CDICSADC

DIFFERENTIAL PREMIUMS BY-LAW

2005 REVIEW

CONSULTATION

September 2005

Canada Deposit Insurance Corporation
Société d'assurance-dépôts du Canada
Canada

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FOREWORD

The Canada Deposit Insurance Corporation (CDIC) *Differential Premiums By-law* (the "By-law") establishes a system for classifying member institutions into different categories for annual premium rate purposes. The authority for the By-law is in Section 21(2) of the CDIC Act which authorizes the CDIC Board of Directors, with the approval of the Minister of Finance, to make by-laws establishing the classification system, setting out the criteria or factors CDIC will consider in classifying its members, establishing the classification procedures CDIC will follow, and providing for the manner of determining the amount of annual premiums applicable to each category.

Annual reviews have resulted in numerous amendments to the By-law over the years, the most extensive of which occurred as a result of the 2004 comprehensive review. A comprehensive review of the premium system is normally done on a five-year cycle.

In April 2005 CDIC further amended the By-law as a consequence of the repeal of the CDIC *Standards of Sound Business and Financial Practices By-law* ("CDIC Standards"). This amendment was necessary since one of the factors taken into account in assessing ten of the one hundred mark score under the differential premiums system was the extent of adherence to CDIC Standards. In order to facilitate scoring for the 2005 premium year without reference to CDIC Standards, CDIC introduced an interim measure whereby members in good standing would obtain the ten marks. This amendment had the effect of granting every member ten marks.

The purpose of this paper is to consider the options for a permanent allocation of the ten marks. The possibilities include increasing the score of existing quantitative or qualitative criteria or factors and/or introducing one or two new measures.

Comments are requested from member institutions, their associations, regulators and other interested parties with respect to the suggestions put forth in this paper.

Please direct your written comments prior to September 30, 2005 to: Ms. Sandra Chisholm, Director, Insurance, Canada Deposit Insurance Corporation, 50 O'Connor Street, 17th Floor, P.O. Box 2340, Station D, Ottawa, Ontario K1P 5W5, Tel: (613) 943-1976, Fax: (613) 996-6095, Email: schisholm@cdic.ca

GENERAL

The main function of the differential premiums system is to classify member institutions into different categories for annual premium purposes. The system has been designed to differentiate among CDIC members on the basis of risk to CDIC. In considering various amendments to the system, the following objectives are kept in mind:

- To provide an incentive to members to achieve the best classification, i.e. the premium spread between high risk and low risk members must be sufficient to provide a meaningful incentive for member institutions to rectify the behaviour that led to the lower rating;
- To ensure that there is virtually no discretion on the part of CDIC in applying the system;
- To be fair to all member institutions irrespective of their size or complexity;
- To be neither overly lenient nor punitive (e.g. half of the membership in the worst category), taking into consideration the economic environment;
- To rely as much as possible on audited financial statements or information otherwise available to CDIC through regulatory reporting; and
- To provide for minimal, if any, deviations from GAAP.

Table 1 below summarizes the differential premiums system in effect for the 2005 premium year. It reflects all of the changes made as a result of the 2004 comprehensive review as well as the interim measure put in place on repeal of the CDIC Standards.

Member institutions that score 80 or more are placed in category one, those scoring from 65 to 80 are placed in category two, those scoring from 50 to 65 are in category three and members scoring below 50 are in category four.

For the 2005 premium year, the introduction of the interim measure effectively granted ten marks to every member institution and these marks need to be permanently reassigned. Various options for reallocation are explored in this paper, introduced by a discussion of the issues surrounding the balance between quantitative and qualitative elements within the system.

Table 1
CDIC DIFFERENTIAL PREMIUMS SYSTEM
SUMMARY

Criteria or Factors ➢ **Measures**	**Maximum Score**
Quantitative	
Capital Adequacy ➢ Assets to Capital Multiple ➢ Tier 1 Risk-Based Capital Ratio ➢ Total Risk-Based Capital Ratio	20
Profitability ➢ Return on Risk-Weighted Assets ➢ Mean Adjusted Net Income Volatility ➢ Stress Tested Net Income	 5 5 5
Efficiency ➢ Efficiency Ratio	 5
Asset Quality ➢ Net Impaired Assets (including Net Unrealized Losses on Securities) to Total Capital	5
Asset Growth ➢ Three-Year Moving Average Asset Growth Ratio	 5
Asset Concentration ➢ Real Estate Asset Concentration ➢ Aggregate Commercial Loan Concentration	 5 5
Quantitative Score: Sub-Total	**60**
Qualitative	
Examiner Rating	25
Member in good standing*	10
Other Information	5
Qualitative Score: Sub-Total	**40**
TOTAL SCORE	**100**

