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## The Basic Rules of Cross-Testing

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## Karen Smith, President, Nova 401(k) Associates

Karen Smith is the President of Nova 401(k) Associates in Houston. She has over 20 years of experience working on 401(k) and defined benefit plans. She is both an actuary and an attorney. She is the chairperson of ASPPA's Defined Benefit Sub-Committee and chairperson of the American Academies Committee on Qualifications.

- Audience Level – Intermediate
  - HCEs
  - Coverage testing
  - Familiarity with new comparability
- Time – 50 minutes

## Agenda

- Introduction
- What is an EBAR?
- What is a rate group?
- What is the "gateway"?

## Introduction

Is it fair that the business owner receives a profit sharing contribution of \$50,000 and his two employees each receive a profit sharing contribution of \$1,500? How would you decide if that was fair?

- Compensation?
- Service?
- Contribution to the company?
- Need?
- Age?

## Introduction

- There are many ways to measure fairness.
- IRS Section 401(a)(4) regulations are a combination of Congress' and IRS' view of fairness.
  - A balance of policy concerns
  - Allocation of tax benefits
  - Retirement security
- A proposed allocation has to be fair only one way, but it has to be one of the ways allowed in the regulations – not fair in our mind.

# Introduction

Name	Age	Compensation	Contribution
Owner	55	\$250,000	\$50,000
Employee 1	50	\$30,000	\$1,500
Employee 2	25	\$25,000	\$1,500
Employee 3	35	\$10,000	\$1,500

- Owner receives more as an absolute dollar amount and as a percentage of pay than everyone else.
- How else can we demonstrate that this allocation is fair? Analogize to a defined benefit plan?



## Introduction

1. Convert profit sharing allocations to EBARs
2. See if each rate group passes a modified coverage test
3. If so, see if the gateway requirement is satisfied. If so, you pass 401(a)(4) test.
4. If not, adjust allocations OR test another way.



## EBAR

- If testing on a contribution basis, EBAR stands for Employee Benefit Allocation Rate.
  
- If testing on a benefit basis, EBAR stands for Employee Benefit Accrual Rate.

## EBAR

$$\text{EBAR} = \frac{\text{Increase in Benefit}}{\text{Avg Comp} * \text{Service}}$$

- All measured over measurement period.
- If the measurement period = 1, then it is the annual method.
- If the measurement period >1, then it is the accrued to date method.
- For cross-testing a dc plan, the increase in the benefit is the normalized benefit which is equivalent to increase in the account balance.

## EBAR

How to normalize the increase in account balance

- Choose assumptions
- Accumulate to Testing Age
- Determine Equivalent Benefit
- Divide Equivalent Benefit by Compensation to arrive at the EBAR

## EBAR

### Choose assumption – Testing Age

- If Universal Normal Retirement Age, then the Universal Normal Retirement Age.
- If no Universal Normal Retirement Age, then age 65
- Special rule for participants older than age 65 (only applies to DC plans – not DB combo plans)

include terms <= 300 hours in concern  
 Limit post-NRA APRs to age 65

## EBAR

Choose assumption – interest rate

- Standard interest rates 1.401(a)(4)-12
  - Standard interest rates – 7.5% - 8.5%
  - Why so high?

## EBAR

Choose assumption – mortality assumption

- Standard assumptions 1.401(a)(4)-12
  - Pre-retirement – None
  - Post-retirement mortality
    - UP-84
    - 83 GAM M or F
    - 83 IAM M or F
    - 71 GAM M or F
    - 71 IAM M or F

## EBAR

How to normalize the increase in account balance

- Choose assumptions
- **Accumulate to Testing Age**
- Determine Equivalent Benefit
- Divide Equivalent Benefit by Compensation to arrive at the EBAR



## EBAR

- Testing age - 65
- Standard interest rate – 8.5%
- Standard mortality table – 71 GAM M

## EBAR

- Employee 2
  - Age 25
  - An allocation of \$1,500
  - Accumulated value at testing age =  $\$1,500 * (1.085)^{40}$   
= \$39,199.52
- Owner
  - Age 55
  - An allocation of \$50,000.
  - Accumulated value at testing age =  $\$50,000 * (1.085)^{10}$   
= \$113,049

## EBAR

Name	Age	Allocation	Accumulated Amount at Testing Age
Owner	55	\$50,000	\$113,049
Employee 1	50	\$1,500	\$5,100
Employee 2	25	\$1,500	\$39,200
Employee 3	35	\$1,500	\$17,337

- Compare the effect of age between employees 1 -3. They all receive the same allocation, but the accumulated amounts are very different.

