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# Enhanced Guidance for Effective Deposit Insurance Systems:

# Ex Ante Funding

Guidance Paper


**Prepared by the Research and Guidance Committee**

**International Association of Deposit Insurers**

C/O BANK FOR INTERNATIONAL SETTLEMENTS
CENTRALBAHNPLATZ 2, CH-4002 BASEL, SWITZERLAND
TEL: +41 61 280 9933 FAX: + 41 61 280 9554
WWW.IADI.ORG

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# Executive Summary

The mission of the International Association of Deposit Insurers (IADI) is to contribute to the enhancement of deposit insurance systems effectiveness by promoting guidance and international cooperation. Its vision is to share its deposit insurance expertise with the world. As part of its work, IADI undertakes research projects to provide guidance on deposit insurance matters.

One of the main public policy objectives of a deposit insurer is to contribute to the stability of a financial system. Operational readiness is integral to building public confidence in a financial system, and sound funding arrangements are essential aspects of such readiness. Inadequate funding, on the other hand, can lead to delays in reimbursing depositors/resolving failed member banks, resulting, eventually, in significant increases in resolution costs and undermining the credibility of a jurisdiction's financial system.

Recognizing the critical importance of funding to the effectiveness of any deposit insurance system and to financial stability, IADI issued the Core Principles for Effective Deposit Insurance Systems ("the Core Principles")[1] in 2009 and a revised set of Core Principles and an accompanying assessment methodology in 2014.[2] The sources and uses of deposit insurance funds (DIFs) is one of the key principles.

Given the importance of funding to deposit insurance systems, the Financial Stability Board's recommendations, and lessons learned in the wake of the international financial crisis, this IADI Guidance Paper sets out additional guidance to address these matters.

# Enhanced Guidance

Drawing on the experiences of IADI deposit insurers as well as academic literature, IADI has identified the following nine guidance points aimed at updating and enhancing its guidance related to funding, for the effective implementation of the Core Principles.

1. Deposit insurers should implement ex ante funding mechanisms to have available the financial capacity to carry out their mandates effectively. Clarity in the funding objectives is essential for deposit insurers to determine the appropriate funding approach and strategies to meet their legal obligations, taking into consideration their role in the financial safety-net.

2. Deposit insurers should determine the appropriate target level of DIF on the basis of clear and well-developed criteria that are consistent with their mandate. The appropriate target level should be determined based on relevant and readily available data, and a well understood and transparent methodology and approach.

3. Deposit insurers should set a reasonable time frame to achieve the expected target level of DIF. In setting appropriate premium rates that facilitate the accumulation of funds, deposit insurers should take into consideration the current and expected outlook of the operating environment, as well as the financial impact on individual banks and on the banking industry as a whole.

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[1] Basel Committee on Banking Supervisions and International Association of Deposit Insurers, *Core Principles for Effective Deposit Insurance Systems* (Basel: BIS), June 2009.

[2] International Association of Deposit Insurers, *Core Principles for Effective Deposit Insurance Systems* [revised] (Basel: BIS), October 2014.

4. The level of ex ante DIFs should not be static. Deposit insurers should periodically review and validate the methodology and approach, and the models used to determine the adequacy of the fund level.

5. Liquidity funding is a critical component of a deposit insurer's funding framework. Such liquidity funding arrangements should be explicitly set out in law or regulation, and appropriate arrangements should be set up in advance to ensure effective and timely access, when required.

6. The objectives and strategy for fund management should be clearly set out and aligned with the deposit insurer's mandate. It should be aimed at ensuring the value of the funds is preserved (capital preservation) and that such funds can be readily available to meet the deposit insurer's obligations, whether for the day-to-day operational needs or for funding a bank resolution or reimbursement.

7. For a deposit insurance system that has separate DIFs, each DIF should have clearly defined objectives.

8. Separate DIFs with their own target reserves should be considered for clear and distinct industry sectors within the financial system which are subject to distinct or separate guarantees (e.g. banks, insurance companies, investment companies), in order to avoid cross-subsidization and to promote equity and fairness. Such integrated deposit insurers should also establish a clear methodology for the equitable allocation of income and expenditures to the relevant funds.

9. Deposit insurance funds can be utilized for many purposes, depending on legislated mandates, including the reimbursement of depositors' claims in the event of bank failures and the recapitalization of banks. The purpose and use of the DIFs should be clearly established in legislation.

# I. Introduction

Sound funding arrangements are critical to the effectiveness of any deposit insurance system. Deposit insurers should have in place such arrangements to ensure that adequate funds are readily available to facilitate the smooth administration of deposit insurance systems and to enable them to meet their deposit insurance obligations in the event of a member bank failure.

In February 2012, the Financial Stability Board (FSB) completed a peer review of deposit insurance systems using the BCBS-IADI Core Principles for Effective Deposit Insurance ("the Core Principles") as a benchmark. The FSB Thematic Review on Deposit Insurance Systems: Peer Review Report ("the FSB Thematic Review") took stock of member jurisdictions' deposit insurance systems and of any planned changes, and drew lessons from experience on the effectiveness of reforms implemented in response to the crisis.[3] The Thematic Review made a number of observations regarding deposit insurance system funding.

Deposit insurance systems typically are strengthened after a crisis. Banking crises bring to light limitations of the financial safety-net and lead to changes in deposit insurance design features. As a result of the global financial crisis, many jurisdictions have enhanced various features of their deposit insurance systems reflecting greater convergence in practices across jurisdictions and an emerging consensus about appropriate design features, including mechanisms for effective funding.

