JOINT PENSION RISK RESEARCH PROJECT

PENSION RISK MANAGEMENT:

DERIVATIVES, FIDUCIARY DUTY AND PROCESS

BY

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Risk is on everyone's mind these days. Volatile markets and rapidly changing demographics exacerbate already large funding gaps for some defined benefit plans, motivating pension fiduciaries to look for potential higher returns in the form of complex securities, derivatives and portable alpha strategies. As famed economist Milton Friedman said, there is no free lunch. Greater risk accompanies higher returns. In assessing financial uncertainty, pension decision-makers will likely want to make sure that the due diligence of external managers - especially those who employ leverage inducing strategies - includes a rigorous assessment of traders' risk management policies and procedures.

On the accounting front, newly proposed asset disclosure rules, if approved, are slated to force change by requiring pension plans to categorize investment risks.[1] Valuation rules such as FAS 157 are likewise causing change by forcing recognition as to how economic interests are marked to market or marked to model. Headlines about billion dollar losses in the financial sector are a reminder that effective risk management is a fundamental determinant of the economic viability of any organization. For plan sponsors, poor process may result in a host of problems such as those relating to liquidity, funding status and/or regulatory compliance. Low interest rates and recessionary pressures pose additional challenges, often leaving employers little room to maneuver. Participants, shareholders and taxpayers are potentially exposed to significant losses if the identification, measurement and management of pension risk fall short of best practices.

Recognizing that meaningful change, as needed, cannot occur without knowledge of the status quo, the objectives of this research are threefold – (a) understand why and how plan sponsors employ derivative instruments, if at all (b) identify what plan sponsors are doing to address investment risk in the context of fiduciary responsibilities and (c) assess

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[1] See "FASB Seeks the Full Monty on Pension Plan Assets" by Marie Leone, CFO.com, February 14, 2008 and "One Step Forward on Pension Disclosures" by Marie Leone, CFO.com, July 16, 2008.

if and how plan sponsors vet the way in which their external money managers handle investment risk, including the valuation of instruments which do not trade in a ready market. A total of 162 retirement plan decision-makers in the United States and Canada represent survey-takers. Each individual was asked to self-identify as belonging to one of two categories – (a) plans that trade derivatives directly (USERS) and (b) plans that do not trade derivatives directly (NON-USERS). A NON-USER may nevertheless be exposed to derivatives indirectly if any of its external money managers use derivatives.

In answering broad questions, a majority of surveyed plan sponsors describe themselves as doing all the right things to manage investment, fiduciary and liability risks. However, answers to subsequent questions – those that query further about risk procedures and policies at a detailed level - do not support the notion that pension risk management is being addressed on a comprehensive basis by all plans represented in the survey sample.

Key findings include the following points:

- Plan size seems to be one factor that distinguishes USERS from NON-USERS, with 39% of USERS managing plans in excess of $5 billion versus 14% of NON-USERS associated with plans larger than $5 billion.
- Pension decision-making appears to vary considerably by job function, with 48% (37%) of USERS (NON-USERS) choosing "Other" rather than selecting from given titles such as Actuary, Benefits Committee Member, CFO or Human Resources Officer.
- Time allocation varies considerably with 64% (40%) of USERS (NON-USERS) saying they devote 75 to 100 percent of their work week on pension issues. In contrast, 37% of NON-USERS say they spend 0 to 24% of their work week on pension issues.
- A majority of USERS (64%) and NON-USERS (48%) have had discussions about the concept of a fiduciary duty to hedge asset-related risks. A smaller number say they have discussed the concept of a fiduciary duty to hedge liability-related risks.
- Few plans currently embrace an enterprise risk management approach with 59% (57%) of USERS (NON-USERS) responding that their organization does not use

a risk budget. When asked if their organization has or is planning to hire a Chief Risk Officer, 57% (64%) of USERS (NON-USERS) answered “No.” For those organizations with a Chief Risk Officer, 62% (43%) of USERS (NON-USERS) state that defined benefit plan duties are handled by someone else.

- Defined benefit plan design does not appear to be a looming priority with 68% (58%) of USERS (NON-USERS) answering “No” when asked if changes are imminent.
- NON-USERS cite numerous reasons for not using derivatives directly, including, but not limited to, “Lack of Fiduciary Understanding” (25%), “Perception of Excess Risk” (31%), “Considered Too Complex” (23%), “Prohibition Against Possible Leverage” (19%) and/or “Defined Benefit Plan Risk Not Considered Significant” (28%).
- A query about whether survey-takers review external money managers’ risk management policies results in 70% (58%) of USERS (NON-USERS) responding “Yes.” Fifty-two percent (57%) of USERS (NON-USERS) say they review external money managers’ valuation policies.
- Sixty-eight percent (61%) of USERS (NON-USERS) include questions about the use of derivatives and risk management as part of the Request for Proposal (“RFP”) process. This survey does not address what kinds of questions are asked.
- Survey respondents seem to rely mainly on elementary tools to measure risk. Eighty-three percent (64%) of USERS (NON-USERS) rank Standard Deviation first in importance. Seventy-nine percent (63%) of USERS (NON-USERS) rank Correlation second. Only one-third (38%) of NON-USERS cite Stress Testing (Simulation). Four out of 10 USERS cite Value at Risk in contrast to 23% of NON-USERS who do the same.
- Survey respondents worry about the future with 58% (60%) of USERS (NON-USERS) ranking “Accounting Impact” as a concern. Other concerns were also noted to include “Regulation,” “Longevity of Plan Participants” and “Fiduciary Pressure.”

BACKGROUND AND METHODOLOGY

In 2007, the Society of Actuaries engaged Pension Governance, LLC to conduct a survey about attitudes towards pension risk management, particularly the extent to which plan sponsors rely on derivative instruments to manage risk and/or enhance return. A global derivatives market in excess of $600 trillion is hard to ignore yet most are unaware of how plan sponsors employ futures, options and swaps, if at all.[2] Statutory reports about pension economics are often no longer relevant by the time they are released to the general public. Allowing that derivative instruments can help or hinder, the impact of a poor pension risk management strategy is potentially devastating and might lead to financial ruin for employees who assume that financial managers make sound decisions on their behalf.

This study goes beyond earlier research by addressing major topics that logically and legally tie together - (a) fiduciary awareness of pension risk considerations (b) the presence of an enterprise-wide risk culture (c) reliance on external asset managers and their risk management policies and (d) explicit use of derivatives by plan sponsors.[3] All survey questions are presented in an appendix.

This research analyzes responses of 162 senior retirement plan decision-makers, each of whom was asked to self-identify as a USER if they trade derivatives in the name of their plan or as a NON-USER, if they do not. As shown in Figure 1, NON-USERS may nevertheless be exposed to derivative instruments if their external money managers use futures, options or swaps.[4] Notable is the fact that responding plan sponsors self-identify

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[2] See http://www.bis.org/statistics/derstats.htm.

[3] For an earlier study about the use of derivatives by institutional investors, see Levich, Richard M., Gregory S. Hayt and Beth A. Ripston, "1998 Survey of Derivatives and Risk Management Practices by U.S. Institutional Investors," FIN Working Paper No. 99-074, October 1999, http://ssrn.com/abstract=204388.

[4] The taxonomy of the derivative instrument product family is open to debate. Many experts categorize futures, options and swaps as primary building blocks. There is an

as NON-USERS more often, with 118 persons disclaiming direct use of derivatives versus 44 persons who claim USER status.[5]

This first part of the survey addresses general characteristics about respondents, including plan design, geographic location, job title, hours spent on pension plan tasks and assets under management.

FIGURE 1: RESPONDENT CATEGORIES

Characteristics	Category	
	USER	NON-USER
Use of Derivatives	Uses Derivatives Directly; May Have External Money Managers Who Use Derivatives	Does Not Use Derivatives Directly; May Have External Money Managers Who Use Derivatives
Number of Questions	37	28

QUESTION 1 (USER AND NON-USER):

WHAT TYPE OF PLANS DO YOU REPRESENT? CHECK ALL THAT APPLY.

Some 60% of NON-USERS say they represent either or both defined benefit and 401(k) plans. Approximately one-third of USERS manage at least one ERISA benefit scheme. Few survey participants self-identify as representing multi-employer arrangements such

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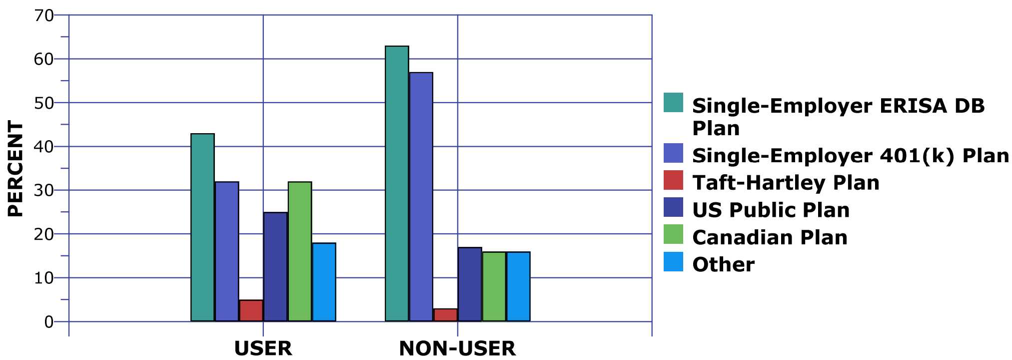
endless variety of hybrid products and strategy combinations, bounded only by the imagination of financial engineers.

[5] Regarding sample size, the author and advisors decided on a final question count that sought to balance sufficient granularity in results with an individual's willingness to complete a long survey.

as Taft-Hartley plans. Fewer than half a dozen respondents self-describe as representing only a defined contribution plan. See Figure 2.[6]

FIGURE 2: TYPES OF PLANS REPRESENTED



	USER	NON-USER
Single-Employer ERISA DB Plan	43	63
Single-Employer 401(k) Plan	32	57
Taft-Hartley Plan	5	3
US Public Plan	25	17
Canadian Plan	32	16
Other	18	16

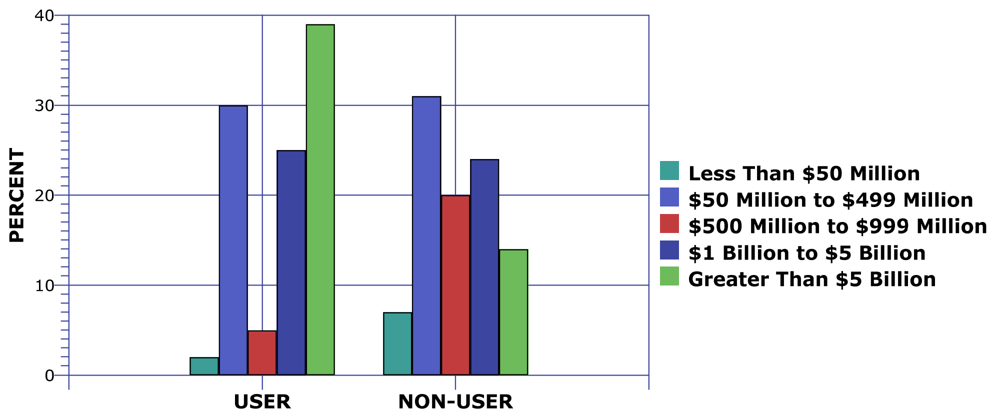
QUESTION 2 (USER AND NON-USER):

WHAT IS YOUR SIZE CATEGORY IN TERMS OF DEFINED BENEFIT PLAN ASSETS? IF YOUR ORGANIZATION HAS MORE THAN ONE DEFINED BENEFIT PLAN, PLEASE ANSWER IN TERMS OF TOTAL ASSETS (USD EQUIVALENT).

Survey results suggest that size in terms of assets under management is an influencing factor with respect to investing and risk control activities. Nearly 40 percent of USERS work with defined benefit plans larger than $5 billion. As shown in Figure 3, this is almost thrice the number of jumbo plans represented by NON-USERS. Additionally, 20% of NON-USERS fall in the $500 to $999 million category versus only 5% of USERS who identify themselves as medium size funds.

[6] A respondent was asked to check all plan type categories that apply. Therefore, percentages may add up to more than 100%.

FIGURE 3: ASSETS OF DEFINED BENEFIT PLANS



	USER	NON-USER
Less Than $50 Million	2	7
$50 Million to $499 Million	30	31
$500 Million to $999 Million	5	20
$1 Billion to $5 Billion	25	24
Greater Than $5 Billion	39	14

QUESTION 3 (USER AND NON-USER):

WHAT IS THE PRIMARY GEOGRAPHIC LOCATION OF YOUR ORGANIZATION?

Geography is a difficult factor to interpret in isolation. Laws vary by country and state. The observation that 36% of USERS hail from Canada, scaled by their proportional survey participation, may be explained by the prevailing regulatory environment. For further insight into this trend, consider the impact of UK and Continental Europe rules on pension risk behavior.[7] Ideally, pension stewards make appropriate risk management decisions for economic reasons, and not because of mandates or financial reporting rules. See Figures 4A and 4B for a breakdown of plans by geographic sector.

[7] See "More pension funds seek derivatives" by Natsuko Waki, *Reuters*, April 17, 2008.

FIGURE 4A: GEOGRAPHIC BREAKDOWN FOR USERS

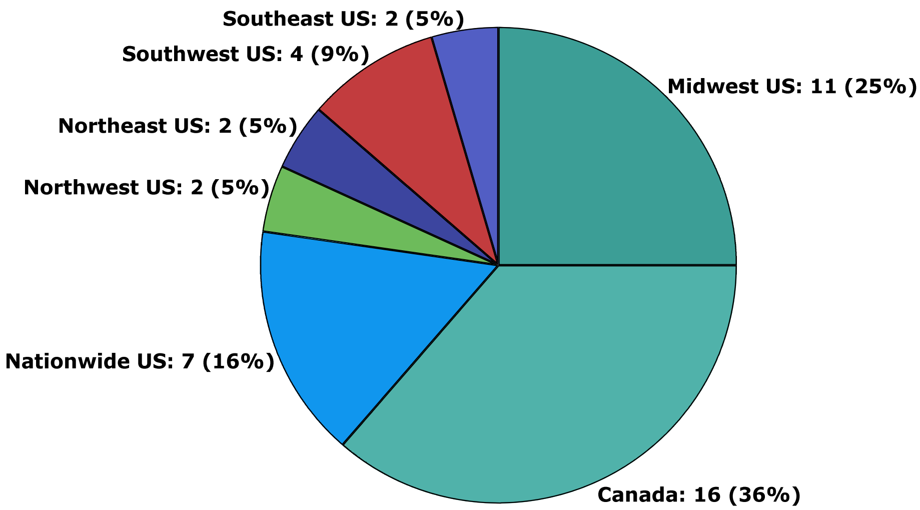
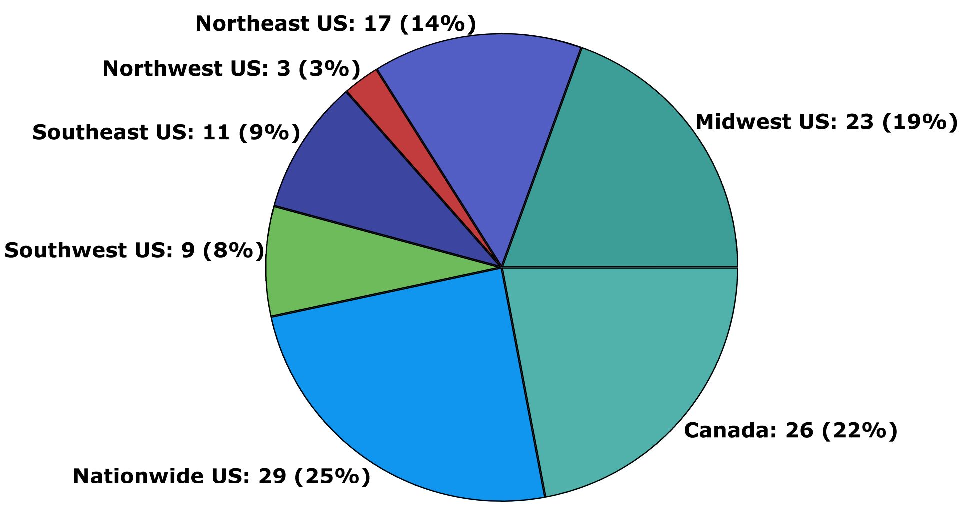


FIGURE 4B: GEOGRAPHIC BREAKDOWN FOR NON-USERS

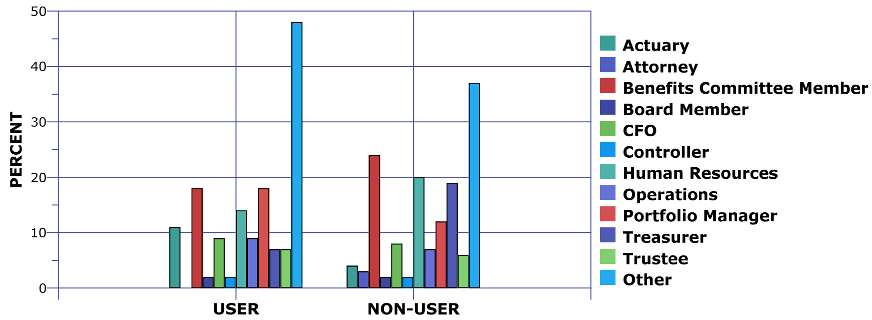


QUESTION 4 (USER AND NON-USER): WHAT ARE YOUR PRIMARY JOB FUNCTIONS? CHECK ALL THAT APPLY. Respondents' job functions vary, with 48% (37%) of USERS (NON-USERS) answering "Other" instead of selecting from the given choices such as "Actuary," "Benefits Committee Member" or "CFO." Write-in answers include "Chief Investment Officer," "Finance Director," "Executive Director" or "Risk Manager." While job function does not necessarily map to job title, the diversity of organizational ownership for pension duties is far from trivial. It goes to the heart of how much authority any one individual may have to effect change, including the improvement of risk management policies and practices.

