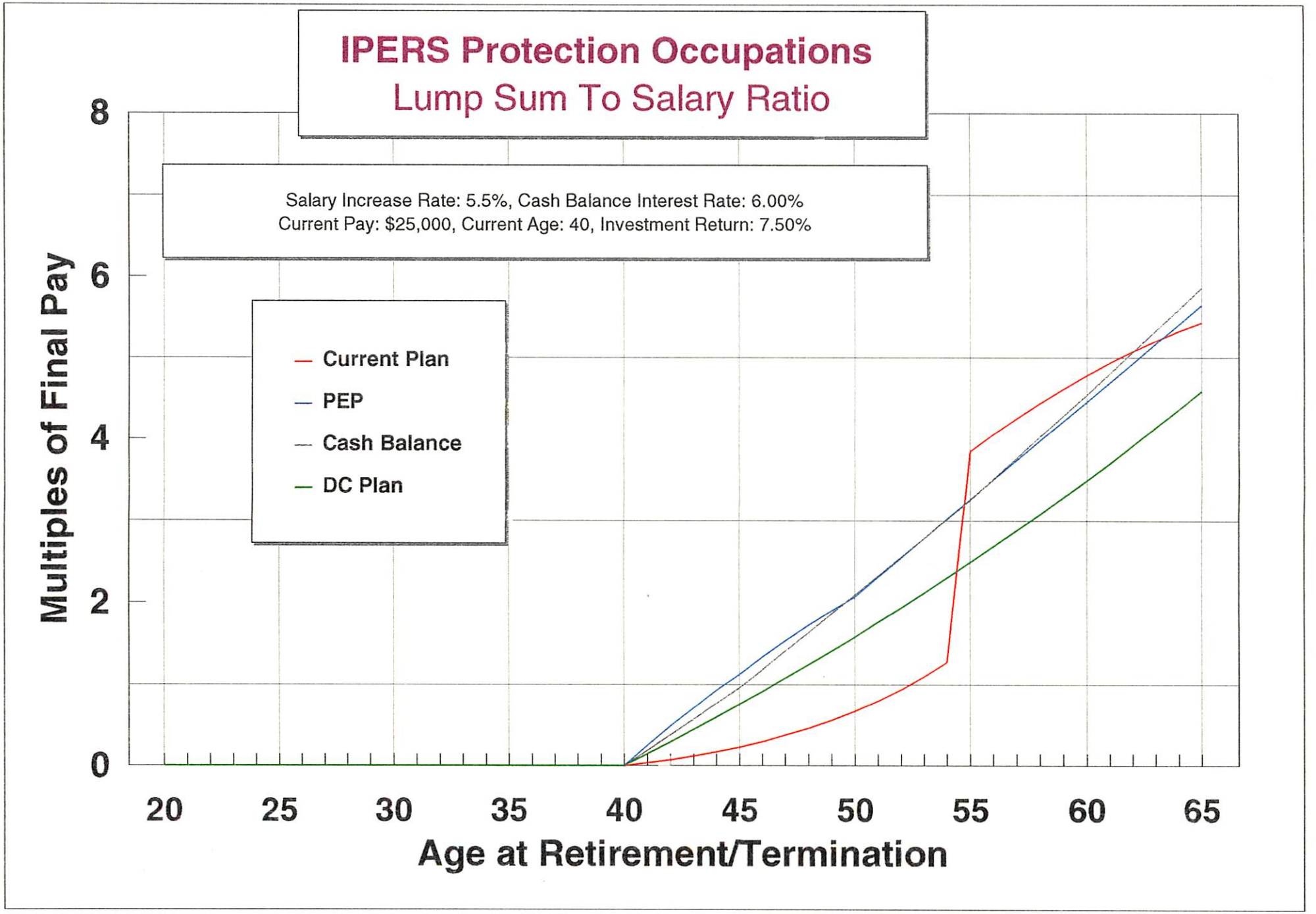
IPERS Protection Occupations
Lump Sum To Salary Ratio