The FSB noted that the experience of the financial crisis highlighted the importance of deposit insurance systems having unambiguous and immediate access to reliable funding sources both for liquidity and for funding losses. To this end, and as observed by the FSB, jurisdictions with explicit deposit insurance systems have either established ex ante funds or are actively considering this option. The FSB also noted that the type of funding structure may depend on the features of the banking system, since they affect the extent to which bank failures can put a strain on deposit insurers.

The FSB Thematic Review confirmed the Core Principle on funding in that depositor confidence depended, in part, on knowing that adequate funds would always be available to ensure the prompt reimbursement of their claims. The FSB also observed that adequate emergency liquidity funding arrangements were important and that the primary responsibility for paying the cost of deposit insurance should be borne by banks.

The FSB noted that unclear or informal standby funding arrangements that require additional approval to draw down such facilities could jeopardize the speed of handling a depositor reimbursement or bank resolution, impede the effectiveness of the deposit insurer in maintaining financial stability, and would not be consistent with the Core Principles.[4] In this regard, the FSB requested that member jurisdictions with explicit deposit insurance systems should ensure that the current resources (including any liquidity funding options) of their deposit insurance agencies are adequate and immediately available to meet the financing requirements arising from their mandates.[5]

The FSB also recommended that IADI should, in consultation with the Basel Committee on Banking Supervision and other relevant bodies, where appropriate, update its

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[3] Financial Stability Board, *Thematic Review on Deposit Insurance Systems* (Basel), February 2012, p. 8.

[4] Financial Stability Board, *Thematic Review on Deposit Insurance Systems* (Basel), February 2012, p. 30

[5] Financial Stability Board, *Thematic Review on Deposit Insurance Systems* (Basel), February 2012, p. 7

guidance, which pre-dates the financial crisis. One area highlighted for further exploration is the desirability of greater use of ex ante funding by deposit insurers.

The trend towards the establishment of ex ante funding is also consistent with one of the recommendations of the International Monetary Fund (IMF), namely that pre-funding will be necessary to restore depositor confidence in the European Union, and as a measure to mitigate procyclicality. The IMF also advocated the use of loss-sharing agreements in dealing with cross-border deposit reimbursements and a common, credible backstop should national deposit guarantee schemes run out of funds. Although the deposit insurance fund should be sufficiently large to deal with the costs of bank failures in most cases, government backstops are needed in case of systemic crises.[6]

Guidance on deposit insurance funding can be found in the revised Core Principles (Principle 9).[7] This guidance is intended to promote the establishment of sound funding arrangements for deposit insurers to fulfill their mandates effectively. The guidance is reflective of, and can be adapted to, a broad range of settings, circumstances and structures.

**Core Principle 9 – Sources and Uses of Funds**

> ***The deposit insurer should have readily available funds and all funding mechanisms necessary to ensure prompt reimbursement of depositors' claims, including assured liquidity funding arrangements. Responsibility for paying the cost of deposit insurance should be borne by banks.***

## Methodology

The paper aims to update the guidance on funding issued in 2009 and is based on the results of the FSB Thematic Review, lessons learned from the recent international financial crisis, and the results of IADI surveys. The methodology employed in developing the enhanced guidance paper includes a literature review and consultation process.

This paper is organized as follows: Section II discusses the elements of an effective funding framework; Section III examines the sources of funds for deposit insurance systems, stressing the importance of an ex ante fund supplemented with liquidity and alternative funding mechanisms; Section IV examines the essential criteria for building a credible Target Fund; Section V discusses the elements of premium assessment; Section VI evaluates various factors that contribute towards enhancing the effectiveness of fund management; Section VII discusses other funding issues, and is followed by a concluding section.

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[6] International Monetary Fund, *European Union: Publication of Financial Sector Assessment Program* (Technical Note on Deposit Insurance), March 2013, p. 12.

[7] International Association of Deposit Insurers, *Core Principles [Revised] for Effective Deposit Insurance Systems* (Basel: BIS), October 2014.

# II. Effective Funding Frameworks

Fundamentally, deposit insurers should establish a comprehensive funding framework based on guiding principles (funding objectives) which would then set the direction for the funding approach and strategies. In a number of jurisdictions, a funding framework can be found in the deposit insurer's legislation, which sets out the sources and uses of funds.

Deposit insurers' funding objectives should be aligned to their mandates and powers, including the availability of, and accessibility to, liquidity funding arrangements. With respect to mandates, deposit insurers are responsible for the protection of depositors who hold insured deposits in the event of a bank failure or a wave of failures. A systemic failure or systemic crisis is normally dealt with by all financial safety-net players, and deposit insurers are not usually structured to deal with a systemic crisis. Where deposit insurers are specifically mandated to deal with maintaining the stability of the financial sector, their overall financial exposure should be reflected when determining the ex ante fund levels to be attained and the liquidity funding arrangements required.

Equally important in the determination of deposit insurers' funding objectives is the operating environment, which in turn is dependent on the resilience of the financial system, the soundness of the regulatory and supervisory regime, the interrelationship between financial safety-net participants, and the financial strength of member banks (including their interlinkages).

The funding objectives can be segregated into internal and external funding.[8] In the case of internal funding, the objectives should be to meet the deposit insurer's day-to-day operating expenditures and to cover expected losses from providing deposit insurance protection. The objective for external funding, meanwhile, is to supplement the deposit insurer's internal funding to meet liquidity requirements arising from activities related to intervention and failure resolution (use of financial assistance, temporary ownership structures such as bridge institutions, etc.).

