

DEPOSIT INSURANCE COVERAGE LIMIT: HOW MUCH IS ENOUGH? EVIDENCE FROM INDIA

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ABSTRACT

Deposit insurance is one of the safety nets employed by nations to ensure banking stability and depositor protection. Determining the appropriate coverage limit for depositors under a system of explicit deposit insurance is one of the most important policy decisions. This study examines the adequacy of deposit insurance coverage limit, through a case of India, to determine the appropriate level of coverage. The study also investigates the suitability of the recent five-fold increase in the coverage limit of India. Time series data from 1993-94 to 2017-18 has been employed for the regression analysis. India's data has been compared with several countries with similar deposit insurance characteristics, using a t-test of sample means, over the period 2003 to 2017. The results show that the real coverage limit as well as the coverage ratio in India has been declining over the sample period. Moreover, India's position has tumbled vis-à-vis its peers in terms of coverage ratio. The findings suggest that the increase in India's coverage limit, after almost 27 years, is a much-needed move. The increase is enough to bring back India's coverage limit to comparable levels; however, this one-time increase is not sufficient in isolation of other policy variables.

Keywords: Coverage Limit, Deposit Insurance, Indian Banking.

JEL Classification Codes: C12, C22, G21, G22.

INTRODUCTION

During the Budget Speech 2020, Ms. Nirmala Sitharaman, the Finance Minister of India announced an increase in the deposit insurance coverage from Rs. 0.1 million to Rs. 0.5 million per depositor (Sitharaman, 2020). This five-fold increase in deposit insurance coverage has brought cheer amongst the depositors. The increase comes almost 27 years after the coverage limit was last revised to Rs. 0.1 million, from Rs. 30,000, in the year 1993 (Deposit Insurance and Credit Guarantee [DICGC] Act 1961, 2006). The Punjab and Maharashtra Co-operative

(PMC) bank crisis of September 2019, followed by the deposit withdrawal restrictions on Sri Guru Raghavendra Sahakara Bank in January 2020, has led to anguish among several depositors. These crises have not only thrown light on the regulatory deficiencies among co-operative banks but also brought forward concerns regarding the sufficiency of deposit safeguards.

The 59-year old deposit insurance system (DIS) of India, therefore, had to be re-examined for the extent of coverage provided to the depositors. But on what grounds is this increase justified? Is a one-time increase in coverage limit enough to solve the depositors' woes? This study seeks to provide answers to these questions.

Understanding Deposit Insurance

The banking system in a country is of prime importance for the development of the nation. By mobilizing funds from the surplus to deficit units, and allocating them among productive investments, banks play an active role in the development of businesses, financial intermediation and, the economy (Akani & Oparaordu, 2018; Gololo, 2017). This sector has been rightly called the 'lifeblood' of an economy; hence, any country must ensure that the banking system is well protected through the adoption of certain safeguards. Deposit insurance is one such safeguard.

Deposit insurance is a system under which bank depositors are offered full or partial protection of the deposits held by them in their accounts (Garcia, 1996). This system aims to ensure banking stability by assuring the depositors about the safety of their deposits. Banks, across the globe, face various kinds of issues such as loan defaults, misgovernance, etc. and all of these tend to jeopardize banks' performance and output (Rezina, Chowdhury & Jahan, 2020). In such scenarios, deposit insurance reduces the incentive of depositors to run on banks witnessing distress, and hence, helps to contain the contagion effect of a bank failure (Cecchetti, 2008).

Apart from banking stability, a system of deposit insurance helps to achieve many other objectives. Firstly, a DIS enhances public confidence in the banking system, thereby reducing the incentives to participate in bank runs based on rumors (Cecchetti, 2008). Second, and a major aim that deposit insurance seeks to serve, is the protection of small depositors (Demirgüç-Kunt & Kane, 2002). Third, deposit insurance serves the objective of financial inclusion. Small depositors or depositors in rural areas may be wary of keeping their hard-earned money in bank accounts. Deposit insurance assures such depositors of the safety of deposits and also facilitates banking activities. This ease of banking promotes financial inclusion among such small depositors, including self-help groups (Singh, Roy & Pandiya, 2020). Such a system, however, carries with it certain concerns that any general contract of insurance entails. The introduction of an explicit scheme of deposit insurance in a country may lead to a problem of moral hazard, with banks taking excessive risk in the hope of shifting this risk to the deposit insurer (Hooks & Robinson, 2002; Wagster, 2007; Ioanniduo & Penas, 2010; DeLong & Saunders, 2011). Moreover, it may also make the depositors more casual and complacent towards their banks, leading to a decline in bank monitoring (Demirgüç-Kunt & Huizinga, 1999; Ioannidou & Penas, 2010). These two major concerns can push the banks towards highly risky behavior and ultimately result in bank failure and instability- something which the deposit insurance system aims to avoid. Despite these issues, over 110 jurisdictions in the world have established an explicit system of deposit insurance with varying design features (World Bank, 2019). These features are substantially influenced by the regulatory and supervisory environment of a country (Demirgüç-Kunt & Kane, 2002). Germany, for example, has a privately funded and managed DIS, wherein member banks monitor each other's activities (Beck, 2002). Countries like Japan, Canada, Italy, the United States, etc. have more than one deposit insurer operating within the

jurisdiction, to provide coverage to different classes of banks. While the majority of the countries restrict the authority of their deposit insurer to reimbursing the depositors in case of a bank failure, Korea, the United States, Norway, Germany, etc. have provided extensive powers to the insurer to act as an administrator and liquidator to the failing banks (International Association of Deposit Insurers [IADI], 2018).