* 2005 interim measure that replaced CDIC Standards adherence

QUANTITATIVE VS QUALITATIVE

When the differential premiums system was first proposed, CDIC suggested an equal distribution between quantitative and qualitative elements. The majority of views expressed at the time supported more weight being attached to quantitative elements (i.e. increasing the total points assigned to non-discretionary transparent criteria). In response CDIC increased the weighting of quantitative criteria to 60% of the total score. In the same vein, CDIC could now allocate additional points to the quantitative criteria consequently increasing the non-discretionary or objective components of the system.

Alternatively, CDIC could allocate the points among other qualitative factors by increasing, for example, the points assigned to the examiner rating. It can be suggested that under the Supervisory Framework and related examination criteria and Guidelines of the Office of the Superintendent of Financial Institutions (OSFI) matters of corporate governance and risk management (the subject matter of the CDIC Standards) are covered and therefore points that had been allocated to CDIC Standards adherence should be transferred to the examiner rating. This option would have the advantage of maintaining the same balance between quantitative and qualitative components of the system.

CDIC is of the view at this time that both approaches (i.e. increase to quantitative and/or qualitative elements) should be looked at as both present certain advantages. Comments are requested on this broad question.

OPTIONS FOR REALLOCATION

The ten marks can be allocated to the quantitative or qualitative elements by: increasing the weighting of existing criteria or factors; creating new measures; or doing a combination of both. In considering the various options, CDIC considers in particular the impact on the balance between quantitative and qualitative elements and the potential impact on the distribution of members among differential premiums categories.

I) ALLOCATION TO EXISTING MEASURES

The option of increasing the weight of an existing criterion was assessed in terms of the potential impact on the balance and effectiveness of the overall system and on the score and categorization of member institutions. For each existing criterion, extensive back-testing was performed using 1999 to 2005 results to estimate the potential impact.

In conducting this assessment we have grouped the various existing quantitative criteria in the following manner:

(1) Capital adequacy - currently accounts for twenty percent of the total marks;
(2) Earnings[1] - the four existing measures represent twenty percent of total marks (five marks each); and
(3) Assets[2] - the four existing criteria account for twenty marks.

The discussion below also reviews the options of:

(4) increasing the weighting of qualitative factors - currently account for forty marks (ten of which are the subject of the reallocation); and

[1] Return on Risk Weighted Assets, Mean Adjusted Net Income Volatility, Stress Tested Net Income and Efficiency Ratio
[2] Net Impaired Assets, Three-Year Moving Average Asset Growth, Real Estate Asset Concentration and Aggregate Commercial Loan Concentration

(5) assigning the marks to a combination of existing quantitative and qualitative elements.

(1) Capital Adequacy

Provided they meet their regulatory capital requirements and operate within their authorized assets-to-capital multiple, member institutions achieve full marks for the capital adequacy criterion. This satisfies the goal of encouraging member institutions to meet capital requirements.

Back-testing over the 1999 to 2005 period confirmed that the impact on member institution categorization would have been minimal if an additional ten marks had been allocated to capital adequacy (average of two institutions per year moved into better categories). Overall, members have performed relatively well under the capital adequacy criterion, and particularly well following the 2005 amendments when 100% of member institutions achieved the maximum score for the criterion. Given the result of the recent amendments, additional marks to this criterion would not support the differentiation objective of the system. Further, with the upcoming implementation of Basel II[3], CDIC may need to make adjustments to this criterion in the future.

For these reasons, CDIC is of the view that the ten marks should not be added to the capital adequacy criterion.

(2) Earnings

The system currently assigns twenty marks to the earnings criteria thereby attaching as much importance to a member's earnings performance as to its capital adequacy. This recognizes the great importance CDIC places on a member institution's earnings sufficiency and sustainability to safeguard its capital and therefore to safeguard insured deposits. The criteria address returns relative to risk, the volatility of income, the adequacy of earnings relative to worst-case scenarios and the enhancement of earnings through efficiency. The five-year comprehensive review has confirmed that the earnings criteria effectively differentiate members' risk profile and performance.

