

Conceptual Framework – thoughts from W. Paul McCrossan

INTRODUCTION

At the November meeting of the IASB's SAC, I raised strong support for the concept of a priority project to accelerate the development of a new Conceptual Framework for the IASB with emphasis on the role of *reliability*, the definition of *liability*, the meaning of *probable*, the effects of contingencies (i.e. *contingent probabilities*), the *unit of account* and accounting for *contractual rights and obligations*. I argued:

- That the conceptual framework project should have priority;
- That the project should also consider whether the “*efficient market*” hypothesis should continue to be implicitly assumed in the conceptual framework or whether “*behavioral economics*” should be substituted;
- That the project to revisit the framework should also reexamine the role of *probability* in general (rather than as restricted by the term “*probable*” in the context of recognition);
- That, in order to test the desirability of any change to the conceptual framework, the project to revisit the framework should be closely coordinated with the projects that affect: banking (including financial instruments in general); insurance (including pensions and other employee benefits in general); and performance reporting. I mentioned this set of projects since, it seems to me as an outside observer, that the difficulties that the IASB and the FASB have experienced with them in the past might be directly related to the current conceptual frameworks of the IASB (and the FASB).

Following my intervention, Sir David Tweedie asked me to put my views to writing. This document is my response to that request. It first reviews the empirical based reasons for the suggested change in the framework to better represent the reality of the financial intermediary world with which I am most familiar; and second proposes a few changes to the current framework to build on one of the Objectives already articulated in the current framework in order to have the framework better reflect these examples.

First, let me recite the necessary disclaimers:

- I am not an accountant; I am an actuary. This is an obvious disadvantage in that I am not well steeped in the core values, core beliefs, and traditions of accountancy. What I have learned of these items has been gained both from 8 years of observation while working with the IASB and its predecessor, the IASC, on specific projects such as pension and employee benefit accounting and insurance accounting and from three years service on the IASB's Standards Advisory Council. One advantage of being an actuary is that my training has been orientated towards the analysis of future uncertain events. This orientation may be of value as the

- accounting profession shifts its emphasis from historical based accounting to the more future oriented, probabilistic, and fair value accounting.
- A less obvious advantage is that cited in the dedication to Machiavelli's *The Prince*¹ since my detachment from the concepts under study might allow me to bring to bear a perspective that is difficult to see from the interior of the accountancy profession; and
 - This document represents my views alone. Although I have been the representative of the International Actuarial Association (IAA) to the IASB and although I am employed by Eckler Partners Ltd. (a member of Milliman Global), the views in this document are mine and mine alone. That is not to say that I did not expose the views in this document to colleagues. It is to say that I was the sole arbiter of which views to accept and which views to reject.

THE CASE FOR CONSIDERING A FRAMEWORK CHANGE TOWARDS BEHAVIORAL ECONOMICS

1. Behavioral economics compared to the “efficient market” hypothesis

Let me start with the case in favour of “behavioral economics” as opposed to the “efficient market” hypothesis. It is an observable fact that individuals do not always act rationally in their day to day lives. That is not to say that they do not act consistently over long periods of time. Most modern economic theory recognizes this observation. Most modern financial institutions attempt to create added value from consistently observed customer behaviour (or, in the case of new products, expected behaviour consistent with that observed from similar existing products until such time as statistically credible observations can be taken concerning the new product) in addition to the value they create from their normal intermediation operations.

For the remainder of this memorandum, I will restrict myself to examples that involve financial intermediation i.e. banking and insurance, in their broadest terms. I make the point in this document that there may be three types of behaviour that *appear* to be “irrational” to the financial intermediary:

- those caused by rational actions based on asymmetry of information;
- those caused by temporary excesses of fear and greed; and
- those caused by individuals trading off money against other values judged to be of greater utility such as convenience, risk aversion, or leisure.

¹ “Nor do I hold with those who regard it as a presumption if a man of low and humble condition dare to discuss and settle the concerns of princes; because, just as those who draw landscapes place themselves below in the plain to contemplate the nature of the mountains and of lofty places, and in order to contemplate the plains place themselves upon high mountains, even so to understand the nature of the people it needs to be a prince, and to understand that of princes it needs to be of the people.”

The second is irrational (“excessive”). The third is rational (in the “utility” sense).
... First, in deep markets in which behaviour can be publicly observed.

Even though “irrational behaviour” (evidenced by excessive price volatility) is observed in deep liquid markets, conventional financial reporting orthodoxy seems to be to accept observed transaction prices as evidence of fair values (presumably on the basis that there is no more credible information available at the time with which to measure *intrinsic* fair value). Stock markets and property markets are two such markets that are prone to observable “overshooting” and “undershooting” of rational fair values. There is ample statistical analysis that such “irrational behaviour” exists in the probability distribution functions derived from measurements of movements even in large liquid stock markets as well as in property markets. The drivers of behaviour in these markets are usually explained through the oft cited factors of fear, greed and asymmetry of information.

