

## **Risk Based Premium - Cross-Country Practices and Experience**

2.1 Deposit insurers collecting premiums from member financial institutions choose between adopting a flat-rate premium system or a system that seeks to differentiate premiums on the basis of individual bank risk profiles. Although flat-rate premium systems have the advantage of being relatively easy to understand and administer, they do not take into account the level of risk that a bank poses to the deposit insurance system and can be perceived as unfair in that the same premium rate is charged to all banks regardless of their risk profile (IADI, 2011).

2.2 The deposit insurance, like any other insurance product, has an inherent problem of moral hazard. The moral hazard theory in deposit insurance argues that deposit insurance creates a strong incentive for the management of banks to choose a high leverage and for the customers of banks to loosen their monitoring the activities of their banks. The presence of moral hazard is more pronounced when the premium of deposit insurance does not properly reflect the effective underlying risk associated with the activities of the banks.

2.3 However, moral hazard could be partially mitigated by introducing appropriate design features to the Deposit Insurance System that would generate incentives for the banks to improve their risk profile. Besides limited coverage levels and scope, and provisioning for timely intervention and resolution by the deposit insurer or other participants with such powers in the financial system safety-net, the design could also provide for collecting a risk-adjusted premium from member banks.

2.4 For these reasons primarily, beginning with the US in 1993, a number of countries adopted risk based premium in their jurisdictions in lieu of flat rate one. Since that time, the number of systems adopting risk based premium has grown steadily, currently estimated to be twenty-six countries, including: Argentina, Canada, Colombia, Finland, France, Germany, Kazakhstan, Malaysia, Peru, Portugal, Romania, Taiwan, Turkey and Uruguay, to name some.

2.5 A brief account of the practices and operations of risk based premium system in some jurisdictions is given in the following paragraphs.

### **United States**

2.6 In the case of Federal Deposit Insurance Corporation (FDIC), the premium rate was set by statute and could be changed only by action of the U.S. Congress. The premium rate was expressed as a percent of assessable deposits. Till 1993, it charged flat-rate deposit insurance premiums from all insured banks.

The increasing bank failures in the 1980s and early 1990s, raised the concerns and legislation was passed that required the FDIC to establish a system of risk-based premiums. The FDIC based its risk based schedule of premium rates on a combination of objective criteria: (1) capital ratios<sup>1</sup> based on financial reports that insured institutions were required to file quarterly with the regulatory agencies; and (2) subjective criteria namely CAMELS ratings<sup>2</sup> derived from on-site examinations.

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<sup>1</sup>specific capital ratios used in the calculation of risk-based premiums are essentially the same as the ratios used in the implementation of Prompt Corrective Action, which requires that progressively more severe restrictions be placed on troubled banks as their capital ratios decline. The use of capital as a primary risk differentiation measure was intended to provide greater protection for the deposit insurance fund by increasing an institution's cushion against loss and increasing the owner's stake in sound operations. Moreover, the use of capital ratios for the purpose of assessing premiums would provide a potentially prompt financial reward (in the form of reduced premiums) to institutions that improve their condition in an objective and defined manner.

<sup>2</sup>U.S. banking supervisors rate insured institutions on six factors: Capital, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risk (CAMELS). Institutions receive an overall rating ranging from 1 to 5, with 1 being the best rating.

2.7 The risk-based premium rate schedule sought to achieve the following objectives:

- Be fair, easily understood, and not unduly burdensome for weak banks;
- Produce sufficient revenue within 15 years to recapitalise deposit insurance funds that had been depleted by the large costs of failure of the 1980s;
- Increase incentives for insured institutions to operate safely; and
- Provide a transition from flat-rate premiums to a “permanent” risk-based system.

2.8 The FDIC implemented the differential premium system effective January 1, 1993, and it began computing risk-based premiums according to a nine-cell matrix using capital ratios and supervisory ratings. (Table 1).

<b>Table 1: Rating Matrix</b>			
	<b>Supervisory rating</b>		
<b>Capital category</b>	A	B	C
1. Well capitalized			
2. Adequately capitalised			
3. Undercapitalized			

2.9 Institutions in column A had the highest supervisory ratings, while those in column C had the lowest. While the supervisory ratings were based essentially on CAMELS ratings assigned by the primary regulators, the institutions were assigned to capital categories on the basis of a number of capital ratios. The minimum premium rate of 23 basis points was mandated by law and corresponded to the rate paid by all institutions prior to the adoption of the risk-related premium system.

