Retirement Annuity Plan (RAP)

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# Table of Contents

Abstract .................................................................................................................................................. 1

1. Introduction ......................................................................................................................................... 2 - 4
   1.1 Mission
   1.2 Why do we need a change?
   1.3 Our design (RAP)
   1.4 What one off-market change could greatly enhance our design?

2. RAP Outline ......................................................................................................................................... 5 - 10
   2.1 The Actuarial and Investment Portion of the RAP design
      2.1.1 Accumulation Phase under RAP design
      2.1.2 RAP Payout phase
   2.2 Benefit Payment Forms
   2.3 Portability
      2.3.1 Transfers to RAP
      2.3.2 Transfers from RAP
   2.4 Actuarial Gains or Losses (other than from investments)
   2.5 Adequacy
   2.6 Source of contributions

3. Governance (Trustees and not Employer as Fiduciary) ...................................................................... 11 - 12

4. How a model plan would have performed based on historical returns? ...................................... 13

5. Miscellaneous comments ...................................................................................................................... 14 - 16
   5.1 Wishful thinking – Extending FERS Thrift Saving Plan G Fund to RAP
   5.2 Why only variable annuities and why no lump sums
   5.3 Sending retirement signals
   5.4 Amount and source of contributions and expanding coverage
   5.5 Prices for bonds vs. annuity contracts
   5.6 Sponsor (employer, government, union, insurance company)
   5.7 Use of RAP accounts for unemployment
6. Regulatory Changes

6.1 Federal Governmental Role
6.2 Disclosure
6.3 Transition Issues
6.4 Insurance Companies and Mutual Funds as contract platform providers
6.5 Actuary role
6.6 Small Plans
6.7 Fraud and Abandonment
Abstract

Our model evolved as we worked on our paper. The post retirement aspects are basically unchanged from our initial design. The final model is a defined contribution (DC) plan during the accumulation phase and a variable annuity during the payout phase.

Leakage is generally prohibited. All benefits must be used to buy annuities until Society’s needs (to have the participant provide themselves with a minimum level of guaranteed income from Social Security or annuity conversions) are met. PBGC-like insurance would be limited to fraud and abandonment.

The employer’s role and fiduciary responsibilities are limited. Plans would be run by professional Trustees. Participants would not control investment choices but could elect to buy an annuity from outside of the plan. Investment restrictions and guidelines would be focused on real rates of returns which decline with age to an ultimate rate of 2%. Benefits (prior to annuitization) would be portable between systems.

The benefit would be communicated as an annuity (e.g. in 2010 your account balance is expected to provide an annuity in real dollars of $500 per year payable at age 65). However the annuity would not be fixed. If things worked as expected, it would increase (post retirement) by CPI less 1%. In years with poor investment return, the COLA increase might be less.

During the pay out phase, the interest rate and mortality assumption assumed by the actuary for all calculations would be regulated. The account balance is converted to an actuarially equivalent annuity based on a 3% interest rate. The age of retirement (subject to a minimum) would be elective. The actuary would annually determine two present values of accrued benefits (PVAB) measures: a PVAB assuming COLA increases based on a 3% net discount rate (PVAB\textsuperscript{incr}) and a PVAB based on a fixed annuity and current market discount rates (PVAB\textsuperscript{fixed}). The COLA increase would only be awarded if the plan funding on a PVAB\textsuperscript{fixed} basis exceeded 100 percent. If the fund balance is more than PVAB\textsuperscript{incr} the benefit would increase by CPI less 1%.
1. Introduction

1.1 Mission

Our mission is to increase basic retirement income and coverage for individuals with minimal transfer of cost or risk between generations. Our focus is not on wealth creation, estate planning or concern about the top 10% of wage earners. We also hope that tax subsidies can be more focused on the societal needs for providing retirement income.

We are unsure that needed increases in retirement income can be achieved without requiring mandatory contributions (roughly at the rate of $1 to $2 per hour worked adjusted for inflation). While our proposal does not require mandatory contributions, we suggest that RAP contributions, benefit levels, personal savings and retiree poverty levels be tracked to see if a voluntary system is working.

1.2 Why do we need a change?

The existing retirement system is in trouble. Without a change, neither income needs of individuals nor Society’s needs will be met. Yet solutions must follow market rules and deal with risk and not be based on hopeful thinking of well meaning agents. While we don’t want to spend too much time on discussing the existing system, we have a few points to make so that the reader will understand what we think is not working.

- Single employer defined benefit pension plans have seen their contribution requirements explode at a time that many employers can least afford to make contributions due to the economic downturn. Many of these plan sponsors have seen their plans trusteed by the PBGC because of their inability to make required contributions. Other employers have closed their plan to new hires and many have also frozen benefit accruals. In addition, even in good times, single employer defined benefit plans are not optimal vehicles to provide retirement income for a mobile workforce.