Analysis of the price fluctuations in these markets often demonstrates behavioral patterns that are “fat-tailed” (i.e. although they may have a similar appearance to normal distributions such as might be derived from random statistical measurement error, the number of “outlying” observations - extreme upward and downward price movements beyond 2 or 3 standard deviations - is not compatible with random statistical measurement error that would be expected from a normal distribution). From time to time, authoritative figures such as central bankers offer warnings against such “overshooting”. Recent noteworthy examples are the “irrational exuberance” remarks of Chairman Greenspan and the even more recent warnings from the Bank of England about excessive upward property price movements. Chairman Greenspan’s “irrational exuberance” warnings were timely; the market judged them to be premature.

What is interesting is that, in spite of ample documented observations (in hindsight) about these large markets “overshooting” and “undershooting”, financial reporting orthodoxy seems to be to accept readily observable transaction prices in these markets as evidence of “fair values” (presumably, as mentioned above, because there is no better information about intrinsic fair value).

For a time, actuaries and others attempted to deal with this observed overshooting and undershooting by using smoothed values derived from (possibly weighted) averaging of recent price observations. However, because the results of this smoothing could not be shown to be better measures of intrinsic fair value, the arguments in favour of smoothing to reduce the extent to which irrational behaviour in deep liquid markets distorts financial reporting have been rejected. While I have noted this past practice used by actuaries for completeness, this paper does not advocate that such smoothing mechanisms be introduced to handle observed irrationality in financial reporting. Rather, the

approach taken in this report is to use statistically credible observations of behaviour throughout the recognition and measurement sections of the conceptual framework. The next section expands on this approach.

... **Second, in large markets in which behaviour cannot be publicly observed.**

The same reliance on observed consistent behaviour is not true of behaviour that is observed in large markets for which there are not publicly available observations (especially markets that involve financial liabilities). I offer five simple, hopefully pertinent, examples of both rational behaviour, irrational behaviour and the “utility driven” types of rational behaviour cited above for which there may be thousands, millions, or tens of millions of behavioral observations yearly that cannot be publicly observed - but which may be of relevance:

- **Bank depositors** who have made non interest earning, or low interest earning, demand deposits may, collectively, leave large amounts in their accounts for long periods earning little or no interest. Explanations of such behaviour might be:
 - The safety of having money in a bank compared to “stuffing it in a mattress”;
 - The convenience of knowing that money will be on hand if and when needed;
 - Lack of knowledge about how to balance a bank book leading to excessive caution;
 - Lack of knowledge about how to make alternate interest earning investments;
 - Fear of investing in alternative investments, etc.

Almost all of these observed behaviours cited above are likely “irrational” (in the efficient market sense). However, the customer may believe that his / her behaviour is completely rational (in the utility sense). The point is that a bank may not know what is motivating its clientele to act “irrationally” (in the “efficient market” hypothesis sense). But banks can measure and monitor their customers’ behaviour and make money from exploiting the risk that there will not be a “run on the bank”. [The roles that either banking supervision or the existence of bank deposit insurance play in avoiding “runs of the bank” are beyond the scope of this paper.]

- **Residential mortgage holders** may have the right to refinance their mortgages advantageously when interest rates fall and when the costs of refinancing are sufficiently low. Their behaviour may be “irrational” in the efficient market sense but quite rational in the utility sense.
 - The mortgage holder may feel the gain is not worth the added inconvenience.

- The mortgage holder may not know the procedures to follow in order to refinance and may not feel that any potential gain is worth the effort to learn the procedures.

Once again, the mortgage issuer may not know the reasons why its customers' behaviour is irrationally "sticky"; but it can monitor the behaviour and manage its affairs to make money from its observations.

[Interestingly, mortgages can be held by the originating financial institution or can be bundled into collateralized mortgage obligations (CMOs) which might then trade in observable liquid markets. As deep liquid CMO markets have developed, it is evident that the transaction prices reflect an expectation of economically irrational (or "sticky") behaviour (which is rational in the utility sense). When such transaction prices can be *publicly* observed in the marketplace, they may be accepted as evidence of fair value. Yet, when comparable credible *non-public* observations can be made by the mortgage issuer itself (or by a service bureau that analyzes industry experience), the credible information may not be acceptable in measurement of values for financial statement purposes.]

