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Purchasing Service in Public Sector Pension Plans

Most plans that allow purchases of service have had rules in place for many years, yet few individuals might remember why those rules were established, particularly the rationale behind the rules on how costs are determined.

This paper provides considerations for plans that are setting up new rules or reviewing existing rules for an Additional Service Credit Program (ASCP)[1].

The design of an ASCP can take many forms and will be driven by a combination of public policy, local and state laws, and employee relations (including at times collective bargaining). In this paper we focus on how to value and price ASCPs and some of the issues that can occur.

Background

Defined Benefit (DB), or pension plans are a common part of the compensation and benefits package offered by many public sector employers. Pension plans typically reward long service employees who qualify for retirement with the most benefit, thereby encouraging longevity and preserving stability for the employer. When a plan participant can retire, and how much their pension income will be, are often tied to their length of service with that employer. In economic terms, pensions are often thought of as an exchange transaction: in exchange for work the employer provides a pension.

Over time, public sector employers have worked to make their pension plans more attractive to potential and current employees. One way this is done is by allowing individuals to receive credit under their current employer's pension plan for time the individual did not work for that employer and which would not normally be part of any service credited to that person. While often a contractual promise, this might not be considered part of the traditional exchange transaction and might not apply to all employees.

When discussing additional service credits there are two distinct types of service that are considered:

- **Eligibility Service –** this is service counted toward determining if the employee is vested in their pension benefit. It is also service that is used to determine when an employee would be eligible to retire (i.e., if an employee can retire at age 55 with twenty years of service, the twenty years in this instance is "eligibility service").
- **Benefit Accrual Service –** this is service that is used to determine the amount of the pension benefit. A common pension benefit formula consists of a "multiplier factor" (for example 2%) multiplied by average pay multiplied by Benefit Accrual Service.

[1] We have created this nomenclature for this paper. We define an Additional Service Credit Program (ASCP) as a pension plan feature which allows participants to receive service credit for service which often was not earned while employed by the current employer.

In an ASCP, the additional service being credited can be just one of the above, or it can be both. The financial implications vary depending on the variation in these combinations.

Example – What service might people be allowed to purchase?

Jane Doe worked for County A for eight years. Then she began working for City B. Under the pension plan rules for City B, she can receive credit for those eight years at County A in her City B pension provided she fulfills any specified payments or other requirements.

What are the sources of service in an Additional Service Credit Program?

For most employees, service (both eligibility and benefit accrual) will only be attributable to the time they spend with one employer over a continuous period. However, a segment of the population will have service from other employers or breaks in service with the same employer. The most frequent sources of service that can become part of an ASCP include:

1. **Service at another employer.** This is often restricted to consider only other governmental employers and sometimes to similar jobs. There is a variety in what is permitted and not permitted across different employers, sometimes depending on state and local laws as well as local preference.
2. **Service not associated with any particular prior employment.** Sometimes referred to as "Air Time"[2], this is service that can be acquired by the individual based on their own needs and interests. For example, a person working in the private sector much of their career might not have access to a pension benefit from their prior employer. As a result, they want to try to achieve a certain minimum pension even though they are starting accruals later in their career.
3. **Military service.** This can be service prior to the individual's employment at the current employer or service that occurs within the time period the person works for that employer. Often, purchases are just for pre-employment time as service credit for military service while at the current employer may be required by federal law.
4. **Pre-break in service time with the same employer.** Bridging of service across a break varies depending on the circumstances. Factors include the time in service before the break as well as the length of the break. From a service restoration standpoint, a key question is whether the individual received a cash out from the plan prior to being rehired.

[2] As in "out of thin air"

How are these service credits financed?

Service credits provided under scenarios 1 (service at another employer) and 2 (service not associated with any prior employment) above generally have some element of employee financing. Scenario 3 (military service) may or may not have some employee cost involved and scenario 4 (restoring pre-break service) will largely not have any employee cost other than a payback (with interest) of any prior cash out payments received.