The deposit insurance system of India is the second oldest in the world, with the United States having the oldest and largest deposit insurance (IADI, 2018) (Note 1). The insurance facility of Deposit Insurance and Credit Guarantee Corporation (DICGC), the deposit insurer of India, extends to all commercial banks, as well as all eligible co-operative banks (Note 2) in India. As per the DICGC Act 1961, all types of deposits are covered except certain types of deposits specifically excluded from the scheme by Act. The insurance coverage was limited to a maximum of Rs. 0.1 million per depositor (now Rs. 0.5 million from February 2020), for principal and interest amount together, held at all branches of a bank in the same right and same capacity. Membership to the scheme of deposit insurance is compulsory, and no bank can withdraw from the scheme voluntarily. The deposit insurance fund in India is an ex-ante fund, with premium income and investment income comprising the major sources of revenue for the fund. All insured banks are required to pay a premium of 0.1% p.a. of their total assessable deposits to DICGC. The system follows a pay-box mandate, which means that the insurer's powers are limited to paying the depositors to the extent of coverage limit as per the provisions of the DICGC Act, 1961.

The Decision of Coverage Limit

The limit of the insurance coverage is probably one of the most challenging decisions for a country establishing an explicit system of deposit insurance. As per Lee and Kwok (2000), full coverage or a blanket guarantee promotes banking stability and allows some extra time for the banks to revive themselves in the absence of constant pressure from depositors. This may be true to some extent, but one can always argue that full coverage can only reduce but not eliminate the incentives for a run on banks, as the depositors may still be wary of the temporary inability to withdraw their deposits from the ailing banks. A cross-country study by Demirgüç-Kunt and Detragiache (2002) suggests that an explicit system of deposit insurance jeopardizes banking stability, and this negative impact is intensified with the increase in levels of coverage. This is supported by the study undertaken by Kim, Kim and Han (2015) in ASEAN countries, which suggests that higher levels of coverage invite more moral hazard on part of banks, with banks engaging in riskier activities. The more generous the deposit insurance scheme is, the greater is the moral hazard (Ngalawa, Tchana & Veigi, 2016). Additionally, Demirgüç-Kunt and Huizinga (2004), through their cross-country study, provide evidence that higher levels of deposit insurance coverage lower market discipline in banks, thereby making them more vulnerable to failures.

Comparing three different types of deposit insurance regimes- no insurance, limited insurance coverage, and full insurance, Shy, Stenbacka and Yankov (2016) found that limited insurance coverage weakens the competition between banks for the deposit market by allowing large depositors to transfer their funds from one bank to another to increase their overall coverage, thereby reducing the deposit rate sensitivity of deposits. Also, it increases the cost of the depositors by inducing them to open several accounts to achieve a higher level of coverage (in those countries where there is no restriction on the number of accounts held by a depositor). Hence, limiting insurance coverage may have a negative effect, not only on banking stability but

also on overall social welfare. Finally, for countries setting up coverage limit for the first time, or revising the amount of the limited coverage, a rule of thumb may be to set a limit that fully covers a high percentage of depositors or deposit accounts (90-95% of depositors) while leaving a majority portion of the value of deposits uninsured (Garcia, 1999).

In India, the DICGC Act, 1961 empowers the DICGC to change the coverage limit with the prior approval of the Central Government. Since its inception, the DICGC has enhanced the coverage limit five times. In the first instance, the limit of Rs. 1,500 per depositor was increased to Rs. 5,000 in 1968, after the extension of coverage to co-operative banks. In the light of an increasing number of co-operative banks being converted into 'eligible' co-operative banks, the limit was further doubled to Rs. 10,000 in 1970. In 1976, with the enactment of the Regional Rural Banks (RRBs) Act, RRBs were brought under the purview of deposit insurance and subsequently, the insurance coverage was, once again, doubled to Rs. 20,000 per depositor. The limit was further increased to Rs. 30,000 in 1980, and finally the limit was enhanced to Rs. 0.1 million in 1993, considering the loss to the depositors due to the failure of Bank of Karad, which was involved in the Harshad Mehta scam of 1992 (DICGC Act 1961, 2006). There is no visible pattern in the periodicity of such changes, which suggests that the increments in the coverage limit were either undertaken in response to the extension of coverage to new groups of banks or to pacify the public during bank distress.

Since 1993, the limit of Rs. 0.1 million had been kept intact. In the wake of the recent announcement to enhance the coverage limit to Rs. 0.5 million, it is essential to understand if this five-fold increase is justified.

Objective and Hypotheses

The objective of this study is to determine the adequacy of the coverage limit of the Indian deposit insurance system, by studying the movement of variables of interest over the sample period of 1993-94 to 2017-18. For this, the following hypotheses are framed and tested:

H₁: There is no significant trend in India's real coverage limit during the sample period.

H₂: There is no significant trend in India's coverage ratio during the sample period.

The study also compares the deposit coverage limit and its changes in India, with that of countries having similar deposit insurance characteristics, at three points of time: December 2003, December 2010, and December 2017. For this, the following hypotheses are framed and tested:

H₃: There is no difference between the change in coverage limit of India and the average change in coverage limit of comparable countries from 2003 to 2010.

H₄: There is no difference between the change in coverage limit of India and the average change in coverage limit of comparable countries from 2010 to 2017.

H₅: There is no difference between the coverage ratio of India and the average coverage ratio of comparable countries in 2003.

H₆: There is no difference between the coverage ratio of India and the average coverage ratio of comparable countries in 2010.

H₇: There is no difference between the coverage ratio of India and the average coverage ratio of comparable countries in 2017.

By testing these hypotheses, the study seeks to investigate whether the recent five-fold increase in deposit insurance coverage limit of India is justified or not.

