

DEPOSIT TAKING BY NON-BANKING INSTITUTIONS (NBI) AND EMERGING CHALLENGES FOR COMMERCIAL BANKS & REGULATORS

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1.0 Overview

Non-banking institutions (NBI) involved in taking deposits from the public have been growing both in terms of numbers as well as volume. Such NBI ranges from finance companies to co-operative establishments and small business undertakings. Some of these do not have the required permission or a license from a regulator to accept such deposits. On one hand the emergence of such NBI which accept deposits is a threat to traditional deposit takers such as commercial banks which largely depend on retail deposits to mobilise funding for their growing asset portfolios. On the other hand it poses challenges to regulators who are required to maintain public faith in the system thereby ensuring protection of savers and fair dealing in the financial market place.

Compared to the outstanding savings and term deposit value of Rs499 billion in commercial banks and Rs132 billion in the National Savings Bank (NSB), the outstanding deposit value of NBI is estimated at a mere Rs88 billion as at end 2002. Although the market share of NBI is not significant, the growing deposit portfolio supported by highly aggressive deposit promotion activities by NBI is a threat to traditional deposit takers looking to increase its liability portfolio.

In the aftermath of the well known and much publicised Pramuka Bank crisis, NBI have attracted the attention of regulators as well as public especially with regard to the need for close supervision. The opinion of the public is that any institution that is engaged in deposit mobilisation should come under the supervision of the Central Bank of Sri Lanka (CBSL) or any other specific regulator appointed for this purpose. Accordingly there should be a mechanism to prevent institutions, except for those that are under the supervision of the regulatory authority, from taking deposits in any form.

This paper examines the practices adopted by NBI in deposit mobilisation, evaluates the role of NBI as intermediaries in the economy and in the deposit market, observes the challenges posed to traditional deposit taking institutions and reviews the need for a regulatory structure that would take into account the distinctive nature of such institutions.

For the purpose of this study, NBI is defined as all corporate bodies other than licensed commercial banks and NSB, which accept funds as either deposits or in any other form. This study covers all deposit taking institutions whether in possession of a license or permission to accept deposits from the public. However, the study does not cover institutions such as unit trusts, primary dealers and general and life insurance companies except for the products offered by such institutions that carry features of deposits and are regulated. In particular, it will cover the following institutions:

- Licensed specialised banks other than NSB

- Licensed finance companies
- Co-operative deposit taking institutions
- Insurance companies offering short to medium term endowment contracts
- Merchant banks
- Leasing companies
- Other companies accepting deposits in any other form

2.0 Market and Products

NBI accept deposits in different forms (except in the form of current accounts) and pay interest on such deposits. The following list broadly sets out several types of products offered by NBI in the form of deposits.

- Savings and term deposits including certificates of deposits
- Promissory notes with maturity ranging from 3 months to 4 years
- Life insurance contracts with a guaranteed maturity value after 3 to 5 years
- Investment contracts linked to real assets such as gold or commercial cultivation of wood
- Advance payment on credit cards account which carry interest income for positive balances
- Investment or portfolio contracts with a guaranteed maturity value

As at end 2002 the outstanding value of above products with NBI was estimated at Rs88 billion. The NBI account for 12% of the market share of total savings and term deposit liabilities of all commercial banks, NSB and NBI.

Table 2.1: Savings and Term Deposit Market

	Rs. millions	%
Commercial Banks	498.9	69.4%
NSB	132.4	18.4%
Licensed Specialized Banks	16.9	2.3%
Cooperative Institutions	23.7	3.3%
Finance Companies	31.8	4.4%
Others	15.2	2.1%
	718.8	

Key features of the products offered by NBI are the following:

Above average interest rate

Generally NBI offer interest rates above those offered by commercial banks and treasury bills.

This may be to compensate for the default risk assumed by the depositors in NBI although higher interest rate does not seem to be the only factors that attract deposits to NBI.

Innovative products

In addition to the traditional savings and term deposits NBI offer a wide range of products with a view to attracting funds. They carry extremely innovative features to meet the needs of the clientele. For example, promissory notes offered by one merchant bank carries a put provision which allows investors to withdraw the funds before maturity.

Tailor made structure

The products also offer investors a choice of coupling features based on the specific need of the investor. Such a choice is generally offered to high net-worth customers and documentation and back office procedures of NBI facilitate servicing of varying featured products.

Products not offered by commercial banks

Some of the products offered by NBI are currently not offered by commercial banks. Investment of relatively small amounts in commercial plantations is an example for such an opportunity, which may not otherwise be available to investors in a convenient manner.