How these service credits are financed often depends on the type of service being requested.

Common questions for employers who currently provide an ASCP or are interested in adding an ASCP are:

1. Does the ASCP increase the pension plan cost and liability?
2. If the employee is required to contribute some amount of money to defray the plan' s increased costs, how much should they pay?
3. Can the ASCP be designed to be cost neutral for the employer?
4. Even if the plan were cost neutral, what risks is the employer taking on?

Do ASCPs increase pension plan costs and liabilities?

An ASCP has a cost to someone. More money being paid out (and potentially earlier) to a person should result in higher overall costs. There are several exceptions, for example:

- A new employee obtains a year of service credit but then leaves before they are vested.
- An employee obtains several years of additional service credits for eligibility purposes but retires at an age at which they would have been eligible for full retirement even without those credits.
- A pension plan has a cap on service, as a result, any individual who works more than that many years would not receive any benefit for service beyond that level.
- A disability pension is not tied to years of service and the employee bought service earlier.

How much does it cost?

Approaches can vary but they typically contain the same four elements:

1. A projection of what is being gained by the purchase (e.g., a larger benefit or earlier retirement eligibility),
2. The economic or expected value of the item being received (including the period over which the benefit will be paid and a discount factor over that period),
3. The timing of when the costs for the service credits are paid for, such as at hire, retirement, or after some number of years of service with the employer, and
4. Variation in the above three elements depending on the type of service credit (e.g., prior employer, military, Air Time).

Element 1, the projection of what is being gained, usually takes the form of estimating the future pension benefit the individual will receive. Unless the purchase of service is taking place at the time of retirement, this includes a projection of future pay levels as well as future retirement dates.

Example – Projection of the benefit

	Without Service Credit	With Service Credit
Current Age	40	40
Current Pay	$60,000	$60,000
Projected Retirement Age	60	60
Projected Service at Retirement	25	30
Projected Pay at Retirement	$108,000	$108,000
Projected Benefit	$54,000/year	$64,800/year
Benefit Increase from Purchase		$10,800/year

Guidelines need to be established as to what rate of pay increase to use (between ages 40 and 60 in the above example) and what retirement date should be assumed to complete this determination. This can be based on the assumptions used in the annual actuarial valuation report. However, in some instances those assumptions are not suitable (for example if the valuation report uses a set of probabilistic retirement dates, or the pay increase rates cover a variety of employee types). There is a general IRS rule that the assumptions used to determine plan benefits should be defined and not left to interpretation by the trustees or others.

Element 2, the economic value of the benefit being purchased, is determined by applying an actuarial factor (called an annuity factor). This factor computes the amount of money needed at the time of the first benefit payment that will last for the duration of the person's lifetime, assuming the person lives according to a certain longevity (mortality) table and the money is invested at a certain rate of return.

Example – Value of the projected benefit

Projected Retirement Age	60
Benefit Increase from Purchase	$10,800/year
Annuity Factor*	11.3
Economic or expected value of benefit at retirement	$122,000

*7% interest, Pub 2010 General employees, male mortality table

The annuity factor has at least two components:

- a discount rate (often called the rate of return), and
- a longevity table (also called a mortality table).

If the plan provides a retiree cost of living adjustment (COLA), an assumption will also be needed for increases associated with the COLA.

Annuity factors can be based on the annual actuarial valuation assumptions but may be different. Differences can arise because the time period for this determination is different than that for the valuation, and in determining individual benefits, the same mortality table needs to be used for men and women and valuation mortality tables are typically gender-based. These factors must be decided upon when setting up the process. Additionally, a periodic review and documentation of what assumptions are being used and whether IRS rules are being applied correctly is appropriate.

Element 3 is an adjustment for the purchase timing, as needed. If, for example, the purchase takes place at the current time, the final step is to determine how much to pay now so that, given a certain level of investment return, the projected amount is equal to the economic or expected value determined above.