Current Plan without COLA

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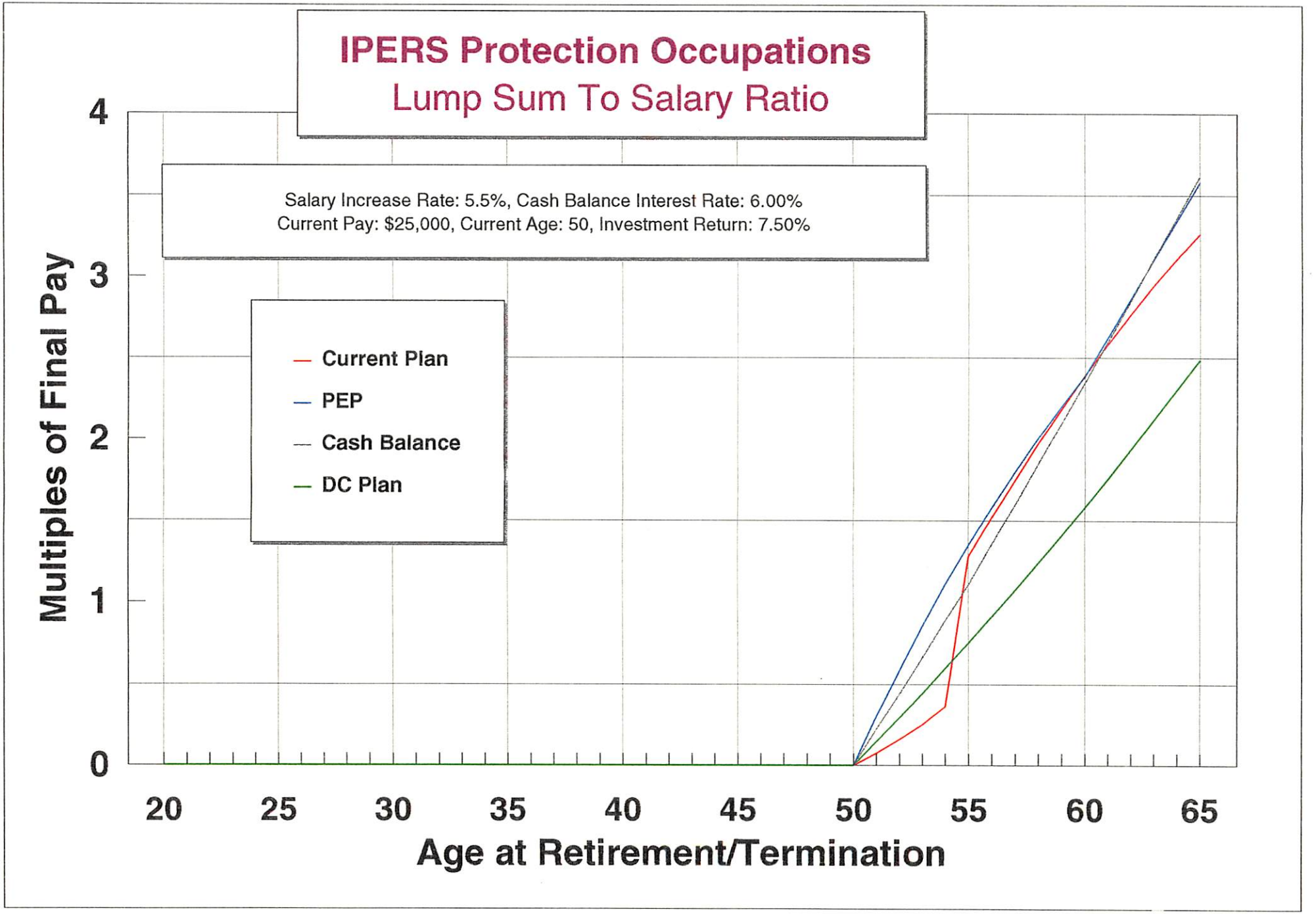
IPERS Protection Occupations
Lump Sum To Salary Ratio



