

## **EBSA Response to Peer Reviews:**

Response to Peer Reviews of Highly Influential Scientific Assessment That Underlies EBSA's Regulatory Impact Analysis of Its Notice of Proposed Rulemaking Titled "Default Investment Alternatives under Participant Directed Individual Account Plans"

September 12, 2006

### **Introduction**

The "Final Information Quality Bulletin for Peer Review" issued by the Office of Management and Budget on December 16, 2004 ["the Bulletin"] establishes that important scientific information shall be peer reviewed by qualified specialists before it is disseminated by the federal government. Section III of the Bulletin provides particularly strict minimum requirements for the peer review of "highly influential scientific assessments."

EBSA has determined that certain information underlying the regulatory impact analysis ("the RIA") accompanying its Notice of Proposed Rulemaking titled "Default Investment Alternatives under Participant Directed Individual Account Plans" ("the NPRM") constitutes a highly influential scientific assessment under the Bulletin.<sup>1</sup> Therefore EBSA arranged for the peer review of that assessment, and subsequently received peer review reports critiquing the quality of the subject information.

This document describes the peer review arrangement, and summarizes and responds to the reviewers' critiques.<sup>2</sup> Pursuant to provisions of the Bulletin, concurrent with publication of the NPRM this document is published on EBSA's public website together with the peer review reports and other material related to the peer review. It may be best understood if read in conjunction with the NPRM and other material.

### **Peer Review Arrangement**

EBSA's decision to pursue this rule making initiative is based in major part on its belief that the proposed rule contained in the NPRM will advance its ongoing effort to promote retirement security. This belief is supported by the RIA, which concludes that the proposed rule on net will significantly increase

---

<sup>1</sup> Under the Bulletin, a "scientific assessment" is a body of scientific or technical knowledge, which typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information. A scientific assessment is considered "highly influential" if a regulation based on its dissemination could result in costs or benefits of \$500 million or more in any one year.

<sup>2</sup> An abbreviated summary appears together with the related regulatory impact analysis in the preamble to the NPRM.

participant contributions to 401(k) plans and, in the long term, 401(k) account balances, the proportion of those balances invested in equities, and retirement income. These and other impacts are estimated to exceed \$500 million annually. EBSA estimated the impacts using a micro simulation model known as PENSIM, parameterized specially for this purpose based on industry surveys of trends in the adoption of 401(k) automatic enrollment programs and recent economic literature exploring the effects of automatic enrollment programs on participant contributions. Collectively the PENSIM model, the data and methods underlying it, the surveys and literature used to parameterize it, and EBSA's interpretation of these and application of them to produce the estimates presented in the RIA, constitute a scientific assessment under the Bulletin. The scientific assessment is highly influential under the Bulletin insofar as it provides a major basis for the rule making initiative embodied in the NPRM. Consequently pursuant to Section III of the Bulletin EBSA arranged for peer review of the assessment in advance of its dissemination in connection with the promulgation of the NPRM.

EBSA enlisted three reviewers: David I. Laibson of Harvard University, Nellie Liang of the U.S. Federal Reserve Board of Governors, and John P. Rust of the University of Maryland. The reviewers together possess considerable experience and expertise in relevant areas including modeling of retirement program reforms, contribution elections of workers eligible for 401(k) plans under both traditional and automatic enrollment arrangements, and financial issues related to participant directed defined contribution plans. (Additional information on each reviewer's qualifications is available on the website of the organization with which each is affiliated.) EBSA provided each reviewer with a "charge" containing instructions for review pursuant to the Bulletin, a draft of the NPRM including a draft RIA, general technical documentation of PENSIM<sup>3</sup> and specific documentation of PENSIM's parameterization and application in support of the RIA,<sup>4</sup> and detailed tables of related PENSIM simulation results.<sup>5</sup> Each reviewer separately reviewed the assessment embodied in these materials and subsequently submitted to EBSA a peer review report. All of the aforementioned materials are published herewith.

---

<sup>3</sup> Martin R. Holmer, Asa Janney and Bob Cohen, "PENSIM Overview," available at [www.polsim.com](http://www.polsim.com).

<sup>4</sup> Martin R. Holmer, "PENSIM Analysis of Impact of Regulation on Defined Contribution Default Investments."