It is good practice for deposit insurers to periodically review their funding framework to ensure that it remains current and relevant – in particular, by conducting an assessment of the potential implications of any change in mandate, powers or operating environment. For example, the reforms undertaken in response to the financial crisis included permanent changes to the mandates and powers of many deposit insurance systems. The expanded powers enable deposit insurers to provide alternative resolution options to reimbursements,[9] which in turn reduces the net losses from providing deposit insurance protection.

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[8] Internal funding refers to internal sources of funds, primarily funds from the collection of premiums as well as returns generated from investments. External funding refers to external sources of funds such as borrowing from the government, or funds raised from the capital markets.

[9] The alternative resolution options to reimbursements include open-bank assistance and liquidity support in the form of loan acquisitions and "receivables-back" investments (Brazil). Russia provided expanded powers to enable its deposit insurer to prevent failures of troubled systemically important financial institutions (SIFIs) and arrange purchase-and-assumption transactions. Special resolution regimes were introduced or enhanced to resolve troubled credit institutions (Canada, UK) and SIFIs (USA). Source: FSB (2012), p. 13–14.

# III. Sources of Funds for Deposit Insurance Systems

## Internal funds – premium collection

Ex ante funding requires deposit insurers to assess and collect premiums from member banks. These premiums are used to cover operating expenses, and to accumulate and maintain a DIF to cover future deposit insurance claims. Member banks, rather than taxpayers, pay premiums as banks directly benefit from having an effective deposit insurance system.

An ex ante funding system:

- provides deposit insurers with greater control over their funding requirements and, thereby, permits better planning. Facilitated by a pool of funds and future premium income, a deposit insurer can put in place a multi-year business plan which sets out the strategies and initiatives enabling it to carry out its role and responsibilities more effectively;

- provides deposit insurers with readily available funds for prompt reimbursement;

- provides assurance to depositors about the safety of their deposits and, therefore, reinforces public confidence in the deposit insurance system and the stability of the financial system;

- has an anti-cyclical feature. The premiums accumulated during stable economic conditions would act as a buffer against adverse economic conditions where losses may be incurred. This avoids further weakening the banking sector in times of economic stress, as would be the case of a pure ex post funding system without any adequate emergency liquidity, in which the surviving member banks would have to pay large ex post contributions at a time when they could least afford to;[10] and

- spreads deposit insurance costs and risks over time and across all member banks. Hence, for member banks, this system of premium collection may be preferred as payments are steady and predictable, although banks may prefer to retain the capital until needed by the DIF. This system is also more equitable as all member banks, including those that failed, would have contributed to the DIF.

Deposit insurers should establish and build ex ante funds to enable them to carry out their mandates effectively. Deposit insurers that have ex ante funding powers can fund any shortfalls in the DIF when they occur.

Given the above advantages, the trend globally is towards the establishment of ex ante funding systems. Based on the results of the 2008 and 2014 IADI Surveys, the percentage of deposit insurers with ex ante funding systems has increased from 83% to nearly 90%.

## External funds – liquidity funding

Deposit insurers do not typically have reserve funds that can fully cover the immediate liquidity requirements when reimbursing depositors' claims, as reserve funds are intended to cover net losses when a bank fails. In most countries, liquidity funding arrangements (such as a borrowing facility with the government) are established to

[10] The negative impact of paying ex post contributions may be reduced to some degree by spreading the collection period over a long time frame.

reinforce public confidence in the deposit insurance system. Such arrangements would require that the deposit insurer has the legislative authority to borrow or raise funds.

A number of options for liquidity funding are used by deposit insurers. The predominant source is borrowing from the government. Another option is to seek funding from private sources, for instance through borrowing from commercial lenders or issuing debt securities in the capital market. However, this option is feasible only when market conditions permit. In some cases, syndicated loans from foreign institutions or supranational organizations might be used.

Table 1: Liquidity funding of selected countries with ex ante systems

| Country | Liquidity funding | Country | Liquidity funding |
|---|---|---|---|
| Argentina | Borrow in market and require advanced premium payments | Indonesia | Government lending facility and recapitalization facility |
| Brazil | Special premiums, advances, loans from private sectors | Japan | Borrow from central bank, in market, or issue bonds with government guarantee |
| Canada | Borrow from the government or markets[11] | Korea | Borrow from government, central bank or market, issue bonds |
| France | Borrow in market and additional premiums | Mexico | Borrow from government, central bank or markets,[12] impose extraordinary premiums, issue bonds |
| Germany | Borrow in market, extraordinary contributions from institutions | Russia | Issue bonds, increase premiums, unlimited government support |
| Hong Kong | Standby credit facility from the Exchange Fund[13] | Singapore | Private sources or Monetary Authority of Singapore[14] |
| India | Central bank supplementary financing | Turkey | Borrow from Treasury or central bank, advance payments from banks |
| USA | Borrow from Treasury, Federal Financing Bank, Federal Home Loan Banks and insured depository institutions[15] | | |

Source: Financial Stability Board, *Thematic Review on Deposit Insurance Systems: Peer Review Report* (2012), p.53.

For effectiveness, deposit insurers with the power to borrow or raise funds from public and private sources should consider an appropriate sequencing for funds usage. Internal funds from the deposit insurer's reserve funds should be used first. If internal funds prove insufficient, financing could also be obtained directly from the market, particularly if the amount to be financed would have a negligible impact on the financial system as a whole. However, since borrowing from the market is not always possible, and may signal individual bank problems, the deposit insurer must complement these measures with a robust backup or emergency funding mechanism, which can take the form of borrowing or drawing down on standby facilities from public authorities. The refinancing of such borrowing with funds raised from the capital markets could subsequently be carried out when market conditions permit. This borrowing should eventually be repaid from the funds recovered by the deposit insurer during the liquidation of the estate of the failed member bank, and through future premium assessments against member banks.