Current Plan without COLA

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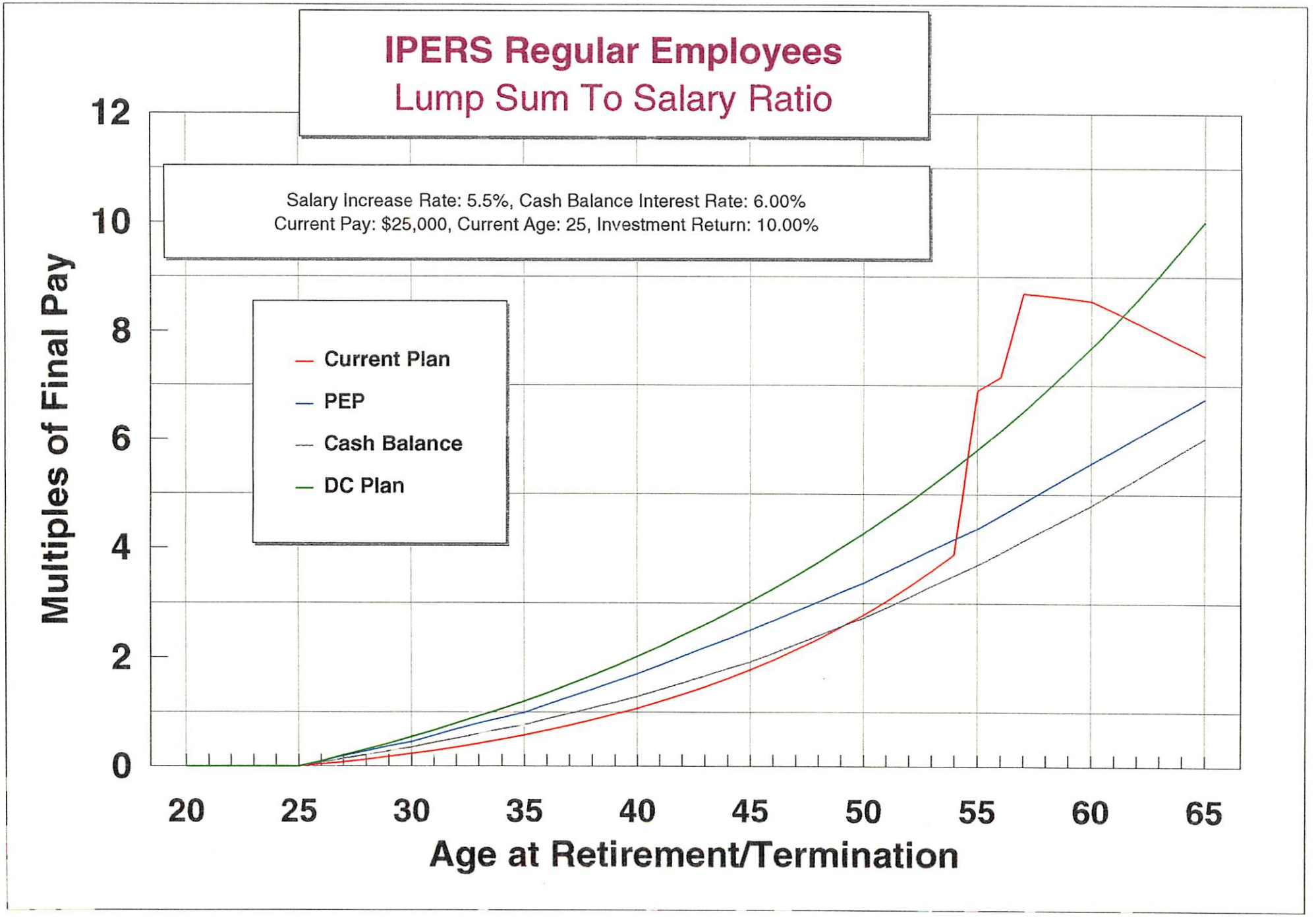
IPERS Regular Employees
Lump Sum To Salary Ratio
Salary Increase Rate: 5.5%, Cash Balance Interest Rate: 6.00%
Current Pay: $25,000, Current Age: 25, Investment Return: 10.00%
Current Plan
PEP
Cash Balance
DC Plan
Multiples of Final Pay
0
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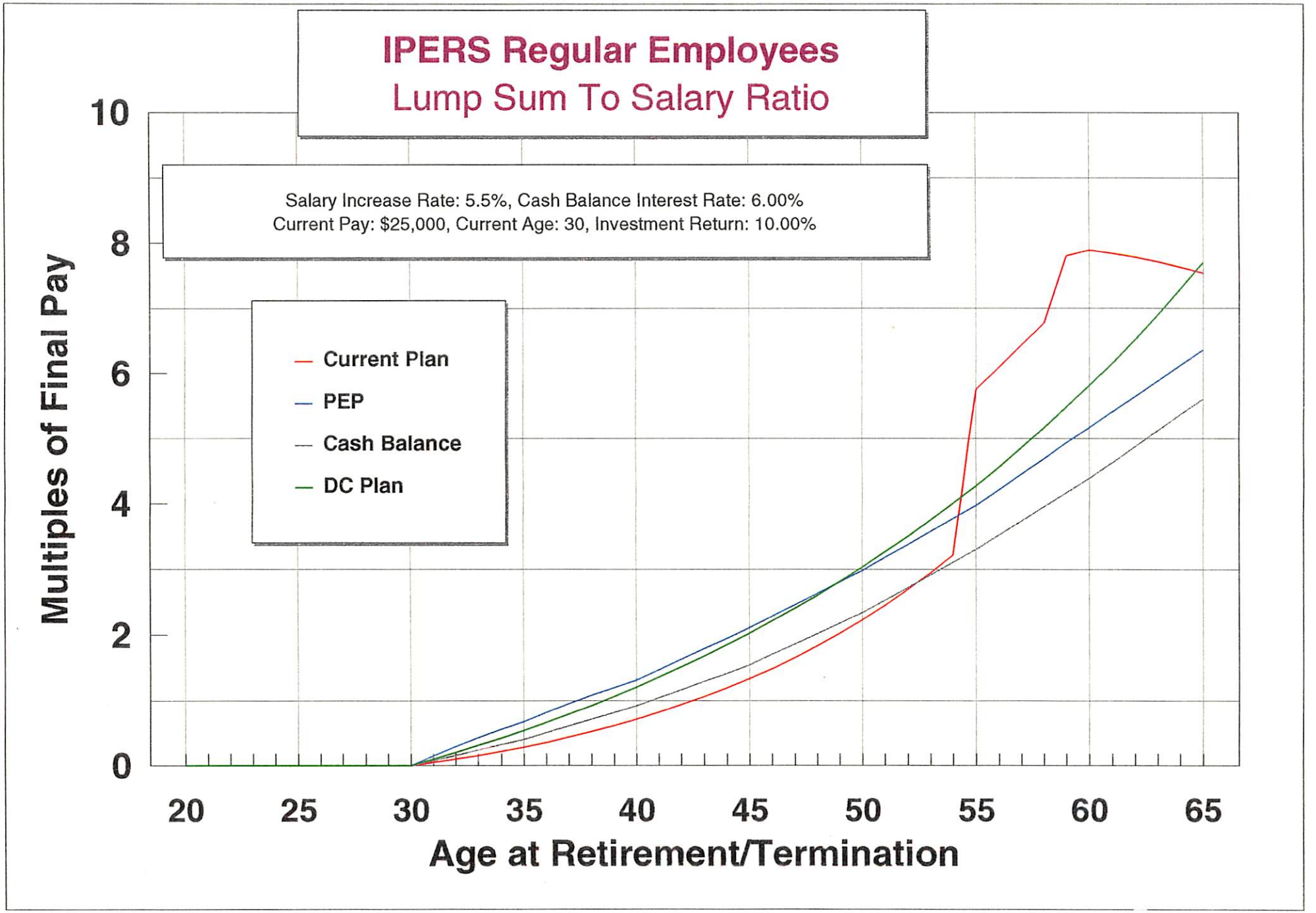
Age at Retirement/Termination


