

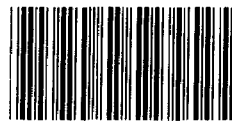
150014



United States
General Accounting Office
Washington, D.C. 20548

Human Resources Division

B-254775



150014

September 30, 1993

The Honorable Olena Berg
Assistant Secretary for Pension
and Welfare Benefits Administration
Department of Labor

Dear Ms. Berg:

We are evaluating certain aspects of the Department of Labor's enforcement of the Employee Retirement Income Security Act of 1974 (ERISA). As part of our evaluation, we are reviewing the methods the Pension and Welfare Benefits Administration (PWBA) uses to target pension and welfare benefit plans for investigation of possible violations of ERISA's fiduciary requirements.¹

PWBA can improve its computer targeting. This correspondence discusses weaknesses in PWBA's procedures for testing computer targeting programs and suggests that multivariate analysis may be a more effective and efficient way to target plans for investigation. We also provide alternatives for your consideration. We are presenting our views on this matter at this time because PWBA is considering revising its computer targeting programs. Additional comments will be presented in our final report on ERISA enforcement.

BACKGROUND

Computer targeting is one of several methods that PWBA uses to select plans for investigation of possible ERISA violations. PWBA developed computer targeting as a substitute for manual review of financial and other information in plans' form 5500 series reports;² it is not

¹Fiduciary requirements concern how plans are to be operated in the best interest of participants. For example, they require that anyone with control over a plan act with care, skill, prudence, and diligence.

²Most pension and some welfare plans annually file with the Internal Revenue Service a form 5500, 5500-C, or 5500-R report which contains financial and other plan information.

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a replacement for such other selection methods as following up on complaints and referrals.

PWBA currently has 96 unique computer targeting programs that search automated form 5500 series information to identify plans that PWBA believes are likely to violate ERISA. Each program uses a different characteristic or combination of characteristics that PWBA believes is an indicator of a potential ERISA violation.³ In addition, over two-fifths of the programs identify only plans that exceed certain dollar or other thresholds. PWBA established thresholds, not only to identify plans that it believes are most likely to violate ERISA, but also to restrict the number of plans identified to a manageable level. For most of the remaining programs, there was insufficient automated information available to establish thresholds when PWBA developed them, so the programs identify only the highest-ranking plans.⁴ In conjunction with revising its computer targeting programs, PWBA is considering establishing thresholds for almost all programs.

The programs also sort plans in highest-ranking order, usually based on dollar amounts or ratios. Programs with thresholds sort only the plans that exceed the thresholds. The other programs sort all identified plans. PWBA headquarters makes information about plans identified by the programs available to its field for their consideration in selecting plans for investigation.

PWBA began testing some computer targeting programs in fall 1990. For testing purposes, PWBA headquarters requires field offices to do limited investigations of certain plans identified by each tested program and, based on the results, decide whether to convert the limited investigations to full investigations. PWBA then calculates the conversion rate for all plans included in each tested program. If the conversion rate exceeds 5

The data is computerized by the Service and made available to Labor.

³Because PWBA considers these characteristics to be sensitive investigative information, we do not discuss specific characteristics in this letter.

⁴The programs identify the 40 highest-ranking plans in each of PWBA's 15 field office for each of seven 3-month cycles.

percent,⁵ PWBA deems the program a success. This 5-percent "baseline" conversion rate, instead of actual investigation results, is being used as an indicator of success because PWBA wants timely evaluation results and some investigation results are not known for 3 years or longer.

PWBA determined that 324 plans must be investigated to evaluate each program. This number was derived from a formula designed to establish the sample sizes needed to determine whether the difference between two proportions, based on samples from two independent populations, is statistically significant. The number was developed using statistical principles that assume the use of random sampling to project results to the universe being tested and reflects PWBA's desire to be 80-percent confident that it will not reject a successful program or accept an unsuccessful program. When programs identify fewer than 324 plans, PWBA investigates all identified plans.

Under current testing procedures, over 10 years and more than 200,000 staff hours will be needed to test all 96 programs. PWBA has not been able to test all computer targeting programs because its field office resources are limited. In addition to testing computer targeting programs, field offices investigate plans based on complaints, referrals, and other indications of violations. PWBA spent over 37,500 staff hours testing 14 programs in 1991 and 1992. Seven other programs are being tested in 1993.

COMPUTER TARGETING CAN BE IMPROVED

PWBA's computer targeting could be more effective and efficient. PWBA could design program thresholds to better identify plans likely to violate ERISA. By randomly selecting plans for investigation, PWBA could project test results to all plans identified by the targeting programs; current test results cannot be projected. With these changes, PWBA could properly validate its programs. In addition, by using a more appropriate sampling formula, PWBA could test the programs with fewer investigations than currently required. PWBA may also be able to target plans more effectively and efficiently by analyzing computer

⁵A private consultant's report on the fiscal year 1991 test results stated that 5 percent was the estimated conversion rate for investigations resulting from manual review of financial and other plan data, without computer-assisted targeting.

targeting programs in combination with one another, rather than individually.