2.10 The FDIC had a Target Fund Ratio (a ratio of deposit insurance fund divided by the insured deposits) of 1.25%. When a deposit insurance fund fell below the target ratio of 1.25 percent of insured deposits, the FDIC was required to charge premium rates that would restore the fund to the target ratio within one year, or charge an average premium of at least 23 basis points.

Beginning in 1996, the FDIC was prohibited by law from charging well-managed and well-capitalised institutions (those in the 1A cell in the table 1 above) for deposit insurance when the fund's reserve ratio was expected to remain at or above 1.25 percent.

### ***Reform of the FDIC Risk-Related Premium System***

2.11 While, the risk-related premium system implemented in 1993 was an improvement over the flat rate system it replaced, some provisions of the system and the governing statutes had unforeseen consequences that required corrective action.

2.12 The establishment of a “hard target” for the ratio of 1.25 percent of insured deposits was intended to ensure that the cost of deposit insurance would be borne by the industry and not by taxpayers. However, because the FDIC was required to restore the fund within one year or charge an average premium of 23 basis points if the fund fell below the target, a sharp rise in premiums proved counter cyclical as the rise could occur in a weak economy when the industry could least afford it. On the other hand, when the Reserve Fund Ratio was at 1.25% or above, the FDIC could not collect premium from institutions in category 1A, though they too posed some risk. Therefore as part of reform process, the Federal Deposit Insurance Reform Act of 2005, established a range within which the Board could set a target reserve ratio (and thus the size of the fund), and provided substantial flexibility for the Board to manage the size of the fund.

2.13 Significant refinements to the risk-related premium system were implemented pursuant to financial reform legislation enacted in 2010. Modifications included redefining the assessment base as average consolidated total assets minus average tangible equity (rather than total domestic deposits, the assessment base that had been in place since inception), revising the system for small bank risk assessment, and substantially redesigning the pricing framework for large institutions.

***Risk differentiation for small institutions***

2.14 In developing the new pricing framework for small institutions - generally those with lower than \$10 billion in assets - the FDIC decided to continue to rely on supervisory evaluations and capital levels as a basis for risk differentiation. As the FDIC found that the number of institutions in several of the risk categories were low and the historical five-year failure rates for some of risk categories were similar, the FDIC consolidated the nine existing categories into four. The four new risk categories are referred to as risk categories I, II, III, and IV (Table 2)

<b>Table 2: Risk Categories</b>			
	<b>Supervisory Group</b>		
<b>Capital Group</b>	A	B	C
Well	I	II	III
Adequate	II	II	III
Under	III	III	IV

***Risk differentiation for large institutions***

2.15 From 2007 through 2011, the FDIC used a combination of risk measures, namely, CAMELS ratings, and the forward looking financial measures of risk to differentiate large banks according to risk. Based upon its experience during the most recent banking crisis (which started in 2008), in 2011 the FDIC adopted a risk-differentiation scheme for all large institutions that eliminates risk categories and attempts to predict risk much farther in the future using measures that were associated with risk during the crisis.

2.16 For large institutions, two scorecards are used: one for most large institutions, and a second for very large institutions that are structurally and operationally complex or that pose unique challenges and risks in case of failure (“highly complex institutions”). Both scorecards combine CAMELS ratings and forward-looking financial measures to assess the risk a large institution poses to the Deposit Insurance Fund (DIF). Each assesses certain risk measures to produce a performance score and a loss severity measure

that are combined and converted into an initial assessment rate. For large institutions, it provided for adjustment in the premium rates by giving credit for long term debt (i.e. adjusting the base premium rate downward) and levying a charge for brokered deposits, adding to the base premium rate.

## **Canada**

2.17 In 1995, Canada amended the Canada Deposit Insurance Corporation (CDIC) Act to replace CDIC's flat rate premium system with a system which would classify member institutions into different risk categories, in large part reflecting the risks posed to CDIC, and charging varying premium rates based on these categories. The design, development and consultation process associated with CDIC's Differential Premium System underwent an elaborate process during a three year period spanning 1996 to 1999.

