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INFORMATION FOR OBSERVERS

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Subject: **Liabilities, Uncertainties, and Expected Cash Flows (Agenda Paper 10)**

INTRODUCTION

1. Both IASB and FASB pronouncements incorporate the use of expected cash flows in accounting measurements. FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements*, defines the term as, "the sum of probability-weighted amounts in a range of possible estimated amounts; the estimated mean or average." IFRSs do not define the term, but the description in IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*, captures the same elements.

2. Recently, the Boards have reached different conclusions about the use of expected cash flows in accounting for liabilities with uncertain outcomes. Accounting for income taxes is the most notable difference to date. Preliminary discussions of lease term and uncertain liabilities (before the FASB dropped the project) seemed to indicate more differences in the future. With that in mind, the FASB and IASB staff directors thought a joint discussion of expected cash flow techniques would be especially useful. I wasn't at

the meeting, so they picked me to write the paper. The result is a brief discussion of how I think expected value fits into recognition and measurement decisions.

3. The term *expected value* is the weighted average of a probability distribution in which different outcomes have different payoffs. It is a descriptive statistic and an analytical tool. It is usually more informative than the most-likely payoff, but knowing both is better. It can enhance accounting measurement by using information that other tools cannot incorporate. However, it is just a tool. It cannot solve every problem. Using expected value in a measurement, for example, cannot compensate for a lack of precision in recognition criteria.

4. The IASB has begun to use the term *expected outcomes* in an attempt to separate the idea of probability-weighted payoffs from the term *value*. The name change signals the IASB's willingness to use the technique in accounting constructs that produce neither prices nor values. I will try to use *expected outcomes* to capture the broad notion of a probability-weighted average and *expected cash flows* to refer to a specific type of expected outcomes.

5. I propose that the Boards discuss the question of expected outcomes in the context of existing element definitions and recognition criteria. No matter how much we might (or might not) like the work to date on elements, it has not even passed the first due-process document. If we are to meet the dates set in the MOU, we will do so using our existing framework definitions.

6. Later in the paper, I will propose that expected outcomes be used in any measurement under conditions of uncertainty, but that recognition and measurement decisions should be independent of one-another. Before we think about where we are going, though, a little reflection on how we got to where we are.

A VERY SHORT HISTORY

7. U.S. GAAP has a long history of accounting for the contractual or, failing that, the single most likely outcome. APB 21, *Interest on Receivables and Payables*, was a groundbreaking standard, but its scope was limited to "contractual rights to receive money or contractual obligations to pay money on fixed or determinable dates." For many years, the SEC relied on that language to prohibit the use of present value to

measure any liability with uncertain cash flows, insisting instead on the undiscounted most-likely amount.

8. FAS 5, *Accounting for Contingencies*, does not contain significant measurement guidance, but practice has focused on evaluating the single most likely outcome. That practice is enforced by FIN 14, *Reasonable Estimation of the Amount of a Loss.* The example in paragraph 4 of the interpretation makes the point clear. Given a range of equally probable outcomes (in statistical terms, a uniform distribution), pick the lowest amount in the range.

> As an example, assume that an enterprise is involved in litigation at the close of its fiscal year ending December 31, 1976 and information available indicates that an unfavorable outcome is probable. Subsequently, after a trial on the issues, a verdict unfavorable to the enterprise is handed down, but the amount of damages remains unresolved at the time the financial statements are issued. Although the enterprise is unable to estimate the exact amount of loss, its reasonable estimate at the time is that the judgment will be for not less than $3 million or more than $9 million. No amount in that range appears at the time to be a better estimate than any other amount. FASB Statement No. 5 requires accrual of the $3 million at December 31, 1976, disclosure of the nature of the contingency and the exposure to an additional amount of loss of up to $6 million, and possibly disclosure of the amount of the accrual.