<sup>5</sup> "EBSA Automatic Enrollment Study: Final Results." Excerpts from these tables appear in the RIA.

## Reviewer Critiques and EBSA Response

The reviewers differ as to the overall merit of the scientific assessment. One review is highly favorable, praising the analysis as “first-rate” and expressing a “high degree of confidence” in it, while raising few technical questions. Another is mixed, questioning numerous specific modeling assumptions, identifying overlooked potential indirect effects, and noting that welfare effects (as distinguished from dollar impacts on retirement saving), which EBSA did not estimate, may be negative in light of risk aversion. The third review is highly critical. It questions EBSA’s premise that increasing retirement savings is beneficial. It dismisses PENSIM’s reduced form modeling approach as lacking the structural, behavioral foundation necessary to predict results and evaluate welfare effects, and disparages EBSA’s application of surveys and literature to parameterize PENSIM as “poorly supported and undocumented behavioral assumptions.” The review finds the PENSIM estimates “unconvincing” and concludes that EBSA has failed to provide a scientific rationale for the policy initiative contained in the NPRM.

Together the reviews illuminate several uncertainties and gaps in the scientific assessment underlying the RIA, as well as in the RIA itself.<sup>6</sup> In light of the reviews, this document qualifies and tempers some of the conclusions drawn in its RIA. It answers, to the extent possible, major questions raised in the reviews, and offers a tentative, prioritized plan for conducting sensitivity tests and otherwise refining its assessment and RIA in connection with a possible final rulemaking. However, EBSA stands by the primary conclusions of its RIA – that the proposed rule on net will increase retirement savings and that its benefits will exceed its costs – and this document explains EBSA’s reasons for standing by these conclusions.

The NPRM invites public comments on the RIA and the assessment, which may provide additional illumination. EBSA will incorporate insights from any public comments along with those from the reviews in preparing a RIA for a possible final rule.

The remainder of this document is organized as follows. First, it addresses reviewers’ concern that EBSA has considered financial but not welfare effects. Next it considers EBSA’s reliance on a reduced form model rather than a structural model to assess the proposed rule’s potential impacts. Finally it discusses the specific model parameters and assumptions that the reviews question.

---

<sup>6</sup> The Bulletin’s peer review requirement and EBSA’s charge to the reviewers extend only to the scientific assessment and not to the RIA itself. Nonetheless the reviews raised some questions on the RIA, and this document provides some response to these as well.

## **Welfare Effects**

A policy's financial effects are not the same as its welfare effects. Financial effects can be thought of as objectively measurable changes in the level or distribution of resources in the economy. Welfare effects in contrast are subjectively experienced changes in the well being of consumers in the economy. A number of reviewer comments relate to the welfare effects of the proposed rule, and concerns that these effects, which EBSA did not estimate, may be negative, or at least less positive on net than EBSA believes. Policies that increase net retirement income by boosting saving or promoting equity investment may reduce welfare if consumers prefer current over future consumption or are averse to investment risk.

## **Savings Adequacy**

One peer reviewer questioned EBSA's premise expressed in the NPRM that many American workers are saving too little for retirement, saying EBSA's claim that this premise is well established is false. The reviewer cites ample economic literature that largely refutes this premise. If Americans are saving optimally, and the proposed rule increases their saving, it will reduce their welfare.

On reflection EBSA believes that its premise was poorly stated in the NPRM. A better statement of the premise can be drawn from the most recent Economic Report of the President. The report addresses what it calls mounting concern that Americans have been preparing inadequately for retirement. In fact, most workers are on track to have more retirement wealth than most current retirees, and recent declines in reported savings rates may not be cause for alarm in light of offsetting capital gains, the report says. Nonetheless, the report identifies risks that savings may fall short relative to workers' retirement income expectations, especially in light of increasing health costs and stresses on defined benefit pension plans and the Social Security program.<sup>7</sup> Because of these real risks, EBSA believes that policies that increase retirement savings can increase welfare by helping workers secure retirement living standards that meet their expectations.<sup>8</sup>

In the context of this NPRM, is this belief consistent with economic theory and literature? The savings increase predicted to result from the proposed rule stems from wider adoption of automatic enrollment programs. Workers for whom increased savings would reduce welfare can opt out of automatic enrollment and thereby preserve their welfare. The workers primarily affected

---

<sup>7</sup> U.S. Council of Economic Advisors, *Economic Report of the President*, February 2006 (Washington DC: U.S. Government Printing Office, 2006).