Recognizing that retirement plan design and asset-liability management each impact the bottom line in a number of ways, a core question about optimum staff size (and breadth), needed to properly manage the fiduciary process and related risks, remains unanswered. Other questions not addressed by this survey abound. Who is best equipped to oversee retirement plan financial management – Human Resources, Treasury, Board of Directors, Other? Must organizational rewards change to motivate improved pension risk management practices? Is the pension risk function purely a finance function, a strategic staffing function or a cross-departmental necessity?[8] Refer to Figure 5 for details.

[8] See "Do Fiduciaries Need Better Incentives to Make the Retirement System Work?" by Susan Mangiero and Wayne Miller (*Executive Decision*, January-February 2006) for a discussion of conflicts of interest and organizational structure.

FIGURE 5: PRIMARY JOB FUNCTIONS

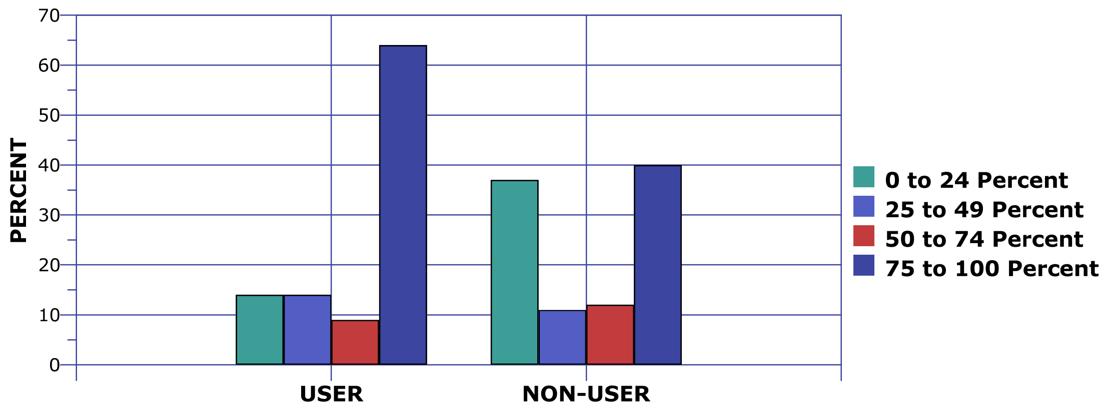


	USER	NON-USER
Actuary	11	4
Attorney	0	3
Benefits Committee Member	18	24
Board Member	2	2
CFO	9	8
Controller	2	2
Human Resources	14	20
Operations	9	7
Portfolio Manager	18	12
Treasurer	7	19
Trustee	7	6
Other	48	37

QUESTION 5 (USER AND NON-USER): WHAT PERCENT OF YOUR TYPICAL WORK WEEK IS TAKEN UP WITH PENSION ISSUES? As shown in Figure 6, the majority of USERS (64%) report that pension plan duties take up 75 to 100 percent of their time. NON-USERS' responses are more evenly spread, with 40% citing pension duties as consuming 75 to 100 percent of their time, versus 37% for whom plan-related work consumes less than a quarter of a typical work week.

Comparing job descriptions, titles and time spent on retirement plan investment issues is a worthwhile extension of this research. In the absence of guidelines that spell out fiduciary education and experience requirements (even at minimal levels), a study of industry practices as to the hiring, monitoring and termination of pension decision-makers would be beneficial.

FIGURE 6: TYPICAL WORK WEEK ALLOCATION TO PENSION ISSUES



	USER	NON-USER
0 to 24 Percent	14	37
25 to 49 Percent	14	11
50 to 74 Percent	9	12
75 to 100 Percent	64	40

FIDUCIARY LIABILITY

Questions in this section of the survey seek to assess whether, and to what extent, fiduciaries connect the financial process with personal or professional liability. In 2004, the U.S. Department of Labor created “Getting It Right” after audit results exposed failures of some functional fiduciaries to properly acknowledge their legal obligations.[9] While no “one size fits all” approach to financial risk management exists that contemporaneously mitigates fiduciary liability, the need to demonstrate awareness is hard to dispute. A flurry of pension lawsuits, many of which allege fiduciary breach, provides insight into the way judges think about elements of oversight such as prudence, suitability, loyalty and care.[10, 11]

[9] See http://www.dol.gov/ebsa/fiduciaryeducation.html.

[10] See www.pensionlitigationdata.com.

[11] Most people agree that awareness of fiduciary obligations is a necessary but not sufficient condition to properly discharging duties. Plan sponsors are encouraged to seek legal counsel for an explanation of their duties.

QUESTION 6 (USER AND NON-USER): DO YOU THINK THERE SHOULD BE MORE REGULATORY GUIDANCE WITH RESPECT TO THE TOPIC OF PENSION RISK MANAGEMENT AND FIDUCIARY RESPONSIBILITIES? As shown in Figure 7, USERS and NON-USERS split on this question, with 48% (41%) of USERS (NON-USERS) answering "No" to more rules. In the aftermath of significant and recent legislation in the U.S. and Canada, it may surprise readers to learn that 39% (31%) of USERS (NON-USERS) answer affirmatively to this question. Does this suggest that existing standards are considered ineffective or unclear? While few USERS were on the fence about regulation (14% of them answered "Not Sure" or "Other"), nearly one-third of NON-USERS remain undecided about whether there should be more rules and regulations.

The debate about more regulation is highly topical. Heavy media coverage about questionable risk controls at some organizations, and related economic losses, open the door to a more activist government role, around the world. At the time this report is being issued, U.S. accounting standard-setters are deciding whether to require pension plans to measure and disclose copious amounts of information about their investment risk.[12] Adding to the fast-changing financial regulatory environment, an acute credit crisis is precipitating a coordinated global attempt to quell fears about market instability.[13] It is still too early to know whether additional regulation of plan sponsors will occur as a result.

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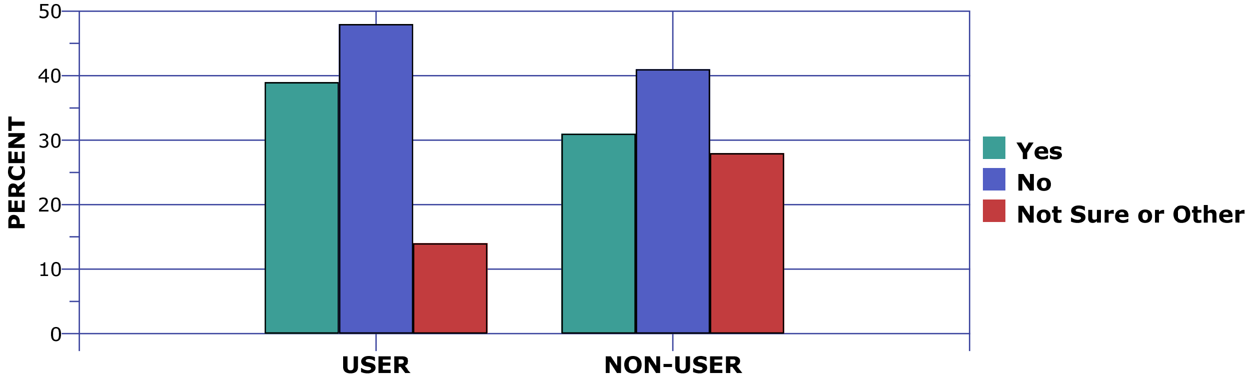
[12] See Financial Accounting Standards Board, "FASB Issues Proposed FASB Staff Position (FSP) No. 132(R)-a, *Employers' Disclosures about Postretirement Benefit Plan Assets*," March 19, 2008 - http://fasb.org/news/nr031908fspfas132r-a.shtml.

[13] See "G7 urged to take joint action to avoid collapse of financial system" by Larry Elliot, Heather Stewart and Andrew Clark, *Guardian.co.uk*, October 10, 2008.

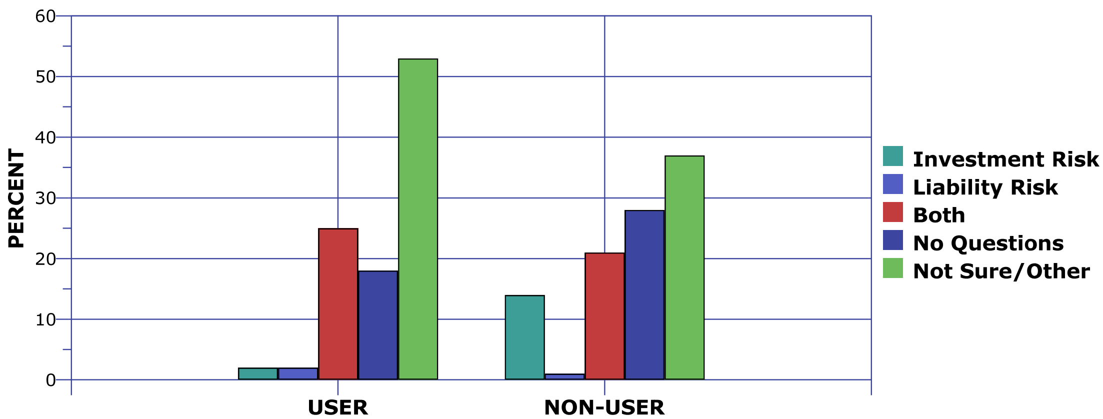
FIGURE 7: ATTITUDE TOWARDS REGULATION



	USER	NON-USER
Yes	39	31
No	48	41
Not Sure or Other	14	28

QUESTION 7 (USER AND NON-USER): DOES YOUR FIDUCIARY LIABILITY INSURANCE UNDERWRITER SPECIFICALLY ASK ABOUT HOW YOU MANAGE DEFINED BENEFIT PLAN RISK, WHETHER INTERNALLY OR EXTERNALLY? Only 25% (21%) of USERS (NON-USERS) receive inquiries from underwriters about how they manage both investment and liability risk. Worse yet, 18% (28%) of USERS (NON-USERS) receive no inquiries whatsoever. Figure 8 shows that many respondents are unsure. Nearly 15 respondents note that they operate without insurance, are self-insured or count on sovereign immunity.

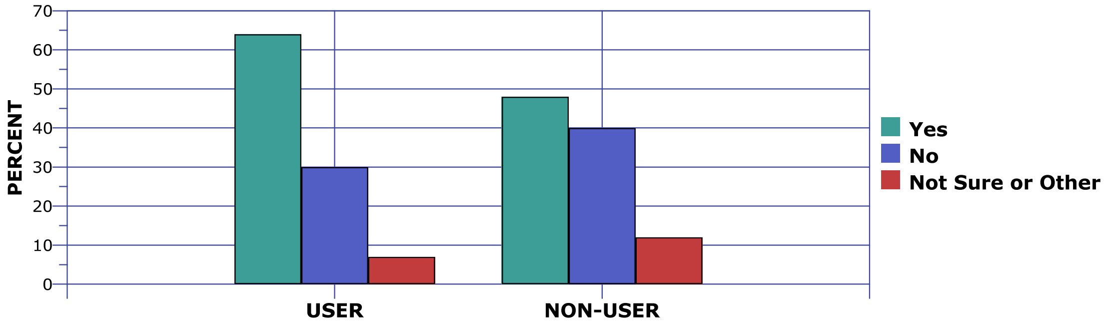
FIGURE 8: FIDUCIARY LIABILITY INSURANCE AND RISK MANAGEMENT



	USER	NON-USER
Investment Risk	2	14
Liability Risk	2	1
Both	25	21
No Questions	18	28
Not Sure/Other	53	37

QUESTION 8 (USER AND NON-USER): HAS YOUR ORGANIZATION EVER HAD DISCUSSIONS TO DETERMINE ITS POSITION ON THE CONCEPT OF A FIDUCIARY DUTY TO HEDGE INTEREST RATE/CURRENCY/EQUITY/CREDIT RISK (RATHER THAN LEAVING DEFINED BENEFIT PLAN ASSET POSITIONS UNHEDGED OR ONLY RANDOMLY HEDGING)? As shown in Figure 9, 64% of USERS have had discussions about whether to systematically hedge asset-related risks. In contrast, a smaller percentage (48%) of NON-USERS confirm that such discussions have taken place. One write-in response differentiates between actions that help a fiduciary to comply with existing rules yet may not make economic sense. Another respondent describes the organization's focus on asset-liability duration matching.

FIGURE 9: FIDUCIARY DUTY TO HEDGE ASSET POSITIONS



	USER	NON-USER
Yes	64	48
No	30	40
Not Sure or Other	7	12

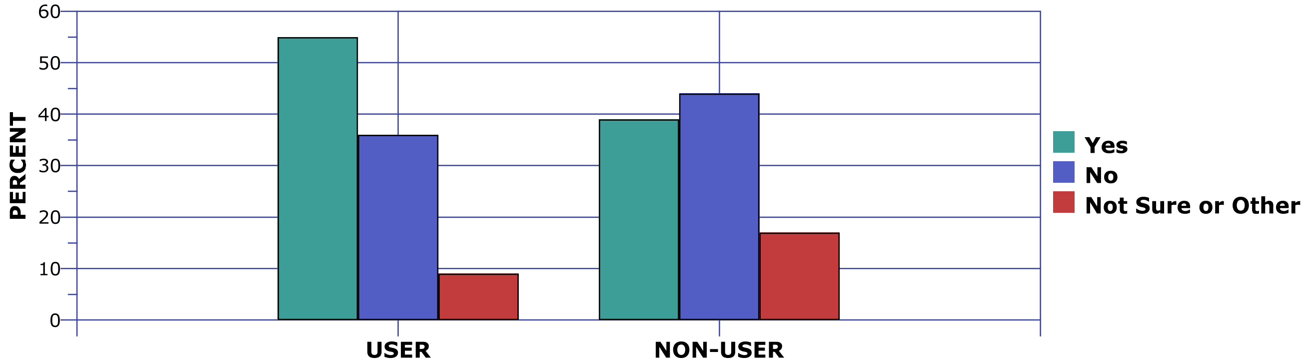
QUESTION 9 (USER AND NON-USER): HAS YOUR ORGANIZATION EVER HAD DISCUSSIONS TO DETERMINE ITS POSITION ON THE CONCEPT OF A FIDUCIARY DUTY TO HEDGE INTEREST RATE/MORTALITY /INFLATION/CURRENCY RISK (RATHER THAN LEAVING DEFINED BENEFIT PLAN LIABILITY POSITIONS UNHEDGED OR ONLY RANDOMLY HEDGING)? As shown in Figure 10, 55% of USERS have had discussions about hedging liability-related risks versus 39% of NON-USERS. Notably, 36% (44%) of USERS (NON-USERS) have not had such discussions. This comports with results of a January 2008 UK survey.[14]

Even when plan sponsors do hedge, comparing across capital pools is difficult. For instance, assume that Plan A hedges only a small portion of its liabilities because it heavily invests in duration-target bonds, while Plan B actively hedges, incurring large transaction costs as a result. Choice of hedging instrument matters too. For example, Plan C may employ interest rate swaps to augment return but Plan D equitizes cash with futures. Which outcome is better? It is hard to say without drilling deep into facts and circumstances that drive each decision and outcome..

[14] See "Pension Protection Fund: Investment Strategy and LDI Survey Results and KPMG Commentary," January 2008.

Hedge performance is not created equal across plans, instruments or strategies, nor is the impact on the net funding position going to be the same. Collateralization of counterparty risk, liquidity and valuation are some other factors to consider.