Longer term maturities

In general deposit products of NBI carry longer-term maturity periods compared with those of commercial banks. Due to the high cost of direct sales operation, there is an incentive for NBI to promote long term deposits. However, in the event that a customer requires redeeming a deposit before the date of maturity NBI offer liberal terms on low penal interest rates, etc.

Other risks

Investments in some of the products offered by NBI may carry risks other than those risks traditionally associated with deposits of commercial banks. Placement of funds in a traditional deposit carries only interest rate risk and default risk of such institutions. However, some innovative products offered by NBI may also carry the risks associated with agriculture/plantations, commodity price movements, etc.

3.0 Distribution Network and Marketing

One characteristic that distinguishes deposit mobilisation practices of NBI is the aggressive promotional strategies adopted by a majority of them. While they rely very little on traditional distribution channels such as branch offices and advertising media for promotion of deposits, more emphasis is placed on direct selling. The distribution and marketing strategies and practices of NBI are identified below

Branch banking

Compared to commercial banks, NBI do not have very large branch networks, except for co-operative institutions and regional development banks. However, they maintain a presence in large cities both for the purpose of deposit taking as well as to promote lending products. Further, they maintain relatively small offices staffed by a few employees. These offices serve mainly as after sales and service points for existing deposit customers.

Direct sales force

Most of NBI employ a full time sales force involved in promoting deposit products to prospective customers. The use of sales force varies with some companies employing only two sales representatives to over hundreds of investment advisors employed by other institutions. Key features of such a sales force are the following.

- :: Sales staff visits potential customers at their doorsteps
- :: Handles sales in the regions around branches or the head office
- :: Responsible for promoting both deposit and lending products
- :: Receives performance based pay linked to achievement of monthly target
- :: Subjected to high turnover of staff

Technology based channels

Even though some NBI provide savings product, etc, the use of technology is very minimal or totally absent. Although the Automated Teller Machines (ATM) and Internet Banking is used to some extent by customers of commercial banks, none of the NBI has progressed to a level of being able to provide technology based channels of distribution. This is in spite of the relevance of such technology for deposit operations of NBI.

Advertising

In the past the use of advertising as a medium of marketing and promotion has been very minimal among NBI. Marketing by NBI who frequently use advertisements is generally limited to press and in particular for advertising interest rates and highlighting financial statements. The elaborate advertising and media campaigns such as those carried out by commercial banks for product launches and continuous promotions are almost non-existent in the limited advertising by NBI. The low level of advertising could be attributed to the low marginal productivity of investments expected by investing in mass advertising due to the lack of a wide branch network and heavy reliance on direct sales.

4.0 Other Services and Competitive Practices

Service level of NBI is seen as being exceptionally high compared with the service generally provided by commercial banks. This high level of service is necessary not only to achieve a competitive edge in deposit taking, but also to differentiate them as institutions that promote lending and other asset products that generally carry interest rates above competing commercial banks. Additional services provided by some NBI are:

- :: personalised service by following up on maturities, interest payments, etc

- :: automatic payment of interest and principal automatically to a number of accounts with any bank
- :: reduced procedures and speedy response in administering accounts and providing temporary facilities

With regard to competitive practices, very few NBI are actively adopting promotional campaigns that give other rewards to depositors on a lottery like those lottery schemes widely practised by commercial banks. There are practices by some NBIs offering give-aways such as air tickets and consumer durable items for depositors of particular products during a promotion campaign.

NBI also offer incentives for promoting deposits. Some institutions not only reward employees for promoting deposits, they also offer up-front commissions for third parties who canvass or make placement decisions on deposits. The practice of giving commission to third parties may lead to unethical practices and to sub-optimal decisions in placing deposits, particularly by institutional depositors.

5.0 Deposits Rates against Risk

This study attempts to assign credit risk to a sample of NBI and commercial banks and to compare the risk with the benchmark one year deposit rate to determine whether the differential in rates offered reflect the risk inherent in NBI. As the risk of the depositors with NBI would essentially be the credit or default risk, it is necessary to develop a tool to measure of credit risk of NBI. It is assumed that the credit risk would mainly be attributed to four fundamental financial conditions of NBI, and the ratios which indicate such fundamentals are given below.