METHOD

Data and Sample

The study relies on secondary data for analysis. The data for the coverage limit of India for the sample period has been extracted from the amendments to DICGC Act, 1961 (Deposit Insurance and Credit Guarantee Act 1961, 2006). To study this coverage limit, the consumer price index (CPI) for India (base: 2010) has been collected from the World Bank Open Database (<https://data.worldbank.org/>) for the sample period 1993-94 to 2017-18. The coverage ratio, one of the most important variables of deposit insurance, has been calculated using GDP per capita for India (base: 2004-05) from 1993-94 to 2007-08, based on total GDP at current prices and the population of India, available in the Reserve Bank of India (RBI) Handbook of Statistics on the Indian Economy (Reserve Bank of India, 2018). From 2008-09 to 2017-18, the value of coverage ratio has been extracted from the annual reports of DICGC. The sample period of study starts from 1993-94 because this year witnessed the last increase in India's deposit insurance coverage limit, from Rs. 30,000 to Rs. 1,00,000 per depositor. Hence, the year acts as a reference point for studying the coverage limit for subsequent years.

As for the countries included in the sample for comparison, the deposit insurance characteristics of each country have been sourced from the Deposit Insurance Survey 2018 conducted by the International Association of Deposit Insurers (Note 3). The coverage limit of these countries (in \$) has been extracted from two sources: The Deposit Insurance Survey (IADI, 2018) and the database provided by Demirgüç-Kunt, Kane and Laeven (2014). For calculation of coverage ratio of these countries, GDP per capita (in \$) has been collected from the World Bank Open Database. This data for the sampled countries has been extracted for only three periods of time: December 2003, December 2010, and December 2017. These three periods allow us comparison over a consistent 7-year period from December 2003 to December 2010 and December 2010 to December 2017, and at the same time, these take into account the pre-crisis and post-crisis periods.

The countries chosen to be included in the sample have been determined through a 'Comparable Characteristics' driven process. Under this process, all the countries that responded to the IADI Deposit Insurance Survey 2018 have been compared to India based on certain characteristics of a deposit insurance system. On the basis of literature review and available databases, we identified 8 characteristics of a deposit insurer that play a big role in shaping the system (see Appendix A for details). Out of these 8 characteristics, those countries which had at least 5 characteristics similar to that of India have been included in the sample. The cut-off of 5 characteristics has been taken to ensure similarity in more than 50% of the selected characteristics.

For comparing the average change in coverage limit across countries, the number of countries in the sample is 43 for the period December 2003 to December 2010, and the number is

61 for the period December 2010 to December 2017. The difference in the number of countries in the sample arises because many countries established a system of deposit insurance after the global financial crisis. For comparing the average coverage ratio across countries at three time periods, the number of countries sampled is 47 for December 2003, and 61 for December 2010 as well as December 2017.

Methodology

For analyzing the adequacy of the deposit insurance coverage limit of India, the study uses regression analysis, in a semi-log form. A semi-log regression equation, wherein we take the logarithm of the dependent variable, allows us to study the impact of a unit change in the independent variable on the rate of growth of the dependent variable. For this, two variables are employed, the real value of coverage limit, and the coverage ratio of deposit insurance in India. To study their movement, we use a semi-log regression equation with time trend:

$$\log(y_t) = \alpha + \beta.t + \varepsilon_t \quad (1)$$

Where, $\log(y_t)$ is the logarithm of the variable of interest at time t , i.e. real coverage limit, and coverage ratio t ranges from 1993-94 to 2017-18 and has been coded as 1,2,3, etc.

α is the intercept, which represents the percentage change in the dependent variable at $t = 0$

β is the slope coefficient, which represents the compound annual growth rate (CAGR). The CAGR is the average annual rate at which a variable grows from its initial value to its final value, assuming that the returns (if any) each year are invested back into the system, and compounded over the life of the variable.

ε_t is the error term

The details of the two dependent variables used are as follows:

i) The real value of the coverage limit of Rs. 1,00,000, introduced in the year 1993-94, for the sample period of 1993-94 to 2017-18. The real value of coverage limit for each year is calculated as:

The real coverage limit for year $t = \frac{\text{CPI for the year 1993-94}}{\text{CPI for year } t} * \text{Nominal coverage limit for year } t$

This variable brings down the value of the coverage limit in India during the sample period to its real value that is the value after taking into account the impact of inflation. A fall in the value of this variable is indicative of the deterioration in the worth of the benefit that the depositors get from the deposit insurance scheme. A rise in the value, on the other hand, indicates that the benefits offered by the insurance scheme beat the rate of inflation. A constant value indicates that the coverage limit is in line with the movement in inflation rates. This variable assumes relevance because the rate of inflation is an important macro-economic variable, used for determining the purchasing power of consumers.

ii) The coverage ratio (CR) of deposit insurance in India for the sample period 1993-94 to 2017-18. The coverage ratio is calculated as: The coverage ratio for year $t = \frac{\text{Coverage limit for year } t}{\text{GDP per capita for year } t}$

The coverage ratio is one of the most widely used measures of the adequacy of deposit insurance coverage, accepted and calculated across nations that have established a DIS. This variable is relevant because it measures the coverage limit of a country with respect to the per capita gross domestic product (GDP) of that country. Changes in the coverage ratio indicate if the coverage limit is keeping in line with the national income of the country.

From 1993-94 to 2007-08, the coverage ratio has been calculated using the above method. However, from 2008-09 to 2017-18, the data on coverage ratio has been sourced from the annual reports of DICGC.

To compare the coverage limit of India with that of sample countries we use the single-sample t-test. This test enables us to determine if the average value of the variables in sample countries is equal to the value of the variables in India. In other words, this statistical tool helps to determine the situation of India in comparison to other countries with similar deposit insurance design features.

The following variables are calculated and analyzed:

i) The average change in coverage limit from December 2003 to December 2010, and from December 2010 to December 2017, for the sampled countries. The change in coverage limit is calculated as:

$$\text{Change in coverage limit from period } t \text{ to period } h = \frac{\text{Coverage limit at } h - \text{Coverage limit at } t}{\text{Coverage limit at } t}$$

Change in coverage limit has been used instead of the absolute amount of coverage limit, due to the difference in the currency of countries in the sample. The percentage change in coverage limit removes the unit of currency and hence makes comparison feasible.

ii) The average coverage ratio as of December 2003, December 2010, and December 2017 for a sample of countries. The formula for coverage ratio suggests that the ratio is independent of the unit of measurement of currency, and hence, is comparable across countries.