IPERS Regular Employees
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Salary Increase Rate: 5.5%, Cash Balance Interest Rate: 6.00%
Current Pay: $25,000, Current Age: 30, Investment Return: 10.00%
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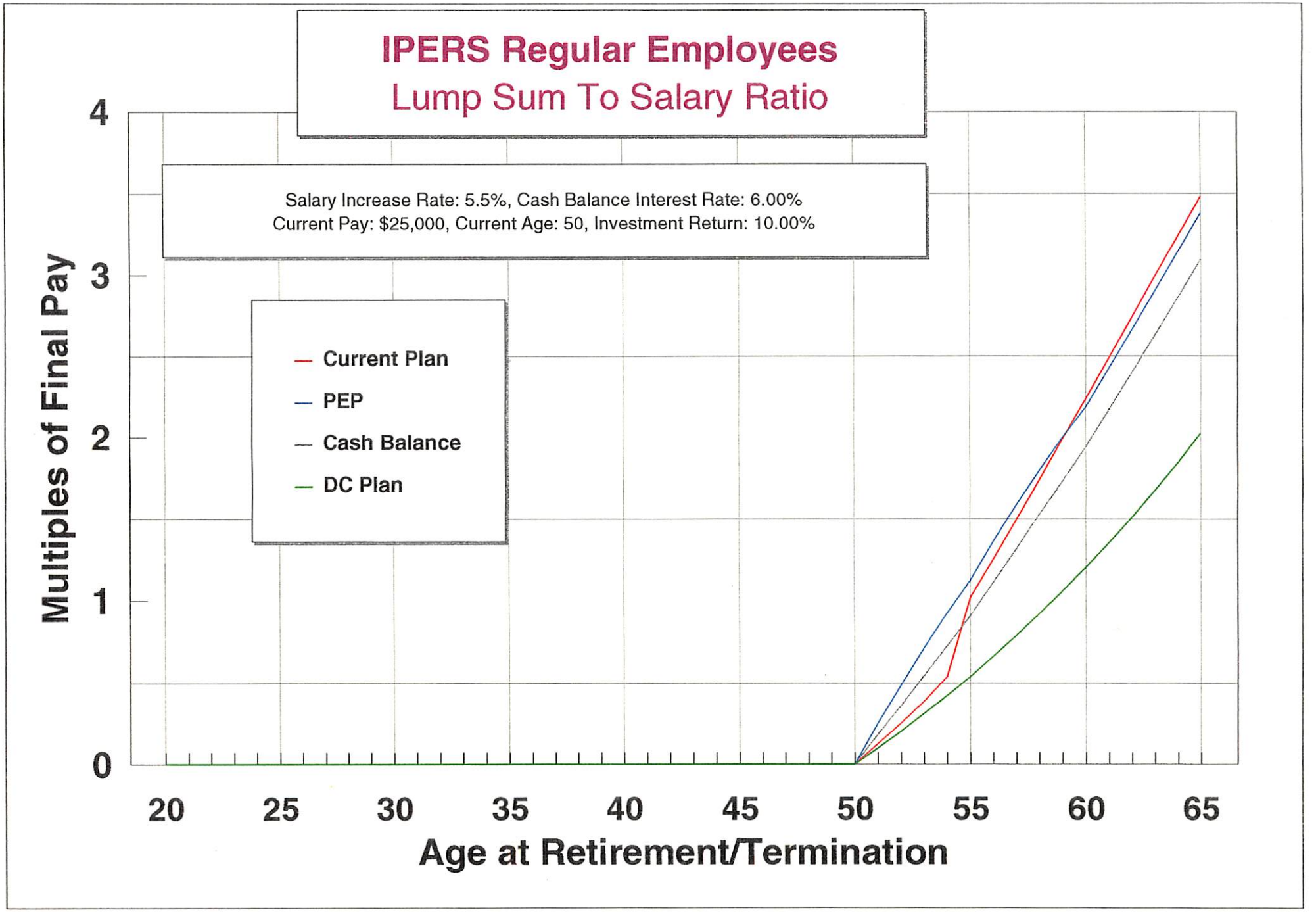