[11] The Canada Deposit Insurance Corporation can borrow up to CAD 19 billion from the government or the markets, and this limit increases annually in proportion to the growth in insured deposits. Additional borrowing requires a special Act.

[12] In Mexico, the Instituto para la Protección al Ahorro Bancario may obtain financing for an amount up to the equivalent of and not exceeding 6% of the banking sector's total liabilities.

[13] Standby credit facility of HKD 120 billion (USD 15.4 billion) from the Exchange Fund.

[14] The Singapore Deposit Insurance Corporation can borrow up to SGD 20 billion from the Monetary Authority of Singapore in the event a member institution fails and liquidity is needed for compensation payments to insured depositors.

[15] Borrowing limit of USD 100 billion.

Liquidity funding should be pre-arranged so that such funds can be accessed by deposit insurers in a timely manner. In particular, liquidity funding from the government should be subject to strict conditions that minimize the risk of moral hazard. It is also good practice to have a guide, developed and agreed to by all parties concerned, for the coordination of actions between the deposit insurer and the provider of liquidity funding, so that there is a clear understanding of their respective roles and responsibilities, including the expected time frame to effect a drawdown of the standby facilities.

Regional jurisdictions may consider establishing some form of common, credible backstop should national deposit guarantee schemes require liquidity.[16]

## Alternative funding mechanisms

There are instances where deposit insurers may consider alternative funding mechanisms to address deficiencies in a member bank's financial position, without having to draw upon immediate liquidity needs. One such mechanism is the provision of guarantees by the deposit insurer,[17] whereby the deposit insurer guarantees certain classes of deposit liabilities, such as wholesale and interbank deposits, to stem institutional withdrawals that can destabilize the financial system. Another possibility is to access funds in the insolvent estate, especially if the deposit insurer is a priority creditor.

For a number of FSB members, these alternative measures, introduced during the recent global financial crisis, included system-wide liquidity support facilities, recapitalization programs, wholesale debt guarantees and, in certain cases, bank-specific capitalization and asset purchase plans or guarantees (France, Germany, Netherlands, Russia, Switzerland, UK, and USA).[18]

One important lesson highlighted in the global financial crisis is that depositors lack confidence in deposit insurers which cannot demonstrate the capacity or capability to meet their mandate. In this regard, deposit insurers can put in place alternative funding mechanisms in the form of stabilization measures to specifically deal with a systemic crisis. Legislated stabilization measures provide deposit insurers with the flexibility to respond to the needs of depositors in the event of a crisis.

Stabilization measures should be legislated and the relevant provisions should endow the deposit insurer with the following powers, in specific circumstances and with the constant objective of not reinforcing moral hazard:

- protecting financial institutions that are non-members;
- protecting financial products that are not insured; and
- protecting insured products over and above the deposit insurance limit.

Legislated stabilization provisions should set out clearly the obligations for funding and absorption of losses. Deposit insurers should consider entering into an agreement with their governments to set out their respective roles, responsibilities and obligations with regard to stabilization measures. Deposit insurers' role should be to administer the stabilization measures, including the assessment and collection of guarantee fees on behalf of the government.

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[16] One of the IMF's recommendations following its financial sector stability assessment on the European Union. International Monetary Fund, *European Union: Publication of Financial Sector Assessment Program* (Technical Note on Deposit Insurance), March 2013 (p. 12).

[17] The USA provided a full guarantee for non-interest-bearing transaction accounts until year-end 2010 (subsequently extended to 2012).

[18] Financial Stability Board, *Thematic Review on Deposit Insurance Systems*, Basel, February 2012, p. 11.

# IV. Building a Credible Target Fund

## Methodologies for determining the level of ex ante funds

Deposit insurers can build an ex ante fund by adopting a steady premium rate over time and setting a target reserve (or Target Fund) level or range, or collecting special assessments.

The calibration of the Target Fund size should be based on relevant and readily available data, clear and transparent criteria, as well as a sound and reasonable methodology and approach. A number of methods can be used to determine the required level of funds, depending on the characteristics and circumstances of each jurisdiction, its deposit insurance system and its financial system. The methodologies for estimating exposure to losses range from the discretionary approach (which relies on discretionary judgment)[19] to more sophisticated approaches such as statistical modeling.[20]

Different approaches and methodologies adopted by deposit insurers have contributed to variations in Target Fund levels. According to a survey conducted by IADI, [21] some deposit insurers forecast DIF losses by estimating the probability of default for member banks. For this purpose, they use either statistical models based on historical data, forecast credit assessments, internal ratings, expert judgment, external ratings, or a combination of these methods.[22]

A common approach when estimating the optimal target reserve is to consider the jurisdiction's past experience with bank failures and associated losses.[23] A number of jurisdictions that have a Target Fund use this approach, as it is relatively straightforward and relies on actual information. However, the past may not be a good guide to the future and this approach does not take into account the current risk profile of member banks, or other information which may be useful in assessing potential losses to the deposit insurer.

The credit portfolio approach is a more analytical method, in which the deposit insurance reserve is viewed as being subject to a portfolio of credit risks consisting of individual exposures to member banks, each of which has the potential (some greater than others) to cause a loss to the fund. In most cases, there will be a relatively higher probability of small losses and a much lower probability of very large losses. The probable large losses would tend to be associated with the presence of large banks.