Increasing the weight of one or more of the earnings criteria would alter the 20 / 20 / 20 balance within the groups of quantitative criteria, and of course the 60 / 40 balance between the quantitative and qualitative elements.

Back-testing indicated that over the 1999 to 2005 period more than fifteen percent of member institutions would have been in a worse category had the ten marks been distributed among the four earnings measures. With the ten marks allocated to two of the criteria (the mean adjusted net income volatility and stress tested net income), more than one third of the members in category one would have dropped to category two. Substantial changes to the individual measures, i.e. band of results and associated scores,

[3] Beginning in fiscal year 2008, member institutions will report capital adequacy information in accordance with Basel II

would have to be made and tested to recalibrate the criteria and the impact on the overall system.

Given the potential for significant negative impact on a large number of member institutions, CDIC is of the view that additional marks not be allocated to the earnings criteria at this time.

(3) Assets

The assets criteria address concentration, growth and impairment. Assigning twenty marks to this grouping recognizes the importance CDIC places on the quality and diversification of a member institution's assets, as well as the operational risks associated with very fast growth in assets. Each criterion is performing very well in terms of differentiation, although not surprisingly almost all member institutions score very well in good economic times under the net impaired assets criterion.

Distributing the ten points among the four asset quality criteria appears to have very little effect on the overall categorization of member institutions. If anything, there is a slightly negative impact. Further, if five marks were allocated to each of the two concentration ratios (aggregate real estate asset concentration and aggregate commercial loan concentration) on average only ten percent of member institutions would have dropped a category.

Given the relatively small negative estimated impact, the addition of the ten marks to one or two of the asset criteria appears to be a viable option. However, it would alter the balance between the various groups of quantitative factors and would increase the quantitative portion of the system to seventy marks.

Comments are requested on this option.

(4) Qualitative

With respect to the qualitative factors, there are two to which additional marks could be allocated: other information (currently 5 marks); or examiner rating[4] (currently 25 marks).

(a) Other Information

This factor is used to capture information not otherwise reflected in the differential premiums system that could have an impact on the viability of a member institution (e.g. a rating agency downgrade of a member institution's parent). Although applied within the context of defined parameters set out in the by-law, the scoring under this criterion is

[4] Examiner Rating means the rating on a scale of one to four that is assigned to an institution by the examiner in the course of carrying out the examiner's duties. The examiner provides its rating to CDIC and the rating is then translated into a score of 25, 18, 11 or 0.

discretionary. For that reason, we are of the view that the weighting of this factor should not be increased in keeping with the objective of minimizing discretion within the system.

(b) Examiner Rating

The allocation of the ten marks to examiner rating would maintain the current balance between quantitative and qualitative elements. Further, as mentioned above, the reasons underlying the repeal of the CDIC Standards and the associated elimination of the qualitative CDIC Standards factor could suggest the transfer of the entire ten marks to the examiner rating factor. Backtesting from 1999 to 2005 indicates that had the ten marks been added to examiner rating using a score grid with a gradation similar to that currently in use (i.e., 35, 24, 11 or 0), on average just under one quarter of the filing members would have dropped a category and in some years more than one third of members would have dropped. If the gradation were changed to favour better rated institutions (i.e. 35, 27, 12 or 0), the impact is not quite as dramatic with an average of thirteen percent of the members dropping a category.

Various options for tempering the downward shift in categorization could be explored, including use of a more graduated scale of examiner ratings. Any such change would need to be carefully evaluated. Some additional granularity may be helpful in better differentiating member institutions, particularly those that fall within the OSFI Moderate Risk composite risk rating. However, it would misalign the current direct relationship between the four OSFI composite risk ratings and the four CDIC examiner ratings, and could raise difficulties for the examiner such as defining criteria for each rating. Furthermore, the differential premiums system overall is not concerned with capturing subtle differences but rather with providing an incentive to low-scoring members to make improvements where necessary.