Example – Current value of purchased service

Projected Retirement Age	60
Current Age	40
Economic or expected value of benefit at retirement	$122,000
Economic or expected value at current age*	$32,000

*7% interest per year

The above illustrations cover a straightforward situation. They also include certain design features that the employer will need to decide upon before the ASCP can be implemented. The employer can design the program that best fits their situation. However, more choices can make the process more complicated, at least at the time the program is being set up. Documentation of choices/issues helps those involved in the future understand the rationale for different selections.

Two important plan features that should be considered are discussed below.

Plan feature – Purchasing eligibility or accrual service? Plans can restrict the purposes any purchased service can be used for.

- Eligibility-service-only purchases limit the participant to just being able to affect their vesting or retirement eligibility date (possibly including eligibility for subsidized early retirement).
- Accrual-service-only purchases limit the participant to buying service just for purposes of having a larger pension benefit. This should make it easier to price and provide more cost certainty. However, it could create confusion for the participant as well as the administrator in communicating the options.
- Accrual and eligibility service combined purchases. From an administrative standpoint it is likely easier to have a service purchase apply for both eligibility and accrual purposes.

Allowing purchases of credit for eligibility or accrual service are separate decisions.

In pricing these different features, the plan should be careful to distinguish what options a participant has. It may seem beneficial to allow the participant to choose the type of service to be acquired, however, as illustrated below, multiple choices result in many calculations that will materially increase the education and ideal disclosure aspects of the program.

Example – Types of service purchase

Scenario	No Service Purchase	Eligibility Only	Accrual Only	Eligibility and Accrual
Current Age	40	40	40	40
Current Pay	$60,000	$60,000	$60,000	$60,000
Projected Retirement Age	60[3]	60	60	60
Projected Eligibility Service at Retirement	25	30	25	30
Projected Accrual Service at Retirement	25	25	30	30
Projected Pay at Retirement	$108,000	$108,000	$108,000	$108,000
Projected Accrued Benefit Payable at age 65	$54,000	$54,000	$64,800	$64,800
Projected Retirement Benefit Payable at age 60	$43,200 (4% reduction per year from age 65)	$54,000 (unreduced early with 30 years of eligibility service)	$51,840 (4% reduction per year from age 65)	$64,800 (unreduced early with 30 years of eligibility service)
Annual Benefit Gain from Purchase		$10,800	$8,640	$21,600

The first two columns show no change in the amount of the annual benefit accrued. Similarly, the third and fourth columns indicate the increase in the accrued annuity is the same. However, for columns two and four the benefit is payable without the early retirement reduction. We show the value of this purchase on the following page.

[3] Care should be taken if the projected retirement age changes after the service purchase. Benefit offsets for "No Service Purchase" amounts should not factor in benefit accruals between the two dates that will never be earned (worked) particularly where they would have required additional employee contributions. There is also the question about whether to discount the offset if terminations between these dates comes with potential forfeitures of benefits.

Example – Value of service purchase

Scenario	No Service Purchase	Eligibility Only	Accrual Only	Eligibility and Accrual
Current Age	40	40	40	40
Projected Retirement Age	60	60	60	60
Projected Retirement Benefit	$43,200	$54,000	$51,840	$64,800
Increase in Annual Benefit from Purchase		$10,800	$8,640	$21,600
Annuity Factor*	11.3	11.3	11.3	11.3
Economic or Expected Value of Service Credit at Retirement	N/A	$122,000	$98,000	$244,000
Economic or Expected Value of Service Purchase at Current Age*	N/A	$32,000	$25,000	$63,000

*7% interest, Pub 2010 General employees, male mortality table

As can be seen, the eligibility service purchase can add significant value to the purchase over and above the actual increase in the annual pension benefit.