- **Life Insurance policyholders** may not surrender their insurance policies for the policies' cash surrender values and may continue to pay renewal premiums. This behaviour may or may not be irrational (in the "efficient market" sense).
 - The behaviour may be economically rational if the insured is aware of a deterioration in health that might show up in a medical for a new policy and prevent the desired coverage from being replaced (whether or not a formal diagnosis of such a condition has yet been made)². Information about the extent of anti-selection is an example of asymmetry of knowledge about which insurers can develop credible statistics over time.
 - The behaviour may also be economically rational even if the insured could replace the coverage because the future likely cash build up under a new policy reflecting its incremental new acquisition expenses would be less than the insured expects to achieve by continuing with the existing policy.
 - The behaviour may be economically irrational (but quite rational in the utility sense) if, although the insured could actually benefit economically from a replacement policy, he /

² Often, through the selection process that occurs when an insurer underwrites a risk, an insurer gains knowledge about an insured's health. An insured may suspect that an adverse health condition exists before a policy is issued but may not yet have had a medical diagnosis. Acting on their suspicions to purchase insurance is known as "anti-selection". A good, readily observable example of anti-selection may be that female policyholders who purchase critical illness insurance coverage are observed to be much more likely to develop MS in the period shortly after issue than should be expected – indicating that individuals can be sensitive to emerging symptoms before they become sufficiently serious to consult a physician.

she does not view the potential gain as worth the time and effort to so do.

The point is that an insurer may not know the extent to which its policyholders are acting economically rationally or rationally in the utility sense. But an insurer can monitor its customers' behaviour as it affects both persistency and the progress of mortality and morbidity through insurance claims frequency and severity analysis to manage its affairs to make money by using its knowledge concerning its customers' collective behaviour

- **Holders of workers' compensation, unemployment insurance, or long term disability income replacement policies** that pay (say) 70% of pre-tax insured earnings may be led to claim benefits under these coverages (or to continue to claim benefits under these coverages) even when they would seem to be able to return to work and receive 100 percent of their earnings. The behaviour may be rational in the "efficient market" sense or may be rational in the utility value sense.
 - The behaviour might be economically rational if the insured recognizes that his / her job may be about to disappear due to economic conditions³. E.g. workers compensation claims for "lower back soft tissue injury" among construction workers are often a leading indicator of an economic slowdown. This is an example of efficient exploitation of asymmetry of information by the insured.
 - The behaviour might be rational in the economic sense if the net income received from insurance exceeds the net income, after taxes and employment related expenses (including day care).
 - The behaviour might be irrational in the "efficient market" sense if the insured values the utility of leisure time gained more highly than the income lost. Such utility driven behaviour is observable statistically in unemployment insurance plans where long claims length is more pronounced among secondary and tertiary earners (especially in high income families during times when a replacement job can be obtained at will). These lengthy claims are examples of rational behaviour in which the utility of increased leisure has a higher value to the individual claimant than the "economically rational" value of increased income.
- **Policyholders who purchase a segregated fund** (separate account, or unit-linked) policy that contains a guaranteed minimum death benefit and a guaranteed minimum maturity benefit may

³ Such behavioral change is known in the insurance industry as "moral hazard".

experience losses in the segregated fund that make the value of these guaranteed minimum benefits potentially very valuable. In general, the larger the difference between the guaranteed value of the segregated fund and the realizable value of the segregated fund, the more the guarantees are worth. Similarly, the closer the guarantee is to realization (measured in time to maturity), the more valuable are the minimum guarantees. Yet policyholders can be observed to surrender the policies in spite of the potentially very valuable guarantees.

- The behaviour might be economically rational in that the policyholder needs the proceeds for other more pressing purposes.
- The behaviour might be economically irrational but the policyholder might have lost confidence in the insurer from which the policy was purchased and “wants out” because of the perceived utility of “peace of mind”.
- The behaviour might be economically irrational reflecting the fact that the policyholder (and possibly his agent) can not make the assessment that waiting out the period to maturity will likely produces a higher expected gain than that economically rationally expected from almost any other investment. Such a decision could still be rational in the utility sense if the policyholder has more comfort in the new alternative investment.

The income replacement example is an example of a failure by the insurer to apply “the insurance principle”⁴. Insurers (including social insurers) must monitor claims experience closely to enable income replacement insurance to be properly priced and designed to reflect both moral hazard and behavioral anti-selection. The segregated fund example may be an example of economically irrational behaviour that might be triggered by the utility the policyholder derives from avoiding fear of further losses (or from satisfying anger at incurred losses to date).

The real life examples above are not cited to advance the proposition that they warrant individual special financial reporting treatment. They are produced to illustrate the more general proposition that the business of financial intermediation should operate to try to develop detailed knowledge of customers’ collective behaviour with respect to similar product lines, whether economically rational or rational in the utility sense. It should also monitor closely whether customer behaviour is observed to change over time.⁵

⁴ The insurance principle is that the existence of insurance should not, in and of itself, be sufficient to change the frequency or the severity of the event being insured against.