The study compares the average change in coverage limit of sampled countries over the years with the change in coverage limit of India and further compares the average coverage ratio of sampled countries at different points in time with the coverage ratio of India using the single-sample t-test.

RESULTS

The International Monetary Fund (IMF) Working Paper (Garcia, 1999) suggests that the coverage limit should be such that it covers a large number of total accounts but a relatively small amount of total deposits in value. This trade-off ensures that the aim of protecting small depositors is fulfilled, without compromising on market discipline (International Association of Deposit Insurers [IADI], 2013).

In India, the number of fully protected accounts as a percentage of total insured accounts with all insured banks has been between 90% to 100% since 1970. As of 2017-18, 91.45% of the total eligible accounts were fully protected. This high depositor coverage has been used as a justification for no change in the deposit insurance coverage limit since 1993. The value of deposits covered by insurance, as a percentage of the total insurable deposits, stood at 29.24% as of 2017-18. These two values show that as per the suggestions made by IMF, the coverage limit

of Rs. 1,00,000 was apt. However, this limit was introduced in the year 1993-94 and had remained unchanged over the past 27 years. The scope and extent of coverage should be reviewed regularly, and periodic adjustments should be made to take into account inflation and changes in the composition of deposits, as well as the introduction of new deposit instruments (IADI, 2013).

Over the past 25 years from 1993-94 to 2017-18, inflation has led to deterioration in the real coverage limit, which stood approximately at Rs. 20,000 per depositor as of 2017-18. The real coverage limit has a significant downward trend with a CAGR of -6.6% p.a. ($\beta = -0.066$, $p < 0.000$), indicating that the effective coverage for the deposits in India has fallen sharply (Hypothesis 1). Indexing the coverage limit to inflation, as is done in the USA and Mexico, is one alternative to ensure that the coverage limit adjusts automatically to maintain the real value of coverage. If we index the coverage limit of Rs. 0.1 million in 1993-94 to the relative inflation in 2017-18, the coverage limit should have been increased to a whopping Rs. 0.49 million in 2018. However, the continuous adjustments may be difficult and costly to implement and may lead to confusion among the depositors.

A widely accepted measure of the adequacy of the coverage limit is the coverage ratio, defined as the ratio of coverage limit to GDP per capita. In India, the coverage ratio for the year ended 2018 was 0.9, as against the world average of 2 (IADI, 2013). Although there is no international benchmark or policy recommendation regarding the coverage ratio, it should be comparable to the global scenario, taking into account the differences in the banking conditions of a particular country. The coverage ratio of India has a significant downward trend with a CAGR of -10.31% p.a. ($\beta = -0.103$, $p < 0.000$), indicating that the coverage limit has failed to keep up with the increasing per capita GDP (Hypothesis 2). This issue can be dealt with by appraisal of the coverage limit at regular intervals to adjust it to the changes taking place in the financial markets.

Cross-Country Comparison

Moving on to the cross-country analysis, the study compares the change in coverage limit of India as well as the coverage ratio in India with a sample of countries having similar deposit insurance features. To ensure consistency in the coverage ratio being used for comparison, we calculate the coverage ratio of India for December 2003, 2010, 2017 from the same database which is used for calculation of coverage ratio of all other countries.

The results of the t-tests have been presented in Table 1, followed by a discussion on their interpretation.

Table 1. Results of t-tests

Comparison with	Results of t-test
The average change in coverage limit from December 2003 to December 2010	$t_{2003-10}(42) = 4.558$, $p < 0.000^*$
The average change in coverage limit from December 2010 to December 2017	$t_{2010-17}(60) = 3.628$, $p < 0.000^*$
Average coverage ratio as at December 2003	$t_{2003}(46) = -0.043$, $p = 0.965$
Average coverage ratio as at December 2010	$t_{2010}(60) = 3.002$, $p < 0.003^*$
Average coverage ratio as at December 2017	$t_{2017}(60) = 4.973$, $p < 0.000^*$

Note. *Significant at 1% level of significance

India did not change (increase or decrease) its coverage limit over the 7 years from December 2003 to 2010, whereas an average change in coverage limit of 213.56% was undertaken by the countries in our sample, which is significantly different from that of India (Hypothesis 3). It may be argued that many countries increased their coverage limit in response to the global financial crisis of 2008. Therefore, we further compare India's change in coverage limit from the period after the crisis (i.e. from December 2010) till December 2017. Similar results were found for this comparison over these 7 years. While comparable countries increased their limit by 53.8% on an average, India has undertaken no such action, and the difference is significant (Hypothesis 4).

As far as coverage ratio is concerned, for December 2003, the average coverage ratio of countries in our sample is 3.80, which is not significantly different from India's coverage ratio of 3.84 (Hypothesis 5). On the contrary, for December 2010 and 2017, the average coverage ratio of sampled countries (5.16 and 4.35 respectively) is significantly different from and higher than the coverage ratio of India (1.52 and 0.81 respectively) (Hypothesis 6 and 7). The results suggest that while India has made no efforts to improve its coverage ratio, the same is not true for other similar countries. Moreover, India's coverage ratio, which was similar to the average of other countries up till 2003, has taken a sharp dip over the years and stood way below the average coverage ratio of other comparable countries. Figures 1, 2, and 3 indicate the falling position of India's coverage ratio vis-à-vis its peers over the 14-year period from 2003 to 2017.