Adopting the credit portfolio approach to reserve targeting requires a deposit insurer to carefully consider: (1) developing a specific provision for each member bank, taking into account the risk of loss and the range of losses that could occur over a specified period of time; and (2) setting aside additional funds (reserves) to cover situations where, as a result of unexpected factors, actual losses exceed provisions. The estimation of the provisions and unexpected losses requires modeling that uses the variables of probability of default, loss given default (ratio of net loss after taking into account recoveries), and exposure at default.

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[19] For example, a deposit insurer may set a fund level that is sufficient to cover its potential exposure to insured deposits for all small banks and a certain proportion of its medium-sized banks.

[20] An example is the "value-at-risk" modeling commonly used by financial institutions to assess credit risks.

[21] International Association of Deposit Insurers, *Evaluation of Deposit Insurance Fund Sufficiency on the Basis of Risk Analysis* (Discussion Paper), November 2011.

[22] Canada, Hong Kong, India, Indonesia, Nigeria, Russia, Philippines, USA, Singapore and Zimbabwe.

[23] Canada, Hong Kong, India, Indonesia, Nigeria, Russia, USA, Singapore.

If modeling is to be used to estimate financial exposure, the deposit insurer should consider the likelihood of each member bank going into default (probability of default) and the financial exposure to the deposit insurer in the event of default (exposure at default). The assumptions used in the model should be updated regularly.

In the case of funding objectives tailored specifically to net losses, the deposit insurer should also consider the estimate of its net loss after taking into account potential recoveries from the liquidation of a bank in any given intervention and failure resolution activities (loss given default).

If a jurisdiction does not have a similar history of failures, or where historical loss data are not available, the deposit insurer should consider using relevant proxies for its modeling that reflect its operating environment.[24] For example, the probability of default for the parent company of a foreign bank may be relevant as a proxy to the deposit insurer if the foreign bank is operating as a branch in a host country. On the other hand, if a foreign bank is locally incorporated, the rating of the supervisor in the host country may be a more relevant proxy.

One of the approaches for loss modeling, disputable or not, is the statistical approach using the Monte Carlo simulation, which uses a large number of scenarios to chart a statistical distribution of potential losses.[25] From the estimated loss distribution, the deposit insurer then determines the level of funds that would be sufficient to cover losses at a specified level of confidence.[26]

## Determining the level of the Target Fund

The Target Fund should reflect the capability of the deposit insurer to meet its mandate, taking into account its overall sources of funding, as well as the financial exposure of the banks which the deposit insurance system is mandated to protect. Deposit insurers should determine the target level of DIFs, based on clear and well-developed criteria which are consistent with their funding objectives.

The level of DIFs should, in principle, adequately cover the deposit insurer's risk exposures in providing deposit insurance protection. However, this has to be balanced against the capacity of the member banks to fund the system. At a minimum, the target level of DIFs should be adequate to cover the potential net losses from providing deposit insurance protection. It should be noted that strong capitalization levels are the first line of defense for a robust financial system. Member banks should build capital buffers and other forms of loss absorbency, rather than the deposit insurer holding excessive resources invested in typically low-yielding assets as a result of the capital preservation objective.

More specifically, deposit insurers, in determining their target level of ex ante funds, should consider a number of factors, such as:

- the composition of member banks (number, size, lines of business);

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[24] In the case of Malaysia, the deposit insurer has no past failure data. It uses proxies for the estimation of its Target Fund level. These include: (1) external credit ratings, where possible benchmarked against internal risk assessment; (2) financial exposure to the deposit insurer using the most probable resolution method for each member bank; and (3) estimated net loss to the deposit insurer after recoveries, taking into consideration the domestic asset recovery experience as well as the deposit insurer's powers regarding early intervention and failure resolution.

[25] Canada and Malaysia.

[26] The level of confidence denotes the probability that the specified level of funds would be sufficient to cover the net insurance losses in providing deposit insurance protection.

- the liabilities of member banks and the exposure of the deposit insurer to them;
- the probability of failures and the characteristics of losses that the deposit insurer can expect, as well as the correlation of the probability of failures between one bank and another;
- the macroeconomic conditions in the jurisdiction that may directly or indirectly affect the potential default rates of member banks;
- the state of the supervisory and regulatory regime;
- the resolution approaches and the resolution powers of the deposit insurer – in particular, the capability for early intervention in troubled member banks to minimize losses to the deposit insurer and the financial system; and
- the availability and adequacy of liquidity funding.

Table 2: Targeted reserve ratios of selected countries

| Country | Target Fund level |
|---|---|
| Argentina | 5% of total deposits |
| Brazil | 2% of insurable deposits |
| Canada | 1% of insured deposits |
| Hong Kong | 0.25% of insured deposits |
| Indonesia | 2.5% of insurable deposits |
| Jamaica | 8 to 10% of insured deposits |
| Jordan | 3% of insurable deposits |
| Kazakhstan | 5% of insurable deposits |
| Korea | Banks, financial investment companies, non-life insurance companies: 0.825% to 1.1% of insurable deposits |
| Malaysia | 0.6% to 0.9% of insured deposits |
| Philippines | 5% of estimated insured deposits |
| Singapore | 0.3% of insured deposits |
| Taiwan | 2% of insured deposits |
| USA | 2% of insured deposits |

Source: 2013 Ad hoc survey conducted by MDIC.

Target reserve ratios vary considerably across different jurisdictions and their appropriateness will be affected by a number of factors, including the assessment or exposure basis.