⁵ It may be neither cost effective nor possible to determine the reasons underlying any one client’s behaviour. It may be possible, and cost effective, to measure customers’ collective behaviour concerning similar products.

2. Combining temporal risk due to behaviour with financial risk

In general, financial intermediaries are exposed to two types of risk: financial / economic risk and customer behavioral risk (both rational anti-selective behaviour and behaviour that is irrational in the “efficient market” sense but rational in the utility sense). A financial intermediary should frequently monitor its customers’ behaviour closely in order to better manage its intermediation business to see if the way the customer values utility changes over time. This is true for banking, insurance and pension operations.

Financial intermediaries profit from investing moneys in ways that allow a spread to be made from the difference between what is guaranteed (or expected to be paid, if greater) to the customer and what can be earned from the use of the customers’ moneys. To do so, detailed financial estimates are made of the timing and amount of both the moneys that will be received from the customer and the moneys that will be paid to the customer bearing in mind the investments made. In making these estimations, the financial intermediary will take into account the most current credible information about the behaviour of its customers (including anti-selective and utility driven behaviour) as well as its most current information (and views) about the financial markets and the economy. As noted above, generally, the information about the behaviour of its customers is derived from statistical analysis of a collective, relevant, portfolio of customers rather than from information about an individual customer.

A simple banking example

... **involving only customer temporal risk.** Consider a simple portfolio of deposits under banking agreements that provide for perpetual renewal of the deposits until the amount in the customer’s account falls below a specified minimum amount, which may be zero. In such a case, a bank will likely use its proprietary (*non-public*) statistical information about its customers’ behaviour in order to estimate when they will actually ask for their money. A bank could then invest the moneys in risk free securities (e.g. government bills) that pay interest or mature in such a way as to provide the moneys estimated to be needed by the bank when they are expected to be needed. In such a case, the bank will have assumed customer related “temporal risk” i.e. the risk that the customers’ behaviour will change to ask for money sooner (or later) than expected – but it will not have assumed financial risk since it only invests in risk free financial instruments. To the extent that the bank expects to receive moneys in a timely fashion to pay for the expected withdrawal demands from its customers, it can be said to have “hedged” its deposit portfolio in the economic sense. But, current financial reporting standards may mean that it has not effectively hedged its portfolio in the financial reporting sense.

This is because the value of the liability currently does not reflect the expected customers' behaviour; but rather reflects the imposition on the value of the liability to the customers that, under the efficient market hypothesis, it cannot be less than the "demand deposit floor". On the other hand, the value of the government bills purchased to "hedge" the deposit portfolio fluctuates with market prices unless they are designated as HTM. This means that, although the bank has "hedged" its expected financial position, its earnings and its equity can fluctuate in ways that are a function of the differences in accounting measurement of its assets and liabilities rather than as a function of real expected financial gain or loss based on credible recently observed customer behaviour.

... involving only temporal and counterparty risk. Of course, the bank may be able to obtain access to "hedge" accounting treatment that eliminates this discrepancy by assuming additional counterparty risk and hedging its temporal risk using derivatives (for example by investing in very short bills and purchasing longer duration swaps). A reasonable question might be why access to hedge accounting to eliminate the asset / liability measurement inconsistency financial reporting problem is only available by assuming additional counter-party (default) risk rather by investing directly in marketable risk free investments that do not merit HTM treatment.

... involving temporal and financial (default) risk with cash instruments. Let's assume for the moment that the bank does not purchase risk free government bills but, instead, purchases high quality, marketable, corporate instruments that are rated by rating agencies in order to have money available when needed. In this case, the bank has assumed both temporal risk (concerning its depositors' behaviour) and financial risk (in this case corporate bond default risk). Once again the bank does not have access to "hedge" accounting because it has invested in real financial instruments. The earnings and equity in its financial statements are still subject to asset / liability measurement mismatch effects.

... involving temporal and financial (default risk) with bank originated loans.

Let's assume for the moment that the bank does not purchase high quality marketable corporate instruments; but instead invests in bank originated loans. As in the previous example, it has assumed both temporal risk⁶ and default risk. But it has avoided the asset / liability measurement mismatch risk by purchasing an asset class that is allowed to be valued at amortized cost.

(I note that the basis of conclusions with respect to the insurance standard explains that amortized cost treatment was afforded these originated loans due

⁶ The temporal risk can be of two types in this example. First, the depositors' behaviour may change with respect to the timing of withdrawals. Second, the borrowers' behaviour may change with respect to patterns of repayment or refinancing.

to reliability problems in determining fair value. Such an asset class for measurement purposes can mitigate the potential asset / liability measurement inconsistency problem for banks when deposit liabilities are subject to a demand deposit floor.)