- Public sector employers tend to be more financially stable and have a (voluntarily) less mobile workforce than private sector employers. However, many public sector pension plans are grossly under funded. In large part due to the recent market downturn, public officials are facing skyrocketing pension contributions that may hamper their ability to provide services to taxpayers. Since there are no minimum funding requirements for public sector pension plans it is likely that some governments will forgo contributions under their prior funding policies. This has already occurred. There is a real possibility that some governments (especially those with shrinking populations) will not be able to make promised payments to retirees.

- Multi-employer plans do not depend on the financial strength of one employer. However, many multi-employer plans are also grossly under funded. These plans face years of additional contributions needed to fund the existing shortfall (a type of intergenerational transfer we want to avoid). In an economic downturn a decline in the
hours worked by members can exacerbate the problem. If they can not provide accruals commensurate with their contributions, they face a competitive disadvantage with non-union labor due to the need for large intergenerational transfers of wealth within the union sector.

- While defined contribution plans do not face the same employer (sponsor) solvency issues or intergenerational transfers as defined benefit plans, they often fail to provide reliable adequate retirement income. First, participants frequently cash out their lump sum benefits upon changing employment (legally allowed leakage). Second, many participants lack the financial planning skills to determine the amount they will need to provide adequate income at retirement (or the will/ability to set aside enough funds). Third, even those who have been fortunate enough to accumulate a balance that could provide an adequate income in retirement lack the skills to manage their account balances so that they are not exhausted in the retiree’s lifetime.

Is the retirement system crisis entirely due to general economic malaise, or are there changes that could be made to improve the system – not only in times of economic challenge but also in more prosperous times?

It is our opinion that the pension crisis is due in large part to practices intended to make pension plans attractive. These measures were: 1) DB and DC plan designs priced on overly optimistic returns, 2) lack of pre-retirement indexing of DB benefits and related pricing based on forfeitures and turnover prior to retirement, 3) defined contribution and cash balance plans that express benefits as lump sums that appeared\(^1\) to be more valuable than market equivalent annuities, and 4) the allowance of leakage since more focus was on ownership than retirement income protection\(^2\). A new design must address all of these shortfalls and more (e.g. governance).

1.3 Our design\(^3\) (RAP)

We are suggesting a design with the following characteristics:

1. There is a minimal amount of intergeneration transfer of investment risk between individuals or generations.
2. Participants do not control investments and the trustees who do control investments have restrictions linked to real rate of return targets which decline to 2% by age 62.

\(^1\) During 20/20 meetings the word hyperbolic discounting was used. This refers to individuals implicitly valuing annuities with a higher than rational discount rate when comparing them to a lump sum. The reasons for this are beyond the scope of this paper. However, we realize the reality of this fact and believe that part of our mission is to educate individuals on the cost of lifetime income.

\(^2\) We would suggest considering prohibiting all tax deferred savings vehicles from using these methods to make these plans seem more attractive and affordable than they really are.

\(^3\) We selected the name Retirement Annuity Plan since each of these three words describes what our mission is focused on. We searched the web and found that a UK plan design has the same name and like our plan requires some level of annuitization.
3. There is some transfer of longevity risk between individuals but a minimal amount between generations.
4. Tax deferred savings vehicles will only be paid as annuities (at least until Society’s needs for avoiding poverty are met).
5. Payments will not occur until death, disablement or attainment of age 62.
6. Prior to annuitization these benefits are fully portable.
7. The annuities will be variable annuities with the amount targeted to increase at close to the rate of inflation. However, the increases will only be made if the plan can afford them (is fully funded) and the annuities could even (hopefully rarely) be decreased if the plan’s poor investment performance so dictates.
8. There never will be any underfunding.
9. Our design includes automatic adjustment mechanisms with no discretion by the trustees when funding problems occur. The automatic adjustment feature is built around forgoing indexation and minimizing the need to ever reduce the nominal amount of an annuity that is in pay.
10. The employer(s) no longer need to be the “platform” or have fiduciary liability for the plan but rather is just a funding source. This implies many things such as immediate vesting. Non discrimination rules in employer contributions may still be desired.
11. The role of trustees and agency issues need to be viewed differently once employers bear no investment risks. Ideally these plans would have independent trustees and be very large in size for efficient administration.

The resulting plan will provide a dollar annuity at a price that is more expensive than the current plan designs since there is no employer guarantor. The difference in the annuity amount would reflect the increase in security (or the reduction in the risk to the employer/PBGC).

One key design aspect is that we have removed the plan sponsor as (1) the platform provider (still optional) and (2) the risk taker for gains and losses. Once the plan sponsor is removed from the risk taking role: (1) the selection of investment and mortality assumptions needs to move from a best estimate model to a more risk free model or (2) risk needs to be transferred to participants. Our design includes elements of both.