<sup>8</sup> EBSA will more carefully state and fully qualify its premise in the RIA of any final rule.

by the proposed rule are those who behave passively: under traditional enrollment they do not contribute to a 401(k) plan, but under automatic enrollment they do. The RIA cites economic literature documenting such passive behavior. The reviewer believes that a life cycle model could be extended to explain such passive behavior in terms of transaction and information costs associated with 401(k) plans, but knows of no existing effort to do this. EBSA believes that the existing literature preserves the possibility that such passive increases in savings may increase welfare, but that it offers no firm basis on which to quantify such welfare effects.

Finally, EBSA directs attention to the RIA's discussion of costs and benefits, which notes that "increases in retirement savings ... will be offset either by decreases in current consumption or reductions in other savings, so net benefits will be smaller than the predicted increases in retirement savings."

The reviewer also noted that increased savings may yield benefits separate from direct welfare effects on the savers, such as by increasing the U.S. capital stock or stock prices. Again EBSA directs attention to the RIA which notes that "an increase in retirement saving is likely to promote investment and long term economic productivity and growth."

### **Risk Aversion**

One reviewer pointed out that increased equity exposure, while increasing expected returns, may nonetheless reduce welfare for risk-averse participants. Lower income individuals may be more risk averse with respect to their retirement savings and therefore may be disproportionately subject to welfare losses from equity exposure.

EBSA agrees with this point, but offers two mitigating observations. First, the increase in equity exposure predicted to result from the proposed rule stems from an expected shift toward equity in default investments under participant directed plans. The proposed rule requires that prospective participants be notified about the default investment and that they have the opportunity to choose a low-risk investment. Risk-averse participants can opt out of default investments to avoid equity exposure. As with the expected increase in saving, the shift toward equity will derive from passive behavior, and such passive behavior complicates the analysis of welfare effects while leaving open the possibility that those effects will be positive. Second, estimates presented in the RIA suggest that at all income levels retirement income gains attributable to the shift toward equity will be larger and more numerous than losses.

EBSA will consider these issues in the RIA of any final rule. In particular, EBSA will expand its examination of the risk of losses to lower-income individuals.

## ***Modeling Approach***

PENSIM is a reduced form model and not a structural model. This generally means that it is grounded in previously observed statistical relationships between individuals' characteristics, circumstances and behaviors, rather than on any underlying theory of the determinants of behaviors, such as the common economic theory that individuals make rational choices as their preferences dictate and thereby maximize their own welfare. One reviewer characterized PENSIM's approach as mere "accounting" that fails to characterize the underlying individual decision process and, therefore, that lacks predictive power.

EBSA agrees that PENSIM, as a reduced form model, has many limitations. By itself, it offers no direct insight into welfare effects, estimating changes in individuals' incomes but not in their well-being. Its predictive power generally is limited by the range and accuracy of the statistical relationships on which it is built. It necessarily relies on exogenous assumptions regarding many relationships that it cannot predict, such as the impact of automatic enrollment programs in eligible individuals' probabilities of 401(k) plan participation. In contrast, a fully and well specified structural model might more truly simulate and therefore better predict individuals' behaviors, in circumstances both familiar and novel. And a structural model, being grounded in welfare motives, can directly represent welfare effects.

Why then did EBSA rely on a reduced form model? To EBSA's knowledge no suitable structural model is available. And the potential advantages of a structural model might be difficult to realize in practice. The levels of effort and complexity associated with building and executing such a model generally are much greater than those associated with a reduced form model such as PENSIM. It is unlikely that available resources could produce a structural model that would better predict financial outcomes and accurately reflect associated welfare effects. In the foreseeable future a reduced form model such as PENSIM is likely to be the best forecasting tool available to EBSA for purposes such as the RIA.

In relying on PENSIM, it is incumbent on EBSA to attend closely and transparently to its limitations and to their implications for the RIA and for EBSA's development of regulatory policy. As the reviewer points out, PENSIM's limitations render highly uncertain its predictions of the effect of automatic enrollment on retirement incomes.