Back-testing can be used to estimate the impact of implementing a five-prong examiner rating factor. CDIC evaluated a scenario for breaking down the Moderate Risk rating into Low Moderate Risk and High Moderate Risk ratings that resulted in approximately ten percent of member institutions dropping a category. However, various scoring grids that accommodate an increased weighting of 30 or 35 points need to be explored.

Comments are requested on this option.

(5) Combination of Existing Quantitative and Qualitative

If the ten marks are split between existing quantitative and qualitative elements, the impact on categorization depends entirely on which criteria or factors are used. For example, splitting the ten marks between capital adequacy and examiner rating results in minor positive and negative movement between categories which in some years is negligible. When five marks are allocated to each of examiner rating and an existing quantitative measure other than capital adequacy, the drop in categorization averages fifteen percent of members using the four-prong examiner rating. The percentage drops to ten percent of members if a five-prong examiner rating is used. Any of these scenarios

would alter both the quantitative / qualitative distribution from 60/40 to 65/35 as well as the balance between the existing quantitative criteria groupings.

CDIC is currently of the view that there does not appear to be much benefit gained from adding five marks to an existing quantitative criterion as it would alter the balance between the existing groupings of quantitative criteria and can, in some cases, impact member categorization negatively. It may be more useful for CDIC to introduce a new quantitative measure that captures a different aspect of the risk profile of a member institution in combination with an increased weighting of the examiner rating.

II) ALLOCATION TO NEW MEASURE(S)

The inclusion of one or more new quantitative or qualitative elements could enhance the system's differentiation among members on the basis of risk. CDIC is looking at those measures that are, as much as possible, not otherwise incorporated in the system. During the 2004 comprehensive review of the By-law, certain of these measures were identified on a preliminary basis. A discussion of possible new measures follows. The analysis of the impact of new measures on members' past categorization can only be roughly estimated.

New Qualitative Factors

CDIC has not identified new qualitative factors that would: be readily available and applicable for each member institution; not be highly discretionary; and, address an aspect not otherwise captured within the examiner rating or other information factors.

CDIC welcomes any suggestion.

New Quantitative Measures

In considering the usefulness of a quantitative measure, CDIC initially assesses whether the risk addressed by the measure has been otherwise captured within the differential premiums system. Further, readily available data must exist to calculate the measure for all members. Any new measure must also appropriately differentiate among members, contributing to the identification of those members that present a higher risk profile.

(1) Interest Rate Risk Measure

CDIC is considering the introduction of a measure of interest rate risk. Interest rate risk is not captured as such by existing quantitative criteria within the differential premiums system. The measure would penalize those members that assume unusually high levels of exposure to interest rates.

Interest rate risk arises when an institution's principal and interest in-flows and out-flows from on- and off-balance sheet items have mismatched repricing dates. The amount at risk is a function of the magnitude and direction of interest rate changes and the size and maturity structure of the mismatch position. Interest rate risk impacts an institution's

earnings through its effect on interest margins and also affects the present value of its assets, liabilities and off-balance sheet items.

Shocks to market interest rates have been shown to be important for member institutions. If a member does not anticipate correctly movements in the yield curve, the rate of return on assets may fall sharply relative to the rate that the institution pays on its liabilities. In the 1980's many of the institutions caught by the U.S. savings and loan crisis had not adequately managed interest rate risks and had substantial fixed interest assets, and short-term deposits, at a time when interest rates were increasing sharply.

Member institution management of interest rate risk differs widely in terms of extent of oversight, procedures and measurement tools. Techniques used by institutions to measure interest rate risk exposure range from calculations that rely on simple maturity and re-pricing tables, to static simulations based on current on- and off-balance sheet positions, to highly sophisticated dynamic modeling techniques that incorporate assumptions about the behaviour of the institution and its customers in response to changes in the interest rate environment. For these reasons, it is difficult to identify a single measure that would adequately capture the exposure to interest rate risk for each CDIC member institution. CDIC has looked at what other deposit insurers incorporate as an indicator in their differential premiums system.

(a) Other Systems

Both the Deposit Insurance Corporation of Ontario (DICO) and the Banking Commission of France (BCF) incorporate an interest rate risk measure in their differential premiums systems. The Federal Deposit Insurance Corporation (FDIC) considered its inclusion.