Our current design is a modification of an earlier design. The original design has all of the eleven design elements listed above. In one sentence: RAP is more like a DC plan during the accumulation phase and our original design was more like a DB plan during all phases.

1.4 What one off-market change could greatly enhance our design?

We tried very hard to avoid pricing assets or liabilities on something other than a market value basis. This is one of the foundational aspects of Retirement 20/20. However, Section 5.1 below provides an example of an off-market security that the US Government provides to its employees. For reasons specific to our design, providing such securities to the annuitant portion of our RAP design would eliminate much of the risk retirees would bear in this design. We ask that this be considered.
2. RAP Outline

RAP combines aspects of defined contribution (pre-retirement) with defined benefit (post-retirement) plans.

2.1. The Actuarial and Investment Portion of the RAP design

2.1.1 Accumulation Phase under RAP design

During the accumulation phase you can look at this as a traditional defined contribution plan. Contributions would be made to an individual’s account which would be credited with earnings. The benefit would be communicated as both (1) an account balance and (2) a deferred annuity (e.g., in 2010 your employee and employer contributions are estimated to provide a $500 per year annuity payable at age 65 in 2010 dollars). Since we are generally focused on annuitization and elimination of leakage, it is very important that the value of deferred annuities in real terms be communicated. This is done in part to give participants a true idea of the cost of real income protection. The communication of projected account balances using nominal interest rates would be prohibited (if possible) and projections would be based on a 2% real return preretirement and the 3% annuity conversion rates discussed below.

We do not want individuals to control investment selection (this would be a trustee choice). We want to (1) create some investment restrictions/pools by age during the accumulation phase and (2) allow for a mechanism to allow regulation to deal with a wide variety of acceptable investments and their evolution. The following is a very basic description of a potential starting point for investment pools.

One guiding principal is that investments pools must scale down to a 2% real rate of return goal by age 62 (the first age at which non disabled annuities can be offered). This is based on (1) a desire for young individuals to take more risks and (2) an expectation that long term inflation indexed securities (TIPS) can provide a risk free real return of 2% but we understand that may not be the case at all points in time.

There should be no limit on investment in government securities including TIPS. TIPS should be a preferred investment at the later ages.

Initially we suggest two accumulation pools (both with over a 2% real return). As plans increase in size and administrative ability, we could see pools in five year age bands or year of birth groupings. Initially the pools might be one for those under age 45 and one for those over age 45.

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4 The exception is a mortality experience adjustment.
The limits might look something like the following:

Table 1:

<table>
<thead>
<tr>
<th></th>
<th>Under age 45</th>
<th>Over age 45 (and under 62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equities</td>
<td>Maximum of 60%</td>
<td>Maximum of 20%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>Minimum of 20%</td>
<td>Minimum of 60%</td>
</tr>
<tr>
<td>US Governments</td>
<td>Minimum of 10%</td>
<td>Minimum of 30%</td>
</tr>
<tr>
<td>US Gov TIPS</td>
<td>No minimum</td>
<td>Minimum of 20%</td>
</tr>
</tbody>
</table>

In this illustration we have left some room for other types of investment classes. What we want to avoid is an agent who thinks a high equity exposure at age 62+ is acceptable.

2.1.2 RAP Payout phase

No payouts would be available until age 62 unless a participant is disabled or dies. The disability definition would be restrictive (e.g. Social Security definition).

Variable annuities would be the normal form of payment. The interest rate and mortality assumption used by the actuary for all calculations would be regulated. The assumed interest rate (AIR) would be 3%, which is 1% over the assumed real rate of return. This should create expected cost of living increases equal to the CPI less 1%. The choice of 3% is a balance between (1) the desire to provide CPI-like COLAs, (2) participant expectations of higher annuities (higher AIRs) and (3) the need to limit downside risk since there is no insurer and we do not want intergenerational transfers. We are also concerned that benefits not be so low as to consider the plan a “Tontine” where those who live the longest get extra benefits from those who die young. The three bullets at the end of section 4 also address some of the Tontine concerns.

Assume a simple world where we earn a stable nominal rate of 5% which is composed of 2% real return and 3% inflation. Our desired outcome is a 2% COLA paid every year (3% less 1%). What we shall call our full COLA is our (targeted) COLA of CPI less 1%. The 1% reduction is due to the AIR being 1% above our 2% real return annuitization plan design target.

The real world will be not so stable. Some of this can be dealt with by a heavy emphasis on bonds including TIPS. Funding levels will always be based on the market value of assets (no smoothing). However, see comments below about using book values for asset liability matching and special securities discussed in section 5.1.