The level of a Target Fund may be set as an absolute amount or a range. An absolute amount gives certainty on the level of funds to be accumulated but is less flexible and may be more difficult to support from a theoretical perspective. On the other hand, a range of target levels may be more reflective of the financial system as well as the risk profile of individual member banks, and may remain relevant given the constantly evolving macroeconomic conditions.[27]

## Time-to-fund and continuous validation

Essential to the establishment of the level of Target Funds is the determination of a reasonable time frame for achieving that level. This is generally known as the 'time-to-fund'. Too long a time frame affects the credibility of the deposit insurance system while too rapid an accumulation may have financial implications for member banks.

In setting a credible time-to-fund, deposit insurers should consider the rate of growth of insured deposits, the level of premiums to be assessed on member banks, and the level of net surplus to be accumulated annually. Of these factors, the level of premiums has

[27] Korea and Malaysia adopt a range of target levels.

the most impact on the time-to-fund and the premium rates constitute the major means by which the deposit insurer could accelerate the time-to-fund.[28]

In Europe, the Deposit Guarantee Scheme Directive requires ex ante funding of all EU deposit guarantee schemes of over 0.8% of insured deposits within ten years, with payment commitments of up to 30%.[29] In addition, the Bank Recovery and Resolution Framework establishes financing arrangements for bank resolution, requiring target pre-funding of 1% of guaranteed deposits within ten years. This proposed time-to-fund is considered against impact assessments on member states.[30]

It is good practice for deposit insurers to consider a longer-term premium strategy that ensures anti-cyclicality and steady premium rates over time. Such strategies contribute to member banks' acceptance, as there would be less volatility and uncertainty about premiums charged by the deposit insurer, which would facilitate member banks' planning. Where possible, this strategy should take into consideration potential future losses or anticipated events based on economic cycles and past failures. Deposit insurers should also put in place mechanisms to replenish the fund in the event of actual losses due to bank failures.

The macroeconomic conditions, banking environment, risk profile of member banks, rate of growth of insured deposits, and net surplus of the deposit insurer change over time – and this has implications for the adequacy of the level of Target Funds. Hence, that level should not be static. It is, therefore, good practice for deposit insurers to periodically review and validate the approach, methodology and models used to determine the adequacy of fund levels, to ensure that they remain current and relevant.[31]

# V. Premium Assessments

The mechanism for the assessment and collection of premiums requires the determination of the premium rate and the base against which the premium will be assessed.

## Defining an assessment base

Premium assessment bases vary among systems. In defining an appropriate premium assessment base, deposit insurers should ascertain if member banks' assets or liabilities best reflect their exposure given their mandate. Deposit insurers charged only with the resolution of small or medium-sized banks (e.g. insured deposits) could have a different assessment base compared to those charged with resolving systemically important financial institutions (e.g. total deposits or assets).

Deposit insurers, after ascertaining the appropriateness of an assessment base, would need to balance the complexity of applying such a base against equity and fairness to member banks.

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[28] In some jurisdictions (e.g. Mexico and Canada) premiums have a legislated maximum limit. This also needs to be taken into consideration, given the potential impact on the time-to-fund (i.e. the premium rates cannot be increased beyond a certain limit, imposing a restriction on the time-to-fund).

[29] European Banking Authority, *Draft Guidelines on methods for calculating contributions to Deposit Guarantee Schemes* (Consultation Paper), November 2014.

[30] The IMF FSAP on the European Union indicated that building deposit guarantee scheme funds over the proposed time-to-fund will significantly reduce the profitability of an already weakened banking sector in several member states, especially combined with the increased amount of deposit coverage. See IMF (2013), p. 5.

[31] MDIC validates its Target Fund approach, methodology and models on an annual basis using deposit data submissions from members.

Total insured[32] deposits and total insurable deposits are the most common assessment base used for assessing premiums. According to the 2014 IADI Survey, 58.8% and 27.5% of respondents use insurable deposits and insured deposits as the assessment base, respectively. Charging premiums on insured deposits is regarded as more equitable, as the deposit insurer assesses only the amount that is explicitly covered. However, this process can be administratively complex. The complexity lies largely in the quality of a member bank's deposit liability data and records. Deposit insurers can address this complexity through the issuance of guidelines prescribing minimum requirements on the maintenance of deposit data by member banks.[33] Canada, Malaysia, Singapore and Turkey are some of the jurisdictions which use insured deposits as their base for premium calculation. The USA, on the other hand, has revised its base from domestic deposits to assets, as required under the Dodd-Frank Act.

## Flat rate or differential premium system?

Deposit insurers can opt for either a flat rate or a differential premium system.[34] A flat rate system, where all member banks are charged the same premium rate, is a good starting point for newly established deposit insurance systems, as it is easy to administer and understand. Its drawback, however, is that a flat rate would not provide any financial incentive for member banks to improve their risk profile, including their supervisory ratings, because risky member banks pay the same rate as less risky ones.

On the other hand, risk-adjusted or differential premium systems mitigate moral hazard by:

- providing financial incentives for member banks to be more prudent in risk management; and
- minimizing cross-subsidization among member banks.

At a minimum, the development of a differential premium system requires:

- a reasonably accurate and acceptable methodology for assessing the risk profile of member banks;
- access to reliable and accurate information to facilitate risk differentiation;
- the use of both quantitative and qualitative factors (which should incorporate supervisory ratings) in determining the risk profile of member banks;[35]
- ensuring that the criteria used in differentiating the risk profile are transparent to all member banks;[36]
- ensuring that scoring categories and premium rates are significantly differentiated; and
- ensuring that the information on the risk ratings and rankings pertaining to individual member banks is kept confidential.