PENSIM generally models automatic enrollees' behavior based on past observed behavior of otherwise similar enrollees who actively opted into participation in such plans. As applied in the RIA, PENSIM also assumes that under the proposed rule more plans would adopt automatic enrollment and all plans would shift default investments more toward equity, but that plans

otherwise would not change. As the reviewer explains, PENSIM thus “fails to account for a number of different behavioral responses by individual workers and by employers that could largely undo or mitigate the forecasted impacts.” Two reviewers devote particular attention to the possibility that automatically enrolled workers will cash out their accounts when leaving their jobs. One also questions whether shifting default investments toward life-cycle funds might prompt participants to remain in default status longer, deferring active decisions.

EBSA agrees that PENSIM’s ability to predict behavioral responses is limited. For example, PENSIM captures both the tendency for accounts attributable to automatic enrollment to be small and the tendency for smaller accounts to be cashed out, but it does not address the possibility that small accounts attributable to automatic enrollment will be cashed out more frequently than those attributable to active enrollment. Nor does it address the possibility that employers adopting automatic enrollment will make other potentially offsetting changes to their plans.

EBSA has considered these possibilities, however, and directs attention to the RIA’s discussion of “additional possible consequences,” which expressly invites public comments on these and related issues. Such comments may help EBSA better interpret and if possible refine PENSIM’s predictions in connection with the RIA of any final rule.

EBSA also notes that the potential for offsetting behavioral responses may be muted because the proposed rule imposes no mandates but merely provides a voluntary safe harbor for default investments. Use of the safe harbor and adoption of automatic enrollment programs are voluntary for employers. Likewise, participation in 401(k) plans is voluntary for eligible workers whether enrollment is automatic or not. The PENSIM estimates make allowance for the proposed rule’s voluntary character. For example, EBSA’s estimates assume that the proportion of plans providing for automatic enrollment will grow from 25 percent to either 35 percent or 45 percent, while the remaining 65 percent or 55 percent of plans will not adopt automatic enrollment. The estimates further assume that under automatic enrollment 10 percent of eligible workers will opt out of participation. Thus, while PENSIM’s predictions generally do not account for behaviors that could “undo” the proposed rule’s effects, they do reflect the expectation that many employers and workers will not change behavior because of the proposed rule, and in that sense account for a passive behavioral response.

Notwithstanding PENSIM’s limitations and the associated uncertainty in its predictions, EBSA believes that its predictions are the best available and that they provide a reasonable and appropriate reference point for assessing the likely effects of the proposed rule.

## ***Specific Assumptions***

All three reviewers questioned some of the specific assumptions relied on in developing the PENSIM estimates. These include assumptions regarding equity and bond returns, plan sponsors' adoption of automatic enrollment programs, participation rates under automatic enrollment, and automatically enrolled workers' long term savings decisions including especially the decision to retain or cash out 401(k) accounts upon job change. All of these questioned assumptions are grounded in the best evidence of which EBSA is currently aware, but EBSA agrees that all are uncertain and that some might warrant refinement and/or be appropriate subjects for sensitivity testing in connection with the RIA of any final rule.

## **Rates of Return**

The reviews raised a number of questions about the rates of return underlying the PENSIM estimates. The underlying inflation and bond rates are fixed at historical means, while equity returns are stochastic and serially independent, reflecting their historical mean and dispersion.<sup>9</sup> Returns are not adjusted to account for investment fees and expenses. According to the reviews, holding inflation and bond rates fixed neglects risks associated with bond investing and mischaracterizes the additional risk associated with equities; actual equity returns may be serially correlated and correlated with inflation and bond returns; future equity premiums may be smaller than assumed; and fees may make results less favorable than assumed.

Together these reviewer comments underscore the importance of caution in interpreting the PENSIM estimates of the proposed rule's effects. Variations in bond and inflation rates entail risk – and variation in retirement income outcomes – not captured in the estimates. Any serial or cross correlation in financial variables could change outcomes in either direction; serial correlation in particular might impact outcomes differently for different cohorts. Perhaps most concerning, if stock returns net of fees are less favorable than the returns assumed in EBSA's PENSIM estimates, retirement income gains may be less numerous and smaller than estimated, and losses may be more numerous and larger.