- :: Liquidity - Liquid assets to gross assets (L)
- :: Capital adequacy - Equity capital to gross assets (C)
- :: Return on assets - Earning after tax to gross assets (E)
- :: Size factor - Gross assets value ranked (from 0-4 in descending order) based on size (S)

It is also assumed that in the absence of adequate information on asset quality of such institutions, the return on assets may to some extent explain the asset quality. Accordingly the measure of risk (r) of NBI is derived as follows.

$$r = 1/ (W_L L + W_C C + W_R E) + S$$

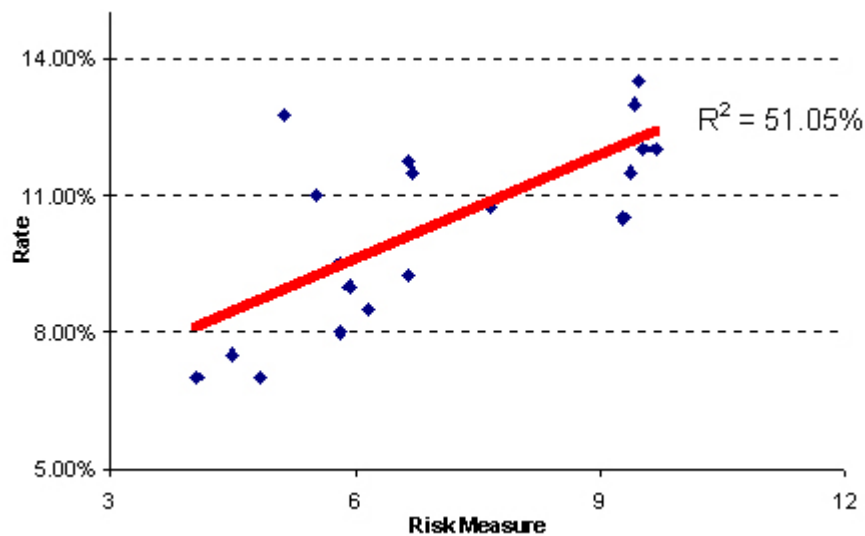
The “W” in the above formula denotes the weight assigned to each fundamental variable where $W_L + W_C + W_R$ will be equal to 1. The interest rate for one-year deposits for interest payable at maturity is considered a proxy for the return on a deposit. The above information is collected from financial statements as at end December 2002 and analysed in respect of a sample of 20 NBI representing a wide range of institutions. The risk measure as calculated above is analysed against the one-year deposit rate offered by such institutions. The graph illustrating the risk return trade-off of NBI is given below.

As seen in the graph the deposit rates of NBI seem to reflect the risk inherent in NBI with a coefficient of correlation of 51.04%. It shows that approximately 51% of the variation in interest rates among NBI could be attributed to the difference in default risk as measured according to the above formula. The study also attempts to determine whether the relationship between interest rate and default risk is significant. For this purpose the regression equation is derived as follows.

$$\text{Interest Rate} = 5.20\% + 0.733\% \times r$$

The hypothesis tested was that the slope or gradient of the above equation (of 0.733%) could be zero, as the relationship between two variables would not be significant if there is a possibility that the slope could be of zero value. However, in three alternative hypotheses testing, the results indicated that there is a strong relationship between the risk of NBI and deposit rates. This seems to indicate that there is a necessity for NBI to offer deposit rates that are commensurate with the default risk for holders of such deposits. The results of the testing and the methodology used are described in brief in Annex I of this paper.

Chart 5.1 : Risk Return Trade-off of deposits of NBI



It should be stressed that no evidence from this study exist to show that interest rates differential would be adequate to compensate for the possible loss arising from the default by NBI. That is to say whether the credit premium would be adequate to compensate for the loss in case of closure and liquidation of an institution. A study of that nature will require historical information on the probability of failure and average losses incurred by depositors in various categories of risk. The lack of information relating to institutional failures of this nature and inadequacy of the sample make it virtually impossible to do a study of this nature for the NBI operating in the local market.

6.0 Regulations

While some of the deposit taking institutions come under the supervision of the CBSL, co-operative banks come under the supervisions of the Commissioner of Co-operative. Some institutions that are taking deposits are not supervised at all while some others are supervised in relation to some financial activities but not in relation to deposit mobilisation. The dispersion of institutions under different regulators are given below.