DICO uses two interest rate risk tests together with a liquidity test to score asset/liability management. The interest rate risk tests include a short-term income test and a long-term market value test.[5] The short-term income test takes into account assets and liabilities up to twelve months. Time buckets are weighted to represent the fraction of the coming year that may be affected by a change in interest rates with the higher weighting being applied to the shorter terms. The long-term market value test is calculated in the same manner except that the measure applies to the entire book of business and increasing weighting is applied to time buckets that are further in the future. DICO combines these interest rate risk measures with a liquidity measure and the worst score from the three criteria becomes the score for the asset/liability management (ALM) portion of its differential premiums system.

The BCF system includes a maturity transformation indicator that evaluates the institution's medium term interest rate risk. The BCF indicator measures the difference between certain assets (those assets with a residual maturity of more than one year plus impaired loans and other fixed term assets and securities) and certain liabilities (those liabilities with a residual maturity of more than one year and some demand deposits and equity capital) as a percentage of capital.

[5] *Member Institution Risk Rating Methodology*, Deposit Insurance Corporation of Ontario, February, 2000

The FDIC is in the process of modifying its premiums system. The current FDIC system uses a nine category risk grid based on a combination of three capital classifications (well capitalized, adequately capitalized, inadequately capitalized) and three categories of regulatory ratings (CAMELS[6] 1 & 2; CAMELS 3; CAMELS 4 & 5). Legislatively FDIC is required to combine CAMELS 1- and 2-rated institutions into the same risk category for premium purposes and this has led to in excess of 90% of FDIC member institutions being classified in the best category for premium purposes.[7]

The FDIC is expected to retain its current method of classification (based on a combination of capital and CAMELS ratings) for its lower rated institutions but intends to introduce more classifications in order to better differentiate amongst those institutions currently classified in the best categories under the present system. It is in the context of looking at possible quantitative measures to differentiate amongst the better institutions that the FDIC considered including an interest rate risk measure. However, among other matters, it was determined that the usefulness of an interest rate risk ratio was questionable given the institutions they were seeking to differentiate (best-rated institutions).

(b) Measurement and Data Constraints

CDIC's development of an interest rate risk measure is constrained somewhat by the availability of data. CDIC has access, for all federally-regulated institutions, to Financial Information Committee (FIC) data that includes a report on interest rate risk, i.e. the Interest Rate Risk Maturities Matching Return (I-3). This report is filed on a quarterly basis and provides information regarding the maturity schedules of an institution's assets and liabilities, and hedges, as well as the impact of changes in interest rates on earnings and the value of net assets. Unfortunately, there are some issues with respect to consistent filing of this data: less than two-thirds of member institutions complete the data on sensitivity and there may be some question about assumptions made by institutions when classifying certain products into time bands of the maturity schedule.

Nonetheless, using the available data CDIC looked at a number of measures of interest rate risk including gap analysis and sensitivity measures (i.e. the adverse impact of a 100 basis point change in interest rates on consolidated net income after tax as well as on the consolidated economic value of net assets). Because of incomplete data, we were not able to conduct a reliable quantitative analysis of the two sensitivity measures and therefore could not conclude in any way on the usefulness of these measures.

The gap analysis measure appeared to provide appropriate conclusions respecting member exposure to interest rate risk as well as appropriate differentiation among members. Appendix A sets out more detailed results of our analysis of the measures.

[6] Capital, Assets, Management, Earnings, Liquidity, Sensitivity to market risk
[7] *Options for Pricing Federal Deposit Insurance*, FDIC Banking Review, 2003, Volume 15, No. 4, p. 3

The use of a gap measure has certain advantages in that it is a simple, universally understood interest rate risk measure and provides a useful general presentation of the interest rate risk position of an institution. In fact, the majority of member institutions present gap reports in the notes to their audited financial statements.

There are also disadvantages to this technique. With its simplicity comes a lack of sophistication in its method of measurement. It is rarely relied on by member institutions, particularly by large or sophisticated institutions, as a primary risk management tool. Further, there can be inconsistency as to the time band classification of non-maturity accounts such as demand deposits, credit card receivables and equity accounts.

CDIC computed for each member institution using the available FIC data various short-term (less than one year maturity) gap measures including net short-term gap as a percentage of total assets and net short-term gap as a percentage of regulatory capital.[8] Analysis of the data for these measures over the 1999 to 2005 period suggests that these simple measures provide useful insight into member institution exposure to interest rate risks. Plotting of the results highlights consistently a number of clear outliers.