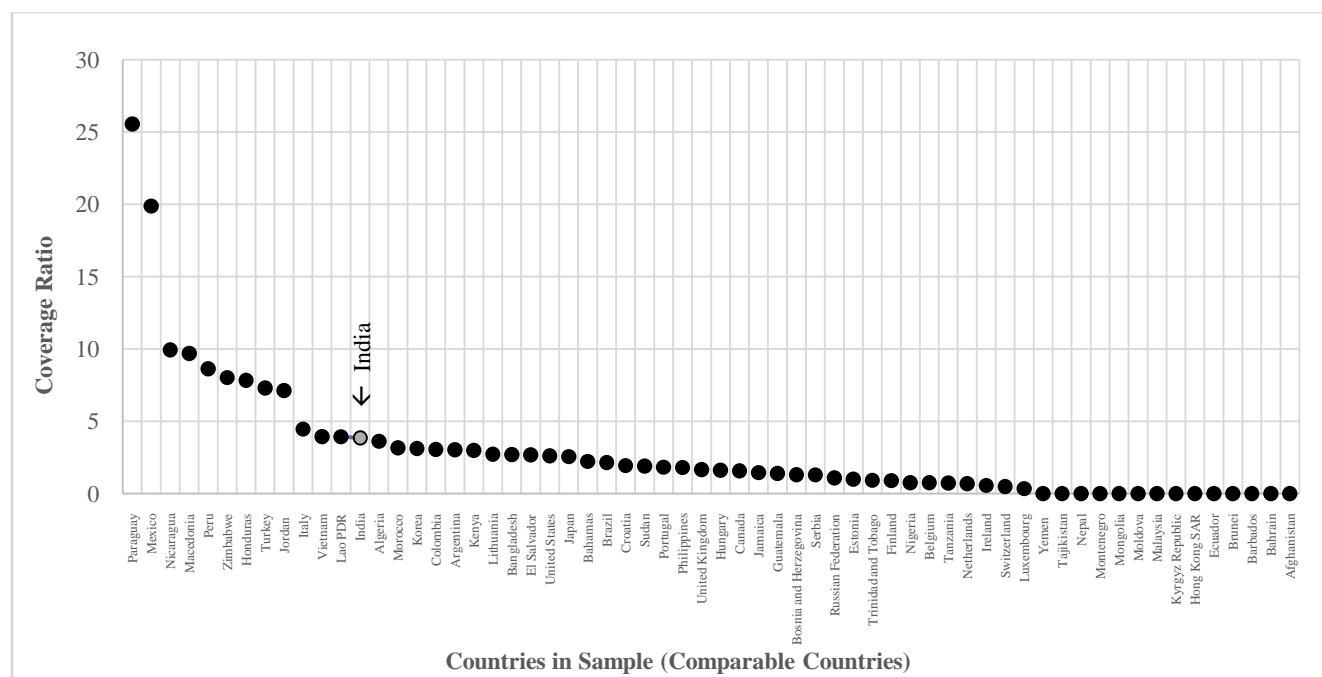


Figure 1. Coverage Ratio of India and Comparable Countries in 2003

Note. Yemen, Tajikistan, Nepal, Montenegro, Moldova, Malaysia, Kyrgyz Republic, Hong Kong SAR, Ecuador, Brunei, Barbados, Bahrain, and Afghanistan established their deposit insurance systems after 2003. They are included in the above graph just to ensure consistency in comparison with the years 2010 and 2017.

Source: Authors' calculations based on Demirgüç-Kunt et al. (2014), IADI (2018), and World Bank Open Data

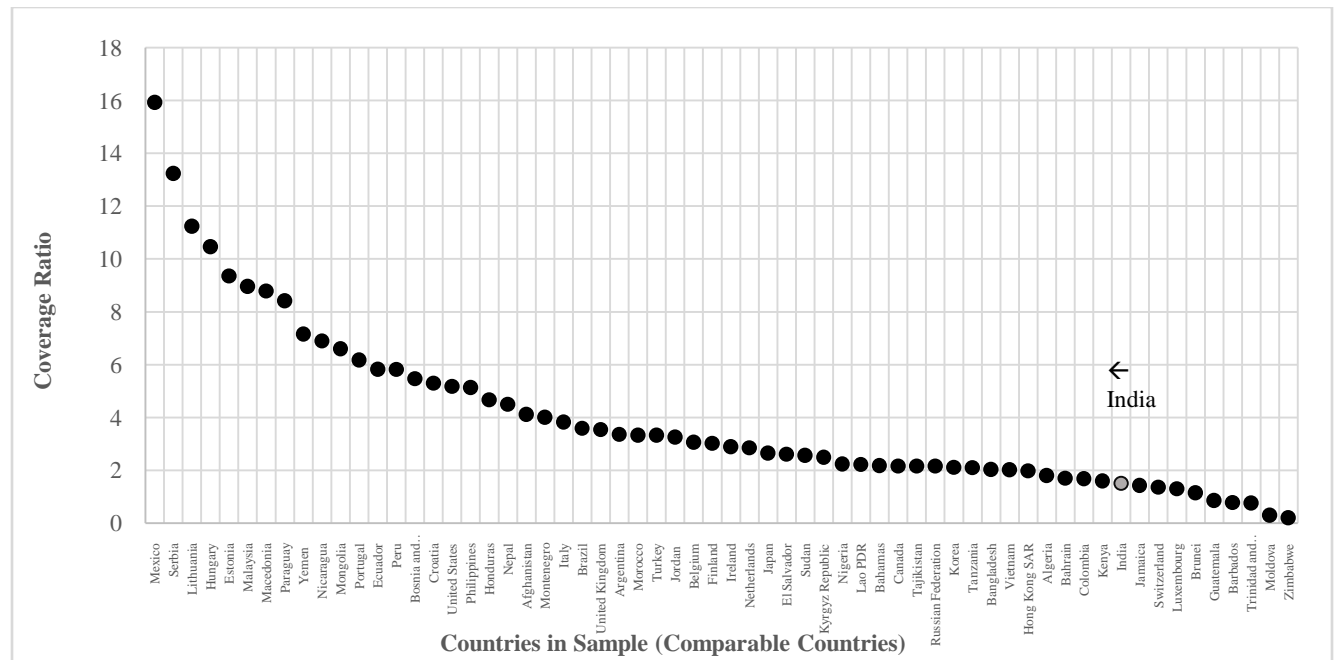


Figure 2. Coverage Ratio of India and Comparable Countries in 2010

Source: Authors' calculations based on Demirgüç-Kunt et al. (2014), IADI (2018), and World Bank Open Data

