



Transfer of Contributions in case of a Change of DGS Affiliation in the EEA (Article 14-3 of the DGSD)

**Research Paper by the European Forum of Deposit Insurers
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EXECUTIVE SUMMARY

- *Possible relocations of credit institutions from one EEA Member State to another, and then from one Deposit Guarantee Scheme ("DGS") to another, have led the European legislators to set the principle of a transfer of contributions from the transferring DGS to the receiving DGS to accompany those cases (Article 14(3) of the current DGS Directive).*
- *How to correctly and efficiently calibrate the level of such transfer of resources so to meet with the needs of the receiving DGS, while not unduly weakening the transferring DGS, will be a decision in the hands of EU legislators in the end. However, this is also a question which requires a deep and solid technical analysis.*
- *The European Commission has asked the European Banking Authority (EBA) to conduct such a study ahead of the current revision of the DGS Directive. For its part, EFDI has tasked a working group to lead a comprehensive analysis of all issues being at stake in that matter. Hereby, EFDI wishes to offer the outcome of that work to the EU community, notably including the Taskforce created by the EBA on DGS issues, so as to shed light on the decisions to be made.*
- *EFDI proposes to use an analytical framework where the impacts of a bank's relocation on the financial situation of both the transferring and receiving DGS are first separately assessed, leading to design a system of sign-off fees (transferring DGSs) and sign-in fees (receiving DGSs) to cope, if so decided, with the financial disbalance generated by the transfer for each DGS. Four options are reviewed in that field, where sign-off fees and sign-in fees can be independently implemented.*
- *As a base for analysing the financial impact of a bank's relocation, the research paper suggests focusing on the Net Value of each DGS in proportion of their risk bases (which combine the covered deposits and risk factors of the DGS's member banks), a more appropriate indicator than the Available Financial Means ratio. It also proposes formulas for the calculation of the respective fees. Last, the paper analyses various technical issues to better test the strength of the approach.*

Disclaimer:

1/ As a Research Paper, this document intends to explore the various aspects of a specific topic. It does not provide with any recommendation.

2/ A simulation tool could be made available latter on to illustrate the functioning of the options reviewed in this paper.

INTRODUCTION

1. The transfer of contributions (hereinafter “ToC”) issue

In most deposit insurance regimes, credit institutions have an obligation to join a deposit insurer, so that all depositors could be protected under the regime. Still, because of a relocation, because of a change in their legal forms, for instance from a subsidiary abroad to a branch, or because a branch activity is sold by a credit institution to another, a portfolio or a whole bank could switch from a specific deposit guarantee scheme to another, changing the underlying risks that both schemes face, while not changing the level of resources they have to compensate those risks.

To mitigate the possible consequences of such a change of membership for the receiving DGS and possibly to lower a potential barrier against free establishment, the EU legislator introduced for the first time in the 2014 DGSD the notion of a transfer of funds between two EEA DGSs, when a member bank switches from one DGS to another¹. The principle and terms of such a transfer from one DGS to another were defined by Article 14(3) of the DGSD the following way:

“If a credit institution ceases to be member of a DGS and joins another DGS, the contributions paid during the 12 months preceding the end of the membership, with the exception of the extraordinary contributions under Article 10(8), shall be transferred to the other DGS”.

Whether other options were considered or not, this option might have been chosen on the basis that it is likely that this part of the resources has been left unused and that a fraction covers a risk that the receiving DGS will bear going forward.

2. Implementation difficulties with the solution provided by the DGSD

The relocation of Nordea headquarters from Sweden to Finland in 2018 shed another light on this provision. The covered deposit base was multiplied by 2.5 for the Finnish DGS. Clearly, the transfer of contributions prescribed by Article 14(3) was not sufficient to cover the drop of *Available Financial Means (AFM)* ratio for the Finnish DGS. The question could then be raised whether the transfer of contributions should be set at another level and also whether another system should be imagined to settle or mitigate all possible cases.

The need for an appropriate solution is actually bound to increase as the deadline to meet the target level set forth in the DGSD gets closer: a change of membership of a significant bank may have a strong impact on the receiving DGS’s ability to reach the target. In addition, when the target level is achieved, flows of new contributions could significantly decrease or even become inexistent, a case that the current DGSD framework based on last 12-month contributions has not anticipated.

Last, Article 14-3 has been implemented differently among the various Member States, contributing to make the issue even more urgent.

¹ The provision also deals with the case of a partial transfer of assets, for instance where a bank buys or sells assets from another bank abroad (DGSD - Article 14(3) par 2).

This led the EBA, the EC and the DGS community to look for a more satisfying approach and to consider a change of the regulatory framework. The EBA Opinion on the eligibility of deposits, coverage level and cooperation between deposit guarantee schemes stated that²:

"There is a need to amend the current provisions in Article 14(3) of the DGSD, in which the amount of contribution transferred is linked to the contributions paid in the 12-month period prior to the institution changing its DGS affiliation or the transfer of some of the activities to another Member State".

In the end, the challenge is to elaborate a "fair" (or consistent) balancing mechanism for all circumstances that would neither destabilise the financial balances of the transferring, nor the ones of the receiving DGSs.

Given the importance of this question, and its technical nature, EFDI has proposed to offer its expertise in that field and has created a dedicated workstream to this end. This Research Paper reflects the outcome of the works held by this workstream, as approved for publication by the EU Committee.

3. Structure of this Research Paper

This paper proposes to consider the possibility of a sign-off fee (transfer of funds from the transferring DGS) and/ or sign-in fee (resources raised by the receiving DGS) mechanism when a bank leaves or joins a DGS. The analysis is conducted along the following sections:

- *Section 1 (Impact analysis of a membership transfer) details the consequences of a transfer for the transferring DGS and the receiving DGS in relation with their risk bases.*
- *Section 2 (Analysis of a DGS financial situation) highlights the key-role of the Fund's Net Value, in comparison with QAFM.*
- *Section 3 (Views on a rebalancing mechanism between DGSs) introduces a sign-off/ sign-in fee mechanism as a framework to address the transfer of contribution issue along four possible options, including the use of both sign-off and sign-in fees, only one of them or none of them.*
- *Section 4 (Determination of sign-off and sign-in fees when applicable) explains how sign-off and sign-in fees could be assessed.*
- *Section 5 (Technical complements) explores various technical questions, including national specificities and special situations, to stress-test the consistency and robustness of the mechanism.*

Various appendices (A to G) complete the paper.

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² EBA Opinion, 8 August 2019, paragraph 7 ii/ a/.

Some introductory remarks are proposed below to facilitate the reading of this paper.

i/ DGS vs Fund

In governance and accounting terms, the deposit insurer could be set, either as an integrated structure encompassing all operations linked to its core missions as well as its 'corporate structure' operations; or as two separate entities, one for its missions and one for its day-to-day operations as a corporate.

This paper will focus on the "**Fund**", i.e. the part of the deposit insurer that is isolated (like the SRF for the SRB) or can be isolated from the deposit insurer's global accountings so to represent only the financials of its core missions.

In other words, revenues and expenses of the deposit insurer as a corporate structure will be discarded in the accountings used below. With no change in the analysis, it is still up to each deposit insurer to take into account, or not, the possible impact of the deposit insurer's profit and loss account as a corporate (e.g. operating fees in excess or short of the deposit insurer's running costs).

ii/ Payment commitments

In order to facilitate the presentation, **payment commitments** will be considered as directly recorded as liquid assets on the asset side of the Fund, and within the net value of the Fund on the liability side – as if they were mere contributions. Again, this depends on each deposit insurer, along the regime they use (cash vs collateral) and their accounting standards. In any case, their specificities regarding the transfer of contributions issue will be addressed in the paper.

iii/ Notations

As far as needed, the following notations will be used in this paper:

$C_{i,n}$	contribution of member bank i for year n
CR_n	contribution or premium rate for year n
$ARW_{i,n}$	aggregated risk factor of member bank i in year n (as a %)
$CD_{i,n}$	covered deposits of member bank i in year n
μ_n	adjustment coefficient for year n
tb	transferring bank
b	before the transfer
a	after the transfer

Covered deposit base

Covered deposits of the member bank ($CD_{i,n}$) or covered deposits of the Fund ($\sum_i CD_{i,n}$).

Risk base

Product of covered deposits and aggregated risk factor: risk base of the member bank ($ARW_{i,n} \times CD_{i,n}$) or risk base of the Fund ($\sum_i ARW_{i,n} \times CD_{i,n}$).

iv/ Insurance models of deposit insurers

There are various approaches in the way deposit insurers see the business of insuring deposits against banks failure; and there are even more straightforward differences between the deposit insurance business and the usual non-life insurance business.

Those differences have various implications on the funding model of deposit insurers compared to the one of non-life insurers, including their financing, their accounting standards or the way they raise contributions; all topics closely linked to the present transfer of contributions issue.

Appendix A offers a quick keynote address in that matter in order to quickly describe the general landscape of deposit insurance that looks relevant for the review of this issue.

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1. LEAVING AND JOINING A DGS – IMPACT ANALYSIS OF A MEMBERSHIP TRANSFER

A - The ToC issue viewed from the transferring DGS's viewpoint

4. Save of any transfer of contributions, the departure of a member bank leaves the transferring DGS in a better financial position. The transferring DGS loses a part of its covered deposit base, the risks it faces will also diminish. As a whole, in case no transfer of resources would occur, the DGS keeps the same level of financial resources to cope with a lower covered deposit base and lower risks.

This implies that the transferring DGS disposes of a financial margin to contribute to balancing the impact of the transfer on the receiving DGS, if so decided.

This of course explains why the EU regulator, in line with the freedom of establishment, considered a transfer of contributions from a "transferring DGS" to a "receiving DGS" as a way to balance the impact for the two deposit insurers; also incidentally legitimating the at-first surprising idea that a bank could somehow "bring a part" of its contributions from a DGS to another.

5. It could be pointed out further that, while being used for regulatory purposes in the Qualified Available Financial Means (QAFM)³ ratio, the covered deposit base constitutes an insufficient indicator to assess the adequacy or the change in the financial situation of a DGS.

When a low-risk member bank transfers its covered deposits to another DGS, it leaves the transferring DGS with an overall higher risk vis-a-vis the remaining covered deposit base. To the contrary, the departure of a high-risk member bank comforts the financial situation of the transferring DGS in proportion of its remaining covered deposit base.

Then, a risk-adjusted covered deposit base ($\sum_i ARW_{i,n} \times CD_{i,n}$ instead of $\sum_i CD_{i,n}$) looks as a more appropriate indicator to assess the change in the financial situation of the transferring DGS. This is of course also valid for the receiving DGS.

6. It could be also said that the departure of a member bank, e.g. a low-risk bank, reduces the capacity of the transferring DGS to raise additional funds, for instance, extraordinary contributions, even if, globally the real risks this DGS faces has not substantially decreased.

The same way, the switch from one DGS to another has also an impact on the capacity of the transferring DGS for mutualising the risks it bears, in relation with the number of its member banks.

³ The wording "QAFM", not a regulatory, nor a standardized terminology at this stage, will be used all along this paper to identify that part of the "AFM" (available financial means as defined by the DGSD – article 2-1 (12)), raised by the DGS on member banks through contributions (DGSD – article 10-1) and then qualified for the calculation of the DGS's regulatory resources ratio defined by the DGSD (article 10 (2)). This wording may change going forward with the on-going discussions in the EU over the banking crisis management framework.

In a simplified case, with no-risk factors, no other financing than AFM and only non-systemic banks, a DGS with five member banks will have to compensate at least 20% (1/5) of the total covered deposit base in case of a failure of its biggest member bank. Its AFM should then be at least 20% of its covered deposit base. For the same reason, if that DGS happens to lose one member bank, its AFM ratio should then pass over a 25% threshold (1/4). This reflects a weaker mutualisation capacity for the DGS and a possible additional charge on the remaining member banks.

This loss in the mutualisation capacity steeply decreases along with the number of member banks (for instance, this AFM ratio increases from 5% to 5.26% with 20 initial member banks; from 1% to 1.01% with 100 initial member banks). The impact on mutualisation capacity is then not significant in many cases and could be discarded at this stage.