To determine the COLA, every year the actuary would determine two PVAB\(^5\) measures for annuitants: a PVAB assuming COLA increases, \(\text{PVAB}^{\text{incr}}\), and a PVAB based on a fixed annuity, \(\text{PVAB}^{\text{fixed}}\). The discount rate for \(\text{PVAB}^{\text{incr}}\) would always be 3% and the \(\text{PVAB}^{\text{fixed}}\) would be based on a current high quality yield curve. The \(\text{PVAB}^{\text{fixed}}\) liabilities would be calculated based on the current benefit payments.

\(^5\) PVAB is the present value of accrued benefits for annuitants in pay. In RAP it does not include those in the accumulation phase.
The PVAB\textsuperscript{incr} liabilities would be calculated based on the current benefit payments plus a full COLA (actual CPI less 1%). One of the following COLA adjustment results would occur:

1. If assets were less than PVAB\textsuperscript{fixed}, benefits would be proportionately reduced to get to 100% funded. We think this would be rare but this is the hard enforcement of solvency. Taking too much investment risk can make this a reality more often if there are no investment restrictions.

2. If assets were more than PVAB\textsuperscript{incr}, a full COLA (CPI less 1%) would be granted. This is the expected result.

3. If assets were between PVAB\textsuperscript{incr} and PVAB\textsuperscript{fixed}, a prorated COLA would be provided.

No increase can put liabilities below PVAB\textsuperscript{fixed}. Generally the ratio between PVAB\textsuperscript{incr} and PVAB\textsuperscript{fixed} is sufficient to avoid a reduction in the (nominal) benefit amount. After benefit adjustments, the PVAB\textsuperscript{fixed} is always at least 100% funded but a 100% funded ratio is the sign of an unhealthy plan.

Mortality gains and losses would be spread across all plan members (including those in the accumulation phase). The plan actuary would compare retiree PVAB\textsuperscript{fixed} to the expected value to determine mortality gains and losses. The difference would be spread among all pools in proportion to size of the pool. This would decrease accumulation pools and increase the retiree pool for losses and do the opposite for gains.

The actuarial mindset for this plan design needs to be different than for current DB plans. Current plan sponsors can say that gains and losses are a “pay-me-now or pay-me-later” event. In these new plans, there is no guarantor (employer) to make up deficits. Therefore, best practices need to be the minimum standards. The use of full generational mortality tables is an example. Data quality is also important.

Lump sums would be available once a member proved that they had guaranteed annuity income above a certain level. That level might be 1.5 to 2 times the HHS poverty guideline (for 2009 = 2 x $10,830 for an individual = $21,660). The level would need to be indexed annually and there should be a higher level for fixed annuities than for indexed annuities. How complicated the test should be (e.g., should it be based on age and should it factor in Social Security benefits) can be debated. We prefer a “proof of income” test over an amount tied to an account balance\textsuperscript{6}. This would also make it difficult for leakage prior to normal retirement age.

\textsuperscript{6} Our mission is to provide minimum levels of income. For this reason we do not want rules such as: (1) x% of account balance can be taken as a lump sum or (2) amounts over $x can be taken as a lump sum even if the rest is not annuitized.
We would allow the purchase of fixed annuities outside of the plan but we do not want to lose the option for CPI indexed annuities provided by the plan. There would be no loans or special hardship withdrawal rules. The mind set needs to be that there is no leakage just as Social Security does not pay lump sums, provide loans or allow for special hardship withdrawals.

Investment of retiree assets (deaccumulation pool):

These pools need to be very fixed income oriented. Trustees could put everything into fixed government securities and if nominal rates were over 3% would be fairly sure of increases every year. However, investing in TIPS would help secure better inflation protection but would create some problems since TIP values vary by inflation expectation and not just current inflation. Over time we would hope that best practices would evolve. Initially we propose the following:

Table 2:

<table>
<thead>
<tr>
<th></th>
<th>Maximum of 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equities</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Income</strong></td>
<td>Minimum of 90%</td>
</tr>
<tr>
<td>US Governments</td>
<td>Minimum of 50%</td>
</tr>
<tr>
<td>US Gov TIPS</td>
<td>Minimum of 20%</td>
</tr>
</tbody>
</table>

Despite our desire to use market value of assets, we would also allow using a partial “book value” method to match part (e.g. 50%) of the assets to existing nominal benefits which are in pay (the basis for PVAB fixed). This would help minimize the short term impact of changes in market values due to interest rate changes.

### 2.2 Benefit Payment Forms

The benefit is intended for retirement purposes to meet individual and societal needs. Accordingly, under RAP no lump sums would be permitted until after a minimum annuity was secured. The annuity benefit could be a single life annuity or a joint and survivor annuity. There would be a minimum retirement age; we would propose age 62. While the minimum retirement age would be age 62, the participant could retire at any later age and the benefit would be increased. All payment forms (single life or joint and survivor, and differing commencement ages) would be actuarially equivalent (based on a 3% discount rate which is the assumed real rate of return plus 1% and not a nominal rate). ERISA rules related to spousal consent, QDROs and minimum distributions could apply. Other than for disabled members, a single unisex mortality table would be used. Longer annuity-certain periods (e.g. 15 years) would be allowed in part to deal with individual health concerns and differences by gender and race.