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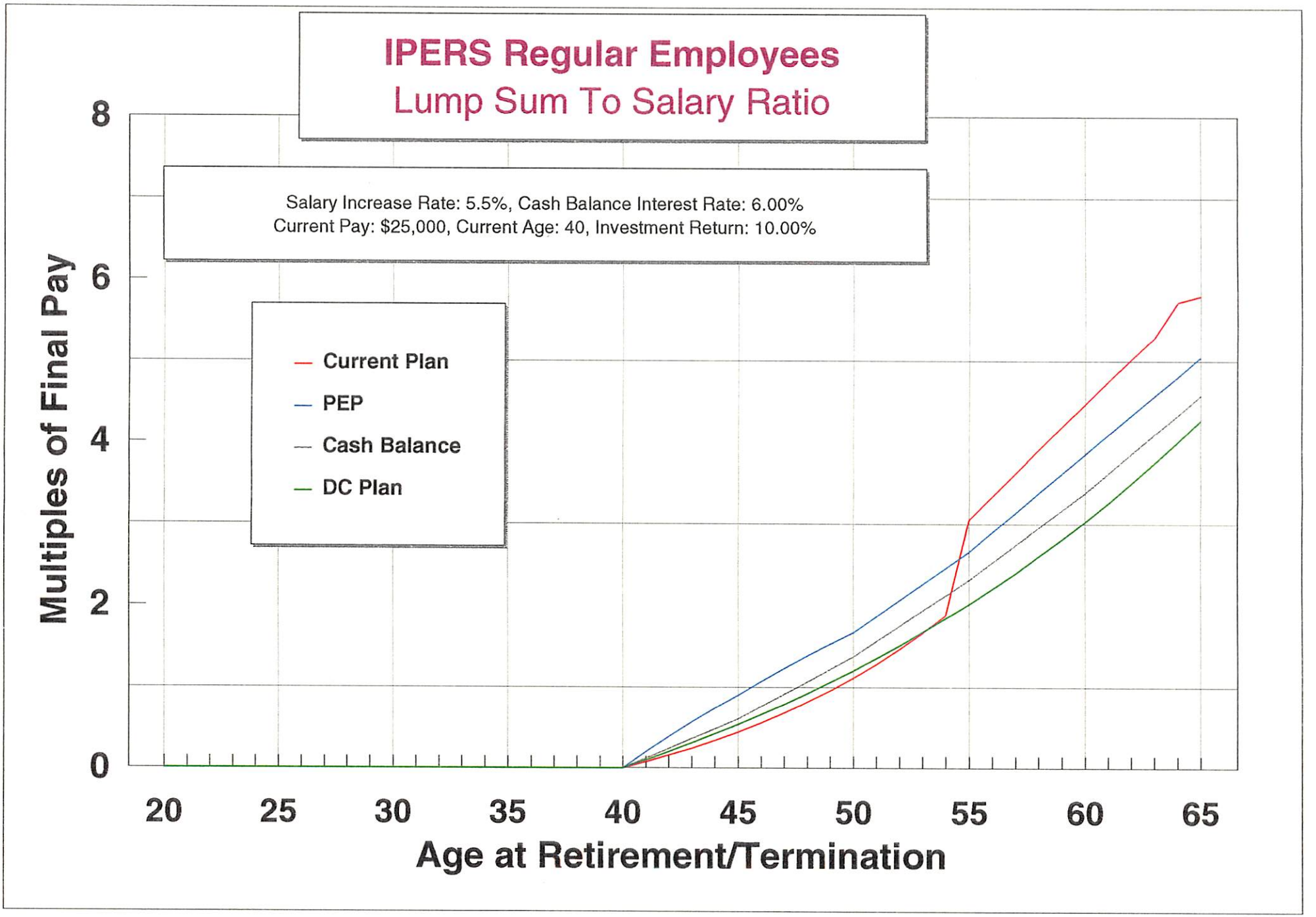
IPERS Regular Employees
Lump Sum To Salary Ratio



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Part III: Discussion of Conversions in Other Public Employee Retirement Systems (IPERS)

A. Background

Among public employers, defined benefit plans remain the predominant primary retirement plan. In state and local government in 1990, 90 percent of full-time employees participated in a defined benefit plan according to the United States Department of Labor, 1992a. At the same time, the DOL reported that Defined contribution plans have also gained popularity at the state and local level. These are primarily deferred compensation plans pursuant to section 457 of the Internal Revenue Code, Section 403(b) tax-deferred annuity programs, and other supplemental savings plan arrangements.

A few state and local governments sponsoring defined benefit plans have, in recent years, considered establishing, or have already adopted, defined contribution plans or hybrid plans, as the primary pension plan. Our Study discusses a few of these statewide plans and their experience in the conversion process.

It is instructive that only a few statewide PERS have actually taken the step to convert from defined benefit to defined contribution or hybrid plan. In its August, 1996 comprehensive review of 100 public employee retirement plans, the National Education Association (NEA) reports that only three large PERS have switched--one to a money purchase defined contribution plan (West Virginia Teachers) a second to a hybrid plan (Washington Teachers) and a third offering an alternative money purchase optional plan

(Ohio State Teachers' Retirement System).[14] More recently as discussed below, legislation has been enacted providing the State of Michigan with a defined contribution plan for its newly hired state employees. Other PERS, as discussed below, are currently considering a switch.

