

# A Guide to the Pension Options

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*Explanatory note: the purpose of this document is to go beyond the requests for tables showing simple, hypothetical results for new-tier pension plans, for a small number of “typical cases”. Those will be very valuable and are included in slides the Senate has distributed, and in materials from UCOP. However, there is no substitute, for those who wish to understand all of the trade-offs between new-tier options, for working through the formulas. The purpose of this document is to provide a thorough description of the proposed plans, for those who wish to analyze them. TFIR, UCFW, and UCPB anticipate that such analyses will be requested and that there will be various others produced by those trying to understand the plans. This common frame of reference should minimize the number of apparently conflicting results, by putting the plans into a common, transparent framework.*

## Introduction

Pension provisions under the current UCRP will apply to past service credit, i.e., pension benefits accrued to date, and to service credits earned between the present and the date of implementation of a new plan. Current employees will have the option (if the IRS permits) of applying the current UCRP to their service beyond the date of implementation for the new tier, but it is anticipated that they will pay higher employee contributions for that option than they would pay if they select the new option for future service. (If the IRS disallows “Choice” between the current UCRP and a new-tier option, current employees will remain in the current UCRP without any choice.)<sup>2</sup>

The new tier options will apply only to employees hired after the date of implementation (current target is 07/01/2013), or to any employees hired before that date who elect to move their future service credit to the new tier. For the latter group, pension benefits earned before the implementation date will still be governed by the current UCRP provisions. Therefore comparisons between the current UCRP and new plans, such as those in Parts 2 and 3 of this document, seem unlikely to be helpful for people who have already accumulated a substantial amount of service credit. These comparisons are intended to provide an explanation for statements about competitiveness, and, used on an individual basis, are likely to be most directly relevant for someone hired shortly before the anticipated date of implementation, who may be asked to choose between

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<sup>2</sup> Employee contributions for 2011-12 are anticipated to be 3.5%, rising to 5% for 2012-13; the value for 2013 and beyond is not yet known. The dissenting statement accompanying the PEB Report argues against anything above 7%.

remaining in UCRP or moving to the new tier. New-tier design proposals need not affect a current member of UCRP, since remaining in the current plan will be an option. To understand the implications of offering choice between plans, Part 4 deals with the calculation of benefits for employees who elect to move to a new tier, and therefore have service credit under two different plans.

The structure of this document is as follows:

1. Understanding the current UCRP provisions
2. Understanding Option C
3. Understanding Options A and B
4. Mixing two plans, for current employees electing “Choice”

The three Options under discussion have some common elements. For that reason and also because Option C is simpler, we compare it to the current UCRP before taking up the so-called “Integrated” plans A and B. One more cautionary note is in order: the word “Alternative” might have been better than “Option”. As far as we are aware, no one is considering offering more than one new-tier Option. Direct comparison of the three Options is important, to understand implications for UC, but it is not intended that some employees will be covered by A, some by B, and some by C.

### *Part 1: Understanding the current UCRP provisions*

UCRP pensions are of the form

$$\text{Age Factor} * \text{Service Years} * \text{HAPC}$$

HAPC is the average of covered compensation from the employee’s three consecutive highest years. Covered compensation is, roughly speaking, payroll, but there are important differences. For faculty in the Health Sciences Compensation Plan, Y and Z components of salary are not covered compensation, and for nine-month faculty, summer compensation is not included. For any combination of service years and HAPC, multiply by the age factor to find the pension.

The maximum age factor is 2.5%. For instance, a person who retires at age 60, with HAPC equal to \$100,000 and 20 years of service credit would receive a pension benefit of \$50,000 per year. A person who retires at 65 with 40 years of service credit and the same HAPC receives a pension of \$100,000 per year. The age factor does not increase beyond age 60, but service credit does still accumulate, until the point is reached where the pension equals 100% of HAPC. Service credit beyond 40 years does not increase pension benefits, except in the event that HAPC rises because of a salary increase.

Table 1 describes the current Plan. The maximum age factor is earned by retiring at age 60 or later. Retiring before age 60 reduces the age factor by an amount that can be thought of as the penalty for early retirement. This penalty is 5.6% of the *maximum* age factor per year, or 0.14 in absolute reduction in the age factor. The age factor declines linearly from 2.5%, decreasing by 0.14 per year until age 50. Employees are not eligible to retire before age 50. In effect, the rising age factor between ages 50 and 60 is an incentive to delay retirement until the targeted age, and the reductions can be thought of as penalties for early retirement.