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7 Because of our desire to avoid intergeneration transfers, we do not want to accumulate the type of surplus that is required of an insurance company. If an insurance company is willing to sell an annuity, use its surplus and provide the guarantee that our plan can not, we would not object. However, we want a low cost indexed alternative to be provided by the plan.

8 A drop in market value due to an increase in nominal interest rates can cause a temporary reduction in COLAs but these should be temporary in nature.

9 This would not be needed if the suggestion in section 5.1 could be adopted.
We are concerned that some individuals will feel disadvantaged by the annuity-only requirement because of their race or gender. However, this plan is intended to meet income needs. Options such as cash refund annuities and 20-year certain and continuous annuities could be permitted. There would be no Social Security leveling option since payments would not be made prior to Social Security eligibility and we do not want to allow a backdoor way to get a lump sum-like payment.

The account balance can be paid out when a participant dies prior to annuitization (or transferred to a spousal account).

2.3 Portability

2.3.1 Transfers to RAP

We would encourage transfers to RAPs. In the US this would include qualified plans, IRAs, 403(b) and 457 plans. However, once transferred into a RAP, all RAP rules would apply including rules intended to prevent leakage and the use of unisex mortality rates.

2.3.2 Transfers from RAP

All benefits (prior to starting annuity payments) would be fully portable between RAPs. For the RAP this would simply be the account balance. Transfers to an IRA and other non-RAP plan needs to be done in a fashion not to evade the restrictions on leakage and use of unisex rates. The participants’ ability to transfer between plans is why the employer has no fiduciary responsibility for the selection of the RAP plan.

2.4 Actuarial Gains or Losses (other than from investments)

There should be very small actuarial gains or losses other than through investment. Because the benefits would be actuarially equivalent, there would be no losses for retirements occurring at different ages.

Disability benefits are not to be subsidized. This means that there is still a need for other disability coverage outside of the RAP.

Mortality gains and losses are intended to be shared across all pools within the plan. The intent is not to expect any gains and losses and require the use of best practices. There may be some antiselection that needs to be accounted for via higher annuity conversion factors. In any case, annual mortality gains and losses need to be handled each year and not carried over to future generations.

2.5 Adequacy

There is no question that in comparison to the benefits provided by a traditional defined benefit pension plan (especially at older ages) the annual annuities will be much smaller. However, the participants will get COLAs and (some) have the option of working to a later retirement age and
receiving an actuarially increased annuity. Since the RAP benefits have COLAs, participants will have a better means of judging the sufficiency of the annuity not just at retirement but during the entire payout phase.

Part of the problem is that individuals often have what is referred to as “hyperbolic discounting”. They undervalue the cost of annuities or over value the ability of lump sums to provide annuity income. This needs to be overcome with education. This starts with communicating real annuities during the accumulation phase.

Part of the way to attain adequacy is to prevent leakage. We would encourage tax structures which favor plans that prevent leakage over those that do not.

2.6 Source of contributions

Our design does not directly require any particular source of contributions. We leave it to others to discuss the following possibilities:

1. Employee contributions similar to 401(k) deferrals
2. Employer contributions including matches
3. Collectively bargained plans similar to “annuity\textsuperscript{10}” plans
4. Individual (and spouse) contributions similar to an IRA
5. A legally required contribution similar to Social Security taxes
6. An “employer” contribution for short term unemployment

One of our missions is to increase retirement income and coverage. Making contributions voluntary, limits what can be accomplished. However, limiting leakage, encouraging auto enrollment and requiring non discrimination testing will help. We envision non discrimination rules similar to current rules.

\textsuperscript{10} Unlike what the name might imply, in the US, the term “annuity” multiemployer plan refers to a defined contribution plan. Contributions are often based on a “cents per hour worked” bargaining agreement.
3. Governance (Trustees and not Employer as Fiduciary)

We first need to differentiate between what we call plan sponsors and plan trustees. We refer to employers who make contributions on behalf or individuals as plan sponsors. We could also call an insurance company who helps with the administration of the plan a non contributing “sponsor”. Both can serve a cheerleading role. In theory the plan sponsor could be an employer, multi or multiple employer system, a private company or organization (e.g., AARP), a governmental employer, the federal government (e.g., PBGC), a state, a bank or an insurance company. Each comes with its own “affiliation advantages” and agency challenges. However, in our design the real question is who is the fiduciary and not who is the plan sponsor.

Our proposal is that independent individual trustees be the fiduciaries much as current multiemployer trustees are fiduciaries (and the technical plan sponsor) in the US. However, RAP trustees would be primarily focused on investments and administrative issues and (unlike many current multiemployer Trustees) not focused on funding (contributions) or benefit changes.