It is also instructive that national employee and employer retirement system organizations representing the interests of PERS and their members are generally not in favor of a switch away from defined benefit plans, or, at best neutral. For example, in the recent report to the Kansas Legislature on the subject of conversion, it is noted that the National Conference of State Legislatures (NCSL) which previously encouraged state legislators to consider adopting defined contribution plans to replace the sales' defined benefit plans, has taken a more "cautious" approach.[15] The 1995 NCSL Public Pension Guide states its position succinctly:

> The question whether a public retirement plan should be a defined benefit or a defined contribution plan is a question of who should bear the risk of providing an employee with retirement income. The difference between these two types of plans expresses opposite ideas of an employer's obligation to employees.[16]

Indeed, the KPERS study considered many of the fundamental issues dealt within the IPERS study, including the pros and cons of each type of plan. Its conclusions are worth restating:

14 Characteristics of 100 Large Public Pension Plans, National Education Association, Research Division, Washington, D.C., August, 1996.

15 Comparing Defined Benefit and Defined Contribution Plans in the Public Sector, A Report to the Kansas Public Employees Retirement System (KPERS), January, 1996.

16 1995 National Conference of State Legislatures (NCSL) Pension Guide, cited in KPERS Report, p. 5.

1. Conversion would not result in lower employer contributions;
2. Conversion would not eliminate the KPERS defined benefit plan unfunded liability;
3. Defined contribution plans are not satisfactory because they transfer investment risks from employers to employees "...who, in many cases are unprepared to make the skilled choices necessary to set and then meet appropriate retirement income goals."[17]

One of the more instructive features of the KPERS study, which merits notice in the present report, is "Appendix A" which contains a point by point comparison of "DB and DC" Plans.[18] Significantly, the author reviews each of the key points associated with both types of pension plan (DB and DC). A reading of her commentary allows one to conclude that there are, in fact, relatively few points on which a DC plan can be said to provide better benefit progressivity or retirement benefit security than a DB plan.[19]

Other national pension organizations studying the issue of DB vs. DC including National Council of Teachers Retirement System (NCTRS), Government Finance Officer Association (GFOA) and National conference of Public Employees Retirement System

17 KPERS study op.cit., p.15.

18 Prepared by Mary Beth Braitman, first published in the May 1995 issue of the National Association of Public Pension Plan Attorneys (NAPPA) Report.

19 Based on a reading of the Braitman analysis, one can conclude DB plans are "better" than DC plans in terms of retirement benefit security, post retirement increases (COLAs), death benefits, investment risk, employer cash flow needs, benefit enhancements, in-service distributions, and administrative costs. At best, DC plans are preferable in terms of early retirement, vesting and accruals and because DC plans, by definition, do not create unfunded liabilities.

(NCPERS) are taking either a cautious attitude or, in some instances, are speaking out about the pitfalls of conversion. Many employee associations, as well, are generally opposed to conversion. In spite of this opposition, the studies by statewide PERS continue to be launched. With this backdrop, we wish to review some large PERS who have successfully adopted DC or hybrid features and others who are considering conversions.

B. Experience of PERS

1. *Wisconsin Retirement System*

One of the most successful conversions in the public sector is the Wisconsin System. It provides a defined benefit plan with defined contribution plan options, in place since 1965.

The Wisconsin Plan can be described as a defined benefit plan with two options, a fixed defined benefit plan option and a variable defined contribution "money purchase" option providing an annuity. Two calculations are made for each employee. As in a "floor offset" plan, the member is entitled to receive the greater of the two benefits at retirement.

Although the arrangement has a long history, the Wisconsin System officials recognize that, like any pension plan, there are disadvantages to its hybrid plan. In the words of their own officials, they include:

- significant administrative complexity;

- somewhat higher contribution cost that a pure DB plan;
- somewhat greater actuarial complexity;
- significant complexity for IRC Section 415 testing;
- participation education is more difficult.

Looking at the advantages, the Wisconsin System officials note:

- protection for inactive participants;
- higher interest and activism of plan participation in investment returns of the pension fund;
- where DB benefit maximums exist, cap can be exceeded by DC benefits for long service participants;
- the plan has greater flexibility in benefit structure than either a DB or DC plan alone.

Wisconsin has long been a leader in keeping abreast of alternative public pension plan design, financing and administrative arrangements and strengthening the System to better serve its members. Significantly, under the Wisconsin "hybrid" arrangement, the member who elects to take benefits as a money purchase annuity bears no investment risk because he/she has the floor protection of a defined benefit plan formula. It is also significant that the member is not required to make investment choices --the investment decisions in the DC plan are made by the System.