The trend is towards greater use of the differential premium system. Among IADI members, according to the 2014 IADI Survey, 41 jurisdictions (or about 40%) out of the 102 deposit insurers surveyed assessed premiums on a risk-adjusted basis (30

[32] Insured deposits are deposits that are protected up to the limit and coverage by the deposit insurer.
[33] Malaysia and Taiwan.
[34] The flat rate premium system is used by Brazil, India, Indonesia, Japan, Mexico, Switzerland and Russia. The differential premium system is used by Argentina, Canada, France, Germany, Hong Kong, Korea, Malaysia, Singapore, Spain, Taiwan, Turkey and the USA.
[35] Argentina, Canada, Malaysia, Turkey and the USA.
[36] International Association of Deposit Insurers, *General Guidance for Developing Differential Premium Systems* (Guidance Paper), October 2011.

jurisdictions) or used differential rates alongside flat rates (11 jurisdictions). This trend is also prevalent in the EU, as seen in the legislation introducing, among other things, risk-based contributions.[37]

## Collection and enforcement issues

Premiums can be collected by using an invoice system, an automatic debit from a member bank's account at the central bank, or a direct credit into the deposit insurer's account. Premiums should be an enforceable debt obligation under the deposit insurance legislation.

# VI. Enhancing the Effectiveness of Fund Management

In an ex ante funding system, deposit insurers need to establish a sound fund management framework to ensure that funds are well managed and readily available to meet deposit insurance obligations.

Although most deposit insurance legislation sets out broad parameters within which DIFs can be invested, the investment or portfolio management policy is typically determined by the governing body of the deposit insurance system. The investment policy should be aligned with the deposit insurer's mandate and, in general, set out:

- the objectives of fund management – which should, at a minimum, incorporate some element of liquidity and capital preservation;
- types of investments and maturities permitted;
- counterparty selection and limits;[38]
- transactional authorities;
- management of liquidity, market and interest rate risks, as well as risk associated with exchange rates (in the case of funds invested in foreign currency), and management of the DIF's operational risk; and
- internal audit mechanisms for monitoring and auditing compliance with investment policies.

As a matter of good governance, deposit insurers should disclose and/or explain their investment policy or practices in their financial statements and annual reports. Where practicable, deposit insurers should make disclosures in line with applicable accounting and reporting requirements, as well as benchmark against relevant industry practices.

## Investment objectives

In some cases when banks fail (e.g. depending on their size, complexity, interlinkages and number), financial markets may seize up, leading to a systemic crisis. As a crisis can unfold at unprecedented speed, it may not be possible for a deposit insurer seeking yield to adjust its investment portfolios quickly enough from higher-yielding (but less liquid and riskier) investments to highly liquid and more stable investments. Furthermore, in a crisis, riskier investments often come under very heavy selling pressure. This would severely erode the value of the investments when they are most needed, and in turn affect the deposit insurer's capacity to meet its obligations.

It is therefore essential that the investment objectives of deposit insurers be conservative. Deposit insurers' fund management approach may vary depending on the

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[37] International Monetary Fund, *European Union: Publication of Financial Sector Assessment Program* (Technical Note on Deposit Insurance), March 2013, p. 4

[38] Different approaches might be applied for this purpose, including the selection of a fund stewardship mechanism.

level of maturity of the deposit insurance system. In the early stages of establishment, the deposit insurer's primary funding focus is to develop systems and fund operations. Thereafter, it is to build reserves. Accordingly, during this stage, most deposit insurers adopt a very conservative approach for their fund management, placing the emphasis on capital preservation and liquidity. The fund management approach may vary after reserves or funds have been amassed, but capital preservation is still key to avoid unnecessary losses from investment activities.

Generally, short-term government bonds, treasury bills and deposits at the central bank, denominated in the currency in which the deposit reimbursements are to be made, have low capital volatility and provide sufficient liquidity.

In circumstances where foreign exchange deposits are part of a deposit insurer's scope of coverage, depositors can be reimbursed in either foreign or local currency, using, in the case of the latter, the conversion rate prevailing on the date of the filing of the petition for winding-up. In this context, the investment strategy should take into consideration the impact of foreign exchange risk. The deposit insurer may want to consider hedging this risk by investing in the respective foreign currency investments in accordance with its approved risk appetite.[39]

However, as far as possible, investments should not be placed with member banks as this creates a conflict of interest. The deposit insurer should also avoid holding investment bonds and deposits in member banks as:

- withdrawing large amount of funds may aggravate, or cause, liquidity issues for the bank;
- in the absence of any legislative priority for the funds invested by a deposit insurer in a failed bank, those funds will be unavailable to the deposit insurer to reimburse depositors of that bank;[40] and
- converting bonds and deposits in other banks into cash for reimbursement purposes may trigger a system-wide liquidity crunch.

However, for day-to-day operational cash management, a deposit insurer needs to have banking arrangements in place. In addition, a deposit insurer may also need to maintain funds with payment agents, which can include member banks, to facilitate reimbursement to depositors. Deposit insurers should carefully consider the nature of deposit placements as well as the condition of the member banks over the long-run, before making such banking arrangements. Setting a limit on the amount of funds placed with member banks for such operational purposes is also prudent.

## Investment management and administration

As regards administration, if possible a deposit insurer may consider establishing arrangements with the central bank for the latter to execute investment transactions, in particular to liquidate the deposit insurer's investment securities in the open market. Such an arrangement can be vital, especially in times of intervention and failure resolution, when a deposit insurer's investments need to be liquidated quickly and in large quantities.