7. The risks borne by a DGS could of course be assessed in a more sophisticated way. For instance, the formula for expected loss could be used (expected loss = covered deposits x probability of default x loss given default). Another approach could be to look at the membership of the DGS as a portfolio of risks and use the risk formulas of the portfolio theory⁴. Under this last approach, it appears that the risk faced by a DGS is not dependent upon only the risk of the departing/arriving member bank itself, but also how the risk of that member bank correlates with the risk of the other member banks in the DGS⁵.

However, the relevant data or indicators for those approaches (probability of default, loss given default, risk, standard deviation for all member banks etc.) are difficult to assess. Furthermore, it looks coherent when addressing a transfer of contributions issue to stick with an approach, albeit simplified, close to the way contributions capture the risks of member banks, i.e. in relation with covered deposits and **ARW** risk factors. This also allows each DGS to stick with its own **ARW** calculation (differing across member states). Then, the way a DGS assesses a financial margin actually reflects its own contribution methodology.

B - The ToC issue viewed from the receiving DGS's viewpoint

8. Following the same reasoning as above, with a new member bank joining a receiving DGS, that DGS faces an increase of its covered deposit base and risks. Its financial situation instantly deteriorates in comparison with the new risks it has to bear. It would need additional financial input to retrieve the same financial position than before.

9. Here again, the situation changes for the receiving DGS according to the risk associated with the transferring bank: a risky bank deteriorates the receiving DGS's financial position more than a non-risky bank.

As a matter of fact, this differentiation between high-risk banks and low-risk banks goes in the same direction for both DGSs: the transfer of a high-risk bank leaves more financial

⁴ Such as $\sigma_{port} = \sqrt{\sum_{i=1}^n w_i^2 \sigma_i^2 + \sum_{i=1}^n \sum_{j=1}^n w_i w_j Cov_{ij}}$ with σ_{port} = standard deviation of the portfolio, w_i = weights of the assets in the portfolio, σ_i^2 = variance of the value of asset i and Cov_{ij} = covariance between the values of the assets.

⁵ Note that under this approach, cases could be imagined where, for instance, the transferring DGS would experience an increase in non-systemic risk due to diminishing diversification, while the non-diversifiable, i.e. systemic risk, remains the same.

margins to the transferring DGS and triggers more additional financial need for the receiving DGS. This also makes the case for a risk-based approach rather than a mere covered deposit approach.

It should be also noted that the assessment of risks is not the same for the transferring DGS and the receiving DGS. Even with the same methodology, the risk-factors to be considered may be relative to the other member banks of the DGS: a bank considered to be risky by a DGS, because its other banks are less risky, could be seen as non-risky by another DGS in comparison with its other banks. Any balancing mechanism to be built should take that dimension into account.

10. Lastly, as opposed to the case of transferring DGS and for the same reasons as in paragraph 6, the mutualisation capacity of the receiving DGS marginally improves in relation with the adjunction of a new member bank.

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Highlights of Section 1: Analysis of a membership transfer

i/ A member bank's transfer from a DGS to another, save of any balancing mechanism, leaves the transferring DGS with the same resources and a reduced covered deposit base ($\sum_i CD_{i,n}$), while the receiving DGS faces a higher covered deposit base with no additional resources.

ii/ Besides this, the change in covered deposit base does not adequately express the evolution faced by both DGSs: the transfer of a low-risk bank has not the same impact as the transfer of a high-risk bank for any of the two Funds. The change in their risk bases ($\sum_i ARW_{i,n} \times CD_{i,n}$) captures this impact.

iii/ As a whole, compared to the existing resources and the new risk bases, in the absence of any rebalancing mechanism, the transfer leaves the transferring DGS with a financial margin and creates a financing need for the receiving DGS.

2. ANALYSIS OF A DGS's FINANCIAL SITUATION

11. Assessing the changes that the transfer of a member bank brings to a DGS implies to precisely identify how its financial situation can be correctly captured and what comparison base can be appropriately used. As regards the transfer issue, the Net Value of the Fund appears as the proper measure of the financial situation and the risk base of the Fund as the adequate comparison base.

A – Net Value of the Fund – Differences with QAFM

12. Following their definition in the DGSD, QAFM refer to the immediately accessible liquid resources raised on member banks. As such, they constitute a **prudential liquidity amount** (or ratio, when related to the covered deposit base $\sum_i CD_{i,n}$).

With this, QAFM does not represent the own funds (or capital position), or what a DGS is worth. For instance, after a payout, a DGS may record expected recoveries, which are not incorporated in its current liquidity position but constitute a part of its real value; recoveries will then progressively feed up its liquid reserves. A DGS may also have borrowed funds (to be reimbursed within a few years or along with all or part of the recoveries), while having also started to replenish its QAFM. The QAFM level does, of course, not give any indication about the level of borrowed funds to be reimbursed.

As a whole, when a member bank leaves or joins a DGS, a correct assessment of the change in the financial situation of the DGS should take into account, not directly its impact on the QAFM, but its impact on the DGS overall financial situation. For instance, a situation where QAFM equal to zero and expected recoveries are worth €1 Bn and a situation where QAFM are worth €1 Bn with no recoveries should be handled the same way when assessing the financial balance of the DGS⁶.

13. With no surprise, what a DGS is really worth is its net value (NV), i.e. the amount of reserves that would be left if all assets (including expected recoveries) are liquidated or sold, and all debts are cleared. This is also the amount of money that member banks have brought to the DGS through their contributions since their affiliation, net of profit and loss recorded through the DGS's activities (interventions, investment income etc).

The correspondence between the available financial means and the net value of the DGS can be schematised through the following balance sheet of the DGS:

⁶ Some DGSs actually set separate accountings after a crisis case, in order to allocate all member banks of the DGS at that moment, the level of recoveries each could get and the level of debt each is responsible for in the future (the individual balance being due even if a member bank leaves the DGS).

Balance sheet of the Fund

Assets	Liabilities
Net Expected Recoveries	Net Value (NV)
Non-compliant Assets, incl: claims on member banks non compliant investments cash & investment on borrowed money	
Qualified Available Financial Means (QAFM)	Debt and Borrowings

The differences between QAFM and the Net Value come:

- on the asset side, from expected recoveries, net of provisions, and from non-compliant assets (illiquid, cash and investments from other resources than contributions...)
- on the liability side, from possible borrowings.

In case the Fund has not yet been activated, or is clean of any trace of prior interventions (i.e. no borrowings, no net expected recoveries), and all contributions raised from banks have been properly paid and appropriately invested, available financial means, on the asset side of the balance sheet, are equivalent to the net value, on the liability side.

Conversely, in case the Fund has been activated or/ and has borrowed money, some discrepancies appear between AFM and NV; those discrepancies are bound to disappear with a final liquidation of the assets and a settlement of all debts.

14. Generally speaking, and discarding usually transitory or insignificant elements, **Qualified AFM are lower than the Net Value when the Fund has borrowed less than the net expected recoveries and conversely.** The compensation process also creates a temporary mismatch between QAFM and NV.

These relations are further analysed in Appendix B. It also illustrates the case where the Net Value becomes negative, even when the Fund still displays some QAFM (QAFM can only be positive or nil).

B – Covered deposits and risk factors

15. As mentioned above, the covered deposit base constitutes a poor indicator to assess the adequacy or the change in the financial situation of a DGS. Considering also the arguments in paragraphs 5 and 9, a risk-adjusted covered deposit base (the “risk base”) evidently seems to be a more appropriate indicator to assess the change in the financial situation of the transferring and receiving DGS ($\sum_i ARW_{i,n} \times CD_{i,n}$ instead of $\sum_i CD_{i,n}$).

16. The use of the risk factors $ARW_{i,n}$ to characterise the risk of a bank could be seen as a perfectible choice: those risk factors are not always granular and not fully harmonised across the EEA. Still, they represent a major asset as they comply with the unique acknowledged methodology across the Union; even more significantly, they are used to determine the contributions of members banks, which annually feed up the QAFM and the Net Value of the Fund. Calculating sign-off and sign-in fees with the same risk indicators as for contributions (see below) underlines and reinforces the consistency of the approach.

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17. Then, directly in line with the considerations above, the financial margin created by the transfer for the transferring DGS and the financial input the receiving DGS would need to recover its previous financial balance could be assessed in reference with **a net value of the DGSs being left unchanged in proportion of their risk bases ($\sum_i ARW_{i,n} \times CD_{i,n}$) after the transfer.**

C – Why the QAFM ratio cannot be an adequate indicator

18. The Qualified AFM ratio plays such a role for DGSs that it is worth further stressing the reasons why this ratio cannot offer an appropriate indicator for the present transfer of DGSs' resources issue.

i/ Restoring QAFM through a transfer of resources after a change of affiliation cannot be a valid option as it does not ensure a measure of the financial position independent of timing issues or of the circumstantial financing decisions made by DGSs.

For instance, looking at the transferring DGS⁷ and using the observations made in Section 1 and Appendix B, the amount of the financial transfer to be defined, measured on the day the transferring bank leaves the transferring DGS, should not depend on:

- whether the Fund has still to compensate depositors (higher QAFM) or has already compensated all of them (lower QAFM);
- whether the transferring DGS has borrowed resources or used its QAFM to finance an intervention; or whether it has used its QAFM to reimburse a loan the day before, or the day after the transfer;
- likewise, whether the DGS gets a payment on its expected recoveries the day before or the day after the transfer;
- identically, whether a change in the nature, liquidity or, more generally, compliance with QAFM definition of the DGSs' investments has occurred or not.

ii/ The QAFM ratio links the available financial means with the covered deposit base. Doing so, it discards any consideration of the default risk associated with the transferring bank, measured through its risk factor. The regulatory ex-ante liquidity requirement set by the DGSD (QAFM ratio) is indeed independent of the member banks' risk profiles: a Fund with all member banks rated with a high risk-factor of 1.5 should reach exactly the same 0.8% target level than another Fund with all member banks at a low risk-factor of 0.75.

⁷ What follows could be reformulated and applied to the receiving DGS.

With a QAFM ratio that would be formulated in proportion of the risk base, taking account of the risk profile of the member banks population, i.e.:

$$0.8\% \times \sum_i ARW_{i,n} \times CD_{i,n} \quad \text{instead of} \quad 0.8\% \times \sum_i CD_{i,n}$$

then this ratio would stay the same for both the receiving DGS and the transferring DGS despite the transfer, at least when QAFM and the Net Value are equal. Still, this is not the way the regulation has been formulated.

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19. The above approach, focusing on a financial disbalance measure, is not per se contribution-based and has of course little to do with the consideration of the last 12- or even n-month gross contributions paid to the transferring DGS.

The same way, the financial margin triggered by a transfer could be higher or lower than the sum of historic contributions paid by the transferring institution (net of any payout and administrative expenses, recoveries or other revenues). As a matter of fact, with another perspective than the one previously developed, the sum of net historic contributions could also be seen as a way to characterise the transferring amount, of course with no claim of matching the above mentioned financial disbalance (see below Section 4-A).

Should this absence of matching between a contribution approach and the financial disbalance approach be considered as an issue, it could be mentioned here that, depending on the contribution system, the two approaches could actually lead to the same outcome. This will be further explored later on in this research (Section 4-B and Appendix G).