The employer contribution rate in the Wisconsin System is currently 6.50%; the employee rate is 6.40%. Additional contributions may be made by the employee (or at the election of an employer on behalf of the employee) of up to 10%. Hence, the Wisconsin plan is considerately more expensive (an additional 3.5% of payroll) than the IPERS defined benefit plan. Significantly, its service retirement benefit formula (at 1.6% x years x FAS) is lower than IPERS (2% x years x FAS). Normal retirement age in the Wisconsin plan is age 65 and any service, or age 57 and 30 years of service, (comparable to IPERS).

2. *West Virginia Teachers' Retirement System*

West Virginia adopted a defined contribution plan for new members, effective 1991. Teachers hired after July 1, 1991 are mandatory members of the defined contribution plan. Teachers hired before that date have the option of remaining in the defined benefit plan or transferring to the defined contribution plan.

West Virginia Teachers DC Plan currently has an employee contribution of 4.50% and an employer contribution of 7.50% of payroll (total of 12% of payroll). The defined benefit plan employer contribution rate is 15% of payroll and, the employee rate is 6% for a total of 21% of payroll. The DB plan has a PBO funding ratio of 13.20%--the lowest among the 100 PERS included in the NEA survey.[20] The DB plan provides a service retirement benefit equal to 2% x years x FAS, with normal retirement benefit payable at age 60 with 5 years of service, age

[20] Characteristics of 100 Large Pension Plans, op.cit., p. 44.

55 with 30 years of service, or any age with 35 years of service. Under the DC plan a member is vested after 6 years of service with 33-1/3%; after 9 years with 66%; and after 12 years with 100% of his or her account balance. Given the progressivity of the service retirement benefit of the DB plan, it is unlikely that the DC plan will be able to generally provide comparable benefits for teachers nearing normal retirement age.

The circumstance leading to the adoption of the West Virginia defined contribution plan for teachers was severe actuarial underfunding. By providing new members with a defined contribution plan, the State hoped to limit its future pension costs and liabilities. However, at the present time the State Actuary is reported to be recommending that the State terminate or freeze the defined contribution plan and reinstate the defined benefit plans.

3. *South Dakota Retirement System*

In 1995, South Dakota adopted a hybrid plan which includes the portable retirement option ("PRO"). The PRO provides portability to short service employees who can now take their employer contributions with them when leaving service. This is especially helpful to teachers since the state does not have a TIAA-CREF option.

Under the basic plan, when an employee leaves service before he or she vests, the employee is only eligible for a refund of employee contributions with interest (as in

IPERS). Under the PRO, however, the employee would have another option: if the employee works less than three years, the employee will receive 75% of the employer contributions; if the employee works three or more years, the employee will receive 100% of the employer contributions. PRO is available to South Dakota employees hired after June 30, 1995 and whose unit of government elects to provide the option. Employees who elect PRO are required to pay for their disability (an important ancillary benefit in most all statewide PERS including IPERS).

South Dakota has a less generous service retirement allowance formula than many other PERS. The benefit formula is 1.3% x years x FAS + 0.1% x 1/2 years at 7/1/94 x FAS, or 2% x years x FAS less all other public benefits including Primary Social Security, but excluding federal military or federal National Guard retirement benefits for members retiring on or after July 1, 1990. Employees and employers contribute 5% each for a total of 10% of payroll. While its PRO provides an attractive feature for young, mobile employees, alternatively, an indexed vested benefit with a rollover option, as proposed for IPERS is our May, 1997 Report on Benefit Enhancements could achieve a comparable result.

4. *Washington Teacher's Retirement System*

Washington adopted a hybrid plan, for teachers only, effective for members who join the System on or after July 1, 1996. Current members were given a bonus contribution if they elected to participate in the new plan by December 31 ,1996.

The new plan combines a DB floor plan for employer contributions with a participant-directed DC plan for employee contributions. The defined contribution portion requires members to contribute between 5% and 8.5% of salary to the plan, depending upon their age and choice of options. There is no employer match. Employees who leave before vesting in the defined benefit plan take with them the amount in the defined contribution plan portion of the plan.

Under the defined contribution portion of the benefit, participants are permitted to invest their individual accounts in a widely array of investment funds, similar to a 401(k) plan. In-house investment staff in the System are responsible for monitoring investments of the defined benefit plan and defined contribution plans. External investment funds are made available for employee contributions. However, employees may elect to have their accounts invested in the defined benefit plan portfolio.[21] Its primary features are portability and investment choice for employee contribution accounts. According to the Chief Investment Officer of the State Investment Board, it was designed to be "cost neutral to the employee and employer."[22].

21 See "Washington Teachers enroll in new DC plan," Pensions and Investments, 3/3/97, p. 22.

22 Pensions and Investments, op.cit., p. 22.

5. *Michigan State Employees Retirement System*

The Legislature has enacted legislation for a defined contribution plan that would replace the State's defined benefit plan for all new employees. Under the plan, the State would provide a mandatory contribution of 4% of salary for all full-time employees, plus an additional dollar-for-dollar match up to 3% of salary.

Michigan has attracted wide interest in adopting a defined contribution plan for new employees. The new plan, providing for self-directed investments by plan participants, however, will not go into effect unless the actuary of the defined benefit plan determines that the DB plan meets full funding standards. It is too early to predict the outcome of this arrangement.