FIGURE 10: FIDUCIARY DUTY TO HEDGE LIABILITY POSITIONS

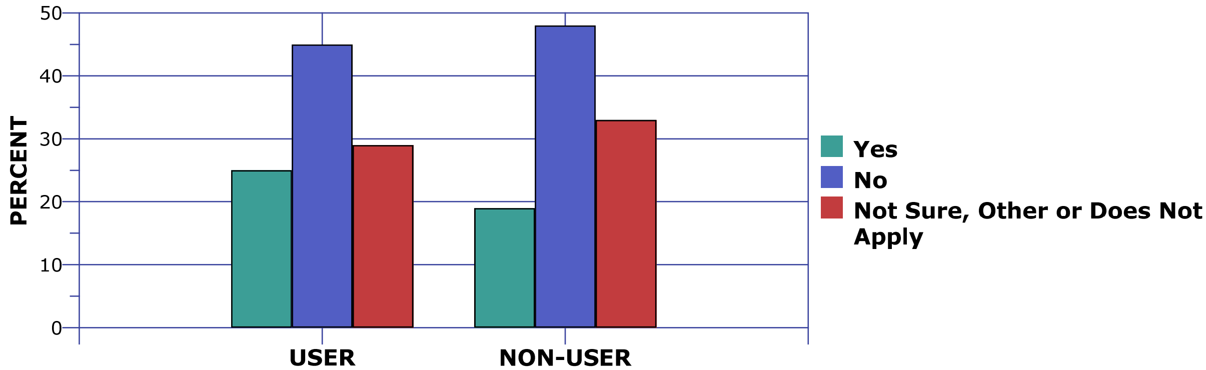


	USER	NON-USER
Yes	55	39
No	36	44
Not Sure or Other	9	17

QUESTION 10 (USER AND NON-USER): HAS YOUR ORGANIZATION EVER HAD STRATEGIC DISCUSSIONS ABOUT THE LINK BETWEEN SARBANES-OXLEY ACT COMPLIANCE AND ERISA/PENSION PROTECTION ACT OF 2006? As shown in Figure 11, both groups of respondents are nearly equal in not having pursued strategic discussions about the corporate governance – pension governance link. Only one of 5 (4) NON-USERS (USERS) have had such discussions. Even allowing for the fact that some respondents represent public plans which are exempt from ERISA, these numbers seem rather low.[15]

[15] See "Retirement Plan Governance – Stay Ahead of the Wave" by attorney Denise Trujillo or "Trickle down: how Sarbanes-Oxley reaches pension plans of private companies" by Robert Cohen et al, June 2005.

FIGURE 11: SARBANES-OXLEY ACT AND PENSION REGULATIONS



	USER	NON-USER
Yes	25	19
No	45	48
Not Sure, Other or Does Not Apply	29	33

ENTERPRISE RISK MANAGEMENT

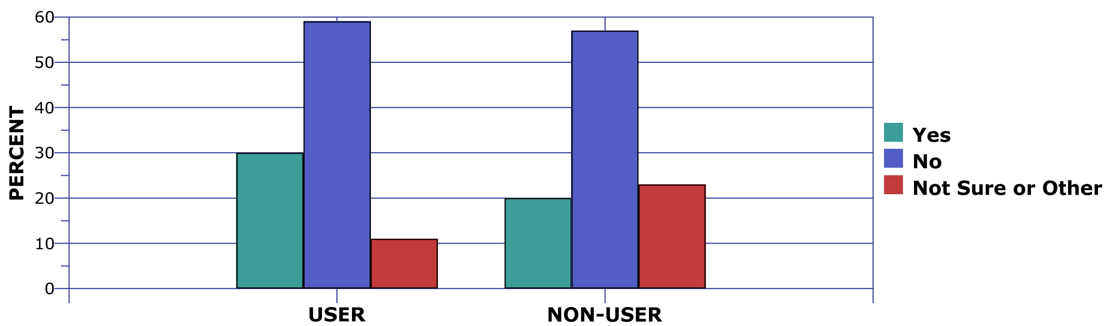
Four questions comprise this section of the survey. The goal is to examine the importance of risk management on a holistic level. Sometimes referred to as Enterprise Risk Management ("ERM"), this concept embraces a broad-based framework for dealing with financial, operational, legal and business risks. ERM impacts strategic planning and internal controls.[16] As survey results seem to suggest, ERM does not necessarily encompass benefit plan analysis. This omission could be problematic for some sponsors, especially if their rating agencies, shareholders and/or creditors take the financial health of the defined benefit plan into account when assessing the riskiness of the organization as a whole.

QUESTION 11 (USER AND NON-USER) DOES YOUR ORGANIZATION HAVE A RISK BUDGET IN PLACE THAT INCORPORATES RISK FROM DEFINED BENEFIT PLANS? Acknowledging that the term is defined differently across organizations, a "risk budget" typically

[16] Interested readers can access the executive summary of "Enterprise Risk Management – Integrated Framework" (COSO, September 2004) for no charge by visiting http://www.coso.org/Publications/ERM/COSO_ERM_ExecutiveSummary.pdf.

considers how to best allocate each asset dollar to systematic and idiosyncratic risk, respectively. Authors of "Risk Budgeting in Pension Investment," Urwin et al describe risk budgeting as the "assessment of the amount of risk to be employed, and where it is applied." As shown in Figure 12, only 30% (20%) of USERS (NON-USERS) confirm the existence of a risk budget that addresses defined benefit plan issues.[17] Several write-ins note that their organization is in the process of creating a risk budget or that they work for a public plan, something they believe obviates the need to create a risk budget.[18]

FIGURE 12: RISK BUDGET



	USER	NON-USER
Yes	30	20
No	59	57
Not Sure or Other	11	23

QUESTION 12 (USER AND NON-USER) DOES YOUR ORGANIZATION HAVE A CHIEF RISK OFFICER? As shown in Figure 13, few respondents affirm the presence of a Chief Risk Officer ("CRO") with only 30% (20%) of USERS (NON-USERS) answering "Yes" to this question. About 60% of respondents in both groups say they have no plans to hire a CRO any time soon. Two organizations give the function a more general name such as Compliance Officer or Risk Manager. Though not addressed by this survey, it will be interesting to observe if (how) new accounting rules, fallout from the credit crisis and/or any funding problems encourage the hiring of a CRO to address pension issues.

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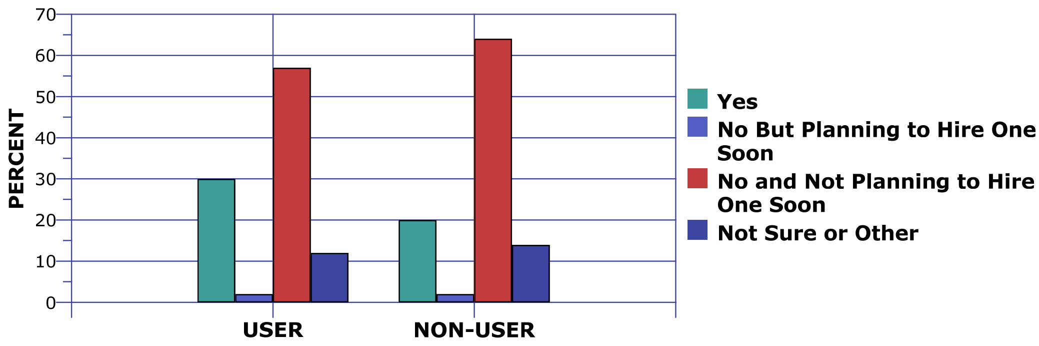
[17] See Urwin, R.C., S.J. Breban, T.M. Hodgson and A. Hunt, "Risk Budgeting in Pension Investment," Presented to the Faculty of Actuaries, 19 February 2001.

[18] Risk budgets purportedly help to discipline investors from taking on "excessive" risk. The idea is that even public plans can benefit from the systematic exercise of identifying, measuring and then allocating monies on a risk-adjusted return basis.

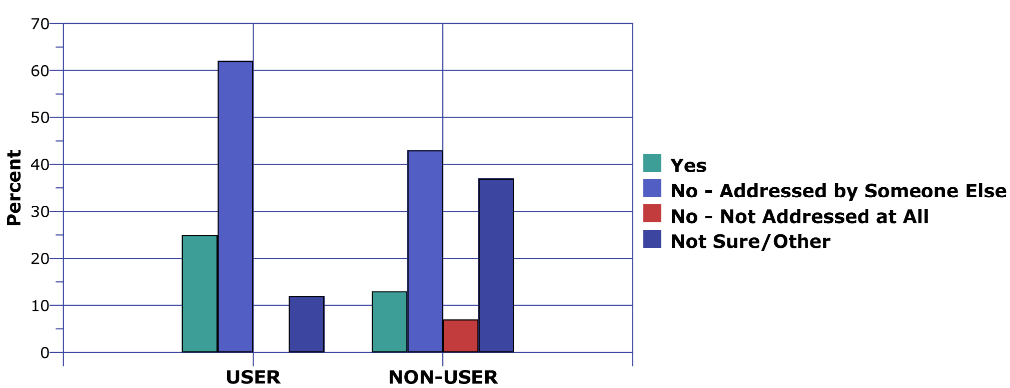
FIGURE 13: CHIEF RISK OFFICER



	USER	NON-USER
Yes	30	20
No But Planning to Hire One Soon	2	2
No and Not Planning to Hire One Soon	57	64
Not Sure or Other	12	14

QUESTION 13 (USER AND NON-USER) IF THE ANSWER TO THE PREVIOUS QUESTION IS YES, DOES HE OR SHE HANDLE DEFINED BENEFIT PLAN RISK? As shown in Figure 14, when Chief Risk Officers are present in the organization, only a few of them handle defined benefit plan risk. Thirteen percent (25%) of NON-USERS (USERS) answer "Yes" to this question. There may be clear benefits that are being missed for organizations that do not involve their Chief Risk Officers in retirement plan decision-making.

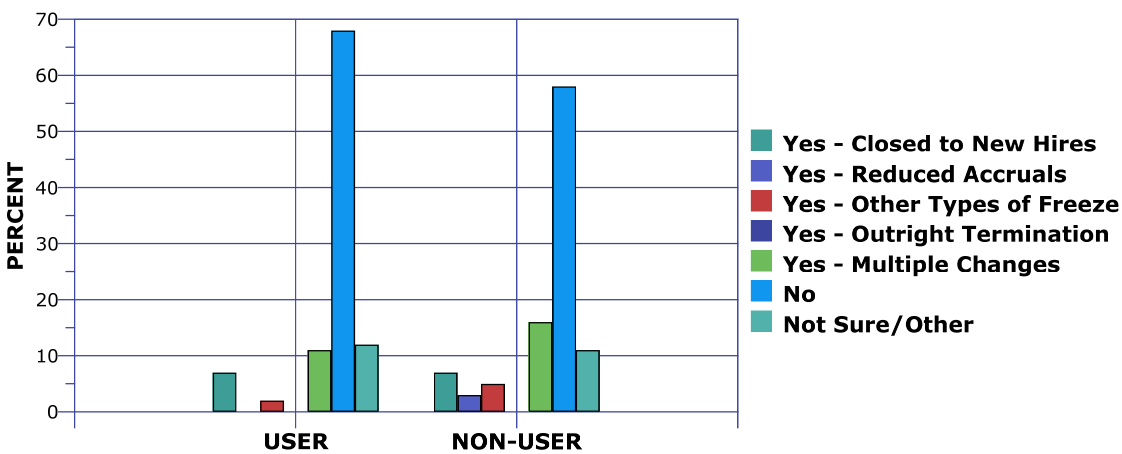
FIGURE 14: CHIEF RISK OFFICER AND PENSION PLAN FOCUS



	USER	NON-USER
Yes	25	13
No - Addressed by Someone Else	62	43
No - Not Addressed at All	0	7
Not Sure/Other	12	37

QUESTION 14 (USER AND NON-USER) IS YOUR ORGANIZATION CONSIDERING A CHANGE IN THE DESIGN OF DEFINED BENEFIT PLANS? While this survey focuses on defined benefit plan risk management practices and concerns, recall that some respondents work for organizations that offer defined contribution plans as well. The intent of this question is to identify if anticipated or expected changes to plan design have an impact on how risk is addressed. As shown in Figure 15, 68% of USERS answer "No" to this question versus 58% of NON-USERS. Since individuals are not asked whether their plans have been already frozen or otherwise converted to some other plan type, it is not possible to infer whether companies with an active pension risk management program are more or less inclined to transfer asset-liability management risk to employees. The topic is important enough to warrant subsequent research.

FIGURE 15: DEFINED BENEFIT PLAN DESIGN



	USER	NON-USER
Yes - Closed to New Hires	7	7
Yes - Reduced Accruals	0	3
Yes - Other Types of Freeze	2	5
Yes - Outright Termination	0	0
Yes - Multiple Changes	11	16
No	68	58
Not Sure/Other	12	11

NO DIRECT USE OF DERIVATIVES

This section of the survey seeks to understand why derivatives are not used by some defined benefit plans. Anecdotally, and because pension rules emphasize prudent process, fiduciaries might want to think carefully before arbitrarily dismissing over-the-counter and exchange-traded products as “too risky” or “inappropriate” and instead seek to conduct a rigorous cost-benefit analysis.

Fiduciaries may wish to consider meeting with experts who can inform and guide with respect to whether derivatives make sense. An investment committee or board of trustees could still choose not to use derivatives. However, decision-makers can point to (hopefully) sound reasons that substantiate their conclusion. A few court cases address the concept of a “fiduciary duty to hedge,” bolstering the notion that a well-thought out analysis should take place and be documented accordingly.[19] As an aside, countless financial assets and liabilities embed derivatives so it is rare indeed that a retirement plan is completely unexposed. Additionally, the use of derivatives by traders, hired by pension plans, is commonplace, though not every asset manager uses derivatives.

Even when pensions do not trade derivatives in their own name but hire traders who do, a variety of instruments and strategies makes it difficult to gauge the impact of their use on plan economics. This in turn means that it is often difficult to assess whether plan sponsors are properly managing risk. Without detailed information, it is tough to know how to meaningfully compare and contrast the changed risk-return profile for each plan as a result of their respective derivative strategy overlay via outside money managers.

Questions in this and later sections seek to shed light as to whether, and when, pension plans employ derivatives and, more generally, how they manage financial risks.

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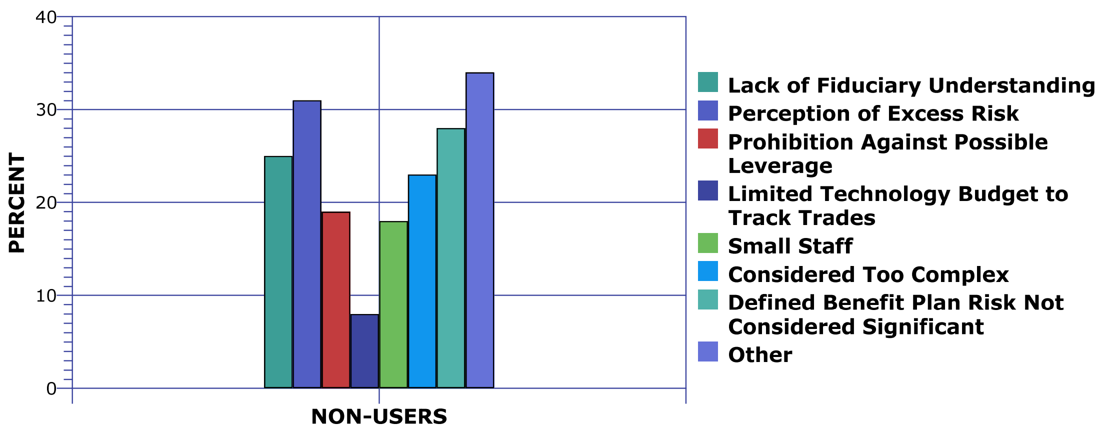
[19] See “A Trust Fiduciary’s Duty to Implement Capital Preservation and Strategies Using Financial Derivative Techniques” by Randall H. Borkus, 36 Real Prop. Prob. & Tr. J. 127, Spring 2001 http://www.borkuslawfirm.com/FIDUCIARYDUTY.jsp.

QUESTION 15 (NON-USER) WHAT REASONS ACCOUNT FOR YOUR DECISION NOT TO USE DERIVATIVE INSTRUMENTS TO MANAGE THE RISK OF YOUR DEFINED BENEFIT PLAN(S)? (THE TERM "RISK" IS USED HERE TO REFER TO INTEREST RATE, CURRENCY, EQUITY, CREDIT, MORTALITY AND/OR INFLATION RISK.) CHECK ALL ITEMS THAT APPLY. As shown in Figure 16, numerous reasons contribute to plans not transacting derivative trades in their own name. "Lack of Fiduciary Understanding," "Perception of Excess Risk" and "Complexity" dominate "Staff Size" or "Prohibition Against Leverage." Interestingly, 28% of NON-USERS express confidence that defined benefit plan risks are immaterial. About a dozen respondents write that derivatives are deemed expensive, their use would conflict with existing investment policy or that regulations preclude their use. Quite a few survey-takers cite the use of derivatives by external money managers, perhaps lowering the need for pensions to consider the direct use of derivatives. (A later section of this survey addresses the use of derivatives by external money managers.) Four others indicate that the use of derivatives will soon be discussed by decision-makers.