9. While the idea of statistical expectation is nothing new, it came very tentatively to U.S. GAAP. In 1993, the FASB introduced expected outcomes in FAS 114, *Accounting by Creditors for Impairment of a Loan*. Paragraph 15 states,

> If a creditor bases its measure of loan impairment on a present value calculation, the estimates of expected future cash flows shall be the creditor's best estimate based on reasonable and supportable assumptions and projections. All available evidence, including estimated costs to sell if those costs are expected to reduce the cash flows available to repay or otherwise satisfy the loan, should be considered in developing the estimate of expected future cash flows. The weight given to the evidence should be commensurate with the extent to which the evidence can be verified objectively. *If a creditor estimates a range for either the amount or timing of possible cash flows, the likelihood of the possible outcomes shall be considered in determining the best estimate of expected future cash flows.* [Emphasis added.]

10. In a 1996 FASB Special Report on its present-value project, I observed:

> For now, the ECF [expected cash flow] approach is presented as a working model for the Board’s use, rather than as a tool proposed for particular

> accounting standards. Few groups in financial reporting make regular use of probability-based techniques. The Board may find it difficult to translate what it learns by using ECF analysis into specific accounting requirements.

11. In 1998, the IASC issued IAS 37, which took the idea a step farther. In its discussion of measurement, paragraph 39 of IAS 37 says:

> Uncertainties surrounding the amount to be recognised as a provision are dealt with by various means according to the circumstances. Where the provision being measured involves a large population of items, the obligation is estimated by weighting all possible outcomes by their associated probabilities. The name for this statistical method of estimation is 'expected value'. The provision will therefore be different depending on whether the probability of a loss of a given amount is, for example, 60 per cent or 90 per cent. Where there is a continuous range of possible outcomes, and each point in that range is as likely as any other, the mid-point of the range is used.

Note that the last sentence contradicts the approach found in FIN 14 (see paragraph 8 above).

12. In 2000, the FASB issued Concepts Statement 7, which incorporated expected value ideas and provided guidance around their use. However, paragraph 25 of Concepts Statement 7 set a very narrow scope for the use of present value:

> The only objective of present value, when used in accounting measurements at initial recognition and fresh-start measurements, is to estimate fair value. Stated differently, present value should attempt to capture the elements that taken together would comprise a market price if one existed, that is, fair value.

13. Paragraph 25 is a product of the difficulty that the FASB had in articulating any objective for an initial or fresh-start present value measurement other than fair value. They (at the time, we) tried. The project's discussion paper devoted considerable (too much) attention to economic theories of interest. It explored a "present-value discount view" and a "measurement surrogate view" of present value. The first exposure draft described fair value and entity-specific measurements as alternative applications of present value. In the end, the FASB concluded that present value should be used only as a technique for estimating fair value, when applied to initial and fresh-start measurements.

14. Paragraph 25 does not mean that expected cash flows cannot be used for other accounting applications. Concepts Statement 7 mentions that they might be used in accounting

allocations. As I remember the history, the FASB didn't think about probability-weighted expectations in any application other than present value.

WHERE WE ARE NOW

15. In FASB Interpretation 48, *Accounting for Uncertainty in Income Taxes*, the FASB considered and rejected an expected outcomes approach to uncertain tax positions. The conclusions, in summary, were:

    a. Initial recognition of a tax position if it is more likely than not (over 50%) to be sustained, and

    b. Initial and subsequent measurement at "the largest amount of tax benefit that is greater than 50 percent likely of being realized upon settlement."

16. The IASB reached a different conclusion. The preballot draft of a revised IAS 12, *Income Taxes*, would require measurement of tax assets and liabilities as described below:

> Uncertainty over whether the amounts submitted by the entity to the tax authorities will be accepted may affect the amount of current tax and deferred tax. An entity shall measure current and deferred tax assets and liabilities using the probability-weighted average amount of all the possible outcomes, assuming that the taxing authorities will review the amounts submitted and have full knowledge of all relevant information. Changes in the probability-weighted average amount of all possible outcomes must be based on new information, not a new interpretation of previously available information