Such an agreement with the central bank is important as large-scale liquidation of investment securities by a deposit insurer may send a signal to the market about the impending failure of a bank, or that a troubled bank requires intervention. Therefore,

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[39] International Association of Deposit Insurers, *Enhanced Guidance for Effective Deposit Insurance Systems: Deposit Insurance Coverage* (Guidance Paper), March 2013.

[40] Even if there is priority, the intermingling of deposit insurance funds in the failed bank is likely to significantly complicate the reimbursement dynamics.

transacting through the central bank would mitigate any signaling issues as central banks generally carry out regular large investment transactions for operational and monetary policy purposes.[41]

## Fund structure – single or multiple funds

Deposit insurers may consider different fund structures for their deposit insurance system. Most deposit insurance systems with ex ante funding maintain only one DIF to meet their operational funding needs, make reimbursements to depositors and, depending on their mandate, conduct failure resolution activities.[42]

Some deposit insurers (integrated deposit insurers) have separate DIFs for different industry sectors. Such funds are required due to different types of financial institutions who are members of the integrated protection scheme (banks, insurance companies, investment banks, etc.). Investments are segregated by industry sector, thereby, investment income is credited to the appropriate DIF.

Separate DIFs, in general, charge costs to the appropriate fund. Common operating costs can be shared between the different DIFs but sector-specific costs should be isolated and charged directly to the relevant DIF. Hence, deposit insurers with separate DIFs should establish a clear methodology in their legislation for the allocation of costs to the relevant fund. The choice of cost apportionment should be equitable for member institutions and should not create competitive distortions among the different industry segments.

The basis for apportionment can be some distinctive criteria that segregate different industry sectors which are subject to distinct or separate guarantees (banks, insurance companies, investment banks, etc.). A common apportionment basis is premiums collected and interest income derived from each fund's investments, which is advantageous in that risk-based premiums are representative of the deposit insurer's financial exposure to the respective industry sectors.

It is good practice for integrated deposit insurers to conduct impact analysis to ascertain the implications of various cost allocation methodologies on each of the distinct industry sectors. It is also important to ensure that the integrity of the funds is maintained and that distinctions among the institutions and their DIFs are real and do not contribute to competitive distortions. It is also good practice for deposit insurers with separate DIFs to prohibit cross-subsidization between funds.

# VII. Other Funding Issues

## Rebates

Some systems have, in the past, adopted the approach of suspending premium collection once the Target Fund size is reached.[43] However, this approach is not equitable as newly established banks would not have contributed to the fund. A more equitable approach is to continue to assess premiums for all members and then link

[41] In the case of Malaysia, the deposit insurer has put in place, since its inception, an arrangement with the central bank to execute investment instructions on its behalf. Investment accounts are maintained at the central bank for purposes of the deposit insurer's investment activities, executed by the central bank.

[42] In the case of Malaysia, although separate funds have been established for deposit protection and insurance benefit protection, each fund is used for day-to-day operational needs as well as intervention and failure resolution activities.

[43] Russia, USA, and Finland.

rebates to past contributions based on the current risk profile of each bank, consistent with the risk-adjusted assessment of premiums on member banks.

## Seed funding

While the funding for deposit insurance systems should be provided by the industry, new deposit insurance systems do not always have the time or capacity to quickly build up an adequate fund. Accordingly, governments or international organizations may provide some initial funding to ensure that the system is credible.

Concerning repayment of such "startup" or "seed" funding, a distinction should be made between seed funding for the deposit insurance fund and government funding for the initial endowment of the agency, which is used to finance the staffing and operations of the agency. Support from the government and/or other financial safety-net players in the form of initial endowment or capital for administration costs, staffing, and operational expenses is not expected to be repaid by the industry.

However, over time all other government startup resources to build the fund should be repaid. There is not a strong view about how quickly such funding should be repaid being awarded depending in part on how long the repayment is planned. Nevertheless, deposit insurance premiums should not be lowered until all such funding has been repaid. Some international organizations or technical assistance agencies, however, provide funding with the explicit agreement that such funding will not be repaid.

## Tax issues

The deposit insurer should not be subject to taxes or "legacy expenses" (such as paying for debt from past crises) if such payments limit the effective building and maintenance of an appropriately sized insurance fund.

# VIII. Conclusion

One of the main public policy objectives of a deposit insurer is to contribute to the stability of a financial system. To achieve that, the deposit insurer should have readily available funds to cover losses and provide liquidity, and have all funding mechanisms necessary to fulfill its deposit insurance obligations. For funds to be readily available, deposit insurers should establish ex ante funding systems supplemented by liquidity funding arrangements. Such liquidity funding arrangements should be established in advance, to ensure effective and timely access when required.

There are a number of key matters that would need to be considered when establishing an ex ante fund. These include determining the objectives, purpose and use of an ex ante fund, deciding whether to adopt a steady premium rate and set a Target Fund level or collect special assessments, selecting the assessment base, deciding whether to adopt a flat rate or differential premium system, and deciding on the investment policies of the DIF. When establishing a Target Fund, issues to consider include determining the size of the Target Fund and a time frame for achieving the target.

If conditions permit, a deposit insurer should consider adopting a differential premium system, in order to provide incentives for banks to mitigate excessive risk-taking and to introduce greater fairness into the premium assessment process.

It is the responsibility of the deposit insurer to manage the DIF with an investment policy that ensures the preservation of fund capital and liquidity. Adequate procedures, internal controls, and disclosure and reporting systems must also be in place.

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