Plan feature – When does the service purchase occur? Plans can allow a service purchase to occur as early as initial hire, while others require the employee to wait some period of years after hire. In cases where the service being purchased is related to a leave of absence there may be a relatively narrow window for the employee to elect the purchase. Common options include:

- Restrict service purchase to date of retirement – this eliminates any uncertainty over what the benefit is that the person will receive (no projections of pay or future retirement date assumption). However, it would also be the most expensive time to buy the service (measured in nominal dollars) and would almost certainly require a single lump sum payment. See the next example for an illustration of purchase costs. In some instances, unused sick time payouts or other similar programs could help pay for the benefit. We have also seen DROP accounts used to pay for service purchase cost, which raises other questions about cost neutrality. Even if credit is purchased earlier, a plan may require a "true-up" at time of retirement which would provide less certainty to the employee and could be administratively difficult (see discussion below about true-up).

When the service purchase occurs is an important feature of the program.

- Restrict the service purchase to a window following a designated event occurring to the individual (i.e., return from leave of absence, vesting date, hire) – this limits any uncertainty for the plan over potential future service purchases. It also allows for installment purchase payments in addition to single lump sum payments. However, it opens the employer to more uncertainty on how to price the purchase. Assumed and actual investment return rates can vary widely as can retirement dates or future pay increases, and plans need to understand these risks.

- Allow service purchases at any time following a designated event (i.e., return from leave of absence, vesting date, hire) – this allows the most flexibility for the participant for potential future service purchase, and for installment purchase payments in addition to single lump sum payments.

This example shows how the purchase cost increases as an employee ages.

Example – Comparison of the cost of purchasing a life annuity of $1,000 to be paid at age 60

Age at Purchase	Single Sum	Installment (Monthly for Five Years)
40	$2,779	$54
55	$7,871	$154
60	$11,322	N/A

*7% interest, Pub 2010 General employees, male mortality table

Can the ASCP be cost neutral?

The "Cost Neutral" idea is often cited as a requirement when considering plan changes. This concept can have different meanings to different audiences.

Cost neutrality can be elusive.

Is cost neutrality feasible? The above examples all determine the value of a service purchase based on a projected benefit, the expected lifetime of the individual and the expected investment returns over the life of the person. Pension plans, however, are not allowed to use gender-based or health-based distinctions in setting a purchase price. An additional complication is that the view of longevity and investment returns can change over time. In recognition of these limitations, some plans will use a simplified pricing. For example, they might use a single factor as the purchase price for every additional $1 of annual benefit regardless of age or the value of eligibility service features. If purchases are made before retirement date, there are many possible ages when an employee might leave employment, yet purchase determinations are usually based on an assumed single age at exit (retirement).

If cost neutrality is a goal: what assumptions should be used in setting the price for the service being purchased? A variety of assumptions go into determining the value of a year of service. As shown in the examples above, the plan and its actuary would consider longevity (mortality), interest rates/long term return rates, salary increase rates, retiree COLAs and retirement ages. Less commonly included would be the likelihood of withdrawal (turnover) or disability but it would be good if plans understood this common limitation and how plans might "true up" the cost at actual retirement.

- **One approach is to use the plan's funding assumptions in setting the price.** This has the convenience of established, approved rates. However, assumption sets that are valid for modeling the long-term cost of a large group of individuals may not be appropriate for a single person purchasing service. For example, some assumed retirement ages might occur after the individual hits a service cap. It would not make sense for the participant to make the purchase if they believe they will work that long so it would similarly not make sense for the plan to assume they will hit the cap. It may be more appropriate to price the service using a "most valuable" retirement date or at the end of a pay increase cycle.

If market interest rates are not used to determine purchase cost, transfer of risk to the plan/employer should be understood.

- **Another consideration is the use of "market assumptions" in setting pricing.** Instead of using risky expected returns, plans can use insurance company pricing, bond rates or Treasury rates for determining the discount rate to reflect current market conditions. Some employers will want to share or transfer the risk of investments and market fluctuations to employees more explicitly than others. The ability to purchase service is almost always limited to just a subset of the plan population. While an employer might fund an entire plan based on higher expected (risky) returns, employers should consider whether they want to offer the same pricing (without employee risk) to the population eligible for these benefits (which are not your standard exchange transactions).