2.18 In developing a differential premium system, CDIC examined a number of possible approaches that would enable it to classify member institutions into different categories for differential premium rating purposes. These included single quantitative and qualitative factor systems and a range of combined quantitative and qualitative factor systems – including the risk-based premium approach used by the Federal Deposit Insurance Corporation (FDIC) in the United States, the Bank of England TRAM model and the methodologies used by rating agencies. CDIC also took into account the feedback from regulators of CDIC member institutions, other supervisory agencies and a committee of senior executives from representative CDIC member institutions.

2.19 The Corporation introduced the new system commencing 1999. CDIC's differential premium system in use, scores members over quantitative and qualitative factors. The transition period provided for the bonus markups over the actual score during the first two years by 20% and 10% points respectively to enable the member institutions to adapt to the risk based premium system.

2.20 The CDIC as part of its periodic review exercise, has revisited the rating model, reviewed these quantitative and qualitative criteria recently and

refined it marginally. A distinction between non-DSIBs (Domestic Systemically Important Banks) and D-SIBs has been introduced through one parameter having a weight of 5%. The quantitative factors are grouped into three broad categories: capital adequacy, other quantitative measures – earnings capacity, efficiency, and asset growth and asset concentraion/encumbrance; all together carrying a weight of 60%. The qualitative measures include supervisory rating (35%) and other information (5%).

. The new rating matrix is in Table 3:

**Table 3: Summary of Criteria or Factors and Scores**

<b>Criteria or Factors</b>	<b>Maximum Score</b>
<b>Quantitative:</b>	
<b>Capital Adequacy</b>	20
<b>Other Quantitative</b>	
Return on Risk-Weighted Assets	5
Mean Adjusted Net Income Volatility	5
Stress Tested Net Income	5
Efficiency Ratio	5
Net Impaired Total Capital	5
Three-Year Moving Average Asset Growth	5
Real Estate Asset Concentration*	5
Asset Encumbrance Measure**	5
Aggregate Commercial Loan Concentration Ratio	5
<b>Sub-total: Quantitative Score</b>	60
<b>Qualitative:</b>	
Examiner's Rating	35
Other Information	5
<b>Sub-total: Qualitative Score</b>	40
<b>Total Score</b>	100

\*Every member institution that is not a domestic systemically important bank (DSIB) must complete this form

\*\* Only a member institution that is a domestic systemically important bank must complete this item.

2.21 The CDIC considers regulatory capital as a cushion against adverse changes in a members' asset quality and earnings. This incorporation of other quantitative factors are intended to assess the ability of a member institution to sustain its capital.

### ***Premium Categories***

2.22 CDIC has put into practice a four-category system appropriate for its financial system. The premium categories and related scores are set out in the Table 4.

**Table 4: Score and Premium Categories**

<b>Score</b>	<b>Premium category insured deposits</b>
<b>&gt;= 80</b>	<b>1</b>
<b>&gt;= 65 but &lt; 80</b>	<b>2</b>
<b>&gt;= 50 but &lt; 65</b>	<b>3</b>
<b>&lt; 50</b>	<b>4</b>

2.23 Premium rates set accross the categories rise in gemetric progression along the rating scale, which are so set with an eye on providing substantial incentive to the member institutions to improve their ranking from lower to higher grades. The setting of premium rates, besides being directionally related to the ratings, has also been guided by the revenue needs of the Corporation and accordingly the premium rates have seen revisions on both in the upward and downward directions.

2.24 The CDIC shares the assigned premium category with each member with a rider that the member institution is prohibited from disclosing the category/premium rate or any other information relating to rating provided to the member institution.



## **European Union**

2.25 The practices in the European Union (EU) nations suggest that the key financial ratios currently applied across member states are quite heterogeneous and the variables taken into account to define them are not identical. They are arrived at in terms of ratios using balance sheet data, financial statement data or other types of account data. For example, France uses solvency, risk diversification, operational profitability and maturity transformation as input variables, while German BVR (Protection scheme of German Cooperative Banks) model incorporates information on capital structure, income structure and risk structure. The indicators used in the models can be broadly grouped into three main classes, each related to one particular aspect of bank activities. The first class reflects their capital structure and solvency profile; the second class measures the riskiness and exposure of the banks; and finally the third set of indicators being the profitability/income.