Table 6.1: Supervision of Deposit Taking Institutions

	Regulators/supervisors	Deposit Taking Institutions
1	CBSL - Bank Supervision Department	Licensed Commercial and Specialised Banks
2	CBSL - Supervision of Non-Bank Institutions	Finance Companies
3	Department	Co-operative Rural Banks
4	Department of Co-operatives Development	Thrift Credit Co-operative Union
5	CBSL - Bank Supervision Department	Sarvodaya Shramadana Societies as non profit organisations taking deposits from members
6	Supervised by Central Bank - Supervision of Non-bank Institutions Department, but not as deposit taking institutions	Leasing Companies
7	Supervised by Controller of Insurance, but not as deposit taking institutions	Insurance companies providing fixed term, guaranteed maturity medium term contracts
	None	Merchant Banks, Unregistered Finance Companies and other companies taking deposits

The regulations and the extent of supervision applied to different categories of NBI vary widely and to some extent reflects the nature of operation and the risk relating to different institutions.

In the case of finance companies, the objective of the supervisor is to ensure compliance with regulations relating to finance companies and in particular to the under-mentioned prudential requirements.

- :: Capital funds (share capital and reserves) to be a minimum of 10% of total deposit liability
- :: Minimum unimpaired capital requirement of Rs100 million
- :: Single borrower limit of 10% of capital base (15% for a group)
- :: Total unsecured loans should not exceed 5% of capital funds and Rs100,000 per loan
- :: Related party transactions: no lending to directors and a limit of 15% of capital funds to total lending to subsidiaries
- :: Liquidity assets of 15% of the deposit liability
- :: Total equity investments limit of 25% of capital funds, 5% limit on each investment and limits of 40% of share capital of investee company
- :: Limit of 50% of capital funds in fixed assets

- :: Revenue recognition, provision for bad debts and disclosures

- :: Advertising and incentive schemes for deposits

- :: Maximum interest rate paid on a deposit

On the other hand supervision of co-operative rural banks, which is under the preview of the Department of Co-operative Development, focuses mainly on the internal controls and prudential operating practices. The societies permitted by the Central Bank to accept members' deposits on the other hand do not come under regular supervision of any regulator. The leasing companies will be supervised under the Central Bank, Supervision of Non bank Institution department, in term of the new Leasing Act. However, the institutions which provide leasing facilities, unless licensed, as a bank or finance company is not permitted accept deposit. The prudential requirements relating to leasing companies will be based on the nature of risk relating leasing business rather than deposits business, even if they accept deposits.

As observed above regulation and supervision of deposit taking institutions in Sri Lanka is fragmented and lacks co-ordination.

7.0 Role of NBI and its Impact on Commercial Banks

NBI play a unique role in the economy and the market and this is evident from their practices and business models,

On the assets side, NBI play a crucial role in providing access to credit to those who are otherwise unable to obtain commercial bank funding. It is widely accepted that through their wide network of branches co-operative rural banks and regional development banks provide micro finance for individuals and village level small businesses to meet day to day funding needs. Most of the other NBI also operate in relatively high risk lending markets and are engaged in providing funds without adequate collateral for activities such as start up ventures, high leverage businesses and short term trades that carry a high risk-return trade off. However, such businesses are an essential component of the national economic structure and should be protected. As the focus of commercial banks on lending to such business is minimal, they are unlikely to survive in the absence of the support given by NBI.

Deposit rates offered by NBI are generally higher than the rates of commercial banks. NBI rates are normally pegged to the rates of NSB and commercial banks. However, there are instances (especially following a shift in general interest rates) when NBI rates seem to influence the determining of commercial banks' rates. Since NBI could be a formidable competitor in the deposit market, commercial banks may attempt to keep rates slightly below, but closer to the rates of at least some NBI. Therefore, the presence of NBI may exert upward pressure on interest rates particularly of smaller commercial banks that compete directly with NBI. Although no studies have been conducted to substantiate the validity of this hypothesis, views of decision-makers in commercial banks provide some argument in favour of it. These dynamics may have helped the intermediation margin of commercial banks, which is relatively high at present, to be

capped at a reasonable level. This impact however, would likely to be higher in the even that the market share of NBI increase to a significant level.

The relatively high service standards maintained by NBI may have had a positive impact on improving the service standards of commercial banks, at least in some segments of business. Considering the relatively small size of NBI viz-a-viz the dominance of large commercial banks, no scientific evidence is available to indicate that the high service standards of NBI had an impact on improving the service standards of commercial banks in general. However, it could be said that in segments where NBI carry a significant market share, high service standards have had a positive impact on the service standards of commercial banks. An example is the leasing business. A key competitive factor in leasing of vehicles is that the lead-time between the inquiry and the release of cheque to the vendor has to be 2-5 days irrespective of any non-banking days that may fall in between this period. In addition, to succeed in the leasing business a close informal relationship has to be maintained with vehicle dealers and the lessor would have to serve the client at his doorstep. Banks which have been able to acquire a significant market share have done so only by matching the above service benchmarks with competing NBI.