Properly Validating Programs
by Randomly Sampling Plans

PWBA cannot properly validate its computer targeting programs using current testing procedures. Validation involves determining, with a certain degree of confidence, whether the projected conversion rate for all plans identified by a targeting program exceeds PWBA's 5-percent baseline rate. But the test results cannot be projected to all plans identified by the program because PWBA investigates only the highest-ranked 324 plans identified by each program.

Enforcement officials in PWBA headquarters told us that they want to investigate only the highest-ranking plans because they do not want to use their limited staff investigating other randomly selected plans that they believe are less likely to violate ERISA. However, PWBA has no empirical evidence that the highest-ranking plans are most likely to violate ERISA. Test results only reflect the conversion rate for the highest-ranking plans, which may not be the same as the rate for the other plans identified by the program. To validate a program with statistical confidence, PWBA must randomly select plans from all plans identified by the program.

In addition, PWBA's thresholds are sometimes too restrictive. When PWBA uses a threshold to limit the number of plans identified by a program, some plans that PWBA believes are highly likely to violate ERISA are excluded from the program universe. We believe that the identity of all plans that PWBA believes have a high probability of violating ERISA should be valuable information for PWBA's field offices, although they likely would not be able to investigate all of them because of limited resources.

We believe that PWBA could validate each program with about half as many investigations as required under current procedures by using a more appropriate sampling formula. Instead of a formula appropriate for comparing two proportions, as was used to establish the current sample size, PWBA should use a formula appropriate for establishing the sample size needed to detect a minimum difference between test results and a baseline. The baseline for testing the programs is the 5-percent conversion rate. Using such a formula, PWBA could reduce

its sample size for each program from 324 to 176 or fewer plans.⁶

More Effective Targeting Possible
Using Multivariate Analysis

PWBA may be able to target plans more effectively by using multivariate analysis.⁷ Using this technique, PWBA could analyze combinations of programs to determine how well the combinations as well as the individual programs identify plans with a high probability of violating ERISA.

Multivariate analysis simultaneously assesses several independent variables to determine the relationship between them and a dependent variable. The technique involves developing a mathematical model that can be used to predict the dependent variable when values for the independent variables are known. Reliable information about the dependent and all independent variables is required.

We believe that PWBA could use multivariate analysis to construct a model from the results of computer targeting program investigations. Characteristics (the independent variables) for a plan not yet investigated would then be entered into the model to predict the likelihood of the plan's conversion from a limited to a full investigation (the dependent variable). Plans with the highest probability of conversion would be the best candidates for investigation. Also, because a wider range of values for the characteristics would be considered, PWBA would have more comprehensive data with which to establish thresholds. The model could be refined continually, and programs could be retained or dropped as the results of newly completed investigations are incorporated.

To use multivariate analysis, PWBA's investigations would need to consider all applicable characteristics in deciding whether to convert limited investigations to full investigations. However, our preliminary ERISA enforcement

⁶Assuming an infinite universe, a random sample of 176 plans would be sufficient to test programs and show at an 80-percent confident level that a successful program will not be rejected or an unsuccessful program will be accepted. The sample size would decrease with substantial decreases in the universe size. For example, for a universe of 250 the sample size would be 104.

⁷There are some multivariate analytical techniques, such as logistical analysis, that would be appropriate for PWBA's use.

work indicates that PWBA's field offices do not systematically consider all applicable characteristics during limited investigations. The offices consider only the characteristics used in selecting the plan for investigation and others they incidentally identify during their investigation.

We believe that multivariate analysis may also be a more efficient method of testing programs. While no formulae exist for establishing sample sizes for multivariate analysis models, a reasonable model likely could be developed on the basis of a smaller total number of plans than under the current system where programs are analyzed individually. The total number of plans needed may be reduced because data on all characteristics for every investigated plan would be considered in validating all programs. However, time saved from investigating fewer plans would be at least partly offset by the additional time required to consider all applicable characteristics during limited investigations.

CONCLUSIONS AND RECOMMENDATIONS

PWBA can improve its current procedures for testing the effectiveness of its targeting programs. PWBA investigates the highest-ranking plans to satisfy enforcement goals rather than investigating randomly-selected plans to test its programs. In addition, some thresholds are too restrictive. Because of this, PWBA's current testing methodology will not result in a valid assessment of the effectiveness of the 96 programs. Moreover, the current sampling procedures are inefficient because they require investigating more plans than necessary to test programs.

We recommend that you revise the way PWBA designs and tests computer targeting programs. At a minimum, you should randomly select plans for testing so that results can be projected and programs properly validated. You should establish program thresholds to identify all plans with a high probability of violating ERISA. You should also use an appropriate formula to set the sample size to minimize calendar and staff time spent on testing.

Developing and testing individual targeting programs may not be the most effective and efficient way to target plans. Combining plan characteristics to obtain the total impact of all characteristics on a particular plan's conversion probability--using multivariate analysis--could be a better approach. We recommend that you test the feasibility of using multivariate analysis to target plans for investigation. If data is not readily available on

investigation conversions and all applicable characteristics which is needed to do multivariate analysis, you should begin systematically gathering such data.

I would appreciate your views on these matters and any specific action PWBA plans to take with respect to our recommendations.

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If you or your staff have any questions about the matters discussed in this correspondence, please call me at (202) 512-7215.

Sincerely yours,



Joseph F. Delfico
Director, Income Security Issues

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