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Highlights of Section 2: analysis of a DGS's financial situation

i/ The overall financial situation of a DGS is captured by its Net value. The Net Value (or own funds of the DGS) is the total amount of contributions paid by member banks to the Fund according to their respective deposit base and risk factor, net of all profits and losses recorded through the Fund's activities (interventions, investment income etc.).

ii/ While the Net Value follows a financial approach, Qualified available financial means (QAFM) are a regulatory liquidity concept, which measures the level of non-encumbered liquidities contributed by member banks and available for interventions. QAFM converge to the Net Value of the Fund with the final liquidation of failed assets and repayment of all debts by the Fund.

iii/ Discarding transitory or insignificant elements, QAFM are lower than the NV when the Fund has borrowed less than the net expected recoveries and conversely. The compensation process also creates a temporary mismatch between QAFM and NV.

iv/ QAFM or the QAFM ratio cannot provide for an adequate indicator to measure the impact of a transfer on a DGS's financial situation. QAFM and the QAFM ratio depend on timing elements and circumstantial decisions of the Fund, while the latter refers to the covered deposit base ($\sum_i CD_{i,n}$) which does not capture the risks that the DGS faces.

v/ Finally, the financial situation to be considered and possibly rebalanced in case a transfer occurs is the ratio between the net value (NV) of the Fund and its risk base ($\sum_i ARW_{i,n} \times CD_{i,n}$).

3. VIEWS ON A REBALANCING MECHANISM BETWEEN DGSs

Combining the transferring DGS's and receiving DGS's approaches

20. Of course, it is unlikely that any last 12- or even n-month contributions received by the transferring DGS could match with both the financial margin left to the transferring DGS and the financial input needed by the receiving DGS to retrieve its prior financial equilibrium. There is also little chance that the financial margin on one side could ever match with the financial input needed on the other side.

At this stage, the following definitions will be given or reminded:

- On one hand, the “**financial margin**” left by the transfer of the bank for the transferring DGS compared to its previous situation. If so decided, this financial margin may be given up by the transferring DGS as a “**sign-off fee**” to the transferring bank for the benefit of the receiving DGS⁸;
- On the other hand, the “**financing need**” created by the enrolment of the transferring bank for the receiving DGS compared to its prior situation (i.e. the relation between its resources and its adjusted covered deposits). Among other alternatives, this financing need may be filled up by a “**sign-in fee**” raised on the transferring bank⁹;
- Lastly, if needed, the “**transfer gap**”, as the difference between the financing need and the financial margin.

The financial margin and the financing need, and then the sign-off and sign-in fees would be assessed so to leave unchanged the financial situation of the transferring DGS on one side, the receiving DGS on the other side. This approach ensures that the size and original financial situation of each DGS is adequately taken into consideration, whatever they are: for instance, the efforts possibly put on the transferring DGS will reflect what it can afford, not the needs of the receiving DGS.

21. Several options can be described on this basis, depending on the way the financial margin, the financing need and the transfer gap are used or financed.

Each option is presented with its own rationale. Those rationales are not unanimously shared. This explains why some elements of rationale could be in opposition from one option to the other.

⁸ Alternatively, the sign-off fee could be paid directly to the receiving DGS with no impact on the reasoning; it could also be partial. As a matter of fact, in some jurisdictions DGSs are not allowed to repay funds to member banks. In addition, Art. 14(3) of the DGSD indicates that funds should be transferred to the receiving DGS. However, at this stage, for the sake of simplicity and consistency with the definition taken for the sign-in fee, this note will keep the assumption of a payment to the transferring bank and for the whole financial margin. See also Section 5-E)

⁹ The sign-in fee on the transferring bank is chosen here for the sake of simplicity. The sign-in fee also represents here the full amount of the financial input needed. There might be other options, differing from the mere implementation of the usual contribution systems, and which could be exposed and discussed later.

A – The “no sign-off fee/ no sign-in fee” option

In this option, a DGS, as a transferring DGS, would keep for itself the financial margin left by the transfer – as it was the case for DGSs with ex-ante funding before Article 14(3) of the DGSD – whereas, as a receiving DGS, it would reconstitute its financial position (e.g. AFM) through the usual contributions on all member banks over time. While it is not disputed that the risks for the transferring DGS decrease with the transfer, the reasoning behind is that:

- the transferring bank has paid contributions to the transferring DGS for offering a guarantee to its clients as well as for mutualising the cost of that guarantee among all member banks, which was done, whether a failure risk has materialised or not;
- a transferring DGS may have to face a payout just before or just after a transfer, the transfer itself should not impact its financial capacity to reimburse depositors of the failing bank. Furthermore, it also faces a loss of mutualisation capacity (paragraph 3 above);
- the departure of a member bank is equivalent to an outflow or decrease of the covered deposit base for which the financial margin would be kept by the transferring DGS, or used as it sees appropriate. A sign-off fee regime would actually create a differential treatment in favour of transferring banks as compared to the effect of changes in the deposit bases for existing members;
- from the perspective of the receiving DGS, the enrolment of a new member is equivalent to an inflow or increase of the covered deposit base, for which the financing need is covered through usual contributions raised on all banks, no matter who is responsible for the inflow or increase. Same as for a sign-off fee regime, a sign-in fee regime would actually create a differential treatment detrimental to transferring banks;
- it is up to the receiving DGS to fill the financing need according to its own criteria and resources situation. In addition, it also gains some mutualisation capacity;
- last this option would align the regime of contributions in the DGSD with the one prevailing for resolution funds, as defined by the BRRD.

Of course, when coming back to the issue initially raised by the relocation of Nordea from Sweden to Finland, this no transfer/ financing-as-usual option does not pretend to bring a full-fledged solution to such cases.

B – The “sign-in fee with no sign-off fee” option

Under this option, as a variation on the previous one, a DGS would not give up its financial margin as a transferring DGS, but, as a receiving DGS, would cover its financing need another way than through the usual contribution system over the whole membership, but through a sign-in fee raised on the transferring bank¹⁰. The reasoning would be:

- as for option A, the transferring DGS would record an improvement of its financial situation, keeping the financial margin for itself, in consideration of the guarantee it has previously offered to the clients of the transferring bank;

¹⁰ See footnote 10 above. Also note that this option does not prevent the receiving DGS to grant facilities to the transferring bank to pay its due.

- it is the receiving DGS's own responsibility to take care of, and to balance the impact of the new enrolment, according to its own parameters and criteria, independently of the transferring DGS's situation and history, whether this one has been recently depleted or not;
- raising a sign-in fee is the only way to settle the issue raised by a transfer in any circumstances from the very first moment of the transfer, including the relocation of Nordea from Sweden to Finland, or even a transfer from a non-EEA jurisdiction;
- raising the sign-in fee on the transferring bank is a logical option, as the transferring bank is the cause for the financial need created for the receiving DGS. Furthermore, not raising this sign-in fee on the transferring bank leads to questionable outcomes:
 - i. all other banks of the receiving DGS would have to pay to cover the costs of the extra-covered deposit base brought by the transferring bank;
 - ii. the transferring bank would freely benefit from a protection it has not contributed to build¹¹.

All in all, this rebalancing-excluding-transfer option brings a solution to the relocation of Nordea from Sweden to Finland, while requiring the transferring bank to somehow pay the price of protection on both sides.

C – The “sign-off fee with no sign-in fee” option

Here the transferring DGS would be required to give up its financial margin to the receiving DGS through a sign-off fee, to contribute filling that DGS's financing need. But the receiving DGS would cover the transfer gap over time through usual contributions spread among all members. The underlying reasoning is that:

- together with its risk profile, deposits are the key reference for the determination of contributions of a bank. It seems fair that, as an extension of the current provision of the DGSD art.14(3), a credit institution, when it leaves, triggers a transfer of the resources it paid in relation with those deposits;
- the sign-off fee would leave the transferring DGS's financial situation unchanged and in a fair manner compared to any other calculation (last 12-month contribution transfer or any equivalent). It could then benefit to the receiving DGS;
- the receiving DGS needs that input to help rebalancing its financial situation for a part, but the enrolment of a new member bank is equivalent to an inflow or increase of the covered deposit base for which the financing need would be handled by the transferring DGS through usual contributions on all members;
- as also mentioned for option A, requiring the transferring bank to pay a sign-in fee to fill the financing need or the transfer gap would lead to a differential treatment for new entrants as compared to the effect of changes (e.g. inflows, increases) in the deposit bases for existing members;
- this differential treatment on the transferring bank would raise a competitive issue and would not be consistent with the principles of free establishment and the promotion of internal market in the EU.

¹¹ e.g. when leaving a DGS with a 0.2% AFM ratio, where additional financing is needed and planned, for joining a DGS with a 1.5% ratio, where the level of existing resources is seen as sufficient.

As for option A, this only-through-transfer financing option does not pretend to bring a full-fledged instrument to restore in the short time a financial situation impacted by a transfer, as illustrated by the relocation of Nordea from Sweden to Finland, but a medium-term approach, through a progressive replenishment of the reserves by all member banks.

D – The “sign-off fee and sign-in fee” option

Under this option, the receiving DGS raises a sign-in fee on the transferring bank to keep its situation unchanged¹². A part of this sign-in fee is financed by the sign-off fee given up by the transferring DGS, the remainder (i.e. the transfer gap) being paid by the transferring bank itself. The reasoning is:

- this sign-off/ sign-in fees option allows both the transferring DGS and the receiving DGS to keep their financial situation unchanged. It also avoids a transferring bank to leave a DGS with depleted resources for a fully resourced DGS at no cost;
- besides the questionable outcomes already mentioned in case of no sign-in fee (see option B), not asking the transferring bank to cover the transfer gap while forcing the transferring DGS to pay a sign-off fee (option C) leads to additional difficulties:
 - i. as long as the receiving DGS seems ready to cope with a disbalance, it has less arguments to get a sign-off fee from the transferring DGS;
 - ii. it looks questionable to discard a sign-in fee because of a differential treatment imposed for incoming banks, while getting a sign-off fee in spite of an equivalent differential treatment created for leaving banks (see option A).
- if the sign-off fee contributes for a part to the rebalancing of the receiving DGS’s financial situation, charging the transferring bank for the transfer gap it is responsible for, is, as for option B, the only way for the receiving DGS to recover its balance and adequately cope with the transfer in the short time (even from a non-EEA jurisdiction). In addition, the transferring bank pays the price of the protection only once;
- In compliance with the principles of free establishment, a sign-in fee levels the playing field for all contributors when a bank uses this freedom. As also mentioned for option B, with no sign-in fee, a transferring bank benefits from a protection that it has not contributed to build;
- as for the differential treatment between new entrants and existing member banks, the relative evolutions of member banks’ deposit bases are unlikely to have as significant an impact, if any, as a transfer of a bank from one DGS to another. Furthermore, this differential treatment could be analysed as a more general flaw of the contribution system that could be addressed otherwise¹³.

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¹² See footnotes 9 and 10 above.

¹³ To be comprehensive, a thorough treatment of the above situations would lead to consider a switch to a stock-based contribution system, where all changes in the deposit and risk bases, whatever their origins (transfers, portfolio transactions, market shares or individual deposit bases changes, as well as risk-factors evolutions), lead to an automatic rebalancing of contributions, as if a global sign-off/ sign-in fee mechanism was applied (see Appendix G).

Highlights of Section 3: views on the rebalancing mechanism

i/ If so decided, the transferring DGS could give up all or part of the financial margin left by a transfer as a "sign-off fee". On its end, the receiving DGS could raise a "sign-in fee" to cover the financing need generated by the transfer, funded for a part by the sign-off fee, the possible remaining gap being financed in all or in part by the transferring bank.

ii/ Then, the way to handle the transfer of a bank from one DGS to another could be seen under one of the following four options, each with its own rationale:

- ***neither a sign-off fee, nor a sign-in fee*** (option A – same regime than for national resolution funds, back to the regime prior the DGSD)
- ***no sign-off fee, but a sign-in fee*** (option B – burden of resetting the receiving DGS's financial situation put on the transferring bank)
- ***sign-off fee, with no sign-in fee*** (option C – use of the financial margin of the transferring DGS, with no specific burden on the transferring bank)
- ***both a sign-off fee and a sign-in fee*** (option D – financial situations of the two DGSs left unchanged by the transfer, any remaining financing gap being put on the transferring bank).

4. DETERMINATION OF SIGN-OFF AND SIGN-IN FEES WHEN APPLICABLE (OPTIONS B, C and D)

Following the development above, the next step is to identify an appropriate way to assess the level of sign-off fees and/ or sign-in fees if such a system is applied. As seen, this system should be based on the Net Value and should reflect the amount of risk transferred from one DGS to the other. It should be also as simple as possible to use and be consistent and able to cope with national specificities (accounting standards, ringfencing of past events etc.). Departing somehow from this approach, but with understandable reasons, it should also ideally be “fair” for member banks, both the transferring bank and the other ones.