Our focus in this section is on how plans are managed by the trustees and the qualifications of the trustees.

We have a number of concerns about how plans are managed. Many of these concerns are common to both existing plans and our new design. There are others who have written more authoritatively on these topics than we can. However, we will provide some observations related to our proposed design:

- **Risk**: Most existing plans need to make serious decisions related to investment risk. In our proposal many of these decisions have been removed by the addition of regulatory investment restrictions. In addition, since employers do not retain any investment risk, there is no imperative\(^\text{11}\) for them to have a role in plan administration.

- **Investment Beliefs**: The mind set of the trustees under our plan needs to be very different than existing DB and DC plan trustees. Trustees will quickly realize that benefits are tied to investments. They also need to think somewhat like insurance regulators. Our hope is that our proposed initial conservative investment guidelines evolve slowly and carefully. Their evolution depends on capable financial engineering professionals, avoidance of material agency risks and development of methods to make decisions transparent and acceptable to participants. Our guidelines start with a philosophy of real rate of return goals which decline by age (see item 2 in section 1.3). Trustees can pick investments but should have no veto right over the need to adopt more conservative investments as participants get older.

\(^{11}\) For affinity reasons there may be a desire for an employer or union representative to be a trustee.
Finding Capable Trustees: Trustees for employer sponsored plans often accept the fiduciary responsibility as part of their corporate or union position. With the employer being removed from this role, trustees need other motivation (e.g. compensation) and protection.

There would be far fewer plans than there are today. It would be better to have 100 very large plans than 2,000 small plans due to economies of scale. Larger plans would lend themselves to the following preferred structure:

- A Board of Trustees composed of a combination of elected (by participant proxy) trustees and professional trustees selected by elected members
- The hiring (by the Trustees) of professional staff to provide administrative and investment expertise.
- Some type of affinity that participants would have to the plan.
- An insurance company can be the administrator (platform) but we need an independent Board to be able to move to a new platform.

While investment and administrative experience is important, viewing this as a regulated product is new and needs to evolve into how Boards work.

Other questions to ask: Should there be term limits for trustees? Are there lessons to be learned from the Australian system where trustees are licensed and closely supervised? Should participants eligible to join a specific RAP be restricted much as those who can join a credit union are restricted? Who can set up RAPs and initial Boards of Trustees? How can Trustees be removed? Does each pool have separate rights that the Board of Trustees need to be concerned about? Our initial answers to the first three questions are: yes, yes and no. However, all of these questions deserve more debate.
4. How a model plan would have performed based on historical returns

When you look at a plan in its infancy you need to be sure not to ignore the problems (risk) that exist when a plan matures. We roughly modeled the RAP design. Our focus was on how likely the automatic adjustment mechanism would lower the benefits in pay.

For the RAP model there is no issue during the accumulation phase which is not also found in existing DC plans. Account values go up and down with the market. All we have done during this phase to minimize losses is to require a gradual reduction in investment risk as individuals get older.

During the RAP pay-out phase the question is whether (largely bond) losses can cause the initial funding at a 3% interest rate to drop below the value of the nominal benefit at a market rate. Rarely would accumulated losses require a reduction in the nominal benefit but it is possible and there were times in our model when this did occur. If losses are due to interest rate increases, we considered the possibility of some book value measurements. This is something Trustees should disclose from the outset if this is adopted. However, downgrade of the investment quality of bonds is a concern and should not be ignored.

High inflation is not a problem but an increasing interest rate environment can cause a loss in inflation protection. The solution discussed in section 5.1 below would solve this problem.

We want to avoid intergenerational transfers. However, there are times when interest rates change materially over time. Those who convert account balances to RAP annuities when interest rates are low might get subsidized by future retirees who retire when interest rates are higher. To some extent this can be resolved by the following:

- Our design allows participants to transfer account balances prior to annuitization and if they want they can buy annuities from insurance companies.

- We would let RAP trustees create generational annuitant pools if they deemed the intergenerational transfers material.

- As noted above, the solution discussed in section 5.1 might be deemed to eliminate most of this problem.

One final note: If there is too much of a surplus over PVAB\textsuperscript{incr}, benefits should be increased beyond the normal CPI less 1%. 
5. Miscellaneous comments

5.1 Wishful thinking – Extending FERS Thrift Saving Plan G Fund to RAP

We have tried very hard to avoid off-market designs. However, in the US the federal government provides an off-market interest credit rate to its own employees. In the Federal Thrift Savings Plan the “G fund offers the opportunity to earn rates of interest similar to those of long-term Government securities but without any risk of loss of principal and very little volatility of earnings.”\(^{12}\) In essence the Federal government provides its employees a liquid investment based on the 30 year Treasury rate which is reset each year with no market value adjustment associated with changes in market interest rates.