2.26 As part of reforms, the EU issued a new Directive 2014/49 on the Deposit Guarantee Schemes (DGSs). The directive prescribes achieving a minimum harmonisation such as uniform protection to depositors, and each EU member state to reach a target fund of 0.8% of covered deposits by 2024. While the directive prescribes that collection of premium be based on the amount of deposit covered and risk profile of the member institution, it leaves the measures of risk to the wisdom of member institutions with a broad guidance such as low risk sectors regulated under national laws may provide lower contributions and risk measures may take into consideration capital adequacy, asset quality and liquidity; etc.

## **Colombia**

2.27 Colombian Deposit Insurance Agency FOGAFIN which was set up in 1985, charged a flat rate premium to all its member banks prior to 1998. In the year 1998, FOGAFIN introduced an element of risk based component of premium, based on the ratings from the credit rating agencies, as mark up over the flat (base) premium rate. The risk- rating was replaced by CAMEL

score arrived at by the Financial Supervisory Authority. Subsequently, FOGAFIN established its own CAMEL scoring system in 2009. Presently, FOGAFIN has a hybrid premium scheme comprising of a flat rate premium and a variable premium component based on the risk profile of the member institution. While the flat rate premium is paid by the member institutions quarterly through the year, risk based component is evaluated at monthly frequencies, based on CAMEL model which gives a score between 1 (the institutions with the highest risk profile) and 5 (the institutions with the lowest risk profile). The key elements of CAMEL evaluation are furnished in Table 5.

<b>Table 5: CAMEL Model</b>				
		Weight	Ranges	Score
Capital	Solvency	25%	< 8%	1
			> = 8% y < 9 %	2
			> = 9% y < 10 %	3
			> = 10% y < 12 %	4
			> 12 %	5
Asset:	Non-performing Loans/Total Loans	20%	> 8%	1
			> 6% y < = 8 %	2
			> 4% y < = 6 %	3
			> 3 % y < = 4 %	4
			< = 3 %	5
Management	Operational expenses / Gross financial margin	20%	> 80% o < 0 %	1
			> = 70% y < = 80 %	2
			> = 60% y < 70 %	3
			> = 50% y < 60 %	4
			< 50 %	5
Earnings	Return on Assets	20%	< 0%	1
			> = 0% y < 1 %	2
			> = 1% y < 2 %	3
			> = 2% y < 3 %	4
			> = 3 %	5
Liquidity	(current assets - current liabilities)/ total deposits	20%	< = -10%	1
			> = -10 % y < = 4 %	2
			> 4% y < = 6 %	3
			> 6 % y < = 15 %	4
			< = 15 %	5

2.28 The CAMEL score is the key differentiating factor for the member institutions and for setting the differential premium. While there are incentives provided to high rated banks, in the form of refund of premium paid in previous year, ranging up to 50% depending upon the rating, a lower rated institution similarly is required to pay additional premium rising upto 50% of the premium paid in the previous year. Therefore there are strong inbuilt incentives for the institutions to improve their risk profile.

## **Malaysia**

2.29 Since the introduction of the deposit insurance system in September 2005, Malaysia had adopted an *ex ante* funding approach where the premiums charged to the member institutions had been based on a flat-rate premium system. Under this system, the annual premium rate of 0.06% was applied to all members. The Malaysia Deposit Insurance Corporation (MDIC) Act 2005 enables MDIC for the establishment of Differential Premium System (DPS). Accordingly, Malaysia switched over to the DPS in 2008 by replacing the flat-rate system. Since then, Malaysia has revisited and reviewed its premium system in 2011 and recently in 2015 and has improved it further.

2.30 The Malaysian differential premium system has continued to nurture throughout, four key objectives namely, (a) to differentiate banks according to their risk profiles; (b) to provide incentives for banks to adopt sound risk management practices; (c) to introduce greater fairness into the premium assessment process; and (d) to contribute to stability of the financial system via the overall improvement in risk management practices of banks.