8.0 Non-Banking Depository Institutions in a Developed Market

The study of the banking and non-banking deposit institutions in advanced economies provides guidance of future development and best practices required by the industry. For purposes of this paper, Australia has been selected due to the country's level of advancement in the financial services industry and focus on the domestic market when compared with countries such as USA, UK and Singapore.

Non-banking institutions in Australia can be mainly divided into the following categories.

- :: Finance companies
- :: Merchant banks and money market corporations
- :: Building societies
- :: Credit unions
- :: Contractual savings institutions and superannuation funds
- :: Authorised money market dealers
- :: Managed funds

Since 1998, supervision of the above institutions has been under the preview of a single regulator, Australian Prudential Regulation Authority (APRA). Among these institutions, building societies and credit unions (which accept public deposits) play an important role at remote areas in channelling savings and providing access to funds. However, they are relatively small in size. The share of financial institutions' assets in building societies and credit unions is only 0.8% and 1.3%, declining from 7.2% and 1.0% as of mid 80's. While credit unions are institutions similar to

co-operative banks in Sri Lanka, there are no local institutions similar to building societies, which are involved in mortgage financing of residential housing at regional level.

Building societies offer a comprehensive range of financial services in the housing finance market. These societies are able to maintain a growth in the market due to obtaining funding from securitisation, aggressive sales strategy in the home loan market and ability to capture client bases of major banks.

By end March 2003 total loans and advances of building societies stood at \$12.7 billion. Of this amount housing loans and other loans accounted for 67% and 12% respectively. The 2002 APRA survey states that building societies presently possess 279 full branches and 194 other face to face service channels. There are only 16 societies and of these only 8 retained a fully mutual structure. Several societies have an issued share capital and are listed on the Australian Stock Exchange.

In March 2003 Australia had 200 credit unions with a total asset base of \$25.4 million, of which 52% and 28% respectively had been provided as housing loans and other advances. Funding of these came mainly from call and term deposits and these accounted for 93% of total liabilities. Brief statistics of the assets of building societies and credit unions are given in Annex II of this paper.

Building societies and credit unions currently provide vital financial services not only in their traditional regions of origin but also in other main capital cities. In recent times these institutions have undergone rapid consolidation with some of them being merged with other institutions and a few of them being acquired by banks. Those who survived are the ones who built niche markets for their products, were able to reach a high level of efficiency by the application of technology and offer non-traditional delivery channels such as ATM and ESTOP to customers.

Further regulation on building societies and credit unions have been harmonised with regulations governing banks and other financial institutions and this has introduced a level playing field in the financial service industry in Australia.

9.0 Policy Issues

In Sri Lanka NBI play an important role in mobilising savings and channelling them to productive users at village level and in informal markets. While it is necessary to create an environment for such institutions to thrive, there is a need to identify those institutions that act as NBI with the deliberate intention of defrauding ignorant savers. Such institutions are not only a danger to gullible investors but they could also damage the system and the faith the savers would have on the system, which is vital to ensure the stability of the financial sector.

In spite of the wide branch coverage of commercial banks, in particular the two state banks, and co-operative rural banks, NBI continue to be able to sustain a high growth in deposits arising due to customer demand. Therefore, the demand of savers and consumers to place deposits in institutions with relatively high-risk characteristics cannot be ignored, even after discounting for

the ignorance of some gullible savers. No doubt there is a market demand for such institutions and what is urgently required is to ensure that before a commitment is made savers have a clear understanding of the inherent risks associated with such investments.

There is a need for a regulatory and supervisory structure that could take into account the nature of NBI. Prudential requirements should be enforced allowing for the operating dynamism that NBI seem to demonstrate and which is the very character that enables them to play a useful and distinctive role in the economy.

The recommended supervisory structure should be based on two fundamental principals.

Savers/consumers should take responsibility for their actions

This requires striking a balance between protecting savers/consumers and the objective of ensuring consumer awareness. On the one hand while the regulator should invest heavily in increasing the basic knowledge required to make financial decisions appropriate to their circumstances, on the other hand institutions are required to provide “clear and objective information about specific products and services to help them exercise informed choice. Once the mandatory information is provided it leads to the principal that the regulatory system cannot protect consumers from performance risk, provided that risk has been appropriately explained at the outset.”