Table 1: The Current UCRP Age Factors

Age at Retirement	Age Factor (%)	Years by which retirement is early	Early Retirement Penalties (absolute reductions=2.5-age factor) (%)	Penalty as a Percentage of the maximum age factor (or pension) (%)
50	1.1	10	1.4	<b>56.0</b>
51	1.24	9	1.26	<b>50.4</b>
52	1.38	8	1.12	<b>44.8</b>
53	1.52	7	0.98	<b>39.2</b>
54	1.66	6	0.84	<b>33.6</b>
55	1.8	5	0.7	<b>28.0</b>
56	1.94	4	0.56	<b>22.4</b>
57	2.08	3	0.42	<b>16.8</b>
58	2.22	2	0.28	<b>11.2</b>
59	2.36	1	0.14	<b>5.6</b>
60	2.5	0	0	<b>0.0</b>

Part 2: Understanding Option C

Option C shifts the age factors by five years, hence it features the same percentage early-retirement penalties as the bold column above, but they apply to ages that are increased by five years (Table 2). Note that these comparisons are for the full career under UCRP vs. the full career under Option C.

Table 2: The Age Factors under Option C

Age at Retirement	Age Factor	Absolute Reduction from UCRP	Percentage Change to go from UCRP to C (full career)	Reduction for Early Retirement (from Table 1) (%)
50	0	-1.1	-100%	n/a
51	0	-1.24	-100%	n/a
52	0	-1.38	-100%	n/a
53	0	-1.52	-100%	n/a
54	0	-1.66	-100%	n/a
55	1.1	0.7	38.89%	<b>56.0</b>
56	1.24	0.7	36.08%	<b>50.4</b>
57	1.38	0.7	33.65%	<b>44.8</b>
58	1.52	0.7	31.53%	<b>39.2</b>
59	1.66	0.7	29.66%	<b>33.6</b>
60	1.8	0.7	28.00%	<b>28.0</b>
61	1.94	0.56	22.40%	<b>22.4</b>
62	2.08	0.42	16.80%	<b>16.8</b>
63	2.22	0.28	11.20%	<b>11.2</b>
64	2.36	0.14	5.60%	<b>5.6</b>
65	2.5	0	0.00%	<b>0.0</b>

For instance, anyone retiring after reaching age 65, holding service years and HAPC constant, receives the same pension under Option C as would have been the case with the current UCRP. If we hold starting age and HAPC constant, a person has to work five years longer to earn the same pension. and the pension is drawn over five fewer years, but any additional growth in HAPC between 60 and 65 increases the pension benefit, over those fewer retirement years.

A person retiring under any new tier at any age between 55 and 64 experiences a reduction in pensions, relative to retiring under UCRP at the same ages, ranging from almost 39%, at age 55, to 5.6%, at age 64. This reduction is due to the differences between the two plan designs.<sup>3</sup> These differences at any age include the effects of the same penalties for earlier retirement that were described earlier. These penalties would apply to any new tier for any age less

<sup>3</sup> Comparing how one fares under the current UCRP with a career spent under a new tier would of course require comparing any differences in employee contributions, as well. The purpose of this document is simply to explain the benefits formulas, so that point is worth acknowledging. Contributions would affect overall competitiveness and employee welfare throughout the career, in the obvious ways, but does not enter into comparisons of the different formulas for pension benefits.

than 65 and for UCRP for any age less than 60, so the pattern of differences between the two plans, when compared across ages, is no longer a simple linear relationship.

Finally, it is no longer an option to retire younger than 55.

### Part 3: Understanding Options A and B

Options A and B retain the basic structure for the pension formula that characterizes both Option C and the current UCRP. However, the age factor depends on the level of HAPC, along with the individual's Social Security Covered Compensation (SSCC).<sup>4</sup>

Hence, the age factor is a blend of two different percentages. For Option A, the age factor is 1.5% below SSCC. Thus, for Option A:

$$\begin{aligned} \text{Pension} &= \text{Age Factor} * \text{Service Years} * \text{HAPC} \\ &= 1.5\% * \text{Service Yrs} * \text{SSCC} + 3\% * \text{Service Yrs} * (\text{HAPC} - \text{SSCC}) \end{aligned}$$

For Option B:

$$\begin{aligned} \text{Pension} &= \text{Age Factor} * \text{Service Years} * \text{HAPC} \\ &= 2\% * \text{Service Yrs} * \text{SSCC} + 3\% * \text{Service Yrs} * (\text{HAPC} - \text{SSCC}) \end{aligned}$$

A common misunderstanding of these plans seems to center on the formula. The statement that the age factor is 3% above SSCC apparently suggests to some that two employees with HAPC values on either side of SSCC could have substantially different pension benefits, due to a sudden change in the value of HAPC above SSCC. The change from 1.5 or 2.0, to 3.0, applies only to the amount of HAPC above SSCC. This is why reference to the formula is necessary. The 3% figure is multiplied by service credit and *the difference* between HAPC and SSCC, not by all of HAPC.