2.31 MDIC uses a combination of quantitative and qualitative inputs in scoring individual banks. The quantitative factors which account for a score of 60 out of 100 include capital adequacy, profitability, asset quality, asset concentration, asset growth, loan concentration, and funding profile, etc. The remaining score of 40 accounts for the qualitative criteria which include supervisory rating (35) and other information (5).

### ***Premium categories***

2.32 Member institutions are classified into one of four premium categories based on their DPS scores, 1 representing the best, and 4 the lowest. The score ranges and corresponding premium categories are set out in Table 6.

<b>Table 6: Scores and Premium Categories</b>	
<b>Score</b>	<b>Premium Category</b>
≥ 85	1
≥ 65 but < 85	2
≥ 50 but < 65	3
< 50	4

### **Taiwan**

2.33 The Central Deposit Insurance Corporation, Taiwan established in 1985 followed a flat rate premium system until mid-1999 whenit switched over to risk based premium. Under the Risk-based Premium System, premium rate for individual insured institution is set based on each insured institution's risk level. The risk level is determined on the basis of two risk indicators: capital adequacy ratio (CAR) and Composite Score of the Risk-based Premium Rating System (CSRPRS) based on Financial Early Warning System. The CAR and CSRPRS are both divided into three risk grades:

- CAR grades: Well Capitalized (12% and above), Adequately Capitalized (8% and above and below 12%), Undercapitalized (below 8%)
- CSRPRS grades: Grade A (composite scores of 65 and over), Grade B (50 to under 65), Grade C (less than 50)

2.34 Based on the above, the Corporation places all banks in five different risk groups.

### ***Deposit Insurance Premium Rates***

2.35 Five-tiered premium rates are set based on the risk groups of the insured institutions.

- For domestic banks and local branches of foreign and Mainland Chinese banks in Taiwan, premium rates are 0.05%, 0.06%, 0.08%, 0.11%, 0.15% of covered deposits. Eligible deposits in excess of coverage limit are applied a flat rate of 0.005%.
- For credit cooperatives, premium rates are 0.04%, 0.05%, 0.07%, 0.10% and 0.14% of covered deposits. Eligible deposits in excess of coverage limit are applied a flat rate of 0.005%.
- For credit departments of farmers' and fishermen's associations, premium rates are 0.02%, 0.03%, 0.04%, 0.05%, and 0.06% of covered deposits. Eligible deposits in excess of coverage limit are applied a flat rate of 0.0025%.

### **Conclusions**

2.36 This study of a few deposit insurance systems as above, throws out some very useful insights in the context of risk based premium systems. The key insights obtained from the study are as under:

- (a) There is wide acceptance of the fact that differential premium system is more fair and incentivises the performance and sound risk management systems.
- (b) Premium differentiation exercise generally is aimed at devising a system for differentiating one bank from another for the purposes of grouping into premium categories and does not seek to measure the exact risk, except perhaps the US, where FDIC uses forward looking risk measures for large institutions.

- (c) Based on the individual scores obtained under ratings process, banks have been categorised generally into four or five risk and thus, premium categories. For small banks, US reduced the number of categories from 9 to 4 based on its experience that historically, in some of the categories, the number of banks remained consistently low. The argument against having large number of categories is that it results in a less visible distinction among the member institutions and less incentive for moving from a lower category to higher category.
- (d) The risk rating process ranges from fairly simple like that of Colombia, Turkey, and Kazakhstan to a complex one as in US which has a risk based one through forward looking risk measures for large institutions.
- (e) In some jurisdictions, supervisory rating is used as an input into the rating model with about one-third weight in the aggregate maximum possible score (Malaysia, Canada, Turkey). The supervisory rating is being provided to deposit insurance agencies as part of the information sharing and cooperation arrangement among the safety net participants.
- (f) Transition period from the flat rate system to the differential rating based one has been fairly liberal (e.g. 3 years in Canada).
- (g) The composite score intervals for categorisation purposes differ from accross jurisdictions. For example, highest rated category has a score of 85 (out of 100) upward in Malaysia (in four category matrix) and Kazakhstan (in five category matrix), 80 upward in Canada and Turkey (in four Category Matrix).
- (h) The rating models are being consistently reviewed in the context of evolving regulatory and general financial system environment – internal as well global.

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