A – The historical net contribution approach

22. A first approach consists in allocating to the transferring bank the individual Net Value brought to the transferring DGS by the transferring bank in relation with its own history with that DGS (date of membership, flows of contributions paid, share of profit and loss of the DGS since the membership – including net intervention costs, investment income, operating expenses if not covered otherwise, ...).

This individual Net Value of the transferring bank would be then considered as the sign-off fee to be paid by the transferring DGS at the time of the departure.

Such an approach of course focuses on fairness¹⁴, as it reattributes to the transferring bank the part of the contributions it paid overtime and was not used by the Fund. Other banks are also left with what they have paid so far and was not used by the Fund.

23. Through that approach, the whole Net Value of the Fund will be allocated, one by one, to all the member banks of the Fund at a given point in time. As for all other methods, to ensure the consistency and correctness of this allocation, the calculation has to be made in advance for the whole population of member banks, not only to the transferring bank at the time of its departure from the Fund.

Theoretically, this requires some works by the DGS, especially for long-standing DGSs or with a large population of member banks: the allocation starts at the date of the creation of the DGS, considering, year after year, the flows of contributions of each member bank, adjusted of the profit and loss account of the Fund, but also of the possible mergers or departures from the Fund that could have occurred during a given year.

Appendix C describes a methodology that can be used to that end and also suggests a few shortcuts to make that determination easier.

Quite importantly here and later, whatever the conventions a DGS could take for such a calculation, an essential prerequisite is that those conventions are set in an objective and non-circumstantial way, ahead of any transfer. Conventions and shortcuts should of course be solid and consistent, but only become opposable when set in advance and not adjusted

¹⁴ ‘Fairness’ should be taken here as “the transferring bank gets back what it contributed for”, a definition which emphasizes a kind of ‘property’ on the net contributions it brought, rather than on the protection the transferring bank has benefitted before its departure.

on a case-by-case basis.

24. Focusing on fairness, the purpose of this approach is not and cannot be to ensure that the financial situation of the DGS will be left completely unchanged after the transfer. The amount of net contributions paid by the transferring bank overtime has some link but cannot precisely reflect the risk base transferred at a given point in time: the relative evolution in time of the covered deposit base and the risk factors of the transferring bank in comparison with other member banks, the changes in the rhythm of contributions year after year, the possible changes in the methodology to assess risks etc., evidently weaken that link.

25. To be also observed, this approach can only be applied to calculate a sign-off fee, when a bank leaves a DGS. It does not give any guide to the receiving DGS for calculating a sign-in fee, when applicable. Another ground for calculation has to be found when the sign-in fee is to be applied (options B and D).

The historical approach can then be used for option C above (sign-off fee with no sign-in fee). Technically, that approach could also be considered for calculating the sign-off fee for option D, but this would appear hardly consistent: as the sign-in fee calculation will be based on the upholding of the financial situation of the receiving DGS along the analysis developed earlier (see section 4B), there would be little reason for taking another (historical) criterion, based on a definition of fairness, when assessing the sign-off fee.

Considerations below will actually lead to use the risk base of the transferring bank in the receiving DGS ($ARW_{i,n} \times CD_{i,n}$) to determine the sign-in fee¹⁵.

B - The Net Value ratio allocation approach

26. Along this second approach, the amount of the Net Value of the Fund allocated to the transferring bank is defined so to leave the Net Value of the DGS after the transfer unchanged in proportion of its risk base $\sum_i ARW_{i,n} \times CD_{i,n}$.

As already mentioned, the covered deposit base reflects the total exposure of a DGS. Its risk base adjusts the measure of this exposure to take account of the risk factors associated to each bank.

This second approach focuses on the financial balance of the Fund¹⁶, allocating the transferring bank only the amount of Net Value which allows it to keep its prior equilibrium reserves vs risks.

¹⁵ Like in the net value approach (Section 4B), the sign-in fee will then be formulated as:

$$Sign\ in_{tb} = \frac{NV}{\sum_{i \neq tb} ARW_i \times CD_i} \times CD_{tb} \times ARW_{tb}$$

¹⁶ This would also reflect another definition of 'fairness': the transferring DGS gives up in favour of the transferring bank only the part of the Net Value which does not negatively impact the situation of the remaining member banks relatively to the Fund.

As a consequence and in line with Section A, a DGS would give up a higher sign-off fee if left safer after the transfer of a high-risk bank, than if left riskier after the transfer of a low-risk bank¹⁷.

27. This approach applies the same way for the transferring DGS when calculating the sign-in fee and for the receiving DGS when calculating the sign-off fee. In both cases, the DGS should cover its risk base with a Net Value in the same proportion before and after the transfer.

This formulation of an unchanged Net Value in proportion of the risk base leads to an easy determination of the sign-off and sign-in fees. As long as the transfer does not change the individual risks of other banks, or that the DGS discards this possible change, **the sign-off and sign-in fees applied to the transferring bank are simply the Net Value of the Fund in proportion of the risk base of that bank compared to the ones of other member banks.**

Sign-off and sign-in fees are then captured with these simple formulas (see Appendix D):

$$Sign\ off_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_i ARW_i \times CD_i}$$

$$Sign\ in_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_{i \neq tb} ARW_i \times CD_i}$$

Appendix D also offers general formulas incorporating the possible change of other member banks' individual risk factors due to the transfer (which is not the case in the current standard calculation of risk factors as recommended by the EBA Guidelines in that matter).

28. Under this approach, there is no need here to specifically identify the individual net value to be allocated to each bank beforehand. It could be directly calculated at any time.

It could be also checked¹⁸, as a consistency control, that in the case where a bank would switch from a transferring DGS to an intermediary DGS, before leaving for a third (receiving) DGS, this intermediary DGS would raise as a sign-in fee and would pay as a sign-off fee the same amount.

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29. When comparing the two approaches, the amount that the transferring DGS would release could of course be higher or lower under this approach than the net historical contributions brought to the DGS by the transferring bank.

However, **the two approaches, net value ratio and historical net contributions are actually identical,** leading to the same results, **when a DGS uses a stock-based**

¹⁷ This would also be the case with the first approach, as a high-risk bank contributes more than a low-risk bank, except that the change in the risk profile overtime and the rhythm of contributions can blur this line.

¹⁸ Taking good care of the impact of the sign-in fee on the Net Value of the intermediary DGS before and after the transfer.

contribution system instead of a flow-based contribution system¹⁹ (see Appendix G).

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Highlights of Section 4: Determination of sign-off and sign-in fees when applicable

i/ An historical approach, applicable for option C (sign-off fee only), could be used to assess a possible level for the sign-off fee, in repaying the transferring bank as it leaves for the sum of all paid contributions, net of profit and loss registered by the Fund, since that bank became a member. This approach departs from the criteria of ensuring an unchanged financial situation for the transferring DGS.

ii/ Under the Net Value ratio allocation approach, applicable to both sign-in fee and sign-off fee, then to options B, C and D, a change of affiliation should leave the financial situation (i.e. the Net Value) of both Funds unchanged in proportion of their risk bases. Then, sign-off and sign-in fees come as the Net Value of the Fund in proportion of the relative risk base of the transferring bank:

$$\text{Sign off}_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_i ARW_i \times CD_i}$$

$$\text{Sign in}_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_{i \neq tb} ARW_i \times CD_i}$$

iii/ The two approaches converge when the DGS uses a stock-based contribution system.

¹⁹ In a stock-based contribution system, (stocks of) contributions are redeemed every year and are net of all profits and losses: the stock-based contribution is then equal to the historical net contribution at any time for all member banks.

5. TECHNICAL COMPLEMENTS

A – Implications on QAFM and QAFM ratio

30. The sign-off/ sign-in fee mechanism presented above will keep the financial situation of the Fund unchanged in proportion of the risk base. As QAFM and the QAFM ratio are calculated on a different basis than sign-off and sign-in fees, the transfer of a member bank from one DGS to another can trigger a change of the QAFM ratio for the two DGSs. Then, if they had previously reached the regulatory requirement related to the target level (the 0.8% target level rule²⁰), they can record a deviation from the regulatory requirement and be led to reconstitute the QAFM.

31. Impact of the sign-off/ sign-in fee mechanism on the QAFM ratio

Without any sign-off fee, the QAFM ratio of the transferring DGS would increase with the transfer of any bank; in the same way, without any sign-in fee (and no sign-off fee either), the QAFM ratio of the receiving DGS would decrease in all cases. With the sign-off/ sign-in fee mechanism presented above, the impact of the transfer on the QAFM ratio depends on the elements below (see Appendix E paragraph 1 for a detailed analysis).

i/ Respective levels of QAFM and NV

The relation between the amount of QAFM and the amount of the Net Value depends on the Fund's interventions and financing (Section 2 and Appendix B). QAFM could be lower or higher than the NV, depending on whether the Fund has borrowed less or more than the net expected recoveries.

As the sign-off and sign-in fees are paid in cash, directly affecting the level of QAFM, the change of affiliation, discarding here all risk-factors, may have a positive or a negative impact on the QAFM of the transferring DGS and of the receiving DGS, in proportion of their new covered deposits base.

For instance, when QAFM are higher than the Net Value, the transfer of a bank with an average²¹ risk-factor compared to non-transferred banks will trigger:

- an increase of the QAFM ratio for the transferring DGS (in short, the outcoming cash identically diminishes the QAFM and the Net Value, but proportionally less the QAFM than the Net Value);
- and a decrease for the receiving DGS (the incoming cash enhances QAFM and Net Value for the same amount, but proportionally less QAFM than Net Value) – see Appendix E, section 1 for a complete demonstration.

Conversely, when QAFM are lower than the Net Value, the transfer of an average bank:

- pulls the QAFM ratio down for the transferring DGS;

²⁰ or 0.5% or any other target permitted by the Directive, this being understood that way in the whole document.

²¹ weighted by covered deposits.

- and builds it up for the receiving DGS.

ii/ Risk factor of the transferring bank

The risk factor of the transferring bank compared to the one of the other member banks also plays a role on the impact on the QAFM.

For instance, in a simplified case where QAFM and Net Value are identical and the transferring bank has a relatively low risk-factor compared to other member banks for the transferring DGS, then:

- the drain on the transferring DGS's QAFM for paying the sign-off fee will be relatively low in proportion of the covered deposit base and the QAFM ratio will consequently increase:
- conversely, the transfer of a relatively high-risk bank will negatively impact the level of QAFM and will leave the remaining member banks with a liquidity gap that they may have to reconstitute.

Under the same assumption that NV and QAFM are identical, the impact will be the opposite for the receiving DGS:

- the inclusion of a low-risk bank (compared to its own population of member banks) will trigger a relatively low sign-in fee and then a decrease of the QAFM ratio:
- the inclusion of a high risk bank will lead to an increase of the QAFM ratio.

iii/ As a whole:

Transferring DGS

event	initial situation	impact of the sign-off fee on the QAFM ratio
exit of an average-risk bank	QAFM > NV	increase
	QAFM < NV	decrease
exit of a low-risk bank	QAFM = NV	increase
exit of a high-risk bank		decrease

Receiving DGS

event	initial situation	impact of the sign-in fee on the QAFM ratio
incorporation of an average-risk bank	QAFM > NV	decrease
	QAFM < NV	increase
incorporation of a low-risk bank	QAFM = NV	decrease
incorporation of a high-risk bank		increase

The above findings illustrate the trends at work when a transfer occurs and the sign-off/ sign-in fees are applied. In real life, more complex situations will appear. For instance, in the case of the inclusion of a low-risk bank by a receiving DGS (with a decreasing effect on the QAFM ratio), which would display QAFM lower than the Net Value (increasing impact on the QAFM ratio), the combined impact (a slight increase or a slight decrease of the QAFM ratio) will depend on the precise data of the case.