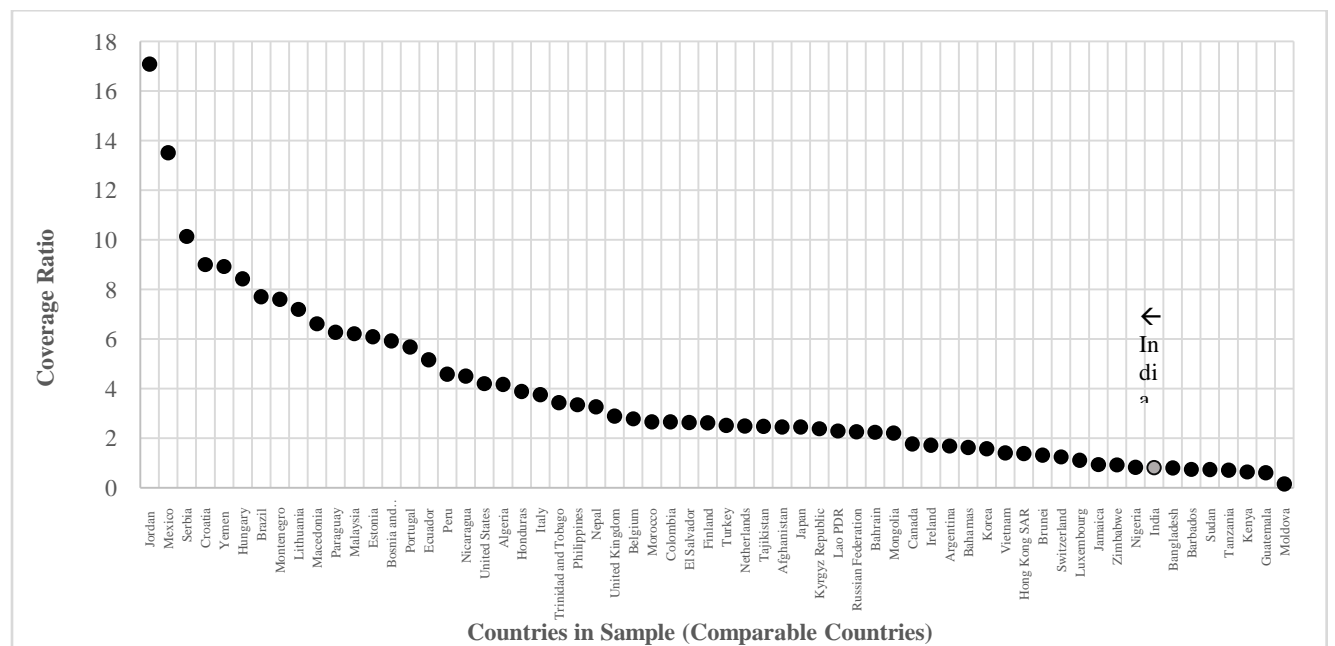


Figure 3. Coverage Ratio of India and Comparable Countries in 2017

Source: Authors' calculations based on Demirgüç-Kunt et al. (2014), IADI (2018), and World Bank Open Data

As of 2003, the coverage ratio of India was among the top 30% of all comparable countries. After 7 years, that is, in 2010, there was a drastic fall in India's position, with it becoming part of the bottom 20%, and in another 7 years it worsened off to the bottom 15%.

DISCUSSION

Is the Deposit Insurance Coverage Increase in India Justified?

The increase in the coverage limit in Indian deposit insurance has come almost 27 years after the last revision. During this period, a number of variables, such as the proportion of fully protected accounts, the value of deposits insured, real coverage limit, and coverage ratio have declined substantially. In real terms, the coverage limit had dropped to 20% of its initial value, and the coverage ratio remained less than 1 for several years. While India's coverage was higher than most of its peers in the 1990s, it had plummeted from the top to the bottom in recent years. Considering this, the enhancement in the coverage limit from Rs. 0.1 million to Rs. 0.5 million per depositor, is a welcome move.

One may ask if the increase in coverage by five times is sufficient or not. The appropriate amount of change is, however, still a matter of debate. As per IMF, two times per capita income can be taken as a rough rule of thumb for determining the appropriate coverage limit (Garcia, 1999). If we were to provide insurance as per IMF's rule of thumb, the coverage limit should have been Rs. 0.2 million approximately for the year ended 2018. On the other hand, the Report of the Committee on Customer Service in Banks (Reserve Bank of India, 2011) suggested an increase in the coverage limit to Rs. 0.5 million to encourage individuals to keep their deposits in banks. On the contrary, the Narasimham Committee Report on the Banking Sector Reforms (Reserve Bank of India, 1998), as well as the Report of the Working Group on Reforms in Deposit Insurance in India (Reserve Bank of India, 1999) recommended that there is no need to increase the coverage limit beyond Rs. 0.1 million. However, these recommendations were made just 5 to 6 years after the improvement in the coverage limit from Rs. 30,000, and that too at a time when the coverage ratio of India's deposit insurance system was one of the highest amongst other countries. Not too many studies have been conducted on the adequacy of coverage limit. However, reports of the Reserve Bank of India support the finding of our study, which states that the coverage limit should be enhanced. After the increase in coverage, India would, once again, feature among the top 30% of comparable countries in terms of deposit insurance coverage. Hence, the five-fold increase in the coverage limit seems justified.