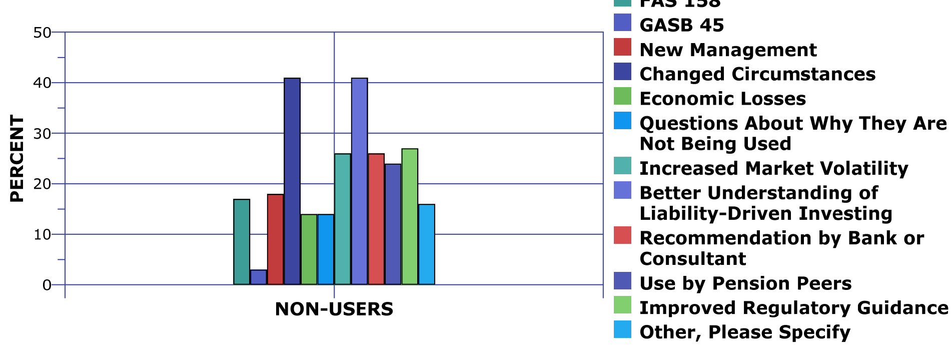
FIGURE 16: REASONS FOR NON-USE OF DERIVATIVES



	NON-USERS
Lack of Fiduciary Understanding	25
Perception of Excess Risk	31
Prohibition Against Possible Leverage	19
Limited Technology Budget to Track Trades	8
Small Staff	18
Considered Too Complex	23
Defined Benefit Plan Risk Not Considered Significant	28
Other	34

QUESTION 16 (NON-USER) WHAT FACTORS COULD GIVE RISE TO A CHANGE IN YOUR DECSION TO USE DERIVATIVES TO MANAGE THE RISK OF YOUR DEFINED BENEFIT PLAN(S). CHECK ALL ITEMS THAT APPLY. A near majority acknowledges the need to better understand Liability-Driven Investing ("LDI") strategies, techniques that often employ derivatives for hedging or return enhancement purposes. As shown in Figure 17, with 41% of NON-USERS citing "Changed Circumstances" as a motivation, write-in answers are telling. One person wants more information from the financial services community about "crash risk." Another cites the need for analytical tools. Other factors given include the following: (a) increase in interest rates which would force the termination of external managers (b) reduced transaction costs (c) more transparency and (d) better internal infrastructure.

FIGURE 17: REASONS TO USE DERIVATIVES LATER ON



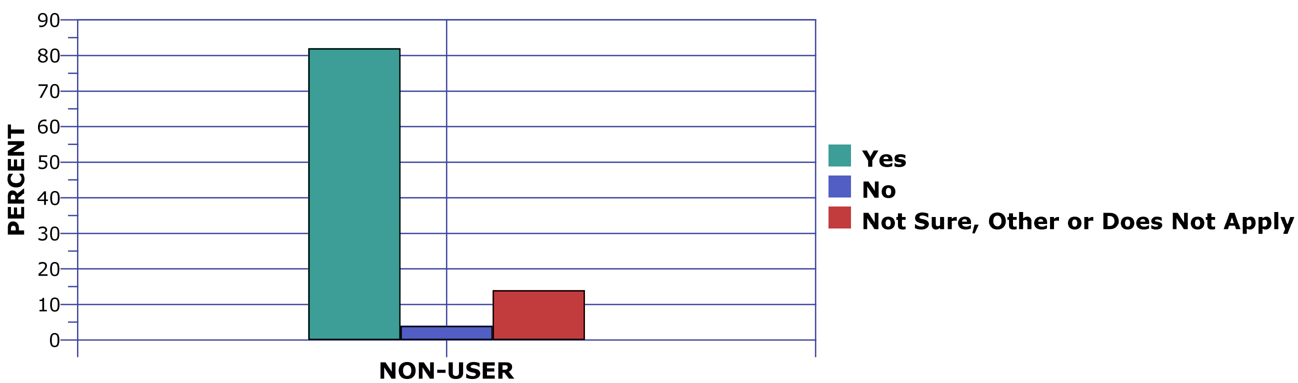
	NON-USERS
FAS 158	17
GASB 45	3
New Management	18
Changed Circumstances	41
Economic Losses	14
Questions About Why They Are Not Being Used	14
Increased Market Volatility	26
Better Understanding of Liability-Driven Investing	41
Recommendation by Bank or Consultant	26
Use by Pension Peers	24
Improved Regulatory Guidance	27
Other, Please Specify	16

QUESTION 17 (NON-USER) DO YOU FEEL THAT YOUR PENSION CONSULTANT HAS AN ACCEPTABLE UNDERSTANDING OF DEFINED BENEFIT PLAN RISK MANAGEMENT ISSUES?

Figure 18 generally reflects a vote of confidence in pension consultants with respect to risk literacy. However, one respondent warns that its consultant has "limited actual experience or working knowledge" and 6 respondents note that they do not employ an outside advisory firm.

While beyond the scope of this study, it would nevertheless be helpful to know more about the role of the consultant and the extent to which discussions about risk mitigation accompany those about performance attribution and manager selection.

FIGURE 18: PENSION CONSULTANT'S RISK LITERACY



	NON-USER
Yes	82
No	4
Not Sure, Other or Does Not Apply	14

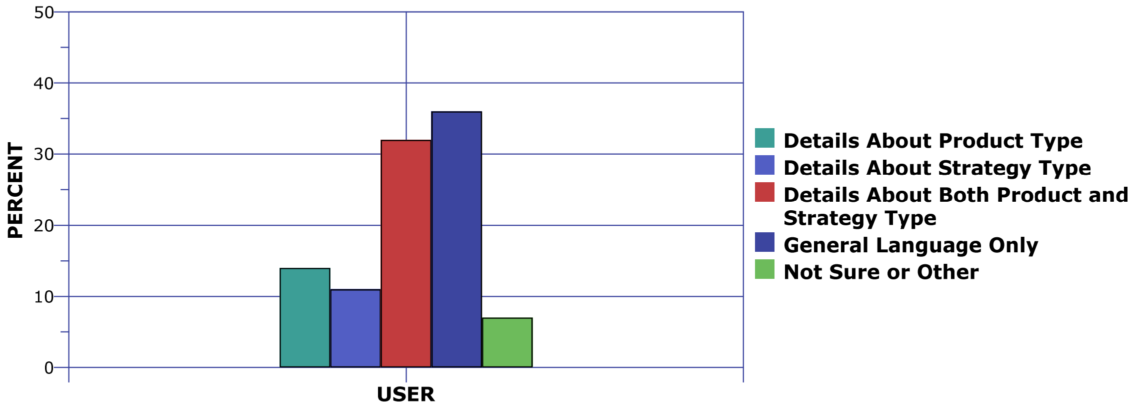
DIRECT USE OF DERIVATIVES

This section of the survey focuses only on plan sponsor decision-makers who self-identify as direct users of derivative instruments. The assumption is that trades, done in the name of the retirement plan, reflect a certain comfort level with issues such as counterparty risk and standard documentation. The goal is to identify prevailing practices for USERS with respect to process, policies and implementation.

QUESTION 18 (USER) DOES YOUR INVESTMENT POLICY STATEMENT INCLUDE DETAILS ABOUT THE USE OF DERIVATIVES BY PRODUCT AND/OR STRATEGY TYPE? As shown in Figure 19, practices vary, with 32% of USERS providing details about both product and strategy but 36% only noting general language. Ideally, a plan sponsor creates, and abides by, a variety of policy guidelines, including a separate risk management policy statement that details how risk is identified, measured and managed. This should apply whether derivative instruments are used or not. Perhaps stating the obvious, the absence of a risk management policy is indeed a risk management policy, or perhaps, more descriptively, a philosophy, albeit a passive one.

While questions about fiduciary prudence and documentation are left to legal experts, the notion is that few or no guiding documents likely make it difficult to exercise care and/or benchmark “appropriate” process.

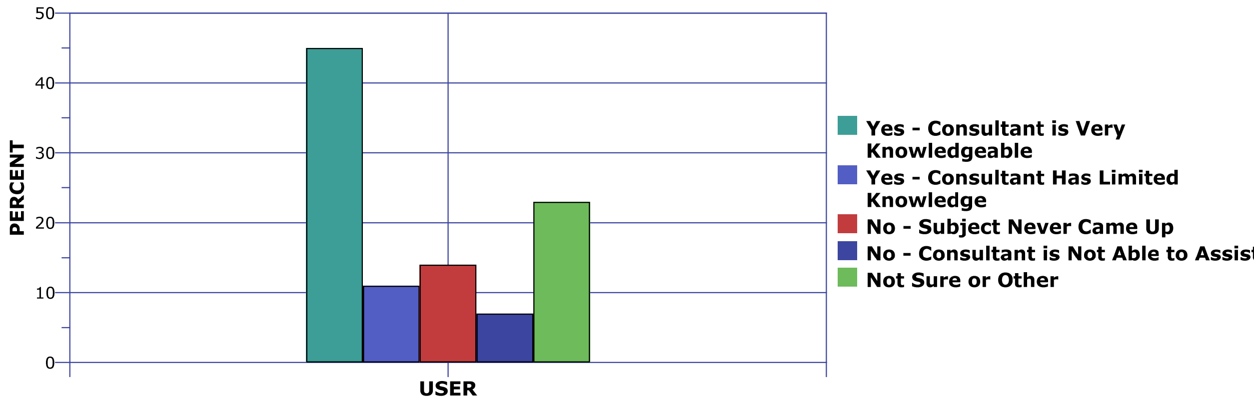
FIGURE 19: INVESTMENT POLICY STATEMENT AND DERIVATIVES



	USER
Details About Product Type	14
Details About Strategy Type	11
Details About Both Product and Strategy Type	32
General Language Only	36
Not Sure or Other	7

QUESTION 19 (USER) DOES A PENSION CONSULTANT ASSIST YOU IN CRAFTING AND/OR EDITING YOUR INVESTMENT POLICY STATEMENT WITH RESPECT TO THE USE OF DERIVATIVE PRODUCTS AND/OR STRATEGIES? As shown in Figure 20, about 45% of respondents who have consultants assist them note that those consultants are very knowledgeable about derivatives. In contrast, 82% of NON-USERS answer "Yes" to a similar query, nearly twice as many USERS.

FIGURE 20: CONSULTANT AND DERIVATIVES

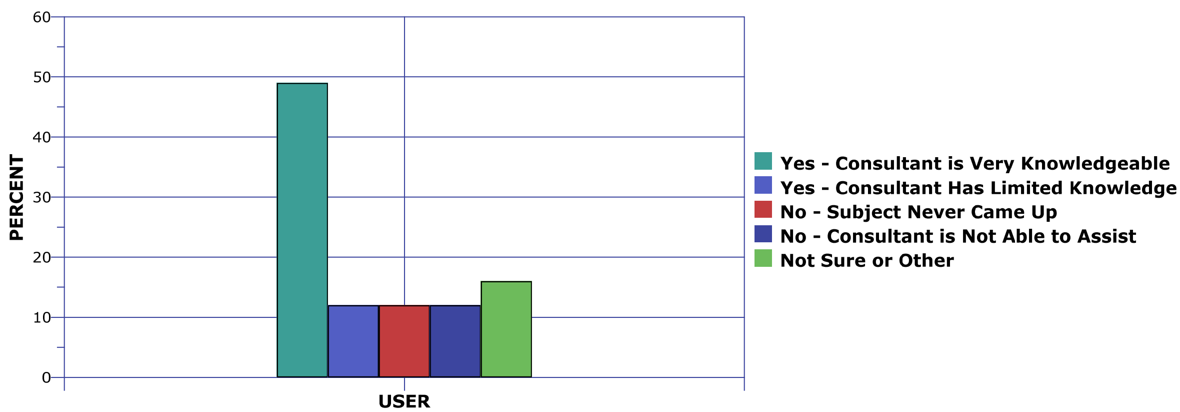


	USER
Yes - Consultant is Very Knowledgeable	45
Yes - Consultant Has Limited Knowledge	11
No - Subject Never Came Up	14
No - Consultant is Not Able to Assist	7
Not Sure or Other	23

QUESTION 20 (USER) DOES A PENSION CONSULTANT ASSIST YOU IN CRAFTING AND/OR EDITING YOUR INVESTMENT POLICY STATEMENT WITH RESPECT TO DEFINED BENEFIT PLAN RISK MANAGEMENT POLICIES AND PROCEDURES? Figure 21 illustrates that nearly half of respondents (49%) use pension consultants and feel that the consultant is "Very Knowledgeable." Thirty-six percent of respondents say the consultant has "Limited Knowledge," "The Subject Never Came Up" or that the consultant is "Not Able to Assist." Four persons write that they do not use a consultant or, in one case, "do not want a consultant." Three persons write that a consultant is used for an "overall review," "annual review," or in conjunction with a review of asset allocation mix.

To reiterate, this survey does not address which type of plan sponsor is more likely to employ a third party (consultants or otherwise) for help in (a) determining whether to use derivative instruments (b) creating and implementing a risk management policy and related procedures (c) selecting and reviewing money managers who specifically use derivatives (d) evaluating risk management systems and/or (e) gauging hedge effectiveness and/or generally assessing efficacy of an existing risk management program. Given the prevalence of derivatives as part of Liability-Driven Investing strategies and the fact that LDI is often a part of the asset allocation conversation, further insight about the role of consultants, actuaries, banks and asset managers would be extremely helpful to have.

FIGURE 21: CONSULTANT AND RISK MANAGEMENT



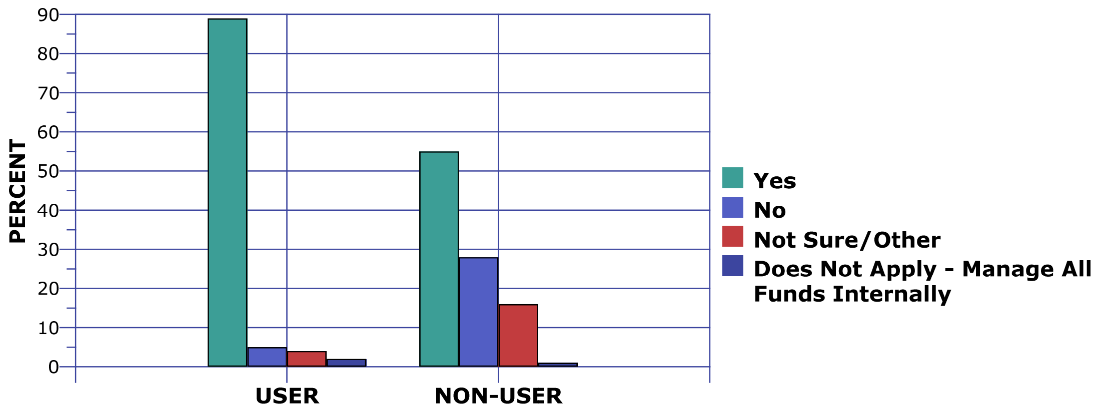
	USER
Yes - Consultant is Very Knowledgeable	49
Yes - Consultant Has Limited Knowledge	12
No - Subject Never Came Up	12
No - Consultant is Not Able to Assist	12
Not Sure or Other	16

USE OF DERIVATIVES BY EXTERNAL MONEY MANAGERS

This part of the survey examines how a plan sponsor assesses the risk control policies and procedures of external portfolio managers. The goal is to identify differences between USERS and NON-USERS, if any, with respect to due diligence of asset managers who utilize derivative instruments and/or complex securities which embed derivatives.

QUESTION 21 (USER AND NON-USER) DO ANY OF YOUR EXTERNAL MONEY MANAGERS USE DERIVATIVES? As shown in Figure 22, a large majority of USERS (89%) and NON-USERS (55%) acknowledge their indirect exposure to price behavior of derivative instruments through external money managers. As mentioned elsewhere, a plan sponsor will ideally have a risk management policy in place that explicitly addresses derivatives, including, but not limited to, instrument/strategy limits and scope of use by outside portfolio managers.

FIGURE 22: EXTERNAL MONEY MANAGERS AND DERIVATIVES



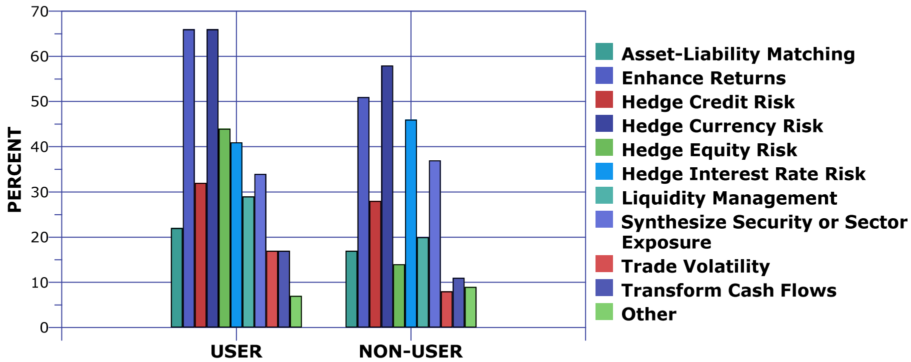
	USER	NON-USER
Yes	89	55
No	5	28
Not Sure/Other	4	16
Does Not Apply - Manage All Funds Internally	2	1

QUESTION 22 (USER AND NON-USER) IF THE ANSWER TO THE PREVIOUS QUESTION IS YES, EXPLAIN WHY. CHECK ALL ITEMS THAT APPLY. As shown in Figure 23, USERS and NON-USERS similarly rank popular applications. “Currency Hedging” tops the list, followed by “Return Enhancement,” “Interest Rate Hedging” and “Security Synthesis.” Seventeen percent of USERS say that their money managers use derivatives to transform cash flows and/or trade volatility versus NON-USER claims of 8% and 11%, respectively. Noteworthy is that a near majority (44%) of USERS cite hedging of equity risk as a likely use of derivatives by outside traders versus a low 14% of NON-USERS.