Note also that, depending on the situation of each DGS, the impact on the transferring DGS and the impact on the receiving DGS may be both positive, both negative, or of opposite signs.

32. Qualitative analysis of the impact on the QAFM ratio

The regulatory QAFM ratio may have to be reconstituted after the transfer and the application of the sign-off/ sign-in fee.

In case the QAFM ratio has improved, this impact could of course be seen as welcome. The possible margin above the 0.8% target level could be left as it is, used to reimburse a loan or even redeemed to member banks if practicable.

But even if the QAFM ratio decreases below the regulatory threshold, triggering a need for a replenishment of reserves by all member banks so to meet the regulatory target, this need is first related to the non-risk base formulation of the regulatory ratio. Moreover, there are a number of situations where this impact does not look inadequate per se. For instance, if the QAFM ratio of the transferring DGS decreases because its Net Value is higher than its QAFM, this reflects a situation where borrowing is lower than expected recoveries. Then, the excess of expected recoveries compared to the repayment of the loan should feed in the QAFM and build up the QAFM ratio.

Appendix E paragraph 2 further explores those situations.

B – Treatment of irrevocable payment commitments (IPCs)

33. There is no need to foresee any specific treatment for irrevocable payment commitments (IPCs). Standing payment commitments taken by the transferring bank to the transferring DGS are a part of the sign-off fee, as other usual contributions included in that fee, and will then be voided, and the collateral returned, as an element of payment of the fee. In the quite unlikely case where standing IPCs would be larger than the sign-off fee, the excess will depend on the DGS's IPC policy: either voided to the benefit of the transferring bank, or converted in usual contributions to the benefit of the DGS.

On the receiving DGS side, the sign-in fee will simply incorporate a part of IPCs, if any, according to the receiving DGS's policy in that field.

As a general rule, whether for a sign-off or a sign-in fee, IPCs will then be treated the same way than other contributions: raised by the receiving DGS or redeemed by the transferring DGS (meaning here voided and the collateral returned).

C – National specificities: accounting standards, ringfencing, stock-based contributions

34. Accounting standards

The accounting standards applied by each deposit insurer may have specific consequences for each DGS and its member banks, but do not change the above reasoning.

In particular, it is up to each deposit insurer, when it includes, depending on the applicable regulation, all or part of its investment revenues in the Fund's total resources, to record those investments at their historic value or at their market value; or to provision all or part of their expected recoveries.

It might seem more adequate that a proposal could be made so that all EEA DGSs use the same accounting standards. However, this looks not only nearly out of reach but also not needed. Actually, from the DGS perspective, it is not improper that two identical DGSs using two different accounting standards might come with two different assessments of sign-off or sign-in fees – as long as those standards are evenly applied to all their member banks.

In this field, what is essential is that the accounting standards of each DGS are set in an objective, non-circumstantial and consistent way, that DGSs stick with their rules²² and that these standards are strictly applied when calculating the sign-off and sign-in fees, with no bias and no specific rules for the transferring bank.

Still, there are two types of accountings patterns that need to be taken into account when defining the Net Value of the Fund: the trustee-type, where a possible negative net asset value of the Fund is balanced on the asset side by an equal amount of receivables (future contributions on member banks) so that the net asset value is never negative; and the corporate-type, with no receivables of that kind and where the net asset value can be negative (see Appendix F – section 1).

The definition of the Net Value in this research paper corresponds to the net asset value of any Fund, less non-nominative receivables recorded for balancing the net asset value, if any (Appendix F – section 2).

35. Ringfencing of past events

When a crisis occurs, some Funds apply a ringfencing of the event: only banks which are members of the DGS at the time of the crisis are seen as financially liable for that event, both for the liability side (borrowing) and for the asset side (recoveries). They are therefore allocated on a nominative basis a share of the borrowing and a share of the recoveries according to their respective situation in the DGS at the time of the failure (see Appendix F – section 3).

When a bank leaves such a Fund, this financial relation between the bank and the Fund should be unwound: the leaving bank pays or receives the difference between its share in the borrowing and its share in the expected recoveries.

Then, the sign-off fee referred to in this paper includes two components: the clearing of the financial relation for past events between the Fund and the transferring bank (negative or positive), and the partial sign-off fee in relation with the part of the Fund set for future crises.

²² of course as long as any inevitable change is not needed – adjustments of the regulation etc.

As for the sign-in fee, as the transferring bank is not held liable for the negative (or possibly positive) Net Value associated with past interventions, it is limited to the part of the Fund set for future crises.

All in all, whether past interventions have been ringfenced or not by the Fund, this will lead to the same impact (sign-off fee or sign-in fee) for the transferring bank.

36. Flow-based and stock-based contribution systems

Deposit insurers' contribution systems could be flow-based or stock-based. Any solution to the transfer of contributions issue must work for both flow-based and stock-based systems.

Flow-based contributions mimic non-life insurers' premiums. Each year, the deposit insurer raises flows of contributions using a premium rate, covered deposits of member banks and their risk factors, with also an adjustment coefficient, μ_n :

$$C_{i,n} = \mu_n \times CR_n \times ARW_{i,n} \times CD_{i,n}$$

The adjustment coefficient μ_n allows to reach a given target of additional resources for the year, only based on covered deposits ($CR_n \times \sum_i CD_{i,n}$), starting from the aggregation of individual contributions incorporating both covered deposits and risk factors²³.

A stock-based contribution system is one where contributions are seen as the amount (the stock) of the Net Value of the Fund that each member bank has contributed for with its contributions, net of all uses made. Instead of determining the flow of contribution expected from a member bank using the above formula, the expected stock is first determined, and the corresponding flow appears as the difference between the expected stock and the current stock observed for each bank (see Appendix G, sections 1 and 2).

The formulas are the same than for a flow-based system, but provides for stocks of contributions ($C^{\odot}_{i,n}$), using a stock-based contribution rate (CR^{\odot}_n), equivalent to the targeted coverage level of the Fund for that year:

$$C^{\odot}_{i,n} = CR^{\odot}_n \times CD_{i,n} \times ARW_{i,n}$$

Stock-based contributions allow the reserves of the Fund to follow the risk base in real time. This leads the Fund to raise contributions on a given member bank for any increase of its covered deposit base (equivalent of a sign-in fee), whether this increase comes from an endogenous increase of covered deposits in that bank, from the acquisition of a portfolio of covered deposits or from its incorporation in the DGS from another one. Similarly, the Fund will redeem stock-based contributions when the covered deposits decrease (equivalent to a sign-off fee), whether this is due to an endogenous evolution, to the sale of a portfolio or to a departure of the bank for another DGS.

The sign-off fee and sign-in fee determined in section 4B in case of a transfer are actually identical to the stock-based contributions redeemed or raised by a stock-based contribution Fund when the risk-base of a bank changes (see Appendix G – 3).

Then, the sign-off/ sign-in mechanism built in section 4B appears fully compatible with both flow-based contribution systems and stock-based contribution systems. Moreover, this

²³ $\mu_n = \frac{\sum_i CD_{i,n}}{\sum_i ARW_{i,n} \times CD_{i,n}}$

implies that those sign-off fee and sign-in fee will be the same whether the transferring DGS or the receiving DGS uses a flow-based contribution system or a stock-based contribution system. Then, all DGSs remain free of using one system or the other with no consequence on the price of the transfer.

D – Special situations: negative sign-off or sign-in fees, negative balance, partial transfers, transfers in between two accounting closings

37. A set of specific situations need to be reviewed further. A negative Net-Value for the transferring or the receiving DGSs leads to negative sign-off or sign-in fees. The sign-off fee that the transferring DGS would be ready to transfer may also be higher than the sign-in fee than the receiving DGS would consider raising. Similar to a full transfer of membership, partial transfers of activity from one bank and Fund to another can also occur. Last, a membership change can intervene at any time during the year, at a moment where accounts have not been closed.

Those situations need to be specifically addressed to complete the design and analysis of the reviewed proposal.

38. Negative sign-off fee for the transferring DGS

Within the current DGSD framework, a member bank could leave a DGS with no penalty through a change of affiliation after a crisis has exhausted the transferring DGS's QAFM and resources. The applicable 12-month rule can even trigger a transfer of resources from the transferring DGS to the receiving one even in that situation.

This case also clearly shows that QAFM do not offer an adequate criterion for the transfer of contributions: whether it still keeps or not some QAFM to secure its intervention liquidity capacities for a future crisis, it looks disputable that a DGS with a negative Net Value should be forced to transfer a part of its QAFM to a receiving DGS.

Quite the contrary, the transferring bank should reasonably be seen as liable for its share of the past interventions of the transferring DGS, whether the associated costs have been ringfenced or not by the Fund.

Then, the transferring bank should pay off a negative sign-off fee to the transferring DGS, if any, before being authorised to change affiliation, as the case may be with two components if past interventions have been ringfenced.

39. Negative sign-in fee for the receiving DGS

In case the Net Value of the receiving DGS is negative and after the change of affiliation, contributions will be raised by the receiving DGS on all its member banks, including the transferring bank to reconstitute its balance sheet.

If the DGS has not ringfenced its past interventions, this will make the transferring bank liable for those interventions. Then, this should lead the receiving DGS to pay (or credit) the transferring bank the negative sign-in fee at the time of the transfer, so to put all member banks on an equal foot for the future: in return, the transferring bank will be asked to participate to the reset of the Net Value.

If past interventions have been ringfenced, a negative sign-in fee is not possible, and the transferring bank will only pay the positive or null sign-in fee corresponding to the part of the Fund set for future interventions.

40. Negative balance between financing need and sign-off fee

This case could occur for instance when the level of reserves of the transferring DGS is higher (say 1% of the risk base) than the one of the receiving DGS (say, 0.2% of the risk base): the sign-off fee exceeds the financing need of the receiving DGS (i.e., the financial disbalance generated by the transfer of the bank, before any sign-in fee – see paragraph 20 above²⁴).

Three possibilities could be considered to handle such a case: the difference could be captured by the receiving DGS or by the transferring bank, or it could be kept by the transferring DGS.

As long as the sign-off fee is large enough to cover the financing need of the receiving DGS, there is little reason that the receiving DGS could receive more than what it actually needs to restore its financial balance and that it could benefit from extra-reserves accumulated by another DGS.

At first, it looks justified that the transferring bank could benefit from the difference, as it will have to contribute to the increase of the receiving Fund's size in the future. But doing so could also encourage opportunistic behaviours from member banks of DGSs with higher requirements or just with higher reserves. In particular, this might put under pressure DGSs with a limited membership, compared to DGSs with a large population of banks²⁵.

As a whole, it looks quite welcome, under option C (sign-off fee only) and D (sign-off and sign-in fees), to allow the transferring DGS to keep these extra-reserves as an exception to the general rule, also counterbalancing this way the loss of mutualisation capacity mentioned in paragraph 6. This adjustment is not relevant for option B (sign-in only) where there is no pressure of that kind on transferring DGS.

41. Partial transfer of activities (e.g. sale of a portfolio incl. covered deposits)

Article 14-3 paragraph 1 of the DGSD addresses the case of a formal change of affiliation from one deposit insurer to another, a move that supervisory authorities and DGSs are necessarily informed of. This change of affiliation may come from the transformation of a bank's branch abroad into a subsidiary, or vice versa, or from the sale of a branch activity abroad to an established bank in that country etc.

A transfer of deposits and risks could occur in other ordinary situations, such as the sale by a bank in a jurisdiction of an activity or a portfolio to a bank already affiliated with another DGS in another jurisdiction. Even if the buyer creates a specific branch to host this new activity, there is no change of affiliation *per se*, neither for the seller, nor for the buyer.

The current legal framework addresses this issue, too, foreseeing a last 12-month contribution transfer through DGSD Article 14-3 paragraph 2:

²⁴ The assessment of the financing need, necessary for this analysis, is the same than for the calculation of the sign-in fee in options B and D, i.e., $NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_{i \neq tb} ARW_i \times CD_i}$.

²⁵ DGSs with a limited membership need to set higher reserve requirements, while the departure of a member bank has a significant and immediate impact on their mutualisation capacity (see Section 1, paragraph 6).