In comparing age factors, Service Yrs divides out, and if we then divide by HAPC, to solve for Age Factor, we see that

$$\text{Age Factor} = 1.5\% * (\text{SSCC}/\text{HAPC}) + 3\% * (1 - \text{SSCC}/\text{HAPC}) \quad \text{for Option A and}$$

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<sup>4</sup> SSCC is the average, over 35 years ending in the year the individual becomes eligible to retire, of each year's figure for the Social Security Wage Base. For individuals retiring in 2010, SSCC is just under \$60,000; in our calculations, we have rounded SSCC to exactly \$60K. In the definition of SSCC, no adjustment is made for inflation; nominal values are used from each year. Applying the formulas in this document to any employee's personal situation requires forecasting both their future HAPC and the SSCC that will be in effect, in the year in which they are eligible to retire.

Age Factor = 2% \* (SSCC/HAPC) + 3%\*(1 – SSCC/HAPC) for Option B,

i.e., for Option A, the age factor is a weighted average of 1.5% and 3.0%, for HAPC values between SSCC and three times SSCC.

For Option B, the age factor is a weighted average of 2% and 3%, for HAPC values between SSCC and two times SSCC.

In either case, the age factor is capped at 2.5% (the same maximum as currently exists in UCRP and as would exist in Option C).

We are reluctant to introduce a new term that has no generally recognized meaning, but it would be beneficial within this discussion to think of this as a composite, overall, or combined age factor. This lets us continue to express an individual’s pension benefit as some age factor multiplied by service credit and HAPC, as in the first formula on page 2.

As a function of income, this Age Factor equals either 1.5% (Option A) or 2% (Option B) at any income up to SSCC, then rises (nonlinearly) with income above SSCC, until the maximum of 2.5% for the composite figure is reached. That maximum is reached at different values for HAPC, in the two plans: when HAPC reaches two times SSCC, under Option B, the composite age factor equals 2.5%, and remains there with any further increases in HAPC. While the formula itself yields an age factor above 2.5%, for higher values of HAPC, it was a policy recommendation in the PEB Report to cap this amount at 2.5%. As shown in Table 3, HAPC must be at least three times SSCC under Option A to produce a composite Age Factor of 2.5%.

Table 3: Age Factors for Options A and B, and Comparisons to C

Income	Age Factor A	Age Factor B	Reduction in age factor from C to A	% Change (C to A)	Reduction in age factor from C to B	% Change (C to B)
\$0 to \$60,000	1.5	2.0	1.0	-40%	0.5	-20%
\$75,000	1.8	2.2	0.7	-28%	.3	-12%
\$90,000	2.0	2.33	0.5	-20%	.17	-6.8%
\$105,000	2.14	2.42	0.36	-14.4%	.08	-3.2%
\$120,000	2.25	2.5	0.25	-10%	0	--
\$150,000	2.4	2.5	0.1	-4%	0	--
\$180,000	2.5	2.5	0	--	0	--
>\$180	2.5	2.5	0	--	0	--

The discussion above and the age factors in Table 3 are all for retirement at 65. What happens if retirement occurs at a younger age? Apply the percentage reductions from Table 2.

For instance, retiring at age 60 under Option A with an income of \$75,000 means that the 1.8% age factor is reduced by 28% (5 years early). It would become 1.3% (1.296%, precisely). The same percentage reduction of 28% applies for any income, if retirement is at age 60 instead of age 65.

The 1.8% age factor for \$75K and Option A is reduced by different percentages for different ages of early retirement. Identical percentages for each age would apply to the 2.2% age factor that applies for \$75K, under Option B.

Thus, it is not possible to make a single statement about the difference, in dollar values, between Options A and B, but the ratio of the two pensions would be the same as the ratio of the age factors 1.8 and 2.2. At an income of \$75K, Option A is worth  $1.8/2.2=0.81$ , just under 82% of Option B. They become closer to each other as income increases, so that at \$150K, the ratio is  $2.4/2.5 = .96$ , i.e. 96%. And of course they provide equal pension benefits, once HAPC exceeds three times covered compensation.