The purpose of this memorandum is not to argue that fair value measurement techniques should be imposed on originated loans. It does observe that reliably measuring the fair value this asset class would be a function of both expected default rates and the shape of the interest rate curve for the appropriate quality financial instruments as well and customer loan repayment patterns. The author believes that many types of originated loans have proven capable of statistically credible observation and estimation of both loan losses and customer behaviour under specific financial / economic conditions since the decision to create the asset class was made by the FASB.

... consistency of measurement of assets and liabilities is essential to the preparation of relevant, reliable, financial reporting for financial intermediaries

The preceding examples provide demonstrations of a simple concept, that asset / liability measurement inconsistencies may arise (and subsequently disappear) as a bank moves from a less risky to a more risky asset / liability management process. The least risky A / L option illustrated may not qualify for hedge accounting treatment resulting in asset / liability measurement mismatch effects being reflected in financial reports. Adding incremental risk may result in there being considerably less need for hedge accounting in order to eliminate the asset / liability measurement mismatch effect.

3. The difference between “earnings” and “value added” in financial reporting for financial intermediaries

If there is one concept that I have learned from Wayne Upton over our 7 years of collaboration, it is the “just because an effect can be measured, does not mean that it should be recognized”. Wayne’s point is that the conceptual framework governs what is recognized.

Let me consider two types of transactions (one banking and one insurance) to examine this proposition and consider the implications of these transactions under both the existing conceptual framework and possible new conceptual frameworks.

... a bank increases its core deposits

Under the current conceptual framework this does not lead to income being recognized, since the efficient market hypothesis leads to the bank’s liability for its customers’ deposits being subject to a “demand deposit floor”. Making the

“heroic” assumption that there were no recognizable costs incurred either to obtain the deposit or to place the investment, the value (whether measured at fair value or using amortized cost) of the incremental asset at the time of deposit would be the same as the amount of the incremental liability. Income is earned as time passes and the difference between credits to the depositor and income to the bank is recognized in earnings.

I think that no one would dispute that, if the transaction were profitably priced, the bank’s value has increased as a result of the incremental deposit being having been received. However, this conclusion is based on recognizing the realistic, observable, probability that the collective of customers will not withdraw their moneys on the day they deposit them. However, since the underlying expected future behaviour of the bank’s customers does not enter into the calculation of either the bank’s earnings or the bank’s equity, the incremental value added from increasing the core deposit base is not recognized.

Note that, if behavioral economics were built into the conceptual framework, there would be a case for recognizing the value added in the financial reports. Just how that recognition should take place is a matter for further discussion. Here are three possibilities:

- The liability for the deposit is fair valued based on behavioral economic theory. This would lead to earnings at the time the incremental deposit is made. However logical to do so, such a change in financial reporting treatment might seem to be too radical to implement before a sufficient period of field testing that demonstrates that the behavioral assumptions can be credibly validated over time.
- The liability for the deposit might be recorded at book value (i.e. using the current demand deposit floor rule); but the difference between the BV and the FV (as defined above) might be reflected in equity. Readers will recognize that such a treatment is the logical equivalent to the AFS measurement treatment for financial assets.
- The liability for the deposit floor might continue to be recorded at BV for both earnings and equity purposes; but the difference between the BV and the FV of the deposit liability might be reflected in the notes to the financial statements as might the difference between the BV and FV of the bank’s financial assets. To use a term current in the insurance industry, the amount disclosed in the notes might be called the “embedded value” of the bank.

The purpose for mentioning consideration of the three alternatives is that any change to the conceptual framework to base it on behavioral economics will be new to the users of financial statements and might need a considerable period of experience (whether through field testing or through publishing values in the notes) before it became accepted as credible financial information which investors would use to make informed financial decisions about the entity.

... an insurer assumes an additional insurance risk contract

Under the tentative conclusions reached concerning phase II of the insurance contract financial reporting project, the addition of such a contract (priced in the expectation of a profit) would not lead to any profit at issue. Yet, once again, the value of the insurer should have been increased reflecting the incremental expected return on equity, at least when measured using the behavioral economics model used by most insurers.

For nearly a decade, insurers have been increasingly showing these values, and their movements, either in the audited notes to the financial statements or in unaudited supplementary information to the financial statements under the caption of “embedded values”. Analysts became comfortable in analyzing insurers based on trends in earnings and embedded values combined.