"If some of the activities of a credit institution are transferred to another Member State and thus become subject to another DGS, the contributions of that credit institution paid during the 12 months preceding the transfer, with the exception of the extraordinary contributions in accordance with Article 10(8), shall be transferred to the other DGS in proportion to the amount of covered deposits transferred."

However, it is not clear whether any specific information is collected or can be collected in that field, if authorities and DGSs are informed of such transfers and in the end how that provision has been implemented. It looks equally clear that banks should not be allowed to get around the transfer system.

A stock-based contribution system discards all risks in that matter, even in case DGSs and authorities are not kept informed: all changes in the deposit and risk base, whatever the origin, leads to an automatic adjustment of contributions (see Appendix G), as if a sign-off/ sign-in fee mechanism was applied.

In the absence of such a system for the concerned DGS, the sign-off/ sign-in fee mechanism reviewed here does not change the situation described above: applying and raising the fees imply that the DGSs are made aware of those transfer operations even if no change of affiliation occurs. A renewed transfer of resources system might further address this information issue, if needed.

42. Membership transfer in between two accounting closings

A change of affiliation can intervene at any time of the year. The way to handle transfers of membership within the year depends on the own regulation of the Fund:

- If for instance the regulation of the DGS states that all member banks at the beginning of the year are liable for any financial event which could occur during that year (contributions, payout, recoveries, investment income etc.), then sign-off and sign-in fees can only be calculated and transfers be made at year end when closing the accountings;
- Conversely, if the possible exits and adherences are taken on an on-going basis depending on their dates, then sign-off and sign-in fees shall be calculated without a formal close of accounts using simplified conventions such as: values at the beginning of the year adjusted of contributions raised meanwhile and of major events (crisis, recoveries, court rulings...) occurred before the departing date.

As for accounting standards, several conventions are possible, and justified as long as they are applied in a consistent, constant and non-circumstantial way. There seems to be no obvious need to harmonise them among DGSs.

E – Options for the transfer of resources

43. For the sign-off/ sign-in fees mechanism as expressed in Section 4, a transfer of resources could be proceeded under two different ways:

- an actual financial transfer from the transferring DGS to the receiving DGS, the receiving DGS raising the possible balance on the transferring bank;

- or a transfer/ refunding of the sign-off fee by the transferring DGS in the hands of the transferring bank, the receiving DGS then raising the whole possible sign-in fee on the transferring bank.

As long as a sign-off fee or a sign-in fee is foreseen (options B, C and D in Section 3) and to help selecting an appropriate way for transferring resources, several elements can be considered:

- in case the transferring DGS ringfences its past interventions, the clearing of those past operations would be better settled directly between the transferring DGS and the transferring bank (options C and D);
- a negative sign-off fee also implies a clearing between the transferring DGS and the transferring bank (options C and D);
- in case the transferring DGS needs time to pay the sign-off fee, it looks more appropriate that the credit is extended by the transferring bank rather than by the receiving DGS (options C and D);
- under option B (sign-in fee with no sign-off fee) and option D (sign-off and sign-in fees), the financing gap, if positive, should in any case be raised on the transferring bank, while a negative sign-in fee will lead to a settlement between the receiving DGS and the transferring bank with no implication of the transferring DGS ;

Conversely:

- the need to compare the levels of sign-off and sign-in fees to handle a possible negative balance case involves exchanges between the transferring DGS and the receiving DGS (option D);
- last, for option C (sign-off fee with no sign-in fee) and as long as the sign-off fee is not negative and the transferring DGS does not ringfence its past operations, a direct transfer of resources from the transferring DGS to the receiving DGS is simpler.

The last two elements look easier to handle than the four previous ones. As said, if option C is chosen, then a direct transfer of the sign-off fee by the transferring DGS to the receiving DGS, similar to the current transfer of contributions set by the DGSD, would offer a simple and process for many cases. Now, all in all, instead of transferring resources between the two DGSs as under the current DGSD framework, **a one-size-fits-all solution could be the following one, with financial transfers going through the transferring bank only:**

- both DGSs calculate the fees (depending on the option) and communicate them to the transferring bank and to each other;
- the transferring bank is asked to pay the sign-in fee to the receiving DGS (options B and D) or the positive sign-off fee on behalf of the transferring DGS (option C);
- the transferring bank produces a proof of payment to the transferring DGS and settle with that DGS the clearing of the sign-off fee, if any (option C and D).

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Highlights of Section 5: technical complements

i/ Keeping unchanged the financial situation of the DGSs through the sign-off/ sign-in fees option may result in variations of the two DGSs' QAFM compared to covered deposits, depending on the original mismatch between QAFM and NV and on the relative risk of the transferring bank. This also comes from the regulatory formulation of the target level, proportioned to the covered deposit base ($\sum_i CD_{i,n}$), not to the risk base ($\sum_i ARW_{i,n} \times CD_{i,n}$). Hence, non-transferred member banks may then have to reconstitute the QAFM ratio of their respective Fund.

ii/ IPCs should be treated as other usual contributions: repaid (or voided and the collateral returned) as a part of the sign-off fee, raised as a part of the sign-in fee.

iii/ While uniform DGSs' accounting standards could be seen as a preferable option, the differences between national accounting standards are not an obstacle for the calculation of sign-off and sign-in fees. The only requirement is that accounting standards should be applied in a constant and consistent way, not making any specific rules for transfers. The same logic should apply to the internal accounting and responsibility-sharing regulation implemented by a DGS to handle transfers occurring in between two closing of accounts.

iv/ When a DGS ringfences its past interventions, the sign-off fee should include the clearing of the ringfenced operations with the transferring bank and a sign-off fee for the section of the Fund set for future crises. For the receiving DGS, as the transferring bank is not held liable for past interventions, the sign-in fee will be limited to the section of the Fund set for future crises.

vi/ The sign-off/ sign-in mechanism as expressed in Section 4B appropriately works for both flow-based and stock-based contribution systems, and then also in case the transferring and receiving DGSs use different contribution models. They lead to the same results. In a stock-based contribution system, sign-off and sign-in fees are identical to the stock-based contribution redeemed to, or raised on the transferring bank.

vii/ In case the sign-off fee is negative, it should be paid by the transferring bank to the transferring DGS before leaving. A negative sign-in fee should be paid (or credited) by the receiving DGS to the transferring bank.

viii/ As an important complement to the general rule for the proposed sign-off/ sign-in fee mechanism, in case the sign-off fee is higher than the financing need of the receiving DGS, the transferring DGS should keep the difference so to avoid an inappropriate competition to the detriment of DGSs with higher reserves requirements.

ix/ A renewed transfer of resources system with sign-off and sign-in fees might also further address the treatment of partial transfers of risk bases between two DGSs.

x/ To solve all possible cases that could occur (ringfencing, negative sign-off fees, credit for payment etc.) with a single method, the transfer of resources would better go through the transferring bank, with an exchange of information between the two DGSs, under the process defined in paragraph 43.

CONCLUSION

The case of a change of affiliation between two DGSs has been addressed but not fully handled by the transfer of the last 12-month contribution rule set by the 2014 DGSD.

An impact analysis of a transfer between two DGSs led to focus on an adequate indicator of the implied changes: the Net Value of each DGS in proportion of their risk bases.

Except for a return to the regime prior to the DGSD (option A), sign-off fees and sign-in fees could be put in place to reset this indicator at its original level, either for the receiving DGS only (option B), for the transferring DGS only (option C) or for both DGSs, with the transferring bank funding a potential mismatch (option D).

The sign-off fee can be calculated for option C under an historical net contribution approach. For all options, sign-off and sign-in fees could be simply assessed as the share of the Net Value of the Fund reflecting the relative risk base of the transferring bank. As a complement, the sign-off fee given up by the transferring DGS should be limited to the level of the financing need of the receiving DGS.

The approach developed here would suit for all EEA DGSs, whatever the accounting standards, past operations' ringfencing or contribution systems.

As a possible extension of this analysis, some further reflection could also be engaged about the current formulation of the target level requirement as a proportion of the covered deposit base.

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APPENDIX A – Are deposit insurers non-life insurers? Funding models

Deposit insurers' activities are quite close to non-life insurers' ones: they basically compensate for damages incurred, thanks to the contributions they collect.

1 - Going one step further, with regard to the question whether deposit insurers are non-life insurers, it must first be defined who the policyholder is, who the insured party and who the insurer. The two following approaches, not excluding others, could be developed.

In the first approach, the insured party is the depositor, who, in the event of a bank failure, receives compensation up to the coverage level. The premiums he pays for this coverage can theoretically be seen as the difference between a low interest rate for covered deposits and a higher interest rate for uncovered deposits (of course, some other depositors' behaviour patterns could be imagined and observed; the model may need further deepening). The deposit insurer's member banks in turn pay (a part of) this difference (lower interest expenses) to the Fund, in accordance to the risk-based premiums. This approach echoes the provisions of a typical property insurance policy (identity of insured and injured party).

In a second approach, the member banks of a DGS have a legal obligation to take out a third-party liability insurance. Premiums for this are collected, corresponding to the risk-based premiums. The annual payment of those premiums could be interrupted in case the DGS has reached its target level, while the insurance remains in force. This may lead to see banks' contributions as an equivalent of a capital requirement. Underlining the same logic, if the existing resources of the deposit insurer turn insufficient to handle a bank insolvency, the other member banks must pay additional contributions, then assuming the role of co-insurers: the deposit insurer is then the trustee of the DGS-funds while, from an economic point of view, only the member banks bear the insurance risk.

As a further consequence, the date of the damage (failure of a bank) always applies for the bearing of the insurance risk. These obligations or claims (recoveries) remain in force even after a possible departure from the deposit insurer: a liability (e.g. repayment of a loan contracted for the financing of a payout) or a potential claim (e.g. right over the recoveries). Likewise, banks that only become members of a deposit insurer after the date of an insolvency do not bear any obligation arising from this insolvency (repayment of loans), neither hold any claim over the insolvent bank's assets. Then, within this approach, the net asset value of the deposit insurer can only be positive (see below and Appendix B).

2 - In terms of financing, deposit insurers and non-life insurers typically use the same generic calculation formula, with a premium rate, a risk factor and an insured value:

$$C_{i,n} = CR \times ARW_{i,n} \times CD_{i,n}$$

The only possible difference introduced in this formula for (at least EEA) deposit insurers is the use of an adjustment coefficient μ_n to make the link between a target of resources for

the year, only based on covered deposits ($CR_n \times \sum_i CD_{i,n}$), and a sum of individual contributions which incorporate both covered deposits and risk factors²⁶.

In any case, beyond those elements, many significant features make deposit insurers and non-life insurers quite different. For instance:

- deposit insurers usually face a small number of large claims rarely happening, with a chance to recover all or part of the claims, while non-life insurers often compensate a large number of small claims regularly occurring, with little hope for any recovery;
- deposit insurers can raise contributions and replenish reserves after a damage has occurred – member banks being unable to exit the scheme and escape the obligation to pay contributions;
- deposit insurers also benefit from preventative tools and resolution instruments as a mechanism for exogenous risk limitation, which in turn impact the level of reserves it will maintain;
- deposit insurers must deal with specific moral hazard issues, which the usual (flow-based) contribution system of non-life insurers can hardly mitigate, especially when they stop accumulating reserves;
- last, but not least, deposit insurers cover the clients of their (contributing) members, not the members themselves.

With no surprise, **the funding models of the deposit insurers and non-life insurers may then also differ**, with deposit insurers in a position, if so needed, to introduce entry fees, to raise ex-post contributions or to stop raising contributions – all features out of reach for non-life insurers. Stock-based contribution systems for deposit insurers (Appendix G) and, as a matter of fact, transfers of contributions bring another illustration of those possible differences in the funding models.

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²⁶ With $C_{i,n} = CR_n \times ARW_{i,n} \times CD_{i,n} \times \mu_n$ and $\mu_n = \frac{\sum_i CD_{i,n}}{\sum_i ARW_{i,n}} \times CD_{i,n}$.