17. The FASB's basis for conclusions describes the difference in view,

> **Measurement Attributes That Use Fair Value Techniques**
>
> B25. The Board also considered a measurement attribute that uses some of the inputs to a fair value measurement but excludes discounting, anticipated changes in tax rate, and examination risk (an expected-outcome measurement).
>
> B26. Some Board members believe that an expected-outcome measurement would be conceptually superior when uncertainty exists because that measurement would require consideration of all potential outcomes, including those with low probabilities of occurring. However, other Board members objected to a measurement approach that is similar to fair value but excludes factors that could be significant to a fair value measurement: discounting, changes in tax rate, and examination risk. The

> Board concluded that, at this time, it is preferable to separately evaluate tax positions for recognition against a recognition threshold and to provide separate measurement guidance for tax positions that qualify for recognition.

18. The heading is as telling as the text. I read this basis as an argument that the use of an expected outcomes approach is limited to estimates of fair value.

19. IFRSs extend the use of expected outcomes beyond fair value. IAS 36, *Impairment of Assets*, applies expected cash flow measurements to both fair value and value in use. The standard includes an appendix, added in 2004 and drawn from Concepts Statement 7, titled, "Using present value techniques to measure value in use." IAS 37 predated Concepts 7 and incorporated expected outcomes, without ever referring to fair value.

20. The FASB has also used expected outcomes outside of fair value. FAS 114, referred to earlier, is not a fair-value standard. Paragraph 17 of FAS 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*, describes recoverability (the undiscounted cash flow test) as follows:

> Estimates of future cash flows used to test the recoverability of a long-lived asset (asset group) shall incorporate the entity's own assumptions about its use of the asset (asset group) and shall consider all available evidence. The assumptions used in developing those estimates shall be reasonable in relation to the assumptions used in developing other information used by the entity for comparable periods, such as internal budgets and projections, accruals related to incentive compensation plans, or information communicated to others. However, *if alternative courses of action to recover the carrying amount of a long-lived asset (asset group) are under consideration or if a range is estimated for the amount of possible future cash flows associated with the likely course of action, the likelihood of those possible outcomes shall be considered*. A probability-weighted approach may be useful in considering the likelihood of those possible outcomes. (Example 2 of Appendix A illustrates the use of that approach when alternative courses of action are under consideration.) [Emphasis added.]

Measurement Objective

21. I think there are some important questions about goals and starting points hidden in the array of conclusions just quoted, and that the answers to those questions influenced decisions at both the FASB and the IASB.

Liabilities, Uncertainties, and Expected Cash Flows

Is the objective prediction?

22. FAS 5 has been interpreted as what I call a "prediction" standard. It focuses on the amount of a probable loss. A prediction view holds that, if the most-likely amount of a loss contingency emerges as expected, the unwinding of the recorded amount should have no affect on future income statements. (This holds even with discounting if you include invested/borrowed funds in the runoff.) This focus has conditioned two generations of accountants.

23. We can see the prediction view in many objections to expected outcome approaches. Consider the liability with two possible payoffs – 100 and 1,000. The 100 payoff has a 70% probability. Those who hold this view would argue that the liability should be recorded at 100, perhaps with disclosure of the 1,000. In their view, 100 is the best prediction of future cash flows and is therefore most consistent with the objectives of financial reporting. They argue that the expected outcome – 370 – is an amount that will never be paid and that has no predictive value.

Is the objective to portray a current state?

24. In contrast, IAS 37 was a step toward what I call a "current state" standard. It focuses on the current measurement, or valuation, of the liability. A current state view holds that if the most-likely amount emerges as expected, future balance sheet measurements will reflect the changing probability as the expected value (the mean) converges on the most-likely value (the mode) and those changes will appear in income.

25. Returning to the example, those who hold a current state view would argue that the expected outcome – 370 – provides more and better information about where the entity stands today. Moreover, they would argue that the evolution of the recorded amount provides more current and useful feedback information than the sudden adjustment needed if the most-likely amount shifts from 100 to 1000.

Is the objective constrained by other factors?