However, an increase in coverage limit is not a decision that can be taken in isolation from other policy variables. One needs to calculate the impact of an increase in coverage limit on the sufficiency of the deposit insurance fund. An excessive or undesirable increase in the coverage limit may make the fund unviable in extreme situations, such as a contagious banking panic. Since a major portion of the deposit insurance fund comprises premium contributions in many countries, the decision to raise the coverage limit may have a direct impact on the premium charged from banks. Currently, India charges the same rate of premium on the deposits of all banks, irrespective of their risk profiles- a practice which is called the flat-rate premium system. However, it has to be realized that simply raising the level of insurance coverage, in a system of flat-rate premium structure, may aggravate the problem of moral hazard among banks (Shiers, 1994). In such a situation, a switch to a risk-based premium system may become indispensable. The Report of the Committee on Differential Premium System for Banks in India (Reserve Bank of India, 2015) provided extensive recommendations for the adoption of a risk-based premium structure suitable to India.

Experience also suggests that more often than not, countries enhance their deposit insurance in the aftermath of a banking crisis. Many countries expanded the scope and limit of their deposit insurance in response to the global financial crisis, including the United States of America (USA), where the insurance limit was increased from \$0.1 million to \$0.25 million. In

underdeveloped countries as well, such as Nigeria, apart from capital injections, deposit insurance has been expanded following the financial crisis (Oyerinde, 2017). In India, the decision to revise the coverage to Rs. 0.5 million has been taken in the wake of the PMC bank crisis. However, enhancing the coverage limit as a reaction to a bank failure may turn out to be only partially successful in preventing bank runs, and may lead depositors to believe that the system does not have any credible limits (Boyle, Stover, Tiwana & Zhylyevskyy, 2015). The approach, instead, should be to undertake a periodic review of the coverage at specified intervals and adjust it over time to reflect the changes in certain economic variables such as per capita GDP and rates of inflation. As per Bank Regulation and Supervision Survey (World Bank, 2019), in several countries, including the USA and Japan, the coverage limit is linked to inflation. In some countries, such as Indonesia, the limit is indexed to GDP. The policymakers also need to make sure that these adjustments are neither very frequent, as it may create confusion and implementation problems, nor too rare, as it may create doubt on the ability of the banking system to withstand a crisis.

The one-time, episodic increase in coverage limit is, therefore, not sufficient in isolation. Such an increase needs to be accompanied by a careful evaluation of the viability and the strength of the deposit insurance system as a whole.

CONCLUSION

Deposits are one of the key inputs for the banking industry, and mobilization of these deposits is an essential function of banks (Nwangolo & Ogechi, 2018). Since banks hold liquid liabilities in the form of demand deposits which are further used for investment in illiquid assets, they expose themselves to liquidity risk, which may materialize if many depositors together wish to withdraw money from their accounts. This primary function performed by banks makes them vulnerable to bank runs. The responsibility of banks to safeguard their depositors and ensure the stability of the banking system leads to stricter regulations for them (Bezawada, 2020) and also entitles them to deposit insurance.

The evidence of deposit insurance from India suggests that the country, with the second oldest deposit insurance system in the world, was in dire need of a coverage limit upgrade. A five-fold increase in the country's deposit insurance coverage is a move that has been accepted with open arms. The results indicate that the coverage limit of India's deposit insurance had fallen way behind the inflation levels. It was also insufficient as far as the per capita GDP of India is concerned. Changes in macroeconomic policy variables, such as inflation and per capita GDP, along with a steep fall in India's coverage limit as well as coverage ratio vis-à-vis other countries with similar deposit insurance features, warrant this increase. However, this is not an all-in solution. It has to be ensured that such a revision is not reduced to a mere cosmetic exercise.

Countries that are contemplating a modification in their deposit insurance coverage should, therefore, consider a few essential pointers. First, since enhancement of coverage increases the burden of the deposit insurer, efforts have to be made to ensure the viability of the insurance fund. Second, enlarging the fund would require additional premium contributions from banks, and moving towards a more sustainable risk-based premium structure. Third, a policy framework to review and revise the coverage limit as per the changing dynamics of the banking industry and the economy needs to be formulated. Such a revision shall take into account the average level of deposits in insured banks, the rate of inflation, per capita GDP, and types of deposit instruments covered, among other things. Lastly, steps must be taken to move from a

reactive system to a proactive system, where policy variables are reviewed periodically, instead of being reviewed in the aftermath of a bank or financial crisis. Which specific variables need to be considered for determining the coverage limit, and how often should the limit be changed, are questions which are still open for deliberations.

This study uses basic statistical tools and simple methods to analyze the trend of coverage limit in India, and determine its adequacy. Although, for comparison, the study attemptsto include countries that share important deposit insurance traits with India, yet these countries differ in terms of other macroeconomic aspects. Hence, these limitations should be kept in mind while interpreting the results. The findings and recommendations of this study are relevant for all countries with an explicit system of deposit insurance, as it would allow them to examine their deposit insurance coverage limit and the system as a whole in the light of multiple other policy variables such as market discipline, depositor protection, deposit insurance fund, premium and the like.

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NOTES

Note 1. A nation-wide deposit insurance system was established in the USA in 1933, due to the failure of multiple banks during the Great Depression.

Note 2. Eligible co-operative banks, as defined under Section 2(gg) of the DICGC Act, refers to those co-operative banks whose states or union territories have amended their Cooperative Societies Act to empower RBI to take certain actions superseding the Registrar of Cooperative Societies of the respective state/union territories.

Note 3. The International Association of Deposit Insurers (IADI) is an association of countries around the world that have adopted an explicit system of deposit insurance. It was formed in the year 2002 with the objective of providing a platform to conduct research, provide guidance, share knowledge and promote international cooperation among countries in the field of deposit insurance.

APPENDICES

Appendix A: Determination of Countries to be included in the Sample

Table 2 lists down the 8 characteristics of a deposit insurance system that have been selected as criteria for comparison with India's deposit insurance system, along with their meaning and the number of countries whose DIS have features similar to that of India.