6. *California Public Employees Retirement Systems*

Legislation passed by the California State Assembly in May allows public employers participating in CALPERS and CALSTRS to establish alternative defined contribution plans which would run alongside existing defined benefit plan. The legislation also allows employees to make a one-time choice to stay in their defined benefit plan or move accrued benefits into employer-sponsored defined contribution plans. The legislation before the California State Senate provides public employers with considerable flexibility on many elements of plan design, including contribution levels and vesting schedules. The Senate bill also requires plan features to be collectively bargained where applicable. We would report on the status of this legislation and the issues raised by both sides of the debate.

According to CALPERS officials, the legislation has been set aside by the California State Legislature for the time being, and perhaps permanently. There appears to be little support for the program at the present time. Public employee associations oppose the legislation in its present form, particularly the provision mandating newly hired employees into the defined contribution plan.

Part IV: Findings and Recommendations

In our study we have considered the pros and cons of converting a defined benefit plan into a defined contribution plan or hybrid pan. We have also considered how each of these plans would affect benefits of IPERS members at various points in their public service in terms of age and years of credited service.

From the application of our analytical program to the IPERS defined benefit plan and to the demographics of the IPERS population, it is apparent that a defined benefit plan generally provides greater retirement income security and, indeed, benefit progressivity, to IPERS employees who have devoted a career to public service and who are nearing early or normal retirement than does a defined contribution plan or hybrid plan.[23] Of course, this conclusion depends upon the plan designs entered into the analytical program for comparative purposes. The IPERS defined benefit plan, it should be noted, is both progressive in its benefit provisions and provides a great deal of retirement benefit security to IPERS members.

A defined benefit plan, like IPERS, generally provides an overall sound retirement program with a high degree of retirement benefit security and supplemental features including disability and death benefits and post-retirement cost-of-living adjustments. Significantly, a defined benefit plan places the investment risk on the employer whereas a defined contribution plan places this risk on employees. Keeping in mind these basic characteristics and other differentiating features of the various plans described in the study, it is nevertheless possible that IPERS could establish a defined contribution plan

[23] In our study based on current IPERS provisions and using the actuarial assumptions of the IPERS Actuary, we have, in fact shown that the current IPERS Plan (with a 3% COLA) provides greater value upon retirement in most situations than a defined contribution plan with a 10% annual investment return (see Set # 5, Graphs, pp. 48-72).

or hybrid plan arrangement that meets its retirement goals. On the other hand, the better long-term policy may not be to convert to a defined contribution plan or hybrid plan, but to strengthen the current core defined benefit plan. We have made several recommendations for benefit enhancements in our May, 1997 Report to IPERS.

The current study, while providing information on the relative merits of alternative plans and their application of their benefits to the IPERS population under different demographic and economic assumptions, does not address the question of the costs of alternative plans to employers and IPERS plan members, nor does it model various alternative plans. For this reason, IPERS may wish to continue the study to consider the application of alternative plan designs and the costs thereof. The modeling included in this Report provides the foundation for further study.

Before deciding whether to continue the process of considering defined contribution and hybrid plan alternatives, IPERS should revisit its basic philosophy for benefits and compensation. Historically, an employee was expected to spend his/her entire career with one employer, and pension plans were designed with that in mind. Most defined benefit plans, like IPERS, are thus designed to reward long-service career employees, with the focus being on retirement, not on providing termination benefits. With today's more mobile workforce, many employers are rethinking the role of benefits and compensation. Some employers believe in a total current compensation package, where the same contributions are made for all employees. A defined contribution plan often fits better with this philosophy. It also fits with a philosophy where the employee is expected to take charge of his/her own savings and retirement planning. In a defined benefit plan, the employer makes the investment decisions and bears the financial risk, thereby

providing considerable retirement benefit security to employees. Our models contained in this Study empirically establish that the current IPERS defined benefit plan provides greater value at retirement age for most IPERS employees than a defined contribution plan with the same level of employer and employee contributions. Hybrid plans may be modeled to more closely approximate the benefit levels and retirement income security afforded by the IPERS defined benefit plan. However, as we have previously noted, further analysis and modeling would be required to establish the actual cost of these plans. The cost of maintaining the current defined benefit plan, even on a "closed" basis, would also be needed before an informed judgment on the merits of conversion could be made. If, on the other hand, IPERS determines its goals are fully met by its current defined benefit plan, or by an enhanced defined benefit plan, as recommended in our May, 1997 Report, no further study may be required on the conversion issue at this time.

In this assignment we have been asked to report our findings and make written recommendations as to whether or not IPERS should convert its core defined benefit plan to a defined contribution plan, or to a hybrid plan including elements of both models. We were also asked to reflect in our recommendations the necessity of protecting benefit levels, and the funds necessary to guarantee these, for the present and future members of IPERS. Based on our research and analysis set forth in this Report, we do not recommend that IPERS convert its defined benefit plan to a defined contribution plan. We recommend instead that IPERS strengthen its defined benefit plan along the lines we recommended in our May, 1997 Report to IPERS.