Write-in answers suggest that some managers, by mandate, must hedge. Others use derivatives for transition management or to extend bond portfolio duration, port alpha and/or equitize cash.

While not addressed by this study, it would be helpful to know if plan sponsors decide to use derivatives and then seek external money managers accordingly or, if instead, pension plans accept the use of derivatives by money managers they favor.

FIGURE 23: HOW EXTERNAL MONEY MANAGERS USE DERIVATIVES



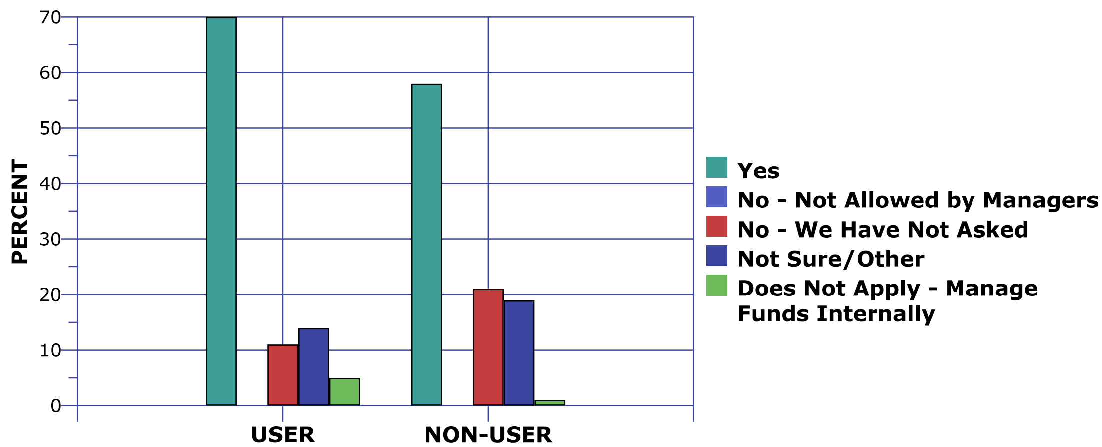
	USER	NON-USER
Asset-Liability Matching	22	17
Enhance Returns	66	51
Hedge Credit Risk	32	28
Hedge Currency Risk	66	58
Hedge Equity Risk	44	14
Hedge Interest Rate Risk	41	46
Liquidity Management	29	20
Synthesize Security or Sector Exposure	34	37
Trade Volatility	17	8
Transform Cash Flows	17	11
Other	7	9

QUESTION 23 (USER AND NON-USER) DO YOU REGULARLY REVIEW YOUR EXTERNAL MONEY MANAGERS' RISK MANAGEMENT POLICIES, EVEN IF THEY DO NOT USE DERIVATIVES? As shown in Figure 24, USERS exhibit a greater tendency towards managing risk by virtue of 70% who affirm regular checks. This is in contrast to 58% of NON-USERS who claim to conduct regular reviews. Nevertheless, results suggest that a majority of both groups discuss risk management (however defined by each plan sponsor) during periodic reviews. Only 11% of USERS claim no interest in contrast to 21% of NON-USERS.

None of the respondents say they experience push-back from external money managers, when asked to shed light on their risk management policies. While seemingly good news, risk policies (and related implementation) can vary considerably in terms of breadth, depth and effectiveness. A manager may be fine to discuss risk controls in theory but do a poor job of putting them to work, thereby exposing a plan sponsor to potential loss. Those plan sponsors with robust external manager guidelines already in place may be better able to benchmark outsiders' policies and practices against pre-specified objectives and constraints.

This study suggests that the concept of “regular” varies across organizations. Write-in responses include “occasionally,” “sporadically,” “left up to the consultant,” “reviewed when hired manager” or “not regularly, but we did earlier this year.” Open questions remain about what triggers a review, if not done at least once per year or as circumstances materially change.

FIGURE 24: REVIEW OF EXTERNAL MONEY MANAGERS' RISK MANAGEMENT POLICIES

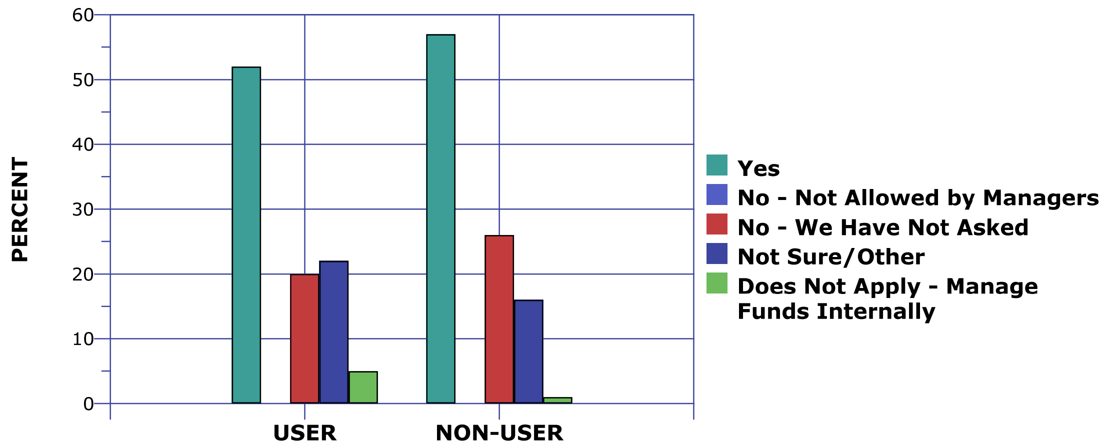


	USER	NON-USER
Yes	70	58
No - Not Allowed by Managers	0	0
No - We Have Not Asked	11	21
Not Sure/Other	14	19
Does Not Apply - Manage Funds Internally	5	1

QUESTION 24: DO YOU REGULARLY REVIEW YOUR EXTERNAL MONEY MANAGERS' VALUATION POLICIES, EVEN IF THEY DO NOT USE DERIVATIVES? (USER AND NON-USER)

As shown in Figure 25, USERS and NON-USERS provide nearly identical feedback with about 50% of respondents answering “Yes” but almost 1 out of 4 never inquiring. Free form answers include “set up originally, then monitor periodically,” “our custodian reconciles monthly with money managers,” “no, assume process has been covered under audit,” or “investment consultant handles this.” Whether this delegation is sufficient or even prudent cannot be addressed herein. However, increased complexity of strategies and instruments, along with new and pending disclosure rules, encourage plan sponsors to review, and perhaps improve, current due diligence efforts as relates to pricing, model risk and independence of service providers.

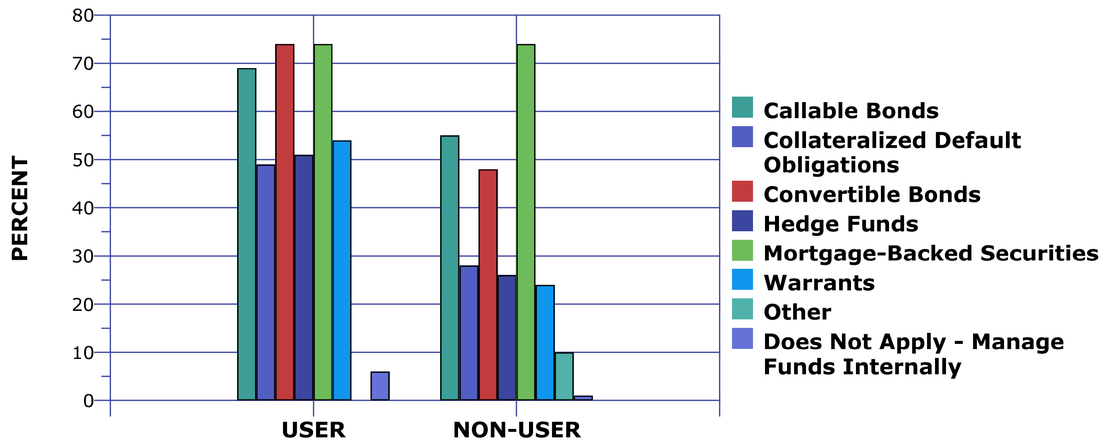
FIGURE 25: REVIEW OF EXTERNAL MONEY MANAGERS' VALUATION POLICIES



	USER	NON-USER
Yes	52	57
No - Not Allowed by Managers	0	0
No - We Have Not Asked	20	26
Not Sure/Other	22	16
Does Not Apply - Manage Funds Internally	5	1

QUESTION 25: ARE YOU AWARE OF ANY OF THE FOLLOWING EMBEDDED DERIVATIVE INSTRUMENTS IN YOUR EXTERNAL MONEY MANAGERS' PORTFOLIOS? CHECK ALL THAT APPLY. (USER AND NON-USER) Some plan sponsors describe derivatives as "overly risky" or prohibit their use outright. Ironically, an organization is nevertheless exposed if it raises capital or allocates monies to complex securities which embed derivative-like features. By recognizing this exposure to derivative instrument price behavior, it may be possible for plan sponsors to better measure and manage risks accordingly. As shown in Figure 26, 69% (55%) of USERS (NON-USERS) recognize callable bonds as an option-free bond plus an embedded call. In contrast, only about 1 out of every 4 NON-USER respondent reports the presence of embedded derivatives in the form of "Collateralized Debt Obligations," Hedge Fund" and "Warrants." About 1 out of 2 USERS, arguably more risk sensitive because they trade derivatives directly, reports awareness of embedded derivatives for the same three categories. One person writes that structured notes are another example of a bundle of contingent economic payoffs, with option-like features. Recognition that an embedded derivative exists is an important precursor to being able to query portfolio managers about related risk issues.

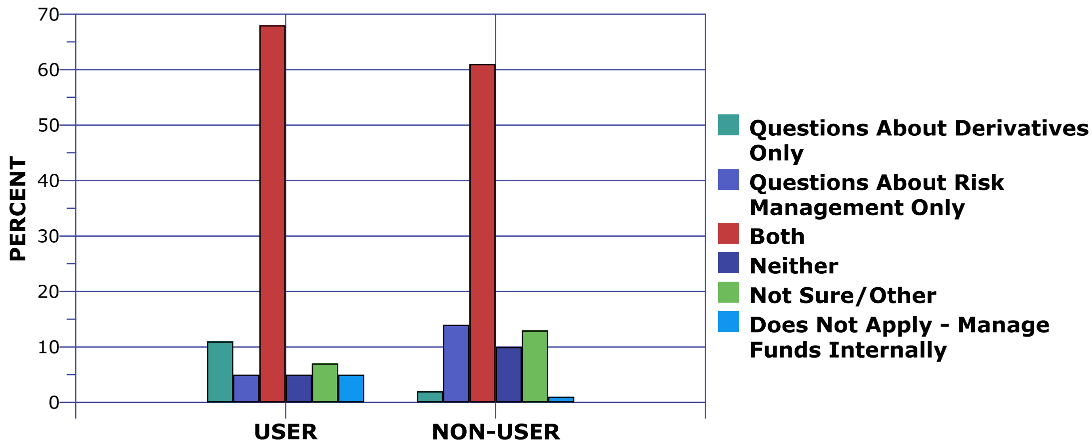
FIGURE 26: EXTERNAL MONEY MANAGERS AND EMBEDDED DERIVATIVES



	USER	NON-USER
Callable Bonds	69	55
Collateralized Default Obligations	49	28
Convertible Bonds	74	48
Hedge Funds	51	26
Mortgage-Backed Securities	74	74
Warrants	54	24
Other	0	10
Does Not Apply - Manage Funds Internally	6	1

QUESTION 26: WHEN CONSIDERING WHETHER TO HIRE PARTICULAR EXTERNAL MONEY MANAGERS, DO YOU ASK QUESTIONS ABOUT DERIVATIVE INSTRUMENTS AND/OR RISK MANAGEMENT POLICIES AND PROCEDURES AS PART OF THE SCREENING PROCESS? (USER AND NON-USER) As shown in Figure 27, 68% of USERS and 61% of NON-USERS answer affirmatively to pre-screening managers about both derivatives and risk management. One in 10 NON-USERS ask no questions about either risk management or derivatives, 7% are unsure and 14% quiz managers about risk management without referring to derivatives. Two NON-USERS write that some questions are asked about "use of managers" and "use of risk budget, counterparty risk and use of custodian."

FIGURE 27: RFP INQUIRIES ABOUT DERIVATIVES AND RISK MANAGEMENT



	USER	NON-USER
Questions About Derivatives Only	11	2
Questions About Risk Management Only	5	14
Both	68	61
Neither	5	10
Not Sure/Other	7	13
Does Not Apply - Manage Funds Internally	5	1

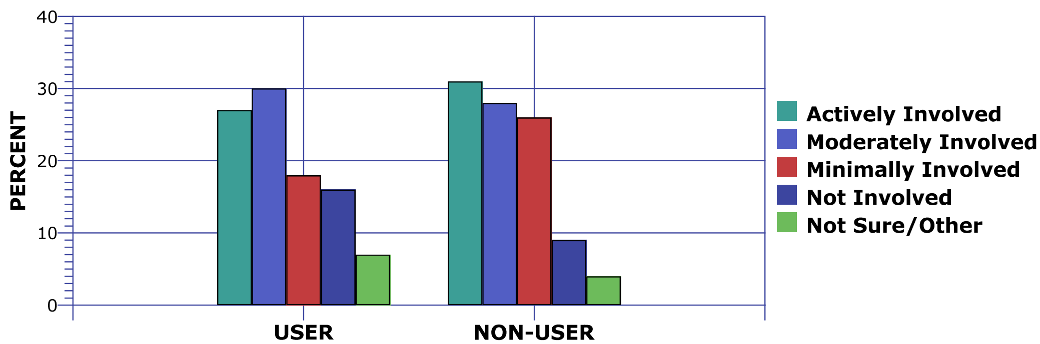
ASSET-LIABILITY MANAGEMENT PRACTICES

As defined benefit plan rules, regulations and economic imperatives change, so too does the process of determining both a strategic and tactical asset allocation mix. The goal of this part of this survey is to identify if, and to what extent, plan sponsors are considering both assets and liabilities in their financial decision-making.

QUESTION 27: HOW INVOLVED IS THE ACTUARY YOU USE IN IDENTIFYING DEFINED BENEFIT PLAN RISK? (USER AND NON-USER) As shown in Figure 28, results suggest that the role of actuary is comparable for USERS and NON-USERS with 27% (31%) of USERS (NON-USERS) reporting "Active Involvement." Another 30% (28%) of USERS (NON-USERS) cite having the actuary "Moderately Involved." Thirty-four percent (35%) of USERS (NON-USERS) describe the actuary as being "Minimally Involved" or "Not Involved."

Regulation is a plausible determinant of the plan sponsor-actuary relationship. In Canada, changes to the federal pension laws have made funding rules a bit looser by lengthening the amortization period for solvency deficit funding. On-going reform of actuarial standards in Canada (still in the draft stage) puts more of an onus on employers in drafting a funding policy for defined benefit plans that would include a methodology for selecting actuarial assumptions. How that will impact the role of the actuary, if at all, remains to be seen.

FIGURE 28: ROLE OF ACTUARY IN IDENTIFYING RISK

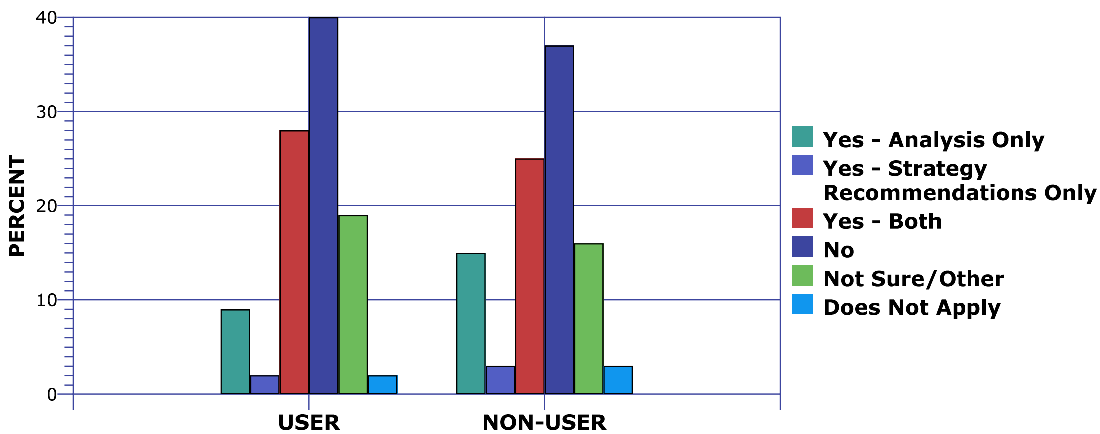


	USER	NON-USER
Actively Involved	27	31
Moderately Involved	30	28
Minimally Involved	18	26
Not Involved	16	9
Not Sure/Other	7	4

QUESTION 28: WOULD YOU LIKE THE ACTUARY YOU USE TO BE MORE INVOLVED IN MANAGING THE RISK OF YOUR ORGANIZATION'S DEFINED BENEFIT PLANS? (USER AND NON-USER) Figure 29 reveals that USERS and NON-USERS are of like mind with respect to the role of the actuary in controlling risk. Approximately 2 out of every 5 respondents favor at least some expanded actuarial interaction with 39% (43%) of USERS (NON-USERS) answering "Yes" to increasing one or more aspects of actuarial interaction. In contrast, 40% (37%) of USERS (NON-USERS) responded "No" to increased actuarial input.