Conclusion:

The net short-term gap measures, although fairly simplistic, appear to be appropriately identifying the institutions that assume significant exposure to interest rate risk.

GAP Analysis

Gap analysis is undertaken by examining details of interest sensitive assets and liabilities* to establish when they will be exposed or subject to a change in interest rates (re-pricing). Items re-pricing within similar periods are grouped together. Interest rate sensitive items are the assets and liabilities that are subject to contractual change in interest rates or that mature during the period of return.

A negative gap exists when fixed rate liabilities in an individual time bucket exceeds fixed rate assets, net of hedges. A positive gap exists when, after taking into account hedges, fixed rate assets exceed fixed rate liabilities in an individual time bucket. Negative gap positions imply that a rise in interest rates will result in a decline in net interest income for the period and decline in interest rates will result in a rise in net interest income.

In the present environment of very low interest rates, CDIC is primarily concerned with the possible adverse impact on earnings of a significant net negative gap. However, in the longer term, given that CDIC will not attempt to forecast the trend in interest rates, the interest rate risk measure should identify outliers at both ends of the risk spectrum, i.e. that have large negative or positive net gaps.

*Excludes trading book

The following table summarizes the results obtained using the thresholds mentioned in Appendix A:

[8] Net short-term gap is the sum of the assets less liabilities and equities adjusted for net off-balance sheet hedges for all time bands less than one year including floating rate assets and liabilities.

	Net short term gap as % of total assets		Net short term gap as % of regulatory capital	
Score	Thresholds	% members	Thresholds	% members
0	≥ 40 or ≤-40	10%	≥ 300 or ≤-300	5%
3	<40 and ≥ 20 or >-40 and ≤-20	20%	<300 and ≥ 150 or >-300 and ≤-150	20%
5	<20 and >-20	70%	< 150 and > -150	75%

Please provide your views on the above suggested measures and thresholds.

(2) Other New Measures

A number of other measures were considered, including measures for foreign exchange risk, liquidity risk, and market risk.

The foreign exchange risk measure was put aside rapidly as it was not relevant to the risk profile of most member institutions and for those that assumed such risk, in general CDIC considered the risk well managed.

In considering the development of an indicator of market assessment, CDIC concluded that such an indicator would be fairly easy to design for member institutions that are publicly traded and rated by credit rating agencies. However, for the many members that are not it is more challenging. Substitute data for those unrated members is not readily available (e.g., few members issue publicly traded subordinated debt). If such a measure were used, CDIC would be required to arbitrarily assign a market assessment to the members not having a readily determinable market indicator.

Liquidity management is crucial to the day-to-day operations of deposit taking institutions. Institutions need sufficient liquidity to meet anticipated day-to-day cash commitments and to provide a margin of safety for those unforeseeable withdrawals and/or draw downs. The suitable level of liquidity will vary depending on an institution's business model, short term obligations, the pledging of its assets and the diversity of its funding sources. Low levels of liquidity could point to a weak risk management program and/or a loss of confidence in the institution. In both cases, it could indicate a higher risk profile.

In considering the development of an indicator of liquidity risk, CDIC noted that those deposit insurers that had incorporated such an indicator into their differential premiums system had done so in conjunction with a measure of interest rate risk. A liquidity measure tends to temper the effects of a low score for those institutions that have a large positive short term exposure to interest rates due to being in a highly liquid position. For example, this would be the case for a member institution that is winding down its business and holding a large cash position.

CDIC looked at a number of measures of liquidity including cash and government securities as a percentage of total assets, deposits from individuals over total deposits, core deposits (i.e. non-fixed term) as a percentage of total deposits as well as unencumbered liquid assets over total assets. Our analysis to date did not identify one liquidity measure as being an unequivocal good risk differentiator. Indicators, such as core deposits as a percentage of total deposits, clearly disadvantaged those institutions that have chosen not to offer demand and chequing accounts and are relying heavily on brokered deposits. The best measure of liquidity was in our view the ratio of unencumbered liquid assets over total assets. Unfortunately less than half of member institutions report this information in FIC[9]. For this reason, and due to the fact that the outliers identified by the other measures are in many cases not necessarily the members exposed to higher liquidity risk, CDIC is of the view that it should not include such a measure at this time. Much more work would need to be done to find a measure that would be fair and takes into account the business of members.