26. This third view of the measurement objective is hard to describe. Standard setters sometimes look backward to the measurement attribute on initial recognition, or to the broader recognition and measurement system described in an existing standard, and try to

craft a subsequent measurement that disturbs neither. In this situation, standard setters may conclude that an expected outcomes approach is a step too far from the existing measurement.

What about abuse?

27. Standard setters sometimes adopt recognition or measurement approaches because they are concerned about abuse. Paragraphs 33 to 35 of IAS 36 are a good example. Those detailed anti-abuse restrictions exclude many of the possible outcomes that would otherwise be included in the expected cash flow measurement that the standard requires. SEC staff and several FASB members expressed concerns about the potential for abuse in overly optimistic evaluations of uncertain tax positions. Given that concern, some FASB members may have reached the same conclusion in tax impairment that some IASB members in fixed asset impairment. In both cases, the need to restrain perceived abuse overrode the conceptual argument.

WHERE WE NEED TO GO

28. The Boards need a common approach to dealing with uncertainty in recognition and measurement. More specifically, uncertainty affects the way we think about each of the steps in recognition and measurement:

    a. What is the unit of account?

    b. If the item exists, does it meet the definition of a liability?

    c. Does the item exist?

    d. Should the item be recognized in the financial statements?

    e. If so, how should the item should be measured?

29. Understanding the expected outcomes could enhance each of those decisions, but remember, expected value is a tool. A tool is not a solution. Remember too that we are working in the existing conceptual frameworks.

Liabilities, Uncertainties, and Expected Cash Flows

Recognition and/or Measurement?

30. The first question is whether we should incorporate expected outcomes into recognition decisions and measurements, or whether the technique should be reserved for measurement. Questions c, d, and e must all be answered under conditions of uncertainty and therefore probability must be part of the analysis. However, questions c and d don't seem to lend themselves to analysis using an expected outcomes technique.

31. The IASB's deliberations around IAS 37 provide a good background for the problem. After months of discussing hamburgers and surgery cases, the IASB seems to have settled on some basic conclusions about uncertain liabilities. As the staff (including the project team) understands the Board's current position:

    a. If the potential obligation arises from a contract with a customer, it is a performance obligation and falls into the revenue recognition project.

    b. In other cases, no obligation is recognized until a triggering event occurs that will lead to an outflow. That triggering event is the bad hamburger or the botched surgery, rather than the selling any hamburger or performing any surgery.

    c. In some cases, there is uncertainty about whether the event occurred. In those situations, management must make a judgement based on the available evidence. The IASB declined to set a numeric threshold on that judgment.

    d. If management concludes that the threshold is met, then the obligation is measured using expected cash flow techniques. The possible outcomes and probabilities that are consequences of the uncertain event and included in the calculation are:

        i. Those for which there is no outflow because the event did not happen;

        ii. Those for which there is no outflow because the event happened but was not discovered;

        iii. Those for which there is no outflow because the event happened but no claim was asserted;

iv. Those for which there is an outflow even though the event did not occur (payments to avoid litigation), and

v. Those for which there is an outflow and the event did occur.

32. This is the point at which Jim Leisenring usually observes that there is a fundamental conflict between the recognition threshold and the measurement (hereafter, *the Leisenring conundrum*). He is right. A measurement consistent with the recognition threshold would exclude item i and item iv. Consider the following simple example of the probabilities that the surgeon was negligent in the operation on patient X:

	Probability			Extension	
Event	**consistent**	**all in**	**payoff**	**consistent**	**all in**
Did not happen		20%	0		0
Happened but was not discovered	20%	10%	0	0	0
Happened but no claim	20%	10%	0	0	0
Did not happen, but paid to avoid litigation		30%	10,000		3,000
Happened and paid	60%	30%	250,000	150,000	75,000
	100%	100%			
		Expected value		150,000	78,000

33. The first two columns show the probabilities of different outcomes. The first column includes those consistent with the recognition threshold. The second column includes all of the possibilities that are connected with the operation on patient X.[1] The third column shows the amount of cash outflow from each possibility. The fourth and fifth columns show the extensions (probability times payoff) and compute expected value.