While direct use of derivatives seems to have little to do with the role of the actuary, (i.e. answers are similar across respondent groups) there appears to be a difference in opinion as to whether actuaries should do more to assist plan sponsors in managing pension risk.

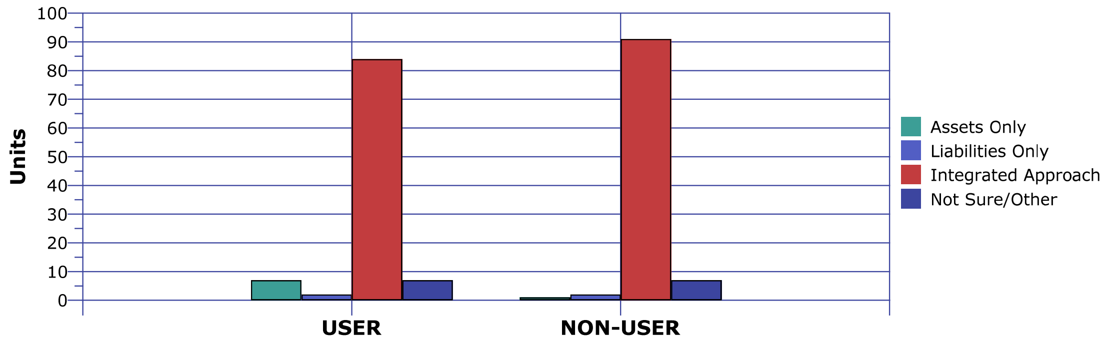
FIGURE 29: ROLE OF ACTUARY IN MANAGING RISK



	USER	NON-USER
Yes - Analysis Only	9	15
Yes - Strategy Recommendations Only	2	3
Yes - Both	28	25
No	40	37
Not Sure/Other	19	16
Does Not Apply	2	3

QUESTION 29: DO YOU THINK DEFINED BENEFIT PLAN RISK MANAGEMENT STRATEGIES SHOULD FOCUS ON ASSETS, LIABILITIES OR AN INTEGRATION OF THE TWO? (USER AND NON-USER) As shown in Figure 30, both USERS and NON-USERS overwhelmingly agree on an approach that integrates assets and liabilities. Once again, the results open the door to more questions. Does this mean that plan sponsors are more likely to consider Liability-Driven Investing? If so, will NON-USERS only consider LDI strategies that exclude the use of derivatives? Alternatively, will plan sponsors instead embrace other solutions such as annuities or outsource everything to a professional risk manager?

FIGURE 30: FINANCIAL MANAGEMENT FOCUS



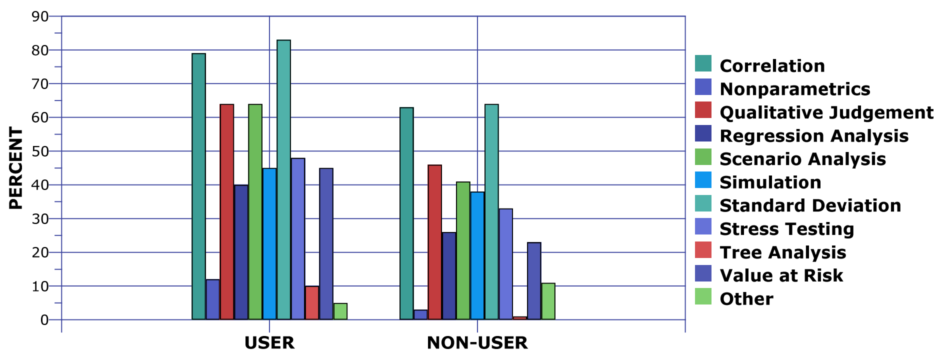
	USER	NON-USER
Assets Only	7	1
Liabilities Only	2	2
Integrated Approach	84	91
Not Sure/Other	7	7

QUESTION 30: WHAT TYPES OF RISK METRICS DO YOU CURRENTLY EMPLOY TO EVALUATE AND MANAGE DEFINED BENEFIT PLAN RISK? CHECK ALL THAT APPLY. (USER AND NON-USER) Risk metrics vary by form, ease of computation, information conveyed and relevance. Use of an assortment of risk metrics, updated on a regular basis and/or when things radically change, is a hallmark of prudent process. There is no perfect metric but some are better than others because they consider what can happen, versus what did happen. Importantly, past is not necessarily prologue. Reliance on historical information can sometimes be misleading. Additionally, a number can be suggestive of financial risk but completely ignore other sources of uncertainty. Operational or settlement snafus are two examples of problems that are not reflected in traditional risk metrics.

As shown in Figure 31, "Standard Deviation" ("Correlation") ranks high by USERS and NON-USERS as first (second) in terms of reliance. Reiterating that numbers themselves offer no fail safe, correlation, a measure of pair-wise association, is not as robust as sometimes needed. First, it assumes linearity of returns which does not always hold. Second, correlations are time-sensitive. High volatility and contagion often go hand in hand. Different sectors of the market that may historically move in opposite directions now move together as respective prices are adversely impacted by exogenous shocks. When this occurs, potential diversification benefits dissipate, even as historical correlations indicate the contrary. Third (and similar to standard deviation as a risk measure), correlation assumes normality of prices or returns which may not be appropriate.

While USERS rely on "Qualitative Judgment" and "Scenario Analysis" more than NON-USERS, these tools ranked third and fourth in importance for both groups. Value at Risk, a stalwart in banking circles, is used by nearly half of USERS but cited by only one-fourth of NON-USERS. Similarly, 48% (45%) of USERS favor "Stress Testing" ("Simulation") in contrast to 33% (38%) of NON-USERS. Few respondents from either group say they employ "Nonparametric Analysis" or "Tree Analysis." Surplus at Risk, common sense, duration analysis, mean-variance focus and attribution analysis reflect respondents' free form answers.

FIGURE 31: RISK MEASUREMENT TOOLS



	USER	NON-USER
Correlation	79	63
Nonparametrics	12	3
Qualitative Judgement	64	46
Regression Analysis	40	26
Scenario Analysis	64	41
Simulation	45	38
Standard Deviation	83	64
Stress Testing	48	33
Tree Analysis	10	1
Value at Risk	45	23
Other	5	11

QUESTION 31: WHAT DEFINED BENEFIT PLAN RISK AREAS CONCERN YOU? CHECK ALL THAT APPLY. (USER AND NON-USER) As shown in Figure 32, both USERS and NON-USERS rank "Accounting Impact" as the number one risk concern. "Shareholder Concerns" and "Union Concerns" rank low in importance for both USERS and NON-USERS, intimating a current emphasis on explicit plan economics versus strategic human

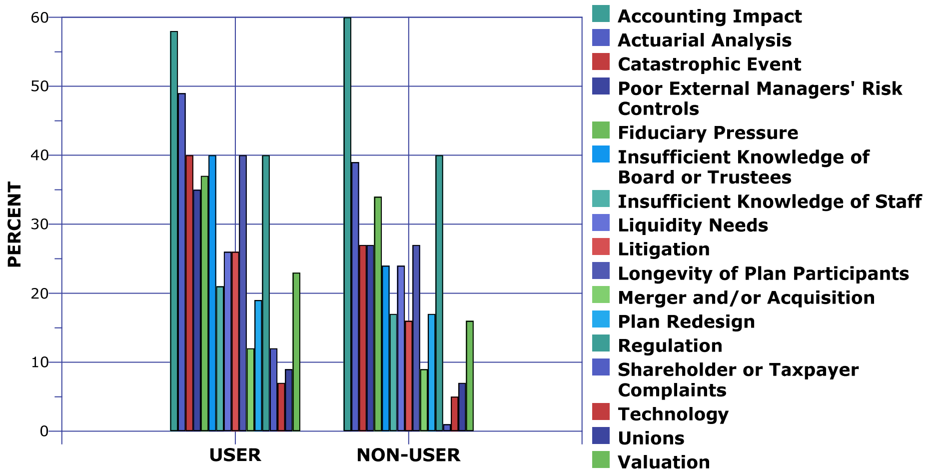
capital or corporate governance considerations. (Remember the aforementioned result that few survey-takers connect ERISA compliance with Sarbanes-Oxley mandates.)

“Technology” likewise falls low on the list which is somewhat disturbing if it means that plan sponsors are unlikely to commit to procuring (or improving) a system to adequately measure risk.

Figure 33 reveals that 4 out of 10 USERS and NON-USERS share a common concern about regulation. In other areas, there is disagreement about relative importance. For example, with NON-USERS, only 27% and 24% cite “Longevity” and “Board Knowledge” as concerns, compared to 40% of USERS who think these are important considerations. Notice that only 21% (17%) of USERS (NON-USERS) complain about “Staff Knowledge.”

Write-in answers are shown in Figure 34 and merit further research as they are legitimate and potentially material in terms of both short-term and long-term economic consequences. Two individuals indicate “no major concerns.”

FIGURE 32: AREAS OF DEFINED BENEFIT PLAN CONCERNS



	USER	NON-USER
Accounting Impact	58	60
Actuarial Analysis	49	39
Catastrophic Event	40	27
Poor External Managers' Risk Controls	35	27
Fiduciary Pressure	37	34
Insufficient Knowledge of Board or Trustees	40	24
Insufficient Knowledge of Staff	21	17
Liquidity Needs	26	24
Litigation	26	16
Longevity of Plan Participants	40	27
Merger and/or Acquisition	12	9
Plan Redesign	19	17
Regulation	40	40
Shareholder or Taxpayer Complaints	12	1
Technology	7	5
Unions	9	7
Valuation	23	16

FIGURE 33: RANKING OF DEFINED BENEFIT PLAN CONCERNS

CONCERN	USER (% OF RESPONDENTS)	CONCERN	NON-USER (% OF RESPONDENTS)
ACCOUNTING	58	ACCOUNTING	60
ACTUARIAL	49	REGULATION	40
CATASTROPHIC	40	ACTUARIAL	39
BOARD KNOWLEDGE	40	FIDUCIARY PRESSURE	34
LONGEVITY	40	CATASTROPHIC	27
REGULATION	40	EXTERNAL MONEY MANAGER RISK CONTROLS	27
FIDUCIARY PRESSURE	37	LONGEVITY	27
EXTERNAL MONEY MANAGER RISK CONTROLS	35	BOARD KNOWLEDGE	24
LIQUIDITY NEEDS	26	LIQUIDITY NEEDS	24
LITIGATION	26	STAFF KNOWLEDGE	17
VALUATION	23	PLAN REDESIGN	17
STAFF KNOWLEDGE	21	LITIGATION	16
PLAN REDESIGN	19	VALUATION	16
M&A	12	M&A	9
SHAREHOLDERS	12	UNIONS	7
UNIONS	9	TECHNOLOGY	5
TECHNOLOGY	7	SHAREHOLDERS	1

FIGURE 34: DEFINED BENEFIT PLAN CONCERNS: WRITE-IN RESPONSES

CONCERN	RESPONDENT CATEGORY
CASH NEEDS	NON-USER
CONCENTRATION OF RISK	USER
DISCOUNT RATE MANDATES	NON-USER
EXTENDING PLAN MATURITY	USER
INTEREST RATE RISK	USER AND NON-USER
LACK OF RESOURCES FOR PLAN GOVERNANCE	NON-USER
LITTLE ATTENTION PAID TO LIABILITIES	USER
OPPORTUNITY COSTS TO CLOSE ASSET-LIABILITY GAP	NON-USER
PLAN TERMINATION	NON-USER
POLITICALLY MOTIVATED DIVESTMENT	USER
STABILITY OF FUNDING STATUS	NON-USER
USE OF SURPLUS	NON-USER

FINANCIAL RISK MANAGEMENT BY DIRECT USERS OF DERIVATIVES

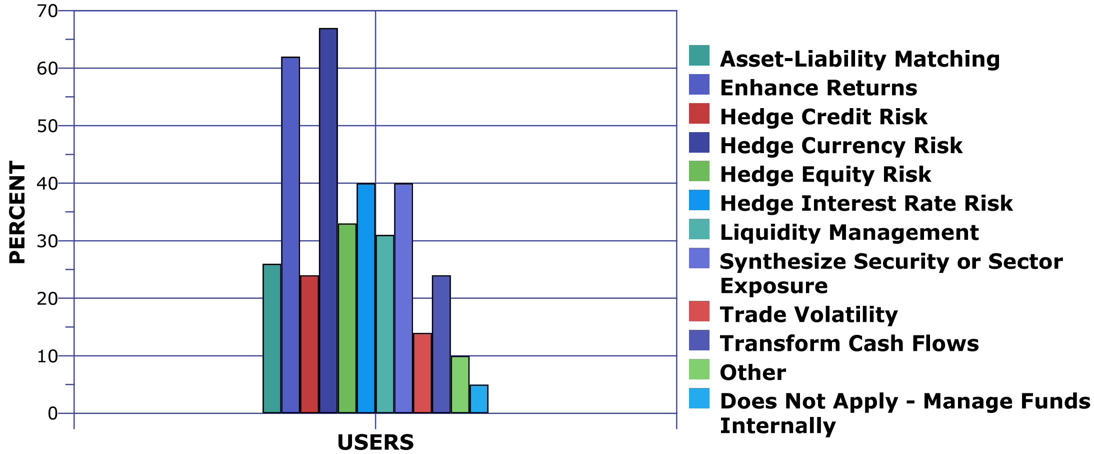
The remainder of this study considers only direct users of derivatives and attempts to better understand how they manage risk.

QUESTION 32: WHAT ARE THE PRIMARY REASONS YOU USE DERIVATIVES, EITHER INTERNALLY OR VIA EXTERNAL MONEY MANAGERS? CHECK ALL THAT APPLY. (USER)

As shown in Figure 35, USERS rank ”Currency Risk Hedging” and “Return Enhancement” as two top reasons. “Interest Rate Hedging” and “Security Synthesis/Sector Exposure” are next in terms of importance.

Many return-enhancement strategies likely induce leverage, unlike hedging. A number of questions arise. Are USER plan sponsors more likely to be active investors? If they do engage in Liability-Driven Investing, are they more likely to employ a portable alpha engine (in the form of a hedge fund or derivative instrument overlay)? How should LDI or straight derivative instrument trading performance be evaluated, both at the plan and individual money manager level? How does a derivatives overlay, constructed for purposes of return enhancement, impact a plan sponsor’s strategic asset allocation mix? How do risk management policies and procedures (whether internal or applied to external money managers) differ for return enhancement strategies versus hedging, if at all? Again, these are subjects for future research.

FIGURE 35: HOW DERIVATIVES ARE USED

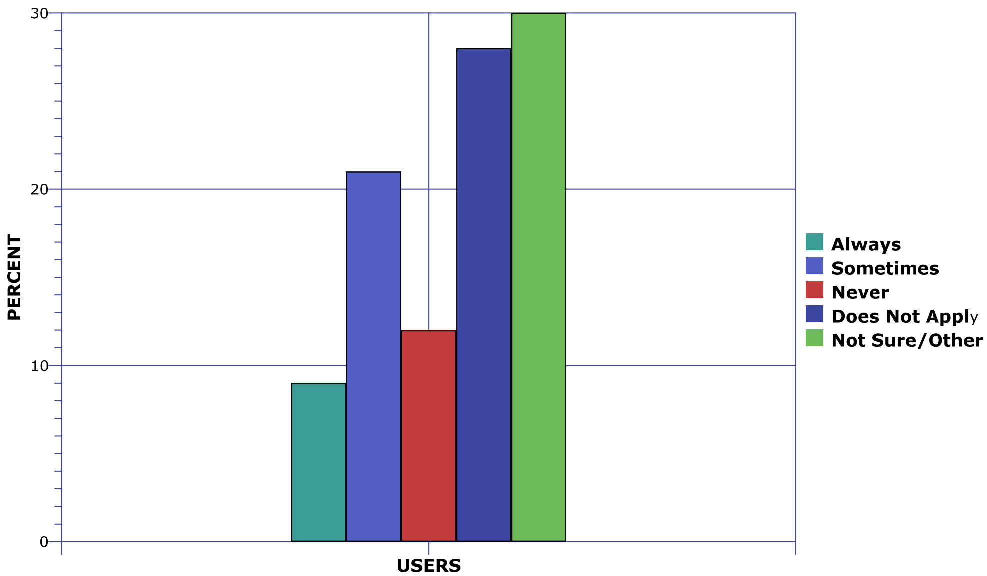


	USERS
Asset-Liability Matching	26
Enhance Returns	62
Hedge Credit Risk	24
Hedge Currency Risk	67
Hedge Equity Risk	33
Hedge Interest Rate Risk	40
Liquidity Management	31
Synthesize Security or Sector Exposure	40
Trade Volatility	14
Transform Cash Flows	24
Other	10
Does Not Apply - Manage Funds Internally	5

QUESTION 33: ARE DERIVATIVES INTEGRAL TO ANY DEBT OR EQUITY ISSUANCE RELATED TO IMPROVING DEFINED BENEFIT PLAN FUNDING STATUS? (USER) Somewhat counter to expectations, Figure 36 indicates that only 30% of USERS include derivatives as part of their organization's corporate finance toolbox. Without more concrete information about how decisions are made within each organization represented in this study (i.e. independence of treasury versus retirement plan committee, treasury as profit center versus cost center, etc.), it is a difficult to know how to interpret the result that 30% of respondents answer "Not Sure" or "Other."