For better or worse, the embedded values disclosed in the notes to most insurers’ financial statements during the 1990s suffered from three important defects:

- they were not market consistent (particularly in assumptions concerning both the “pick-up” from equity investments and the market expected discount rate of return on equity that was built into the published embedded values);
- they ignored the value of “out of the money” guarantees, options and derivatives embedded in their insurance contracts in many countries; and
- they did not provide adequate sensitivity analysis concerning key behavioral and financial assumptions made to enable analysts to assess the embedded values disclosed.

These defects came to cause the embedded values published by insurers to be regarded with suspicion, a result that the insurance industry is now trying to rectify through the introduction of embedded values that correct for the three major past problems (equity pick-up and market expected discount rate plus lack of sufficient, relevant, disclosure).

The author of this paper wonders whether such notes, or supplementary financial information, to the financial statements should be the subject of guidance by the IASB. Such guidance could include encouragement of supplementary information in the financial statements. As confidence is gained in the reliability of the information, standards could be introduced indicating:

- what amounts (if any) should be recognized in earnings;
- what amounts (if any) should be recognized in equity; and
- what amounts (if any) concerning any additional value added to the insurer should be disclosed in the notes to the financial statements as a result of the transition from the efficient market hypothesis currently

implicitly assumed in financial reporting to a system of financial reporting based on behavioral economics.

The author argues that such a fundamental change in the conceptual framework should be approached with caution until it has had a serious field tested “shakedown”. In time, if the shift in financial reporting paradigm proves to produce information that is recognized as valuable by the users of financial statements, it might be deemed appropriate to move some of the value recognized by an IASB mandated shift from the notes, to equity and finally to earnings.

Sufficient confidence about the reliability of the elements developed using behavioral economics might develop shortly, following deliberations by the IASB and consultations with financial intermediaries, for the first steps of such a paradigm shift to be reflected in either equity or earnings immediately.

The author of this paper advocates, should the IASB accept the concept that a shift in the conceptual framework from the “efficient market” hypothesis to “behavioral economics” is worth investigating, that it should test its tentative conclusion by applying both the old and the new hypotheses during the development of new standards (including asset and liability measurement) primarily involved with financial intermediation:

- projects involving banking including hedging;
- projects involving insurance contracts including hedging;
- projects involving pensions and other employee benefits; and
- projects involving performance reporting for the above three projects.

4. Would using behavioral economics better reflect intrinsic fair value?

The examples above demonstrate that, in the case of financial intermediaries, the use of behavioral economics can lead to better understanding of what underlies intrinsic fair value.

The author believes that using behavioral economics yield to much more relevant information about a financial intermediary.

In order to use behavioral economics, the use of probabilities needs to be accommodated in the conceptual framework. Note that, while the accommodation of the use of probabilities is a necessary step before incorporating behavioral economics into the conceptual framework, the extended use of probabilities does not necessarily require a commitment to endorse behavioral economics.

One of the problems that has long been problematic in financial reporting is that regular GAAP leads to many items not being recognized as tangible assets. Yet, purchase GAAP can lead to the very same items being recognized if companies

in the same business recognize the values created in determining purchase prices. The author's experience in the financial intermediary field is that arms length purchases involving knowledgeable firms in the financial intermediation sector determine the transaction price reflecting their knowledge of the relevant customers' behaviour. To the extent that the use of behavioral economics is accommodated in the conceptual framework, the value gap between "purchase" GAAP and "regular" GAAP may be significantly narrowed.

One of the effects of using behavioral economics (or even using more robust probability) in the conceptual framework could be that certain items now regarded as intangible assets might be recognized as tangible assets. This would be a major departure from existing accounting practice and that IASB may want to move cautiously to ensure considerable comfort about the reliability of any such asset before it is admitted to the balance sheet.

On the other hand, as argued in the memorandum, a practical first step might be to encourage disclosure of the values in the notes to the financial statements (or in the supplementary information published in the financial statements) before allowing them to be affect equity of earnings. There are two reasons for doing so. First, relevant additional information about the magnitude and drivers of these values will be disclosed to users. Second, and more important in the author's estimation, the trends in these values will also be disclosed. Such information is potentially is potentially very valuable to the users of financial statements – especially if significantly altered adverse (or favorable) trends in the behaviour that affect these values begins to emerge.

5. The Trade-off between Relevance and Reliability using Probabilities

The author notes that, in September 2004, the FASB published a discussion of the trade-off between relevance and reliability concerning its review of its own conceptual framework. In it, the FASB states that "*the purpose of verification is to provide assurance as to the correspondence of accounting information to real-world economic phenomena*". The purpose of the examples illustrated above is to illustrate that the current IASB conceptual framework *does not* accommodate "correspondence of accounting information to real-world economic phenomena".