[1] Why are the percentages assigned to probabilities different between the "consistent" and "all in" columns? The probabilities of any distribution must always add to 1 (or 100%). So, the probability that the event happened but was not discovered in the "consistent" approach is 10% divided by 50% or 20% of the total possibilities.

Liabilities, Uncertainties, and Expected Cash Flows

34. Returning now to the questions posed in paragraph 28. The IASB's tentative decision doesn't describe how to evaluate the evidence in reaching a conclusion that an item exists. They could have taken a variety of other approaches, including:

    a. ***More likely than not that the event occurred.*** An old favourite, but hard in this situation, as the probabilities are 50-50.

    b. ***More likely than not to have a cash outflow.*** Changing the focus to outflows results in a 60% probability, but it conflicts with the description of the liability creating event as actual negligence. One of the outflows is independent of negligence.

35. My point here is not to criticize the IASB's tentative conclusion or to reiterate the several debates that preceded it. Instead, I use it as an example. The answers to questions c and d in paragraph 28 are binary. The answers are "yes" or "no." In the example, the evaluation depends on the "probability" columns of the table and doesn't require the "payoff" columns. The binary nature of recognition decisions, then, leads me to recommend that:

36. **Expected outcome approaches are a measurement tool to be used after the decisions about recognition (items a through d in paragraph 28).**

Consistency Between Recognition and Measurement?

37. The second question deals with the Leisenring conundrum. Should we strive for measurement that is consistent with recognition criteria?

38. If we do, we are in trouble. The IAS 37 illustrates the problem. The IASB set a recognition threshold based, in part, on concerns that business risks might otherwise be recognized as liabilities. The threshold was a combination of pragmatism, concept, and compromise. Our computation of a measurement consistent with that threshold would have started at 150,000, before incorporating present value and risk adjustment. But we would expect negotiations around the price to either transfer or insure the uncertain outcome of this operation to begin at 78,000. One might argue that more items should be recognized, but 78,000 is certainly a more decision useful measurement of the consequences of a possibly negligent operation on Patient X. Which leads me to my second recommendation:

39. **Decisions on measurement should be independent of decisions about recognition.**

Is Expected Value Limited to Fair Value?

40. The third question is whether expected outcomes approaches are limited to applications of fair value. The FASB's Basis for Conclusions in FIN 48 labels expected outcomes as a "fair value technique." It certainly is a technique used in estimating fair value, but both Boards have extended its use beyond fair value to provide a better picture of the current state of an asset or liability. Over the last 15 to 20 years, both Boards seem to have favoured "current state" over "prediction" measurement objectives. Indeed, setting aside situations that involved existing standards or concerns about abuse, I cannot think of a situation in which either Board has chosen prediction as the measurement objective.

41. The subsequent accounting is as important to this question as the initial accounting. Consider the example of a 10 year lease with an option to renew for 5 years. Management considers the probability extending the lease term to be 30%, so 10 years is the most-likely outcome. It will remain so until the probability of extending exceeds 50%. The expected lease term is 11.5 years (10 years times 70% plus 15 years times 30%). That term will change from year to year as management updates its estimate of the lease term. This assumes a model in which the liability measurement is updated for changes in estimate. I can think of only one example in US GAAP or IFRS in which an uncertain liability is not updated – life insurance accounting in US GAAP.

42. Given the Boards' preference for current state measurements and the superiority of expected outcomes approaches in developing those measurements, I can find no rationale for limiting their use to fair value measurements. That leads to my last recommendation:

43. **Measurements under conditions of uncertainty should always take account of the range of possible outcomes and their relative probabilities. That is, the measurements should always incorporate expected outcome techniques.**

CLOSING THOUGHT

44. In this paper I have proposed some working premises for the Boards to use when confronted with measurements under uncertainty. I don't think they rise to the level of concepts. The Boards would want to see a lot more analysis before incorporating some of

this into revisions to the conceptual framework. For our purposes over the next few years, that doesn't matter. We need a shared approach now.