For the 28% of respondents who answer "Does Not Apply," external funding may be a non-event for several reasons. For instance, a plan with a healthy funding status may not require external security issuance but could instead be periodically topped off from cash flow or earnings (depending on whether a plan sponsor is seeking to improve statutory, accounting or economic funding status). Another situation might involve a public government which does not issue equity.

FIGURE 36: DERIVATIVES AND DEBT ISSUANCE



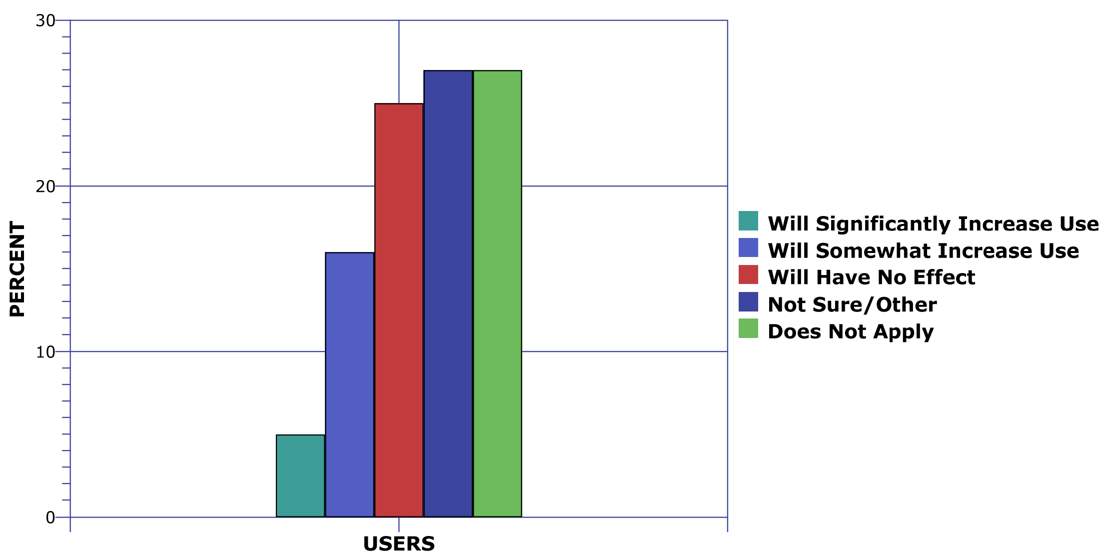
	USERS
Always	9
Sometimes	21
Never	12
Does Not Apply	28
Not Sure/Other	30

QUESTION 34: HAS OR WILL FAS 158 CAUSE YOU TO CHANGE YOUR CURRENT USE OF DERIVATIVES AS PART OF DEFINED BENEFIT PLAN RISK MANAGEMENT? (USER) While this question does not apply to public plans, recall that both USERS and NON-USERS rank "Accounting Impact" as their most important concern. According to the website for the Financial Accounting Standards Board, FAS 158 requires an employer to "recognize the overfunded or underfunded status of a defined benefit postretirement plan (other than a multiemployer plan) as an asset or liability in its statement of financial position and to recognize changes in that funded status in the year in which the changes occur through comprehensive income of a business entity…"

As shown in Figure 37, 21% of USERS cite a "Significant" or "Moderate" increase in the use of derivatives. This compares to 25% who are unconcerned about any meaningful effect. Canadian plan sponsors follow the Canadian Institute of Chartered Accountants (CICA) rules.

One respondent wrote that their use of IAS 19 has increased the usage of derivatives. As new pension disclosure rules are adopted (and several are pending at the time this study is being issued) and funding rules become more arduous, it would be helpful to study whether and how regulations impact pension risk decision-making. Will plan sponsors use more or fewer derivatives in response? Will pensions ultimately be forced to ratchet up the risk management function? These and other related questions remain open at the present.

FIGURE 37: EXPECTED IMPACT OF FAS 158

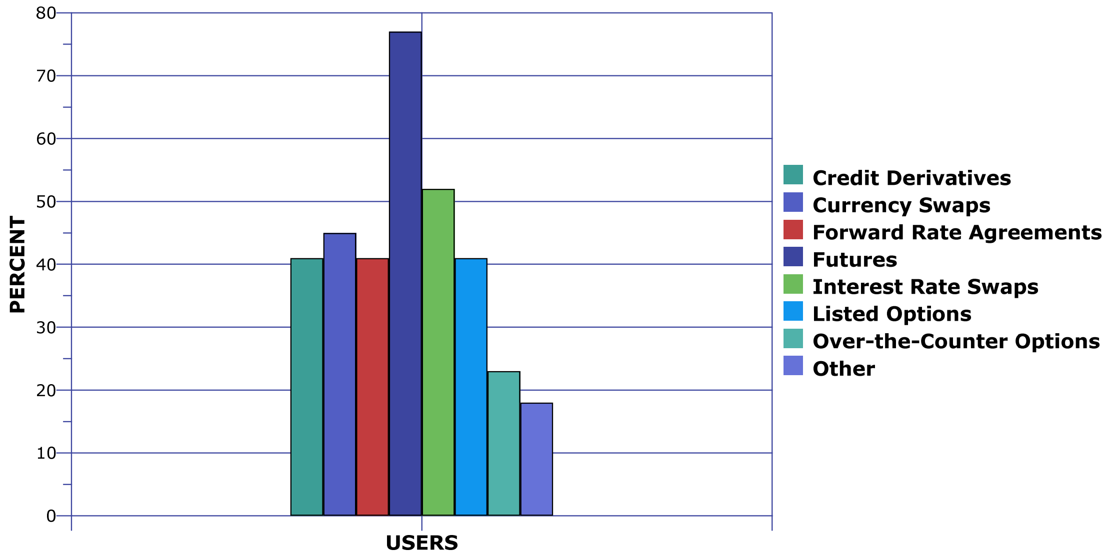


	USERS
Will Significantly Increase Use	5
Will Somewhat Increase Use	16
Will Have No Effect	25
Not Sure/Other	27
Does Not Apply	27

QUESTION 35: WHICH DERIVATIVE INSTRUMENTS DO YOU CURRENTLY USE? CHECK ALL THAT APPLY. (USER) As shown in Figure 38, 77% of respondents ranked "Futures" as first in terms of popularity. "Interest Rate Swaps" come in at a relatively close second (52%), followed by "Currency Swaps" (45%), "Credit Derivatives" (41%), "Listed

Options" (41%) and "Forward Rate Agreements" (41%). "Over-the-Counter Options" lag with only 23% of USERS citing use, possibly because of an initial cash outlay (in some situations) and/or a prohibition against their use. One respondent cites the use of equity swaps. No information was solicited from respondents with respect to choice of exchange (for listed products) or proportionality of use for each instrument within a given plan.

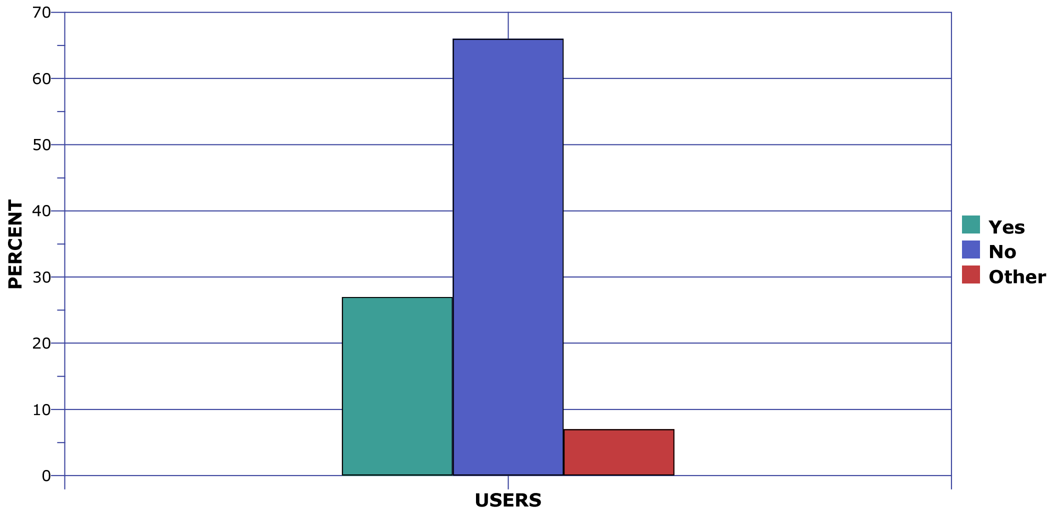
FIGURE 38: DERIVATIVE PRODUCT USAGE



	USERS
Credit Derivatives	41
Currency Swaps	45
Forward Rate Agreements	41
Futures	77
Interest Rate Swaps	52
Listed Options	41
Over-the-Counter Options	23
Other	18

QUESTION 36: HAS THE FLURRY OF INFORMATION ABOUT LIABILITY-DRIVEN INVESTING ("LDI") LED YOU TO CONSIDER INCREASING THE USE OF DERIVATIVES TO MANAGE DEFINED BENEFIT PLAN RISK? (USER) According to Figure 39, fully two-thirds of those already engaged in derivative instrument trades are not influenced by LDI marketing efforts. Two survey participants write to acknowledge their current use of LDI. Whether other USERS likewise employ LDI is unknown.

FIGURE 39: LIABILITY-DRIVEN INVESTING



	USERS
Yes	27
No	66
Other	7

QUESTION 37: PLEASE RANK ALL DERIVATIVES-RELATED RISK FACTORS ON AN IMPORTANCE SCALE OF 1 TO 3. (USER) Figure 40 is telling in several ways. First, 51% of USERS cite "Counterparty Default risk" as "Extremely Important" (and likely more so now, in light of recent events), followed by "Fiduciary Risk" (44%) and "Knowledge risk" (44%). This mirrors the responses to Question 8 (Question 9) wherein 64% (55%) of USERS acknowledge discussions about their fiduciary duty to hedge assets (liabilities). This is seemingly consistent with earlier results that show 40% of USERS citing "Insufficient Knowledge of Board Members and/or Trustees" as a risk area. (It is not clear whether this earlier response relates to knowledge concerns about derivatives or a broader knowledge deficit with respect to relevant topics such as risk management, asset allocation, economics of fees paid, and so on.)

A seemingly low priority on valuation issues is evident with only 17% noting it as "Extremely Important." Recall that only 23% of USERS cite this as a concern in an earlier question. Given the flood of headlines about valuation "problems" and increasing monies being allocated to "hard to value assets," further exploration about valuation-related current practices, vis-à-vis best practices, is suggested.

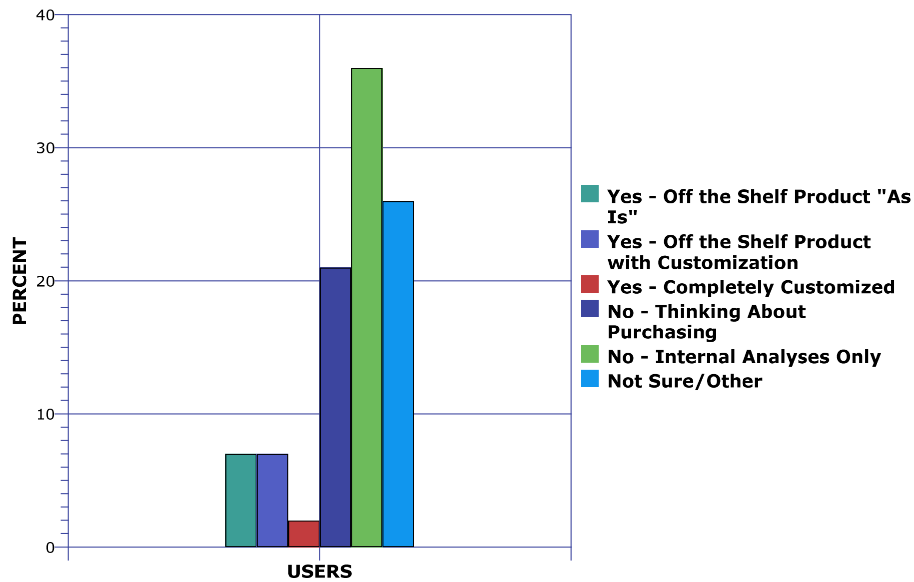
FIGURE 40: DERIVATIVES-RELATED RISK FACTORS

Description	Percent		
	Extremely Important	Somewhat Important	Not a Concern
Counterparty Default Risk	51	34	15
Fiduciary Risk	44	29	27
Knowledge Risk	44	39	17
Legal Risk	29	46	24
Liquidity Risk	29	51	20
Operational Risk	29	59	12
Settlement Risk	24	51	24
Valuation Risk	17	68	15
Volatility Risk	32	50	18

QUESTION 38: DO YOU CURRENTLY USE AN EXTERNAL RISK ANALYTICS SOFTWARE PACKAGE? (USER) As shown in Figure 41, only 16% of USERS use an "Off the Shelf" or "Customized Technology Solution." While 21% ponder the purchase of a system, 36% says they do all analyses internally. Three respondents write that consultants do the analyses for them. Two persons say that derivative instrument use is too small to warrant an expenditure on specialized analytics.

Whether plan sponsors trade directly or through external money managers, it is important that they be able to accurately and frequently capture relevant data and then examine it carefully. For a significant user of derivatives, aggregation (and disaggregation) of risks and exposures, by instruments, manager and currency, inter alia, may be difficult to update and review in a spreadsheet environment.

FIGURE 41: RISK ANALYTICS SOFTWARE

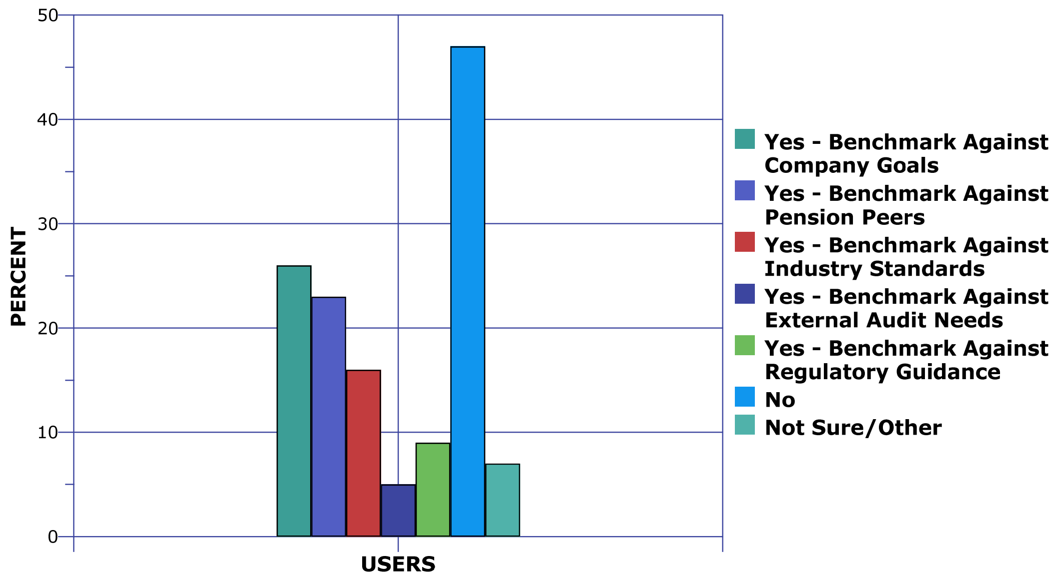


	USERS
Yes - Off the Shelf Product "As Is"	7
Yes - Off the Shelf Product with Customization	7
Yes - Completely Customized	2
No - Thinking About Purchasing	21
No - Internal Analyses Only	36
Not Sure/Other	26

QUESTION 39: DO YOU BENCHMARK RISK MANAGEMENT ACTIVITY OF YOUR DEFINED BENEFIT PLANS? CHECK ALL THAT APPLY. (USER) The results to this question are interesting in that they tie back to good fiduciary process, or lack thereof. For the 26% of USERS who say they benchmark against company goals, they may not necessarily be benchmarking against pension peers, industry standards, external audit needs and/or regulations.