GOING FORWARD

We look forward to your comments on the various options mentioned in the paper.

Later in the fall of 2005 CDIC will issue a further paper responding to comments received and including proposed by-law amendments. Further comments would be requested at that time. It is anticipated that the reallocation of the ten marks will be in effect for the 2006 premium year.

[9] Pledging and REPOS Report (U3)

Appendix A
to
Differential Premiums Consultation Paper
August 2005

(i) Gap Analysis

The net short-term gap as a percentage of total assets highlights a number of member institutions that have been identified through monitoring or examination as presenting significant exposure to interest rate risk. Results are consistent from year to year, and are statistically significant. The net gap as a percentage of total assets typically range between +50% and -50% of total assets, with an average standard deviation of 20%. After applying one and two standard deviations to the results, we have determined that thresholds of 20% and 40% (both positive and negative) are acceptable. Using these thresholds, seventy percent of member institutions would score five marks, twenty percent would score three marks and ten percent would score zero marks.

Net short-term gap as a percentage of regulatory capital also identifies a number of outliers. For the most part, the same institutions are identified as for the prior measure but with different relative rankings among members. High capital levels mitigate in certain cases high interest rate risk positions assumed. Results generally range between +300% and -300% of regulatory capital, but with certain outliers the negative net gaps are as large as 800%. After applying one and two standard deviations to the results, thresholds of 150% and 300% were determined to be acceptable (both positive and negative). Using these thresholds, approximately seventy-five percent of member institutions would score five marks, twenty percent would score three marks and five percent would score zero marks.

Using the DICO approach, we also computed a variation of the above net gap measures - net short-term weighted gap as a percentage of total assets. There are some advantages to this duration weighting in that it recognizes the different durations of the period of impact on net interest income between a net gap in the one-month time band and the net gap in the 11th month time band. Further, it can allocate a less than one-year duration weight to demand deposits and certain floating rate assets. However, there are substantial disadvantages to duration-weighted net gap in that these simple weights are not based on institution-specific durations and can distort considerably the results. It can also be difficult to assign a reasonable weight to demand deposits and certain assets. The differentiation power of this measure over the other net gap measures is negligible and, in fact, results in terms of outliers were much more erratic and were highly dependent on the weights assigned to the various time bands and products. This suggests that there would be very limited benefit in using such a measure.

(ii) Adverse Impact of 100 basis point change in interest rates on consolidated net income after tax

This method of calculating interest rate sensitivity subjects on- and off-balance sheet items to a hypothetical interest rate shock. The amount reported in FIC is based on the

institution's interest rate sensitivity position as at the reporting date and assumes an immediate and sustained parallel change in interest rates of 100 basis points across all maturities over the next twelve months. It also assumes no additional hedging is undertaken and that all assets and liabilities re-price by 100 basis points.

Advantages of using this methodology include the fact that it is relatively simple to implement and, especially when expressed as a percentage of capital, may be considered a better measure of an institution's interest rate risk position than a net gap measure. Further, it presents a direct assessment of the interest rate risk faced by an institution. However, given the data constraints and issues with the underlying assumptions, the disadvantages may outweigh the advantages. For example, the assumptions used by institutions are not transparent in that the modelling and simulation of the impact of changes may be quite complex. There is a lack of consistency in the reporting as institutions appear to be reporting their interest sensitivity based on internal models. Further, the sensitivity is fairly limited as it does not incorporate exposure to varying magnitudes of parallel shifts in the yield curve nor flattening, steepening or inversion of the curve. Finally, the use of this measure is seriously constrained by the fact that presently less than two-thirds of CDIC member institutions report the necessary data in the I-3 FIC form.

(iii) Adverse Impact of 100 basis point change in interest rates on consolidated economic value of net assets

In the I-3 FIC form, member institutions are required to report the impact of a 100 basis point parallel change in interest rates on the market value of the institution's net assets, in present value terms, on an after tax basis. The same advantages and disadvantages arise with respect to this method of measuring interest rate sensitivity as occur for the adverse impact of a l00 basis point change on consolidated net income after tax.