Ensure fairness through supervision and controls

It is necessary to ensure that institutions would in an intelligent manner comply with the spirit of the law, rather than relying on narrow interpretation. The minimal prudential standard required for ensuring the protection of depositors should be defined in the regulation and adequate supervisory mechanism should be set-up to ensure its enforcement.

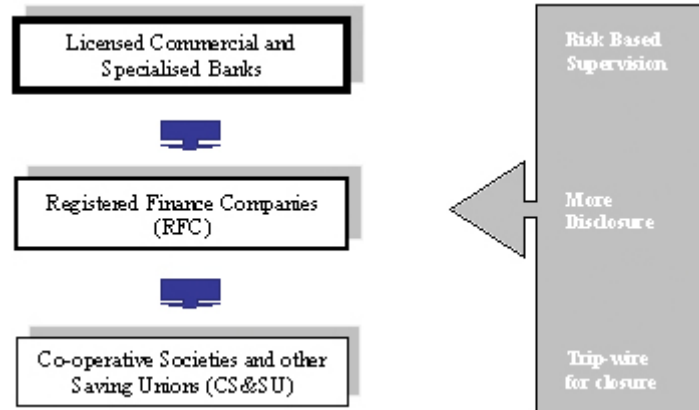
Supervision and monitoring of deposit taking institutions whether they are commercial banks, finance companies, co-operatives or other saving units, should be carried out by a single agency. This does not necessarily require the harmonisation of regulations governing such institutions as implemented in USA and UK. At this stage of the industry, it may be necessary to maintain different prudential requirements based on the level of development of different institutions. However, harmonisation of prudential requirements relating to all financial institutions should be the long term objective of regulators. Designating one agency for overall supervision of deposit taking institutions may ensure consistent application of enforcement as well as high quality of the supervision. It has been recognised that a single regulatory structure would “provide a consistent approach to capital requirements and supervision and discourage regulatory arbitrage and achieve a level playing field for all market participants.”

To bring all deposit taking institutions under a single supervising agency, amendments to the regulation should be effected to define the product “deposit” to include money accepted by any institution, with the promise to pay it back with or without interest. The definition should be broad enough to include raising funds by issuing any other securities provided it is done on a continuous basis. Although equity type securities which entitle the holder to a residual value such as unit trusts should not be considered as deposits. An attempt should be made to restrict

NBIs structuring equity type products with returns based on some pre-defined formula solely to evade regulatory supervision.

The regulatory and supervisory structure should be organised into three main layers to ensure the required attention to all deposit taking institutions to the extent that it warrants.

Graph 9.1: Supervisory layers of Deposit Taking Institutions



The prudential requirement could vary between the three layers. For example the minimum capital requirement for a commercial bank is Rs500 million while for a finance company it is Rs100 million. The third layer may have a minimum capital requirement much below Rs100 million, in the event that they are required to maintain a minimum absolute capital value at all. However, considering the nature of each type of institution, prior to defining the prudential requirement relating to the third layer, considering the nature of institutions it is appropriate to review the difference in prudential standards. The appropriateness of prudential standards such as restrictions on unsecured loans, maximum interest rates and even minimum capital requirement (provided capital adequacy ratio is maintained based on the risky assets) should be evaluated.

Presently the supervision of co-operative rural banks is the responsibility of the Commissioner of Co-operative Development and it is aimed at maintaining better corporate governance and focuses on internal control and operating practices. This is similar to the corporate governance mechanism in limited liability companies with an external audit and internal audit committee to ensure the protection of shareholder interest. While the present practice of supervision by the Commissioner of Co-operative Development should be continued, prudential supervision as a deposit taking institution should come within the proposed single supervisory agency.

One challenge for supervision relating to the third layer is the large number of bodies, societies or institutions involved and the quality of the management that is required to maintain compliance with prudential requirements. However, once the prudential requirements are defined, consolidation of the industry that will allow for mergers and/or closure of institutions not able to meet required standards should be actively encouraged. To meet the arising

supervisory challenges the supervisory agency needs to modify their approach under the following circumstances.

Risk based supervision

The extent of supervision, particularly with regard to the institutions in the third layer, should be based on the level of risk inherent to the institution as observed from the preliminary examination across the industry. Due to the large number of institutions in the third layer, which are dispersed geographically around the country, and the limited resources of the supervisor, it will become impossible to devote equal attention to each institution. Therefore, a periodic investigation based on the structured risk assessment methodology should be conducted across the industry to determine those institutions that carry high risks and these institutions in the high-risk category should be given more attention.