The retiree pool in the RAP could benefit greatly by such an investment. Even more ideal would be TIPS with a 2% real rate of return and no market value adjustments. This would almost guarantee an annual COLA equal to the CPI less 1%, if invested 100% in such a pool. While somewhat justified (in both the Thrift Savings Plan and RAP) by payout restrictions\(^ {13}\), we recognize that this is an investment that is generally not available. We would like to suggest that such an investment be made available as part of the tax favored preference given to RAPs.

5.2. Why only variable annuities and why no lump sums

Just as a bank may opt to take less risk by offering adjustable mortgages, under our design these plans will take less risk by offering variable annuities. We are proposing that this be the form of payment because of the following three considerations: (1) there would be no PBGC coverage, (2) there is no employer to make up for losses, and (3) inflation indexed annuities will better meet the needs of retirees and society.

To partially offset the hyperbolic discounting done by participants, we have modified our approach in three ways: (i) we would allow lump sums once a sufficient annuity was provided, (ii) we priced annuitization to provide increase at a rate 1% less than inflation and (iii) we would allow the purchase of fixed annuities from an insurance company.

5.3 Sending retirement signals

The first signal we are sending is that this is a retirement plan and not an estate or capital accumulation plan. There should be no leakage.

The second signal is that retirement at age 62 is acceptable. While the average age at retirement needs to be later, there is a need to recognize that the range of ages by which people need to leave the workforce is widening. Leaving the earliest age equal to the age at which Social Security benefits can begin (and not before) was important to us.


\(^ {13}\) US Corporate plans remember the idea of a “benefit responsive GIC” which is similar to the justification used above.
The only encouragement to work later is the growing account balance and (for some) the possibility of exceeding the annuity limit at which a partial lump sum can be paid.

Just as some jobs are physically demanding enough to require individuals to retire at age 62, some will become disabled before age 62 and need access to funds. However, we were restrictive in that we wanted difficult standards (e.g. Social Security any occupation standards) and still required annuitization (based on disabled mortality).

Participants could continue to work after they start their annuity. Perhaps they might wish to annuitize some of their account balance. However, our desire for lifetime income protection ruled out temporary annuities or “level income” options.

5.4 Amount and source of contributions and expanding coverage

At a minimum we think of the source of contributions as being the same as qualified plans and IRAs. However, we need to ask:

1. Is this a voluntary system?
2. What can we do to expand coverage?

Making the plan mandatory (a second tier on Social Security) would certainly expand coverage. However, that is a conversation above our pay grade. Assuming that this is not mandatory, how can we expand coverage? We suggest the following be considered.

- Removing employer fiduciary responsibility might help some to expand coverage but we suspect not much. We would not make employers responsible for choosing a bad RAP since (1) employees can move funds between plans just as they do with an IRA and (2) RAP trustees would be regulated. Employers still need to be prevented from favoring just high paid employees just as the do in DC plans currently.

- Tax breaks should favor RAPs. Perhaps credits or larger deductions for low wage earners should be considered.

- Perhaps future contributions to IRA and existing defined contribution plans should lose their tax deductible status unless converted to (or transferred to) a RAP.

- To an economist there may be no distinction between (1) lowering wages and making a RAP contribution and (2) paying higher wages with no RAP contribution. However, we do not want this to lead to a situation where employers or employees elect the second option. Tax favored treatment of RAP and non-discrimination rules are important for society’s needs to be met.
5.5 Prices for bonds vs. annuity contracts

Generally market rates for insured annuities go up and down with interest rates in the bond market. However, this is truer over the long run than over the short run. The RAP model is based solely on market bond rates. During 2008, the US bond market and annuity market did not move together. If there ever were a need to insure RAP annuities (e.g. plan termination), the annuity market might not be able to accept them (due to capacity restrictions) or might charge more than PVAB\textsuperscript{fixed}.

In some ways the RAP is a system which expands on the capacity of the annuity market with a margin different than the insurance company surplus model.

5.6 Sponsor (employer, government, union, insurance company)

We see affinity groups/sponsors as cheerleaders, sources of funding and interested parties but not as fiduciaries. The fiduciaries are the Trustees. While the “sponsor” might set up the initial group of Trustees we want to limit the agency risk associated with sponsor participation beyond being a funding source.

5.7 Use of RAP accounts for unemployed

We did discuss adding a rule that allows payments prior to age 62 for reasons other than death or disability. We understand that some individuals will be involuntarily terminated before age 62 and find it difficult to reenter the workforce. Under our design we would not allow these individuals to take lump sum payments or annuity payments. We considered a rule which would allow anyone over the age of 57 who has been unemployed for more than one year to start to (1) receive an annuity without actually annuitizing their account or draining their account to zero or (2) allow withdrawals if a sufficiently large deferred annuity were purchased. However, without more discussion of the difference between unemployment insurance and retirement benefits, we did not ultimately include this in our design. Just as our design does not cover all disability needs, it does not cover all unemployment needs.