As shown in Figure 42, 47% of USERS answer "No" to any type of benchmarking. This begs a number of important questions. How can USERS know when and how to revise their risk management policies and practices if they do not perform a post-audit (which in turn depends on comparing results with some pre-identified and appropriate set of standards)? Is transacting in a vacuum likely to expose decision-makers to allegations of breach for bad process? How can plan sponsors identify how to improve if there is no basis for determining what constitutes "good" versus "inferior" outcomes?

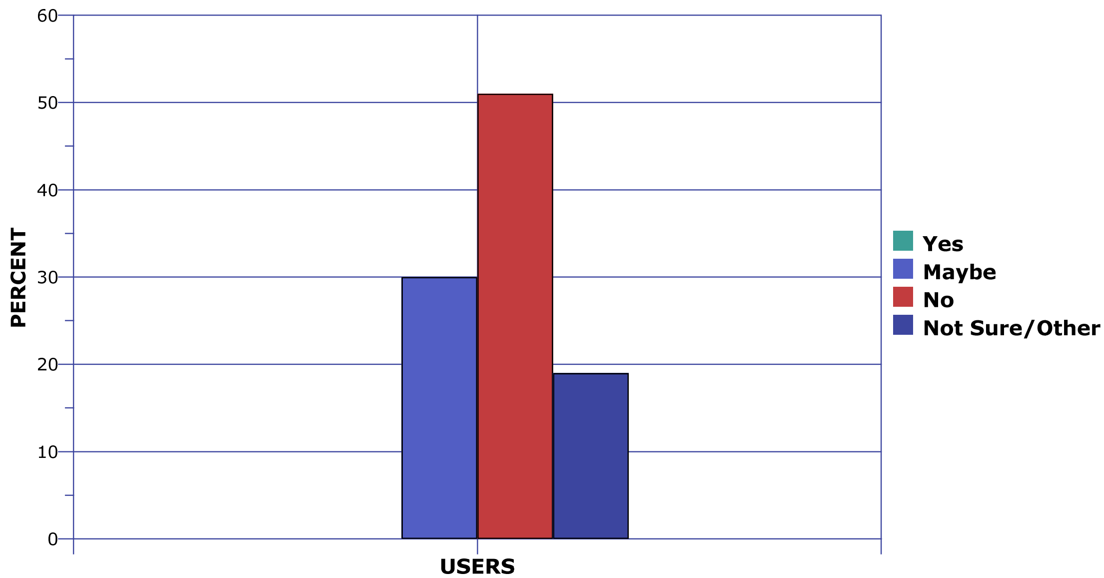
FIGURE 42: BENCHMARKING RISK MANAGEMENT ACTIVITY



	USERS
Yes - Benchmark Against Company Goals	26
Yes - Benchmark Against Pension Peers	23
Yes - Benchmark Against Industry Standards	16
Yes - Benchmark Against External Audit Needs	5
Yes - Benchmark Against Regulatory Guidance	9
No	47
Not Sure/Other	7

QUESTION 40: WILL YOU INCREASE YOUR USE OF DERIVATIVES IF MORE DEFINED BENEFIT PLAN FIDUCIARIES DO LIKEWISE? (USER) As shown in Figure 43, 51% of USERS respond "No". Zero respondents answer "Yes" and 30% respond "Maybe." The potential impact of enhanced disclosure rules, as relates to the use of derivatives and general risk management practices, is unknown.

FIGURE 43: PEER INFLUENCE AND USE OF DERIVATIVES



	USERS
Yes	0
Maybe	30
No	51
Not Sure/Other	19

CLOSING REMARKS

The Society of Actuaries and Pension Governance, LLC acknowledge the generosity of the 162 plan sponsor respondents who took time to answer this long survey. While the survey cannot fully address all elements of pension risk management, the hope is that this report encourages a lively debate about existing practices, areas for improvement and ways to preserve financial integrity on behalf of plan participants.

SURVEY QUESTIONS

Early attempts at designing one unified survey for both USER and NON-USER respondents led to the conclusion that certain questions were important for one group but not for another. As a result, and in order to keep inquiries to a reasonable number, the decision was made to create two surveys. While some of the questions differ by type of respondent, each survey includes questions about various topic areas: (a) plan characteristics (b) fiduciary liability (c) enterprise risk management (d) direct use (or lack thereof) of derivatives (e) indirect use of derivatives due to trading by external money managers and (f) asset-liability management practices. Survey questions follow.

GENERAL RESPONDENT DATA	RESPONDENT TYPE
What type of plans do you represent? Check all that apply. • Single-Employer ERISA Defined Benefit Plan • Single-Employer 401(k) Plan • Single-Employer 403(b) Plan • Taft-Hartley • State • City • Federal • Non-U.S. • Other, Please Specify	NON-USER AND USER
What is your size category in terms of defined benefit plan assets? If your company has more than one defined benefit plan, please answer in terms of total assets (U.S. and non-U.S.) and in terms of U.S. dollars. • Less Than $50 Million • $50 Million to $499 Million • $500 Million to $999 Million • $1 Billion - $5 Billion • Greater Than $5 Billion	NON-USER AND USER

GENERAL RESPONDENT DATA	RESPONDENT TYPE
What is the primary geographic location of your organization? • Northeast United States • Midwest United States • Southeast United States • Southwest United States • Northwest United States • Nationwide United States • Canada	NON-USER AND USER
What are your primary job functions? Check all that apply. • Actuary • Attorney • Benefits Committee Member • Board Member • CFO • Controller • Human Resources • Operations • Portfolio Manager • Treasurer • Trustee • Other, Please Specify	NON-USER AND USER
What percent of your typical work week is taken up with pension issues? • 0 to 24 Percent • 25 to 49 Percent • 50 to 74 Percent • 75 to 100 Percent	NON-USER AND USER

<table>
<tr><th>FIDUCIARY LIABILITY</th><th>RESPONDENT TYPE</th></tr>
<tr><td>Do you think there should be more regulatory guidance with respect to the topic of pension risk management and fiduciary responsibilities?
Yes
No
Not Sure
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
<tr><td>Does your fiduciary liability insurance underwriter specifically ask about how you manage defined benefit plan risk, whether internally or externally?
They Ask About Investment Risk Only
They Ask About Liability Risk Only
They Ask About Both Investment and Liability Risk
They Do Not Ask About Investment or Liability Risk
Not Sure
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
<tr><td>Has your organization ever had discussions to determine the position on the concept of a fiduciary duty to hedge interest rate/currency/equity/credit risk (rather than leaving defined benefit plan asset positions unhedged or only randomly hedging)?
Yes
No
Not Sure
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
<tr><td>Has your organization ever had discussions to determine its position on the concept of a fiduciary duty to hedge interest rate/mortality/inflation/currency risk (rather than leaving defined benefit plan liability positions unhedged or only randomly hedging)?
Yes
No
Not Sure
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
</table>

FIDUCIARY LIABILITY	RESPONDENT TYPE
Has your organization ever had strategic discussions about the link between Sarbanes-Oxley Act compliance and ERISA/Pension Protection Act of 2006? • Yes • No • Not Sure • Does Not Apply • Other, Please Specify	NON-USER AND USER

ENTERPRISE RISK MANAGEMENT	RESPONDENT TYPE
Does your organization have a risk budget in place that incorporates risk from defined benefit plans? • No • Yes • Not Sure • Other, Please Specify	NON-USER AND USER
Does your organization have a Chief Risk Officer? • Yes • No But Planning to Hire One Soon • No and Not Planning to Hire One Soon • Not Sure • Other, Please Specify	NON-USER AND USER
If the answer to the previous question is Yes, does he or she handle defined benefit plan risk? If the answer to the previous question is No, please do not answer this question and go on to the next question. • Yes • No – Addressed by Someone Else • No – Not Addressed at All • Not Sure • Other, Please Specify	NON-USER AND USER
Is your organization considering a change in the design of defined benefit plans? • Yes – Closed to New Hires • Yes – Reduced Accruals • Yes – Other Types of Freeze • Yes – Outright Termination of Plan(s) • Yes – Looking at Multiple Changes to Plan Design • No • Not Sure • Other, Please Specify	NON-USER AND USER

NO DIRECT USE OF DERIVATIVES	RESPONDENT TYPE
What reasons account for your decision not to use derivative instruments to manage the risk of your defined benefit plan(s)? (The term “risk” is used here to refer to interest rate, currency, equity, credit, mortality and/or inflation risk.) Check all items that apply. • Lack of Fiduciary Understanding • Perception of Excess Risk • Prohibition Against Possible Leverage • Limited Technology Budget to Track Trades • Small Staff • Considered Too Complex • Defined Benefit Plan Risk Not Considered Significant • Other, Please Specify	NON-USER
What factors could give rise to a change in your decision to use derivatives to manage the risk of your defined benefit plan(s). Check all items that apply. • FAS 158 • GASB 45 • New Management • Changed Circumstances • Economic Losses • Questions About Why They Are Not Being Used • Increased Market Volatility • Better Understanding of Liability-Driven Investing • Recommendation by Bank of Consultant • Use by Pension Peers • Improved Regulatory Guidance • Other, Please Specify	NON-USER

NO DIRECT USE OF DERIVATIVES	RESPONDENT TYPE
Do you feel that your pension consultant has an acceptable understanding of defined benefit plan risk management issues? • Yes • No • Not Sure • Other, Please Specify • Does Not Apply	NON-USER

DIRECT USE OF DERIVATIVES	RESPONDENT TYPE
Does your Investment Policy Statement include details about the use of derivatives by product and/or strategy type? • Details About Product Type Only • Details About Strategy Type Only • Details About Both Product and Strategy Type • General Language Only • Not Sure • Other, Please Specify	USER
Does a pension consultant assist you in crafting and/or editing your Investment Policy Statement with respect to the use of derivative products and/or strategies? • Yes – Consultant is Very Knowledgeable • Yes – Consultant Has Limited Knowledge • No – Subject Never Came Up • No – Consultant is Not Able to Assist • Not Sure • Other, Please Specify	USER
Does a pension consultant assist you in crafting and/or editing your Investment Policy Statement with respect to defined benefit plan risk management policies and procedures? • Yes – Consultant is Very Knowledgeable • Yes – Consultant Has Limited Knowledge • No – Subject Never Came Up • No – Consultant is Not Able to Assist • Not Sure • Other, Please Specify	USER

USE OF DERIVATIVES BY EXTERNAL MONEY MANAGERS	RESPONDENT TYPE
Do any of your external money managers use derivatives? • Yes • No • Not Sure • Does Not Apply – We Manage All Funds Internally • Other, Please Specify	NON-USER AND USER
If the answer to the previous question is Yes, explain why. Check all items that apply. If the answer to the previous question is No, please do not answer this question and go on to the next question. • Asset-Liability Matching • Enhance Returns • Hedge Credit Risk • Hedge Currency Risk • Hedge Equity Risk • Hedge Interest Rate Risk • Liquidity Management • Synthesize Security or Sector Exposure • Trade Volatility • Transform Cash Flows • Other, Please Specify	NON-USER AND USER
Do you regularly review your external money managers' risk management policies (even if they do not use derivatives)? • Yes • No – They Will Not Permit Us to Review • No – We Have Never Asked to Review • Not Sure • Does Not Apply – We Manage All Funds Internally • Other, Please Specify	NON-USER AND USER

<table>
<tr><th>USE OF DERIVATIVES BY EXTERNAL MONEY MANAGERS</th><th>RESPONDENT TYPE</th></tr>
<tr><td>Do you regularly review your external money managers' valuation policies (even if they do not use derivatives)?
Yes
No – They Will Not Permit Us to Review
No – We Have Never Asked to Review
Not Sure
Does Not Apply – We Manage All Funds Internally
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
<tr><td>Are you aware of any of the following embedded derivative instruments in your external money managers' portfolios? Check all that apply.
Callable Bonds
Collateralized Default Obligations
Convertible Bonds
Hedge Funds
Mortgage-Backed Securities
Warrants
Does Not Apply – We Manage All Funds Internally
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
<tr><td>When considering whether to hire particular external money managers, do you ask questions about derivative instruments and/or risk management policies and procedures as part of the screening process?
Ask Questions About Derivatives Only
Ask Questions About Risk Management Only
Ask Questions About Derivatives and Risk Management
No Questions About Derivatives or Risk Management
Not Sure
Does Not Apply – We Manage All Funds Internally
Other, Please Specify</td><td>NON-USER AND USER</td></tr>
</table>

ASSET-LIABILITY MANAGEMENT PRACTICES	RESPONDENT TYPE
How involved is the actuary you use in identifying defined benefit plan risk? • Actively Involved • Moderately Involved • Minimally Involved • Not Involved • Not Sure • Does Not Apply • Other, Please Specify	NON-USER AND USER
Would you like the actuary you use to be more involved in managing the risk of your organization's defined benefit plan(s)? • Yes – For Analysis Only • Yes – For Strategy Recommendations Only • Yes – For Both Analysis and Strategy Recommendations • No • Not Sure • Does Not Apply • Other, Please Specify	NON-USER AND USER
Do you think defined benefit plan risk management strategies should focus on assets, liabilities or an integration of the two? • Assets Only • Liabilities Only • Integrated Approach • Not Sure • Other, Please Specify	NON-USER AND USER
What types of risk metrics do you currently employ to evaluate and manage defined benefit plan risk? Check all that apply. • Correlation • Nonparametrics • Qualitative Judgment • Regression Analysis • Scenario Analysis • Simulation • Standard Deviation • Stress Testing • Tree Analysis • Value at Risk • Other, Please Specify	NON-USER AND USER

ASSET-LIABILITY MANAGEMENT PRACTICES	RESPONDENT TYPE
What defined benefit plan risk areas concern you? Check all that apply. • Accounting Impact • Actuarial Analysis • Catastrophic Event • External Money Manager Risk Controls or Lack Thereof • Fiduciary Pressure • Insufficient Knowledge of Board Members and/or Trustees • Insufficient Knowledge of Staff • Liquidity Needs • Litigation • Longevity of Plan Participants • Merger and/or Acquisition • Plan Redesign • Regulation • Shareholder or Taxpayer Complaints • Technology Availability and/or Implementation • Unions • Valuation • Other, Please Specify	NON-USER AND USER

FINANCIAL RISK MANAGEMENT BY DIRECT USERS OF DERIVATIVES	RESPONDENT TYPE
What are the primary reasons you use derivatives, either internally or via external money managers? Check all that apply. • Asset-Liability Matching • Enhance Returns • Hedge Credit Risk • Hedge Currency Risk • Hedge Equity Risk • Hedge Interest Rate Risk • Liquidity Management • Synthesize Security or Sector Exposure • Trade Volatility • Transform Cash Flows • Does Not Apply – We Manage All Funds Internally • Other – Please Specify	USER
Are derivatives integral to any debt or equity issuance related to improving defined benefit plan funding status? • Always • Sometimes • Never • Does Not Apply • Not Sure • Other, Please Specify	USER
Has or will FAS 158 cause you to change your current use of derivatives as part of defined benefit plan risk management? • Will Significantly Increase Use • Will Somewhat Increase Use • Will Significantly Decrease Use • Will Somewhat Decrease Use • Will Have No Effect • Does Not Apply • Not Sure • Other, Please Specify	USER

FINANCIAL RISK MANAGEMENT BY DIRECT USERS OF DERIVATIVES	RESPONDENT TYPE
Which derivative instruments do you currently use? Check all that apply. • Credit Derivatives • Currency Swaps • Forward Rate Agreements • Futures • Interest Rate Swaps • Listed Options • Over-the-Counter Options • Other, Please Specify	USER
Has the flurry of information about liability-driven investing led you to consider increasing the use of derivatives to manage defined benefit plan risk? • Yes • No • Other, Please Specify	USER
Please rank all derivatives-related risk factors on an importance scale of 1 to 3 – “Extremely Important” (1), “Somewhat Important” (2) and “Not a Concern” (3). • Counterparty Default Risk • Fiduciary Risk • Knowledge Risk • Legal Risk • Liquidity Risk • Operational Risk • Settlement Risk • Valuation Risk • Volatility Risk	USER

FINANCIAL RISK MANAGEMENT BY DIRECT USERS OF DERIVATIVES	RESPONDENT TYPE
Do you currently use an external risk analytics software package? • Yes – We Use "Off the Shelf" Software As Is • Yes – We Use "Off the Shelf" Software with Customization • Yes – We Use a Completely Customized Product • No – We Are Thinking About Purchasing • No – We Do All Analyses Internally • Not Sure • Other, Please Specify	USER
Do you benchmark risk management activity of your defined benefit plan(s)? Check all that apply. • Yes – We Benchmark Against Company Goals • Yes – We Benchmark Against Pension Peers • Yes – We Benchmark Against Industry Standards • Yes – We Benchmark Against External Audit Needs • Yes – We Benchmark Against Regulatory Guidance • No • Not Sure • Other, Please Specify	USER
Will you increase your use of derivatives if more defined benefit plan fiduciaries do likewise? • Yes • Maybe • No • Not Sure • Other, Please Specify	USER

DISCLAIMER

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