In applying PENSIM to estimate the impact of the proposed rule, EBSA sought to examine most closely those variables that the rule is intended and expected to influence most directly and strongly. The rule is expected to promote equity investments and thereby to increase default investors' average investment return while exposing them to more risk. EBSA set out to examine

---

<sup>9</sup> The assumptions and their bases are detailed in Martin R. Holmer, "PENSIM Analysis of Impact of Regulation on Defined Contribution Default Investments."



closely both of these effects by building them into the PENSIM estimates. EBSA will refine this effort in connection with the RIA of any final rule, at a minimum by performing sensitivity tests that account for the possibility of a smaller equity premium and the existence of fees. EBSA will also give further consideration to the advisability and feasibility of building into its estimates variation in inflation and bond rates and serial and cross correlation in financial variables.

Many 401(k) plans direct matching contributions into the stock of the sponsoring company. The reviews question the volatility of company stock returns reflected in the PENSIM estimates. The PENSIM estimates reflect a standard deviation of 35%, which EBSA believes is within the range suggested by the reviews.

### **Adoption of Automatic Enrollment**

EBSA expects a major impact of the proposed rule to be an increase in the adoption of automatic enrollment programs by 401(k) plan sponsors. As explained in the RIA, based on available surveys EBSA assumes that the proportion of 401(k) eligible workers whose plans include such programs will be 25 percent under current law, but will increase to between 35 percent and 45 percent under the proposed rule. The reviews question these assumptions, and raise the possibility that under the proposed rule the proportion could grow to 67 percent.

EBSA agrees that the future penetration of automatic enrollment programs is highly uncertain, and believes the reviews reinforce its decision to consider both low- and high-impact possibilities. EBSA observes that changing these assumptions would alter the magnitude, but not the direction, of the proposed rule's estimated effects. That is, holding other assumptions constant, an increase in the penetration of automatic enrollment programs yields a net increase in estimated retirement savings. In conducting the RIA of any final rule, EBSA will reconsider its assumptions in light of the reviews, any newly available relevant surveys, and any relevant public comments on the NPRM.

### **Participation Rates**

The PENSIM estimates assume that 90 percent of eligible workers will participate in plans that maintain automatic enrollment programs. The reviews question this assumption, pointing out that it is based on case studies of the experience of a few companies over a limited period. EBSA will consider the advisability of conducting sensitivity tests of this assumption in connection with the RIA of any final rule. However, EBSA believes that the general principle that automatic enrollment produces substantially higher participation is adequately supported by the case studies. EBSA's general prediction of a substantial increase in retirement saving is therefore likely to be robust to this question.

The reviews also raised questions about the characteristics of participants newly enrolled because of wider adoption of automatic enrollment programs. The PENSIM estimates draw such new participants randomly from affected eligible non-participants, who as a group relative to active participants are younger and lower paid. In the RIA of any final rule EBSA will provide summary estimates of such participant characteristics.

### **Savings Behavior**

The reviews question whether the PENSIM estimates adequately represent the potential effects of the proposed rule on savings behavior. Specific questions raised include the degree to which any new 401(k) contributions might be cashed out upon separation from employment.<sup>10</sup>

EBSA did not attempt to estimate such potential indirect impacts on savings behavior, and is not aware of any available basis for such estimates. The RIA invites public comment on the potential for such indirect effects, and EBSA will consider such comments in formulating the RIA of any final rule. At the same time, EBSA plans to refine where possible PENSIM's representation of individuals' propensity to cash out 401(k) accounts upon separation from employment. PENSIM currently reflects the higher propensity associated with accounts of less than about \$11,000 relative to larger accounts. One refinement under consideration would separately account for the presumably even higher propensity associated with smaller accounts, such as those of less than \$5,000 or \$1,000. Additional refinements will be considered when feasible.

The reviews also question the PENSIM estimates' assumption that participants sell company stock at age 55, citing empirical evidence to the contrary. EBSA agrees and will relax this assumption in connection with the RIA of any final rule. This issue generally is not proximate to the proposed rule's primary effects, and EBSA therefore does not expect this refinement to have a large impact on the RIA's conclusions.

---

<sup>10</sup> This question arose (and was addressed) above in connection with more general reviewer concerns over the modeling approach, but merits additional consideration here as a specific exogenous assumption relied on in generating the PENSIM estimates.