\textsuperscript{14} Except for PVAB\textsuperscript{incr} which is based on a nominal 3% rate.
6. Regulatory Changes

6.1. Federal Government Role

The federal government would serve many roles. Three key roles would be:

Role #1: Provide tax incentives to encourage savings and prevent leakage
Role #2: Provide periodic rules on investment restrictions
Role #3: Provide annual rules on mortality\(^\text{15}\) and interest rate assumptions
Role #4: Monitor savings rates and decide if contributions need to be mandatory

All qualified plan rules would be reevaluated to see if they still make sense with the RAP design. Rules such as required distributions at age 70.5 (to start collecting taxes) might make sense but protecting accrued benefits (IRC section 411(d)(6)) would need a reevaluation. The simple concept of removing the employer as the plan sponsor\(^\text{16}\) needs to be considered.

The federal government should debate whether a trigger is needed to replace the voluntary model with a mandatory model. For example, if the poverty level for those over age 65 increases from under 10% to over 13%, contributions would be mandatory. This will not help those already over 65 but would help address long term problems.

6.2 Disclosure

Ideally, these would be large plans and could provide the type of online disclosure that many cities and states in the US provide to members of their public retirement systems. Plan level disclosure of funded ratios based on both PVAB\(^\text{incr}\) and PVAB\(^\text{fixed}\) should be included along with investment details for each investment pool.

Participants would get updates of their account balances just as DC plans currently provide. However, just as important they would get updates of the projected annuity benefit base solely on a 2% real growth rate and a 3% discount rate for annuity conversions. Projections of nominal accounts would not be permitted. To keep everything on an equal footing we would suggest requiring that any existing DC or IRA administrator be required to show similar “real” amounts if projections are shown. We suggest that there be a debate about whether nominal projections should be allowed.

Other types of disclosures (e.g. 5500 like filings or investment prospectuses) should be debated since a RAP may have characteristics of both a qualified plan and an investment vehicle. There is also a need to disclosure various governance issues.

\(^{15}\) including generational mortality and disability mortality
\(^{16}\) e.g. the employer would no longer have the settlor function of deciding to terminate the plan.
6.3 Transition Issues

Starting from a point of no assets (for a plan that ideally has billions invested) would be difficult. However, we think that existing DC plans and IRAs could be easily converted if desired. We suggest that tax treatments for certain existing designs be changed. We suggest discontinuing deductions for future contributions to traditional DC plans and IRAs and only allow for future deductions to the extent they are made to a RAP. Since individuals will not want the lump sum restrictions applied to existing account balances, we would allow these to be exempt from that requirement if they were transferred to a RAP17.

DB plans could continue to provide additional accruals if they did not provide for lump sum payments on future accruals.

There is also a need to determine who the initial Trustees would be. We would suggest that employers, labor unions, mutual funds and insurance companies each be allowed to accept the role of initial corporate Trusteeship. However, we also suggest that they be replaced by individual elected Trustees within five years.

6.4 Insurance Companies and Mutual Funds as contract platform providers

Insurance companies and Mutual Fund companies can be platform providers. We suggest requiring the selection of independent Trustees who would have the right to (1) hire and fire the Insurance/Mutual Fund company (contractor) or (2) set up their own administrative system. If we do this, we might want to limit the types of outsourcing contracts that are permitted if they limit portability between vendors (while protecting contractors from frequent or quick removal without cause).

Below we suggest rotating the terms for actuaries and auditors but we are not requiring rotation of contract platform providers.

6.5 Actuary role

The actuary needs to determine the \( \text{PVAB}^{\text{incr}} \) and \( \text{PVAB}^{\text{fixed}} \). In addition there is a need to determine annual mortality gains and losses to be spread among all pools. While less complicated than current DB plan valuations18, actuaries and Trustees need to recognize that accuracy (and data quality) is more important since the self adjusting mechanisms is not changes in employer contributions but rather changes in participants’ benefits. Annuitant data needs to be reconciled closely.

Because of the impact on participants, best practices need to be followed. This means the use of generational mortality tables.

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17 Transfers would not be required but employers would have no fiduciary problem if a plan wide transfer were provided.
18 There are no non-annuitant valuations to be done which are more complicated than annuitant valuation in a traditional plan.
As noted earlier, we suggest that actuaries (and auditors) be rotated every five to ten years.

6.6 Small Plans

While the design is scaleable, we would encourage large plans. We would also allow plan mergers.

6.7 Fraud and Abandonment

There is no need for PBGC to protect benefits since they are self adjusting and always 100% funded (ignoring non guaranteed COLAs).

Insurance of fraud would have some value.

If a plan is abandoned we would suggest that the government (e.g. PBGC) find another plan for it to merge into.