Table 2. DIS Characteristics Selected for Comparison

Characteristic used as Criteria	Details	No. of countries with characteristics similar to India
Administration of DIS	A DIS can be government legislated and administered, government legislated but privately administered, privately established and administered or administered by the central bank.	72
Mandate	A country can choose to adopt one of the four system mandates: Pay-box, pay-box plus, loss minimizer, or risk minimizer.	40
Institutions covered	The institutions that can become members of the DIS can vary from commercial banks, credit unions, co-operative banks, investment banks, Islamic banks, rural banks, savings banks, to investment companies, securities companies, and other deposit-taking institutions.	16
Membership	Membership to the DIS of a country can be mandatory or voluntary.	108

Types of deposit products eligible for coverage	Countries may provide protection to savings account, checking account, certificate of deposits, traveler's checks, money orders, foreign currency deposits, inter-bank deposits, government deposits, and some other deposits which may be specified in the law and may be peculiar to the country.	105
Coverage per depositor per institution	A DIS may set coverage limits per depositor per institution, or per depositor across all institutions, or may specify separate limits for different types of deposits.	106
Type of funding	Funding of the deposit insurance fund can either be ex-ante or ex-post or a combination of the two.	98
Method for levying premium	The premium can be levied at a flat rate or at a variable rate or can be a combination of both. For some countries, no premium is levied due to the employment of ex-post funding.	48

As mentioned under the research methodology, we used a 'Comparable Characteristics' driven process for selecting the countries to be included in the sample for each analysis. For the comparison of the change in coverage limit from December 2010 to December 2017, as well as for the comparison involving coverage ratio for December 2010 and 2017, the sample size is 61. Figure 4 shows the process used for arriving at this sample size of 61 comparable countries.

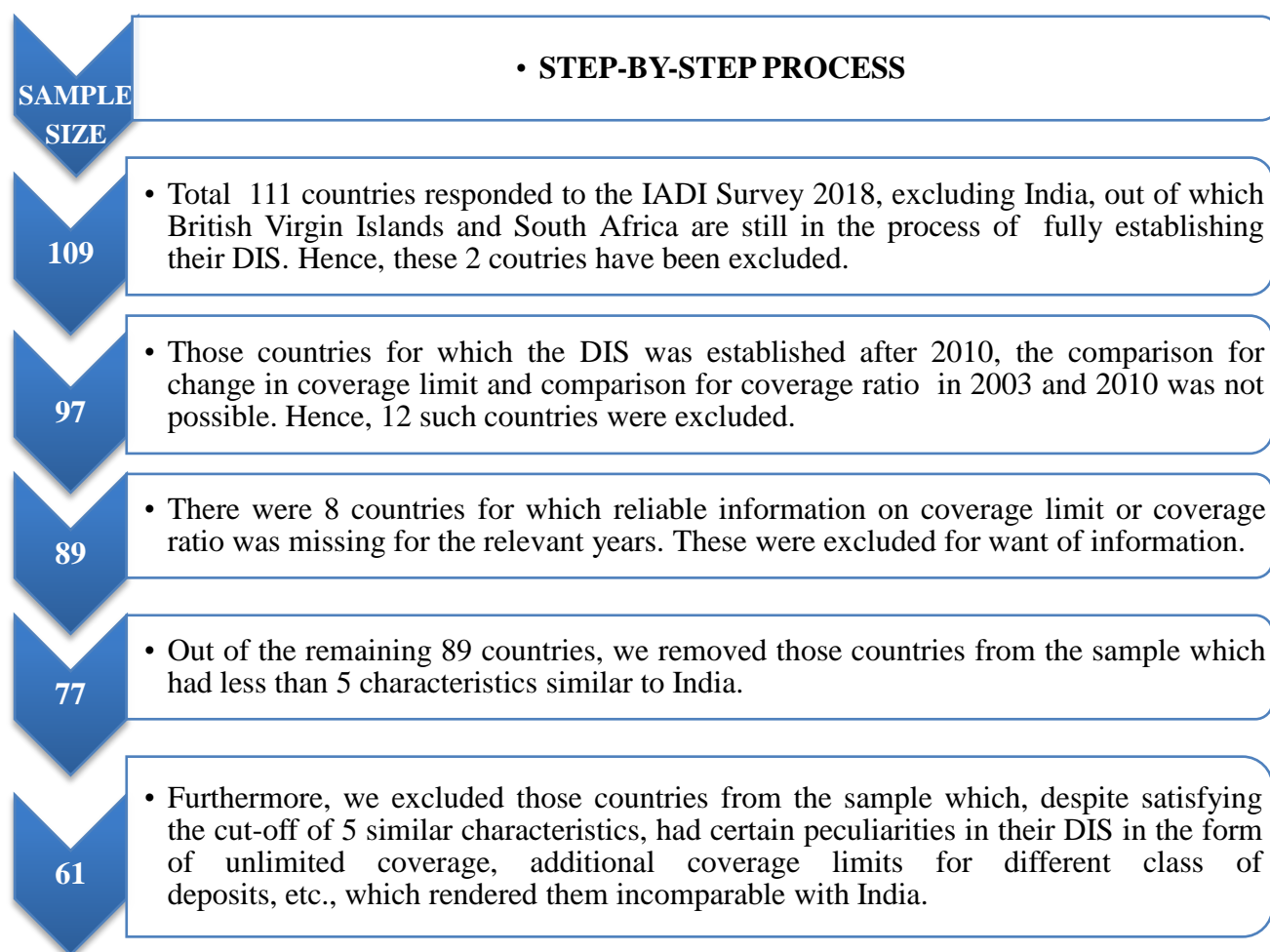


Figure 4. Process of Selection of Countries in the Sample

Further, for the analysis concerning the comparison of coverage ratio as of December 2003, the sample size reduced to 47, due to exclusion of 14 countries that were established after the year 2003. For the analysis concerning the comparison of the change in coverage limit from December 2003 to December 2010, in addition to excluding the above 14 countries, we also excluded 4 additional countries for which reliable data on coverage limit in 2003 was not available, thereby reducing the sample size to 43.

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