If credit is purchased before retirement a plan can require a "true-up" at time of retirement to stay cost neutral. This provides less certainty to the employee and could be administratively difficult.

Pricing – Is there a way to "fix" experience deviations? Assumptions such as the ones listed above are developed based on much careful thought and study. However, even with all due care, it is likely that for any one individual that person's actual experience will not exactly match the assumed events. One way to make an ASCP more transparent is to provide for a true-up option. This would allow for a plan to reflect the actual amounts paid when determining the amount of extra annuity to be provided. For example, if the person retires at an age different from that assumed when the service purchase price was developed, the benefit could be increased or decreased. The difference between assumed pay and actual pay at retirement is a major source of variation and could be fixed via the true-up approach. This will come with additional administrative complexity.

- Use of the true-up feature provides a way to avoid either the plan or the participant from being in a negative situation versus the amount of money paid for the benefits.
- The true-up determination would be more complicated and may cause participant dissatisfaction if their benefit is not what they thought they had agreed to. Making the adjustment at retirement could make the true-up more expensive.

Example – Actual pay increases were more than expected at the time of purchase

	Without Service Credit	Expected with Service Credit	Actual with Service Credit
Current Age	40	40	40
Current Pay	$60,000	$60,000	$60,000
Projected Retirement Age	60	60	60
Projected Service at Retirement	25	30	30
Projected/Actual Pay at Retirement	$108,000	$108,000	$115,000
Projected Benefit	$54,000/year	$64,800/year	$69,000/year
Gain from Purchase		$10,800/year	$15,000/year
Additional True Up Cost			$47,000 [11.3 x ($69,000 - $64,800)]

What other features should be considered?

The more features an ASCP has, the more complicated it is to explain. In the below sections we discuss several potential approaches as well as alternative views.

Plan feature – Is the "purchase price" of the additional service refundable to the employee? Most public sector pension plans require employee contributions and have a feature that requires that any time the total payouts from the plan do not exceed those accumulated employee contributions, there is a refund of the residual amount (e.g., a modified cash refund feature). Amounts paid by the employee to receive credit for additional service may or may not be treated as normal employee contributions.

Plan feature – Is the "purchase price" paid in a lump sum or installments?

- Single sum purchases are common when purchasing service. The amounts being purchased are associated with the past and the participant wants to have full credit for the additional selected years. In this way, a single sum payment seems appropriate, plus there is no concern over what to do if only a portion of the installment payments are made. However, the size of the single sum payment can be a deterrent to the participant. A person coming back from a leave of absence or other break may not have the resources to purchase the service all at once.

- Installment payments are more manageable for most participants and can be administered similarly to how regular employee contributions are made. The payments can be over a limited period of time (5 or 10 years) and taken directly from payroll so there is no concern over collection. However, complications can occur over the payment period. For example, what if the participant were to terminate employment or retire before the full payment is made? Do they get a prorata portion of the initial targeted service, is the initial computation redone to determine how much benefit is to be provided, or is the entire purchase revoked and the prior payments returned? If actuarial assumptions change during the purchase period should more or less service be granted for the original price or should the price change? The longer the service purchase period the more opportunity for these types of situations to occur.

Plan feature – Provisions that negate the value of additional service. It is not uncommon for plans to include special ancillary benefits that are not based on service. One of the most common is the disability retirement benefit. The disability pension may be determined based only on pay and not service (i.e., 50% of pay). The plan should decide in advance how to manage any such service purchase for a participant who later is subject to the particular benefit. Two common approaches include:

- Do not provide any refunds or additional benefits for the individual. This approach is based on the concept that the disability benefit is outside any normal benefits and employees don't get other contributions returned. (This issue would be avoided if purchases were only allowed at time of retirement.)
- Return the value of the service purchased to the individual.