## EBAR

How to normalize the increase in account balance

- Choose assumptions
- Accumulate to Testing Age
- **Determine Equivalent Benefit**
- Divide Equivalent Benefit by Compensation to arrive at the EBAR

## EBAR

Determining the Equivalent Benefit is as easy as dividing the accumulated value at the testing age by a life annuity factor at the testing age using standard assumptions

## EBAR

- Employee 2
  - Age 25
  - An allocation of \$1,500
  - Accumulated value at testing age =  $\$39,199.52 / 8.477$   
= \$4,624.22
  
- Owner
  - Age 55
  - An allocation of \$50,000.
  - Accumulated value at testing age =  $\$113,049 / 8.477$   
= \$13,335.99

# EBAR

Name	Age	Allocation	Equivalent Benefit
Owner	55	\$50,000	\$13,336
Employee 1	50	\$1,500	\$602
Employee 2	25	\$1,500	\$4,624
Employee 3	35	\$1,500	\$2,045



## EBAR

How to normalize an increase in account balance

- Choose assumptions
- Accumulate to Testing Age
- Determine Equivalent Benefit
- **Divide Equivalent Benefit by Compensation to arrive at the EBAR**

## EBAR

Name	Age	Comp.	Equivalent Benefit	EBAR
Owner	55	\$250,000	\$13,336	5.33%
Employee 1	50	\$30,000	\$602	2.01%
Employee 2	25	\$25,000	\$4,624	18.50%
Employee 3	35	\$10,000	\$2,045	20.45%

## EBARs - Mistakes

Test	
Pre Retirement Interest	8.500
Post Retirement Interest	8.500
Mortality Table	71GAM M

Using a mortality table other than a standard mortality table because your testing system will let you

Testing Assumptions	
Mortality Table	UP-84
Pre-Retirement Interest Rate	8.5
Post-Retirement Interest Rate	8.5

## EBARs - Mistakes

Using the accrued to date method without having the necessary information

## Rate Groups

A rate group is an HCE and all participants who have an EBAR that is higher or the same than an HCE.

- Sort the participants by EBAR from highest to lowest.
- Draw a line under each HCE and the HCE and everyone above her and that is rate a group

## Rate Groups

- The maximum number of rate groups is the number of HCEs.
- Participants are often in multiple rate groups.

## Rate Group

Name	Age	EBAR
Employee 3	35	20.45%
Employee 2	25	18.50%
Owner	55	5.33%
Employee 1	50	2.01%



## Rate Groups

- Once you have the rate groups, each rate group must pass a modified coverage test:
  - 70% Ratio Percentage Test OR
  - ABT
    - Pass ABPT &
    - Mid-point of range instead of safe harbor percentage

## Rate Group

Name	Age	EBAR
Employee 3	35	20.45%
Employee 2	25	18.50%
Owner	55	5.33%
Employee 1	50	2.01%

Our rate group does not pass the 70% ratio percentage test.

Coverage ratio =  $(2/3) / (1/1) = 66.67\% < 70\%$  Fail

Move onto to ABT

## Rate Group

Name	Age	EBAR
Employee 3	35	20.45%
Employee 2	25	18.50%
Owner	55	5.33%
Employee 1	50	2.01%

$$ABPT = ( 20.45\% + 18.50\% + 2.01\% ) / 3 / 5.33\% = 255.9\%$$
 which is greater than 70% so pass this ABPT part of test

Coverage ratio =  $(2/3) / (1/1) = 66.67\% >$  Mid-point so passes

## Rate Groups Mistakes

When using the accrued to date method including participants who do not have a current year accrual.

## Rate Groups Mistakes

Missing opportunities to restructure

## Gateway

- If a dc plan passes 401(a)(4) testing using cross-testing, then the plan must satisfy the gateway requirement.
- This is in addition to the rate group testing.
- Does not apply to the following plans:
  - DC plans that test on a contribution basis
  - DB plans that test on an accrual basis

## Gateway

- What contributions count towards the gateway contribution?
  - Profit sharing allocation
  - Non-elective safe harbor contribution
  - Top heavy minimum as a non-elective contribution
  - Allocation of forfeitures as profit sharing contribution
  - QNEC



## Gateway

- What is the gateway contribution? The lesser of the following:
  - 5% of the allocation rate of 415(c) compensation
    - May exclude post-entry
  - 1/3 of the HCE highest allocation rate using 414(s) compensation
    - May exclude post-entry
    - May use net compensation
    - Pass 414(s) test (e.g. use plan pay definition of base pay)

## Gateway

- Who must get the gateway contribution? Any participant who receives any non-elective contribution:
  - Profit sharing allocation, Non-elective safe harbor contribution, Top heavy minimum as a non-elective contribution, Allocation of forfeitures as profit sharing contribution
- Who does not have to get a gateway contribution?
  - Only receives an employer match
  - Only has a deferral
  - Receives nothing

## Gateway mistakes

Not coding system to take into account all money types –  
specifically not coding safe harbor non-elective contributions

## Gateway mistakes

Disaggregating for the gateway and not handling top heavy

## Gateway mistakes

Providing gateway to participants who are not required to get it.

Questions?