We provide these remarks to indicate why we have not, in general, made specific percentage comparisons between plans. Because such comparisons depend on the variables of retirement age and HAPC, we feel it is much clearer to simply provide the formulas. *Simpler comparisons between plans obscure the complexity of the plans. We expect that the proposed “on-line benefits calculator” to be developed by HR&B will allow all employees to readily see side-by-side comparisons of the plans, for their specific situations.*

#### *Part 4: Mixing two plans, for current employees electing “Choice”*

Under choice, service credit earned after the date of implementation is evaluated according to the details for UCRP (Part 1.), if the employee elects to remain in UCRP. *New tier benefit formulas have no effect on the pension benefit such employees receive.* If they instead opt for the new plan, then at retirement, the pension benefit is a mix of benefits accruing to service prior to the implementation date, still determined using the UCRP provisions, and benefits from service after implementation, which are determined using the new tier provisions.

All of the tables above apply to these calculations.

Suppose an employee works for UC until age 65 or beyond, with age 65 occurring after the date of implementation, and suppose this employee elects a new tier for future service credit.

At the point of retirement, the employee's pension will be

$$\text{Pension} = K * \text{HAPC}$$

where K involves both of the applicable age factors and service years. K can be thought of as a blend of two age factors, but each is multiplied by service years under the two separate plans:

$$K = 2.5 * (\text{2013} - \text{start date}) + (\text{new max. age factor}) * (\text{ret. Year} - \text{2013})$$

Suppose that the new maximum age factor for this individual is 2%, and suppose he or she worked for ten years before the change to the new tier, and 20 years afterwards. Such an individual receives a pension benefit of 25% of HAPC, attributable to the first ten years (2.5 times 10), plus a benefit of 40% of HAPC, attributable to the later service (2 times 20). K would equal 65%, and the total pension received from UC would be 65% of HAPC.<sup>5</sup>

If the new tier happens to be Option C, then K reduces to 2.5\*service, provided the employee works until 65. For the other Options, K will be more complicated, unless the employee's HAPC is sufficiently high that he or she reaches a 2.5% age factor under the new tier.

For all three Options, for retirement between 60 and 65, K becomes more complicated. An early-retirement penalty applies to service under the new tier, but not to the service covered by the current UCRP:

$$K = 2.5 * (\text{2013} - \text{start date}) + (\text{new max. age factor}) * (1 - \text{early ret. Penalty}) * (\text{ret Year} - \text{2013})$$

For retirement between 55 and 60, for all three Options,

$$K = 2.5 * (1 - \text{early ret. Penalty under UCRP}) * (\text{2013} - \text{start date}) + (\text{new max. age factor}) * (1 - \text{early ret. Penalty under new tier}) * (\text{ret Year} - \text{2013})$$

Note that the penalties are different for the two separate plans, for any particular age.

Finally, for retirement between 50 and 55,

$$K = 2.5 * (\text{early ret. Penalty}) * (\text{2013} - \text{start date}) + 0$$

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<sup>5</sup> Note that the percentages we report are considerably lower than those for "income replacement" cited in the PEB Report, for the two "Integrated" plans. The reason is that we are focused only on the portion of retirement income provided by UC; Social Security is not included because it would be the same across Options (holding retirement age constant, of course). In the PEB report and in other materials provided by UCOP, this employee would replace a percentage of HAPC (working income, loosely speaking) that is higher than 69% by the amount due to including Social Security. Our purpose is to demonstrate the mechanics of the blended pension benefits, so we do not add that detail.



This case is included mainly for completeness. Employees who knew they were going to retire before age 55, after the implementation date, would presumably elect to remain in the current UCRP.<sup>6</sup>

It would be relatively straightforward to compile a table or graph showing the combined pension benefit received, under UCRP and the three new-tier options, but this would depend on the level of HAPC, for Options A and B, and it depends on total service credit and the portion under UCRP, as well as the early retirement penalties. This document has provided all of the information needed to specify pension benefits for an individual who retires at age X, with Y years covered by UCRP, Z years covered by any one of the three new-tier plans, with HAPC equal to W. The proposed on-line calculator, to be provided by HR&B, should report a pension benefit that varies over at least these four variables.

One final caveat exists. The two “Integrated” Options are quite complicated, in that they are based on Social Security Covered Compensation, currently around \$60,000. This figure represents the average over 35 years of the Social Security Wage Base, and hence will continue to increase over time, along with wages in the general economy. For individuals anticipating retirement sometime in the future, it is necessary to forecast salary increases, since HAPC will continue to increase, and the same is true of SSCC. Calculations based on retirement today are only an approximation, but they do facilitate comparisons between the three Options.

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<sup>6</sup> It seems unlikely that this would be observed, but could occur if the employee elects the new tier, then retires at an unanticipated, early age. Since retirement can be delayed, this would perhaps apply to death or disability. It should be emphasized that nothing in Part 4 is meant to be a recommendation; we are simply describing all possibilities.