A related consideration is what to do when a person's purchased service loses value because of service caps or other limitations. A mid-career employee may predict they need to purchase service to obtain a full pension, but end up working longer, resulting in them earning the full pension without the extra service. Options for this situation include:

- Do not provide any compensation (refund) for the individual. The purchased service had value up until the point they reached the service cap or earned the full pension[4]. Given that continuing to work was the participant's choice, the plan should not be the only one at risk. This would be similar to a subsidized early retirement benefit. Just because a person works past their most valuable retirement date does not mean the plan owes them anything extra.
- Grant some sort of extra benefit to the participant.
- Refund the purchase price.
-

Are there other considerations in setting up an ASCP?

There are several legal and administrative issues that should be considered when structuring an ASCP. These include:

- The benefit limitation rules (Internal Revenue Code section 415 limits) in cases where the service credit cost is fully or partially subsidized by the employer. Whether or not there is a subsidy from the perspective of section 415 likely depends on market interest rates and not expected values (and is beyond the scope of this article).
- Tax treatment of pension payments can become an issue. Many public sector plans utilize the "employer pick-up" mechanism to allow employee contributions to be made to the plan on a pre-tax basis. This often results in annuity payouts being treated as 100% ordinary income and taxed accordingly. However, a single sum annuity purchase or even installment payments may not qualify as "employer pick-up" payments and would be deposited on a post-tax basis. This means that technically, every future pension payment would have a portion that would not be subject to income tax. Determining this amount can be complicated and beyond the capability of some administrators. If the

[4] There still may be some residual value if pay levels are higher than expected.

plan won't provide the breakout, the participant can also determine the portion of non-taxable income and file for a tax adjustment on their own.

- Collection of payments mechanism. Large dollar amounts can be involved in the purchase of service. The plan can provide for single sum payments, installment payments or a combination. The plan and the participant need to have some way to track and monitor the payment process to ensure it is timely and that the correct amounts are paid. Requiring a single sum payment by a certain date is the most straight forward method with fewer loose ends. Installment payments that come directly through payroll deductions would be the next most convenient, but these may create problems in making sure the payments are started and stopped at the appropriate times and receive the correct tax reporting treatment.

- Funding sources. The funds for service purchase activities can come from several sources. The below commentary is of a general nature and does not constitute tax advice. Before acting on any of the below, a plan or participant should have the specifics of their transaction reviewed.
  - Personal assets – the payment is made by the participant out of general (non-tax preferred assets). No special arrangements need to be made other than the ones detailed above.
  - Sources such as unpaid sick time or other deferred (non-qualified) compensation. This would be treated similarly to personal assets. The income would be subject to income taxation as general income and then be sent to the pension plan as post-tax money.
  - Other plan sources such as prior pension plan funds and accounts. Assuming the money is available for rollover/transfer and that the plan is designed to accept qualified rollovers, these funds could be moved into the pension plan on a tax deferred basis.

Conclusion

Additional Service Credit Programs are popular features of many governmental pension plans. They help employers with recruiting and retention and employees with obtaining a strong retirement benefit. Many employers who offer these plans work to provide them on what is intended to be a cost neutral basis. This can be a difficult task due to the many variables that can impact the eventual benefit to the employee and the risks the employer may still retain. A careful analysis of the different sources of plan cost, risk, and liability should be undertaken to understand fully how service purchases can impact the plan finances on a long-term basis.

Pension plans and their actuaries and sponsors should keep in mind that when setting pricing, there will almost certainly be a (potentially large) actuarial gain or loss.

If a lump sum payment of the initial value of the additional service was made by the person at the time of the service purchase several years prior, the payment requirement may have been overstated or understated. It is unlikely that the plan, plan sponsor, or the actuary are focused on tracking the separate experience related variations for the subset of participants who have additional service credits.

If you have any questions, please call Tom Vicente at (443) 573-3918.