Effective regulatory intervention to minimise losses from failure by application of corrective action and mandatory liquidation

It has been observed, by Kaufman and Scott that “simply shutting down of failed banks’ assets for an indeterminate period and freezing deposits as supervisors have often done in some countries feeds incentives to run on all possible affected banks at the first suggestion of trouble. The policy of prompt resolution of insolvent or near insolvent banks, if properly implemented by the supervisory agencies, should result in relatively small if any losses to depositors.”

One way to implement this strategy is to install an early warning systems that will specify a numerical value of a capital trip-wires for supervisory sanction. Once an institution reaches this capital threshold closure and liquidation of the institution should be mandatory. However, in determining such value, an adjusted value rather than book value of the capital should be used.

Public disclosure of examination reports and supervisory rating of the bank supervisor on the deposit taking institution

The fundamental principle relating to regulation of the third layer deposit institutions is the disclosure. While regulators and supervisors ensure that institutions disclose the specified information to enable savers to make appropriate decisions, it is necessary for supervisors to add to such disclosure the information they already possess as a result of independent supervision but is concealed from the public. As stated by Kaufman and Scott, members of the US Shadow Financial Regulatory Committee, “the obvious lesson is that banking supervisors should not impede, but instead enhance, the disclosure of information about the financial condition of banking institutions. Depositors have done much better than they are usually given credit for in distinguishing insolvent from solvent banks, and shutting down the former through runs faster than supervisors might have been inclined to do. But it is not necessary to definitively resolve that debate in order to draw lessons from it for the banking agencies. The current practice of mandatory secrecy examination reports and supervisory rating, a sceptic might argue, is apparently founded either on the notion that depositor confidence must be based on ignorance or on the proposition that management is willing to reveal negative information to examiners because they believe nothing much will result from it, compared to the consequences of telling

the world at large, or perhaps on the reluctance of regulators to face a market test. None of these positions is reassuring.”

The contribution by Mr Sanjaya Kalidasa BSc, by collection of data, statistical analysis and building of regression model Dr Priyal Perera, by suggestion made to improve the framework of the study and recommendation, and Ms Jayani Amarasiri, by editing the draft paper, is hereby acknowledged.

Annex I: Statistical Analysis of Data on Risk Return Trade Off

This annex describes the statistical methods used to determine the significance of the variables of interest, i.e. interest rate and risk measure.

For this purpose a regression analysis was carried out to determine the relationship between the two variables. The objective is to test whether the coefficient of the explanatory variable is zero or not.

Regression

Regression is a statistical technique used in determining the relationship between a variable, known as response variables (y), and other variables known as explanatory variables (x). In this study the response variable y is,

y = Interest rate of one year deposits

And x = Risk measure (r)

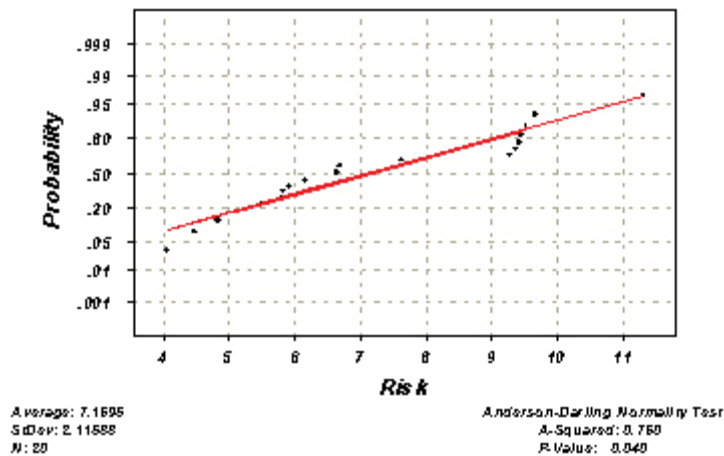
Which is given by $r = 1 / (W_L L + W_{CC} + W_{RE}) + S$.

Since the data roughly follows the normal distribution (Graph 1) and the Pearson Correlation Coefficient, which explains the linearity of a relationship is 0.740 , the following linear regression model ($y = a + bx$, in standard notation) was derived.

Rate = 5.20 + 0.733 Risk

Statistical Package MINITAB was used in this regard.

Normal Probability Plot



The objective is to check the significance of the relationship. Further, if the gradient of the equation was zero, the risk would not explain the interest rate. Hence, the under-mentioned tests would be carried out to test the hypothesis.