In the Concluding Comments to its discussion paper, the FASB notes "*The Board has required the use of fair value measurements in financial statements because it perceives that information as much more relevant to investors and creditors than historical cost information. Such measures better reflect the present financial state of reporting entities and better facilitate assessing their past performance and future prospects.*"

It is worthwhile considering some of the examples used above against a similar conceptual measure that has been advocated by both the FASB and the IASB, "own credit rating".

- It has long been agreed that credible observations concerning the probability of mortality can be used to measure liabilities for a portfolio of insurance contracts with similar expected mortality expectations on the basis that the unit of account is the portfolio and not the individual policy – even though the credible mortality information may not come from public sources.
- It has not yet been agreed that non-public credible observations concerning the probabilities of refinancing or depositor withdrawals can be used to measure mortgage or demand deposit liabilities (except indirectly when CMO transaction prices which incorporate such expectations can be publicly observed).
- In some cases, non-public, but credible, loan loss probability observations can be used to measure a portfolio of bank originated loans – but not a single loan.
- Even though the “law of large numbers”⁷ does not apply to the expectation of default on a single security, both the FASB and the IASB have advocated consideration of “own credit rating” in the measurement of the entity’s own debt. Yet, it is obvious that making such an adjustment to a single entity’s debt must be far less reliable than the application of credible statistical observations, whether public or non-public, in the examples cited above.

Should the conceptual framework not first be modified to accommodate the use of credible statistical information consistently and experience gained with the reliability of using these statistically credible probabilities, before a change is mandated to incorporate probabilities that would have much lesser reliability (as in the use of “own credit rating”)?

INCORPORATING BEHAVIORAL ECONOMICS IMPLIES CHANGING THE CONCEPTUAL FRAMEWORK TO INCORPORATE PROBABILITY IN RECOGNITION AS WELL AS IN MEASUREMENT

All of the examples noted above, involve to some extent or another estimating customers’ behaviour (in the very broad sense including probabilities of inaction / inertia, anti-selection, moral hazard, death and morbidity).

It seems obvious, on the surface, that the current conceptual framework of the IASB was not written to accommodate such probabilistic analysis. ***Yet, as highlighted below, the “Objectives” section in the conceptual framework already incorporates the concept of likelihood.***

It is the author’s view that relatively few amendments to the conceptual framework would be needed should the IASB decide to modify it to give

⁷ The law of large numbers is a statistical concept that, given a sufficiently large sample, the distribution of the actual observations will follow the probability distribution function of the underlying variable.

consistent effect to the concept of likelihood in the sections of the conceptual framework that follow the “Objectives”.

The Conceptual Framework of the IASB is examined in the order in which it appears.

1. The Preface

It seems to the author that no change need be made to the Preface in order to accommodate either probability or behavioral economics. The information, and insights, that would be gained from better understanding the businesses of financial intermediation would aid the user of financial statements to make better informed economic decisions concerning objectives (a), (b), (c), and (d).

2. The Introduction

It also seems to the author that no change need be made to the Introduction to the IASB’s Conceptual Framework.

3. The Objectives of Financial Statements

It does not seem to the author that changes are needed to the Objectives. Indeed, the changes necessary to incorporate both probability and behavioral economics would seem to the author to better fulfill those laid out in paragraph 15 (concerning relevant economic information) than does the current conceptual framework. Similarly, the information about financial position outlined as an objective in paragraph 16 would seem to be enhanced.

Similarly, the objectives concerning performance reporting in paragraph 17 would also seem to be enhanced since reference is made therein to “potential changes in the economic resources that it is *likely* (emphasis added) to control in the future”. It seems to the author that the desire to provide relevant information concerning what is *likely* to happen should already incorporate the concept of probability in both recognition and measurement – although the current conceptual framework does not do so.

There do not appear to be any problems with paragraphs 18 to 21.

4. Underlying Assumptions

It is only when paragraph 22 (“Accrual Basis”) is considered that the first change may need to be considered. The problematic wording is “the effects of transactions and other events are recognized when they occur”. This statement appears solidly rooted in recording the past rather than in recognizing the *likely changes in control of economic resources* (the key phrase noted in paragraph 17 above) that flow from past decisions.

It could reasonably be asked whether paragraph 22 is already in implicit conflict with paragraph 17. Note that a simple change to paragraph 22 to reiterate the objective in paragraph 17 would appear to clear the way. The replacement wording would be “the *likely* effects of transactions and other events *on control of economic resources* are recognized when they occur” (suggested changes are in bold italics). While reiterating words from the Objectives might not seem to be a key change, making such a nominal change would seem to change the focus for the sections of the conceptual framework that follow.

There would appear to be no problem with paragraph 23 on the “Going Concern” assumption.

5. Qualitative Characteristics

“Understandability”, “Relevance” and “Materiality” would not appear to require any changes.