APPENDIX B – Qualified Available Financial Means and Net Value

1 - Accounting correspondence between QAFM and NV

The same simplified accounting presentation as in the core text is used here to illustrate the differences between available financial means and net value.

The term “net value” has been used here preferably to the usual “net asset value” accounting term. Because accounting standards and terminology may differ within the EU, the net asset value for a deposit insurer could include or not some elements and then may change the way conclusions could be formulated (see Appendix F).

Balance sheet of the Fund

Assets	Liabilities
Net Expected Recoveries	Net Value (NV)
Non-compliant Assets, incl: claims on member banks non compliant investments cash & investment on borrowed money	
Qualified Available Financial Means (QAFM)	Debt and Borrowings

The notional imputation of the Net Value to member banks does not mean that they become the shareholders of the Fund. Their share in the Net Value rather illustrates their responsibility in the deposit insurance system and the level of risks they generate. The higher the share, the higher the costs both in peace and in crisis times.

2 - Respective levels of QAFM and NV

There is no immediate relation between the amount of QAFM and the amount of the NV. All depends on the Fund’s interventions and financing.

The “non-compliant assets” mentioned above will be supposed here to be transitory and non-significant, which is usually the case. The presentation of the Fund’s balance sheet may then be further simplified, and expressed as follows:

Assets	Liabilities
Net Expected Recoveries	Net Value (NV)
Qualified Available Financial Means (QAFM)	
	Debt and Borrowings

QAFM could be lower than the NV. This is the case for instance when the Fund has used a part of its QAFM to finance an intervention, but still records some net expected recoveries on the asset side of its balance sheet. Generally speaking, QAFM are lower than the NV when the Fund has borrowed less than the net expected recoveries (and especially if the Fund has not borrowed money for its interventions).

Conversely, the NV could be lower than the QAFM, for instance in case the Fund has borrowed the whole amount of an intervention and record expected recoveries for a lower amount than the borrowing. More generally speaking, the NV is lower than QAFM when the Fund has borrowed more than the net expected recoveries.

3 – Specific crisis situations

The Fund's balance sheet could offer a quite different look after the DGS had to intervene.

During a compensation process and for a transitory period, the Net Value of the Fund will immediately take the full impact of the compensations due to the failed bank's depositors, while the QAFM will progressively decline with the actual compensations made along the time.

This transitory mismatch aside, if the Fund had to use all its QAFM, or even ex post contributions, and had also to borrow money to face a specific crisis, then its QAFM are reduced to zero and **its Net Value has become negative²⁷**. Later on, after a new call for contributions, it may prefer securing some liquidities (QAFM) before reimbursing all its debt, so as to be able to face another possible crisis.

The typical balance sheet of the Fund in such a situation will then appear as follows, with a negative Net Value as well as (positive or nil) QAFM on the asset side:

Assets	Liabilities
Net Expected Recoveries	Debt and Borrowings
Qualified Available Financial Means (QAFM)	
Negative Net Value (NV)	

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²⁷ Depending on the accounting standards for the Fund, a potentially negative Net Asset Value may be balanced by a claim on member banks also on the asset side. See Appendix F.

APPENDIX C – Determination of historical net contributions

1 - Accurate calculation

As mentioned in Section 4 of the research paper, the historical amount of contributions of a member bank is the total amount of contributions paid by that bank since it has become a member, net of the share of that member in the profit and loss recorded through the Fund's activities during the period.

This calculation has to be done for each existing member bank of the Fund, so to allocate its entire Net Value to the whole population.

In a rigorous manner, the DGS needs then, from the date of its creation, to take into account for all members, year by year and step by step: flows of contributions paid; then adjustments of the membership base during the year; last, allocation of the profit and loss account (payouts, recoveries, associated provisions, investment income etc.) end of the year. This can be mapped for a given year as follows:

*Step 1: **Net Values for each bank end of year n-1** (0 at inception)*

+ Flows of contributions paid by each bank during year n

= *Intermediary Values 1 for year n*

Step 2: Treatment of mergers and exits during year n

Merging banks become one unique member

Intermediary Values 1 of exiting members are allocated to remaining members pro rata their own Intermediary Values 1

= *Intermediary Values 2*

Step 3: Allocation of profit and loss of year n

Pro rata Intermediary Values 2

= **Net Values for each bank end of year n**

Once done for the past, the same methodology will be used year after year in the future quite easily.

2 - Possible approximations

Such a rigorous exercise is feasible²⁸, but could be demanding, especially for long-standing deposit insurers, or for those who have not switched to a stock-based contribution system. Nevertheless, some shortcuts could be applied for defining the first allocation of the Net Value, depending on the regulations, conventions or standards the DGS will set for itself:

- Instead of inception, the starting point could be the last time the Fund was depleted or nearly depleted if it has been the case;
- The methodology could be applied from a given date, not too distant in the past, as if the Fund was depleted at that time, and the original Net Value of the Fund at that date be allocated along the proportions calculated during the following period;

²⁸ The French DGS has applied this on a retroactive 17-year period.

- The first allocation could also be made in proportion of the average risk-weighted covered deposit bases ($ARW_{i,n} \times CD_{i,n}$) along the last few years;
- Even easier, the first allocation could be made in proportion of the cumulated flows of contributions raised during the last few years.

As for accounting standards, an essential point is to determine from start a convention in an appropriate, objective and non-circumstantial way, applied the same way to all member banks.

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APPENDIX D – Determination of sign-off and sign-in fees under the Net Value ratio approach

1 – The Net Value ratio approach

The Net Value of the Fund remains unchanged in proportion of its risk base ($\sum_i ARW_i \times CD_i$), before and after the transfer. This leads to define the sign-off and sign-in fees the following way (with "tb" to designate the transferring bank):

For the sign-off fee (transferring DGS):

$$Net\ Value\ Ratio_n = \frac{NV}{\sum_i ARW_i \times CD_i} = \frac{NV - Sign\ off_{tb}}{(\sum_i ARW_i \times CD_i) - (CD_{tb} \times ARW_{tb})}$$

For the sign-in fee (receiving DGS):

$$Net\ Value\ Ratio_n = \frac{NV}{\sum_{i \neq tb} ARW_i \times CD_i} = \frac{NV + Sign\ in_{tb}}{(\sum_{i \neq tb} ARW_i \times CD_i) + (CD_{tb} \times ARW_{tb})}$$

The sign-off and sign-in fees can then be easily calculated, leading to:

$$Sign\ off_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_i ARW_i \times CD_i}$$

$$Sign\ in_{tb} = NV \times \frac{CD_{tb} \times ARW_{tb}}{\sum_{i \neq tb} ARW_i \times CD_i}$$

For the record, it has to be kept in mind that the transferring and receiving DGSs use each their own methodology to assess risk factors, also in relation with their own membership. Therefore, the risk factor of the transferring bank is not presumed to be the same in the sign-off fee formula for the transferring DGS and in the sign-in fee formula for the receiving DGS.

2 – Generalisation to the case where risk factors change with the transfer

The above formulas imply that risk factors are defined by the DGS in an absolute way, meaning that the transfer of a bank does not change their calculation. That is the case when following the EBA Guidelines on the calculation of contributions, either for the bucketing, or for the sliding scale methods. Nevertheless, if it were considered that the transfer could lead to changes in the non-transferred members banks' risk factors, generalising the approach **for both absolute and relative risk factors** only requires to write the initial conditions as follows, with 'b' for before the transfer and 'a' for after the transfer:

For the sign-off fee:

$$Net\ Value\ Ratio = \frac{NV}{\sum_i ARW_i^b \times CD_i} = \frac{NV - Sign\ off_{tb}}{\sum_{i \neq tb} ARW_i^a \times CD_i}$$

For the sign-in fee:

$$Net\ Value\ Ratio = \frac{NV}{\sum_{i \neq tb} ARW_i^b \times CD_i} = \frac{NV + Sign\ in_{tb}}{\sum_i ARW_i^a \times CD_i}$$

leading to:

$$Sign\ off_{tb} = NV \times (1 - \frac{\sum_{i \neq tb} ARW_i^a \times CD_i}{\sum_i ARW_i^b \times CD_i})$$

$$Sign\ in_{tb} = NV \times (\frac{\sum_i ARW_i^a \times CD_i}{\sum_{i \neq tb} ARW_i^b \times CD_i} - 1)$$

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APPENDIX E – Impact of the sign-off/ sign-in fee mechanism on the QAFM ratio

1 – Impact of a transfer depending on QAFM and NV respective levels

While aiming at keeping the financial situation of the DGS unchanged, sign-off and sign-in fees may also directly affect the level of the QAFM ratio in an extent which depends, among other factors, on the respective levels of QAFM and Net Value of the Fund.

This can be made clear with a simplified situation where the transferring bank (tb) shows an “average” risk factor, meaning here that its risk factor represents the average risk factor of the whole population of member banks ($ARW_{tb} = \sum_i ARW_i \times CD_i / \sum_i CD_i$) and that its transfer will not change the risks of other member banks ($ARW_i^a = ARW_i^b$). This leads the risk base to stay the same in proportion of the deposit base:

$$ARW_{tb} = \frac{\sum_i ARW_i \times CD_i}{\sum_i CD_i} = \frac{\sum_{i \neq tb} ARW_i \times CD_i}{\sum_{i \neq tb} CD_i}$$

i/ Transferring DGS

The formulation of the sign-off fee can then be simplified:

$$Sign\ off_{tb} = NV \times \left(1 - \frac{\sum_{i \neq tb} ARW_i^a \times CD_i}{\sum_i ARW_i^b \times CD_i} \right) = NV \times \frac{ARW_{tb} \times CD_{tb}}{\sum_i ARW_i \times CD_i} = NV \times \frac{CD_{tb}}{\sum_i CD_i}$$

The QAFM ratio ($ratio_{qafm}^b = \frac{QAFM}{\sum_i CD_i}$) becomes:

$$ratio_{qafm}^a = \frac{QAFM - Sign\ off_{tb}}{\sum_i CD_i} = \frac{QAFM \times \sum_i CD_i - NV \times CD_{tb}}{\sum_i CD_i \times (\sum_i CD_i - CD_{tb})}$$

In case $QAFM > NV$, then:

$$ratio_{qafm}^a > \frac{QAFM \times \sum_i CD_i - QAFM \times CD_{tb}}{\sum_i CD_i \times (\sum_i CD_i - CD_{tb})} = \frac{QAFM}{\sum_i CD_i} = ratio_{qafm}^b$$

When $QAFM < NV$, then:

$$ratio_{qafm}^a < \frac{QAFM \times \sum_i CD_i - QAFM \times CD_{tb}}{\sum_i CD_i \times (\sum_i CD_i - CD_{tb})} = \frac{QAFM}{\sum_i CD_i} = ratio_{qafm}^b$$

Then, **the transferring DGS's QAFM ratio increases with the transfer of an average bank if QAFM are higher than the Net Value; and decreases if QAFM are lower.**

i/ Receiving DGS

The sign-in fee can be simplified as follows:

$$Sign\ in_{tb} = NV \times \left(\frac{\sum_i ARW_i^a \times CD_i}{\sum_{i \neq tb} ARW_i^b \times CD_i} - 1 \right) = NV \times \frac{ARW_{tb} \times CD_{tb}}{\sum_{i \neq tb} ARW_i \times CD_i} = NV \times \frac{CD_{tb}}{\sum_{i \neq tb} CD_i}$$

The QAFM ratio ($ratio_{qafm}^b = \frac{QAFM}{\sum_{i \neq tb} CD_i}$) becomes:

$$ratio_{qafm}^a = \frac{QAFM + Sign\ in_{tb}}{\sum_{i \neq tb} CD_i + CD_{tb}} = \frac{QAFM \times \sum_{i \neq tb} CD_i + NV \times CD_{tb}}{\sum_{i \neq tb} CD_i \times (\sum_{i \neq tb} CD_i + CD_{tb})}$$

In case $QAFM > NV$, then:

$$ratio_{qafm}^a < \frac{QAFM \times \sum_{i \neq tb} CD_i + QAFM \times CD_{tb}}{\sum_{i \neq tb} CD_i \times (\sum_{i \neq tb} CD_i + CD_{tb})} = \frac{QAFM}{\sum_{i \neq tb} CD_i} = ratio_{qafm}^b$$

When $QAFM < NV$, then:

$$ratio_{qafm}^a > \frac{QAFM \times \sum_{i \neq tb} CD_i + QAFM \times CD_{tb}}{\sum_{i \neq tb} CD_i \times (\sum_{i \neq tb} CD_i + CD_{tb})} = \frac{QAFM}{\sum_{i \neq tb} CD_i} = ratio_{qafm}^b$$

The receiving DGS's QAFM ratio decreases with the inclusion of an average bank when QAFM are higher than the Net Value; and increases when QAFM are lower.