“The gradient (b) equals to zero against the gradient does not equal to zero”

The following three tests were used in this regard at the 95% probability level.

i. F-Test

In this test, the following test statistic is used.

$F_{cal} = \frac{MSR}{MSE}$, where MSR is the value estimated at the given x , using the derived regression equation is the mean and the n gives the sample size. F_{cal} follows the F- Distribution on $(1, n-2)$ degrees of freedom.

Hence if the $F_{1, n-2}$ value given by the F- Distribution is less than the value calculated for the data, the hypothesis is rejected.

In NBI data, the F_{cal} obtained by the Package MINITAB stands at 21.76 and $F_{1,18}$ is 4.54 in F distribution. Hence the hypothesis is rejected. It explains that at a 95% confident level, the gradient of the regression model could not be zero.

ii. t-Test

The statistic $t_{cal} = \frac{b}{SE_b}$ for this test. Here b represents the value obtained for the gradient by the regression and is the value expected. More simply it is the value that would be obtained theoretically. Hence for this NBI data,

$t_{cal} = \frac{b}{SE_b}$, as the objective is to check the probability of obtaining zero for the gradient. t_{cal} follows the student t distribution on $(n-2)$ degrees of freedom.

Hence if the t_{n-2} value given by the t- distribution is less than the calculated value using the above statistic, the hypothesis will be rejected.

In this study, the tcal stands at 4.674 while $t_{18} = 1.734$. Hence the hypothesis is rejected explaining that at a 95% confidence level, the gradient could not be zero.

iii. Confidence Interval

This method is another approach of the t- Test. Instead of checking for the gradient to be zero, an interval for the gradient is derived.

In this regard, the same statistic t is used in the following manner.

The test shows that at a 95% confidence level, the gradient lies in the range (0.461, 1.005). It further explains that the gradient of the regressed equation of

$$\text{Rate} = 5.20 + 0.733 * \text{Risk}$$

Therefore gradient could not be zero.

Annex II: Statistics of Building Societies and Credit Unions of Australia

Assets of Credit Unions and Building Societies:

	Credit Unions				Building Societies
	Small	Medium	Large	All	
March 2002	<i>As a percentage of total assets</i>				
Cash and liquid assets					0.5
Notes and coins	0.9	0.9	0.8	0.8	1.7
Deposits at call	12.3	9.1	3.6	4.5	0.3
Other liquid assets	11.2	5.5	3.4	3.8	3.1
Total cash and liquid assets	24.3	15.5	8.5	9.7	
					2.8
Government securities	0.6	0.3	0.0	0.1	10.1
Other securities	3.0	6.6	7.7	7.4	
Loans and advances					66.7
Housing loans	36.5	43.4	53.6	51.9	14.1
Other loans and advances	32.6	31.1	27.1	27.7	
					1.4
Other investments	0.4	0.5	0.5	0.5	1.0
Fixed assets	1.5	1.6	1.6	1.6	0.1
Intangible assets	0.0	0.0	0.0	0.0	0.7
Other	1.0	1.0	1.0	0.1	
					12.7
Total assets (\$ billion)	0.5	3.2	21.6	25.4	16
Number of institutions	65	71	64	200	

Mr. J.H. Dheerendra Bandara Abeyaratna



Mr. Abeyaratna is a Senior Vice President of DFCC Bank and the Head of Treasury and Resource Development Division. He is a Non-Executive Director of DFCC Stock Brokers Ltd and W.M.Mendis & Co. Ltd..

Mr. Abeyaratna held the position of Executive Director and Chief Executive Officer of the Unit Trust Management Co. Ltd. Managers of Ceybank Unit Trust and Century Growth Fund. He was also a Non-Executive Director of Ceybank Securities Ltd. a primary Dealer of Government securities licensed by Central Bank of Sri Lanka and Staff Consultant of Ernst & Young, Colombo Office in the Management Consultancy Division.

Mr. Abeyaratna is an associate member of the Institute of Chartered Accountant of Sri Lanka (ICASL), Chartered Financial Analyst of USA (CFA) and passed Finalist of the Chartered Institute of Management Accountant of UK (CIMA). He is a Diploma holder of Marketing Management.

He has presented several technical papers in the areas of primary share issues, capital market, risk management, debt markets etc. He is a member and head of several technical committees appointed by SEC, ICASL, CIMA Colombo office, SLASIA etc. He has attended several workshops in Sri Lanka and abroad. He is a visiting lecturer at the Central Bank Centre for Banking Studies and the Institute of Bankers - Sri Lanka and University of Southern Queensland - MBA programme at ICASL.