I suspect that “Reliability” would be improved if there was an additional second paragraph that dealt with issues between those of ensuring freedom from material error and faithful representation (current paragraph 31) and those of disregarding information that is so unreliable as to be potentially misleading (current paragraph 32).

The additional paragraph should deal with the concept of using current credible estimates of relevant contingencies or events as the “gate-keeper” for reliability. Perhaps, something like ***“31a. To be deemed reliable, information regarding future events concerning control of economic resources should be based on all material current credible probability estimates of frequency, magnitude and timing. In the absence of relevant credible estimates, there should be a presumption that the information is potentially misleading.”***

The remainder of Reliability (“Faithful Representation”, “Substance over Form”, “Neutrality”, “Prudence”, “Completeness” and “True and Fair View”) could be left unchanged.

“Comparability” would not seem to require any change.

“Constraints on Relevant and Reliable Information” could benefit from a reinforcement in the paragraph on “Timeliness”. I suggest something like ***“When probability estimates of information regarding future events concerning control of economic resources are used, care should be taken to ensure that these estimates can be typified as both current and credible.”*** The remaining sections (“Balance Between Benefit and Cost” and “Balance Between Qualitative Characteristics”) would not seem to need to be changed.

6. The Elements of Financial Statements

Paragraphs 47 and 48 seem fine.

“Financial Position” could benefit from the addition of a paragraph between 49 and 50 to expand on the words “expected” in 49 (a) and 49 (b). I suggest something like **“49 (d) Expectations in 49 (a) and 49(b) should be based on all material current credible probability estimates.”**

Paragraphs 50 to 52 also seem fine.

Concerning “Assets”, paragraphs 53 to 55 seem fine. However, paragraphs 56 and 57 contain the stark word “control”. It seems to me that, without referring either to likelihood or expectation, the use of the stark word “control” can be interpreted as an absolute concept more in keeping with historical cost accounting. Wording that reflects what is finally chosen for the suggested new paragraph 31a (above) should be substituted. For example the second sentence of 56 might be made more generic if it were to read **“However, while physical form is not essential to the existence of an asset, in the absence of physical form when the asset is an expectation of a future economic resource, current credible estimates concerning frequency, magnitude and timing of any future economic resources that arise from past transactions or other past events are expected.”** The remainder of “Assets” would not seem to require change.

Concerning “Liabilities”, all sections seem fine to me although there might be a case to expand 64 to incorporate the concept of using all current credible material information when estimates are made.

Concerning “Equity”, “Performance”, “Income”, “Expenses” and “Capital Maintenance Adjustments” all sections seem fine to me.

Concerning “Recognition of the Elements of Financial Statements”, paragraph 83 (a) is problematic since to be recognized under the existing conceptual framework an item must be “probable”. I think 83 (a) needs to be rewritten to say something like **“there is current credible information that a future economic benefit will flow to or from the entity”**.

This should be reinforced in paragraph 85 by commencing with **“The concept of current credible probability estimates ... ”**.

Similarly the words “the use of reasonable estimates” in paragraph 86 should be replaced with something like **“the use of current credible estimates”**.

Similarly, the word “probable” in paragraphs 89 and 91 should be replaced to reflect the new wording chosen for 83 (a).

Given these changes, I think the words “measured reliably” in paragraphs 92 and 94 with respect to “Income” and “Expenses” stand up well.

7. Measurement of the Elements of Financial Statements

Paragraphs 100 (c) and 100 (d) could also usefully incorporate the concept that all material current credible information should be used in order to tie them into the preceding sections.

Paragraph 101 should probably be adjusted to reflect IAS 39.

8. Concepts of Capital and Capital Maintenance

These sections seem fine.

9. Other Issues (Behavioral Economics and Unit of Account)

The astute reader will discern that I have not, so far, brought in “behavioral economics” directly; but have only dealt with the elaboration of the use of probabilities in the conceptual framework to reflect what is meant by the *likely* events referred to in the Objectives. Neither have I dealt with the concept of “Unit of Account”. It seems to me that these can be dealt with through examples of what constitutes *all* “material current credible information” and how to use that information.

A FINAL THOUGHT ABOUT HEDGING

It seems to me that many of the problems that financial intermediaries encounter in financial reporting could be addressed by incorporating the concept of probabilities in their estimation of cash flows for hedging purposes when effectiveness is tested as well as allowing hedging to involve the use of cash instruments. More of the problems in reflecting financial intermediaries’ hedging might arise because partial hedges against only one risk (say economic risk rather than behavioral risk) might not be recognized as effective.

Incorporating the concept of probability (and particularly behavioral economics) in assessing exactly what is hedged and what is not might allow for resolution of the hedging problem by allowing explicit recognition for what is effectively hedged while requiring “standard” financial reporting for the portion of the risks that are not hedged.