2 – Qualitative analysis of the impact on the QAFM ratio

This paragraph further explores, in cases where sign-off or sign-in fees have altered the QAFM ratio, in which extent the reset of QAFM should be considered as detrimental for the non-transferred member banks.

For the sake of simplicity, the scenario used here is one where the transferring DGS and the receiving DGS exactly meet the 0.8% liquidity requirement before the change of affiliation, but not after the change and the application of sign-off and sign-in fees. This example could of course be extended to a mere decrease or increase of the QAFM in proportion of the covered deposits, compared to their levels before the change of affiliation, where multiple factors will play at the same time.

It is worth mentioning that a QAFM ratio terminating above the 0.8% target level, either for the transferring DGS or the receiving DGS, does not give any ground to increase the level of the sign-off fee or to limit the level of the sign-in fee (in both cases for the benefit of the transferring bank): actually, taking advantage of this leeway compared to the regulatory threshold would unfairly deprive other banks of a part of the Net Value they have contributed to (see also Section 2).

It is also interesting to notice that the evolution of the QAFM ratio, either above or below the prior 0.8% level, is not necessarily inadequate or unwelcome per se, as shown by the following development.

i/ Transferring DGS

QAFM terminates above the prior 0.8% level

The DGS ends then in a better situation regulatory speaking. Even if this increase of the QAFM ratio can result from a more complex combination of factors, two simple cases illustrate the trends at work:

- the leeway could come from a situation where the QAFM of the Fund are higher than its Net Value, meaning that the Fund has borrowed more than the net expected recoveries²⁹. In such a case, it may make sense for the DGS, to keep that excess of QAFM to face the repayment gap in the future;
- for the transferring DGS, this regulatory margin could also be the outcome of the transfer of a low-risk bank³⁰. It could be legitimate for the DGS in this situation to keep a higher QAFM ratio in order to better cope with the (higher) risks of its remaining members, as it would the case if the regulatory ratio was defined in comparison with the risk base rather than the covered deposit base.

Both cases look favourable and allow the DGS to take decisions within a wide range of options: keeping its new QAFM level, using some QAFM to repay a loan, redeeming some contributions if possible.

QAFM terminates below the prior 0.8% level

The DGS will have to replenish its reserves to cover the residual gap with the target level.

- This residual shortfall of QAFM could stem from QAFM of the transferring DGS lower than the Net Value³¹, then reflecting a borrowing lower than the net expected recoveries, or even nil. The DGS can obviously raise more contributions to fill the shortfall; but it could also in this situation reconsider the original financing of its interventions; or rely, depending on its timing, on the excess cash expected from the liquidation of the failed assets after the repayment of its borrowings.
- The shortfall could also be the consequence of the departure of a high-risk bank³². A lower QAFM would then not be unjustified, given the better average risk of the Fund; but, despite a correctly calibrated sign-off fee, members banks of the DGS will still have to cover the residual shortfall due to the formulation of the QAFM ratio in proportion of the covered deposit base.

As a whole:

Transferring DGS

QAFM	because of	situation	analysis	appreciation
increases	QAFM > NV	borrowing higher than expected recoveries	excess of QAFM may help financing this borrowing gap	QFAM
increases	exit of a low-risk bank	remaining member banks riskier on average than the transferring bank	excess of QAFM fits with a riskier membership	adequate
decreases	NV > QAFM	borrowing lower than expected recoveries	additional borrowing practicable; expected recoveries net of repayment could also fill the regulatory QAFM gap over time	not inadequate
decreases	exit of a high-risk bank	remaining member banks less risky on average than the transferring bank	QAFM gap fits with a less risky membership, but need for restoring QAFM	adequate

²⁹ See tables in section 5A

³⁰ Same

³¹ Same

³² Same

ii/ Receiving DGS

QAFM terminates above the prior 0.8% level

Again, the DGS ends then in a better regulatory situation. Beyond this welcome outcome:

- the margin compared to the regulatory threshold could come from QAFM lower than the Net Value. With borrowings being then below net recoveries³³, the surplus in the QAFM ratio looks certainly welcome, even if not needed per se. Again, the DGS benefits from a wide range of options to handle this situation.
- The surplus can also come from the transfer of a high-risk bank³⁴. Here a QAFM ratio higher than before can be justified but should be left to the free decision of the DGS.

QAFM terminates below the prior 0.8% level

Again, the DGS needs to raise reserves to fill the gap not covered by the sign-in fee.

- If this shortfall of QAFM stems from QAFM of the receiving DGS higher than the Net Value³⁵, then with borrowings on the liability side in excess of the net expected recoveries on the asset side. In these conditions, additional financing may look already needed to fill the gap between expected recoveries; raising some more contributions to reset the QAFM at the 0.8% threshold comes then as an extra charge.
- The shortfall could also be the consequence of the arrival of low-risk bank³⁶. As for the departure of a high-risk bank for the transferring DGS, a lower QAFM would fit with a better average risk of the Fund; but the residual shortfall has still to be covered with additional contributions for the part not covered by the sign-in fee.

As a whole:

Receiving DGS

QAFM	because of	situation	analysis	appreciation
increases	NV > QAFM	borrowing lower than expected recoveries	excess of QAFM not needed per se, could be redeemed if appropriate	not harmful
increases	incorporation of a high-risk bank	transferring bank riskier than the average of initial member banks	excess of QAFM fits with a riskier membership	adequate
decreases	QAFM > NV	borrowing higher than expected recoveries	additional financing needed while contributions already needed to fill the expected recoveries gap	unwelcome
decreases	incorporation of a low-risk bank	transferring bank less risky than the average of initial member banks	QAFM gap fits with a less risky membership, but need for restoring QAFM	adequate

*

³³ Same

³⁴ Same

³⁵ Same

³⁶ Same

APPENDIX F – Accounting patterns, Net Value and Ringfencing

This appendix explains the differences between two types of accountings pattern – the trustee-type and the corporate-type –, precises the notion of Net Value to be used in both cases and draws the consequences of the accounting ringfencing of past crises by DGSs.

1 - Funds' accountings patterns: trustee-type vs corporate-type

At least, two different patterns for Funds' accountings can be considered in the European landscape. For facilitating their use and while those definitions are not standardised, they will be qualified here as "trustee-type" accountings and "corporate-type" accountings.

i/ "Trustee-type" accountings

Some EEA DGSs see themselves as the trustee of the DGS-funds while, from an economic point of view, only the member banks bear the insurance risk, all assuming the role of co-insurers of banking failures (see Appendix A).

As a consequence of this approach, for those DGSs, the net asset value of the Fund cannot be negative. When the Fund is depleted, had to borrow money to finance an intervention and that this borrowing is higher than expected recoveries, then the potentially negative own funds are balanced on the asset side of the balance sheet by receivables, i.e. by contributions to be raised in the future on member banks to repay the borrowing.

ii/ "Corporate-type" accountings

For other Funds, which see themselves as direct insurers, not as trustees, the accounting standards allow for negative values of the net asset value. In the same circumstances than above (Fund depleted, money borrowed for the financing of the intervention, too limited recoveries), no receivables on member banks are recorded on the asset side.

The net asset value then turns negative, as it would do for any corporate. This value will only be restored when contributions are raised in the future to reimburse that part of the loan that expected recoveries cannot help to pay back.

2 - Net Value vs Net Asset Value

Those two accounting patterns have a direct impact on the net asset value of the Fund which could be seen with or without receivables.

Therefore, another concept than the net asset value has to be defined to refer to the same net equity of the Fund when calculating the sign-off and sign-in fees, whatever the accounting standards are.

This is the '**Net Value**'. The Net Value represents the net asset value, less any possible non-nominative receivables³⁷, if any, recorded on member banks to finance the future repayment of the money borrowed for the financing of an intervention. The case of nominative receivables is referred to below.

3 – Ringfencing of past events

i/ Ringfencing and nominative receivables

While this could be done by corporate-type DGSs, the DGS-as-trustee approach leads or can lead to put in place a ringfencing of past crises: banks who belong to the DGS at the time of a given crisis are the only ones held financially liable for this crisis, both on the liability side and on the asset side.

With such a ringfencing, any member bank is acknowledged through a nominative receivable, at the time of the failure and at any time later on, a specific share of the loans contracted to finance an intervention, as well as a specific share of the expected recoveries. Those receivables appear on the asset side of the Fund's balance sheet, but, being nominative, they also appear in the balance sheet of the concerned member banks and impact their net equity.

The DGS can then display two separate accountings, accountings for each past event on one hand, and accountings for future events on the other hand. In terms of available financial means, there cannot be any QAFM for the past events section, as all liquidities, if any, are encumbered and due to the concerned member banks. QAFM will only appear in the section for future crises.

Fund accountings including ringfencing of past events

Assets	Liabilities
Future events	
Non-compliant Assets, incl: claims on member banks non compliant investments cash & investment on borrowed money	Net Asset Value (NAV)
Qualified Available Financial Means (QAFM)	Debt (not related to past events)
Ringfencing of past events	
Net Expected Recoveries	Borrowing (in relation with past events)
Nominative Receivables on Member Banks	

³⁷ Whether this is a practice in the EEA has to be checked. Conversely, the use of nominative receivables by trustee-type EEA DGS is an acknowledged practice.

ii/ Ringfencing and changes in the membership

When ringfencing is applied and if a member bank leaves the deposit insurer, the assets and liabilities between the Fund and the bank in relation with the ringfencing have to be cleared at the time of the departure: the bank will pay or receive³⁸ the difference between the receivable it owes and its share in the expected recoveries. Conversely, a new member bank of the DGS joins a Fund pristine of any trace of past crises in terms of borrowing and expected recoveries – but possibly a Fund where QAFM have been depleted by those crises.

In the absence of any ringfencing (corporate-type of accountings)³⁹ and of any sign-off/ sign-in fee mechanism, a bank which leaves a deposit insurer leaves with no right, nor liability: it ceases to be responsible for reimbursing existing loans or restoring the level of AFM, it also loses any right on future recoveries on failed assets that have been partly financed thanks to the contributions it paid in the past. On the other hand, a new member bank immediately becomes liable for the past commitments of the Fund and will have to participate to the repayment of a loan, while also benefitting from the future recoveries on failed assets.

iii/ Ringfencing and sign-off/ sign-in fee mechanism

When a ringfencing of past events is applied with nominative receivables, the unwinding of the relations between the leaving member bank and the DGS implies two components:

- a partial sign-off fee (positive or null) for the bank, related to the section of the Fund affected to future events and along the lines set for sign-off fees in this paper;
- the clearing (positive or negative) of receivables with the bank for the part of the Fund ringfenced for past events.

In the context of this research paper, the global sign-off fee (positive or negative) which the bank will get or pay when leaving the transferring DGS for the receiving one, is the sum of those two components, as if there were not two separate accountings for past and future events.

As for the sign-in fee that the receiving DGS will apply when using a ringfencing approach, the transferring bank will only be held liable for future events and will then pay a sign-in fee calculated on the part of the Fund allocated to future events only.

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³⁸ Except in cases, if any, where the DGS's internal regulation would not allow this.

³⁹ Except with a stock-based contribution system, where contributions reflect the Net Value of the Fund, also deals with those kinds of situations (see Appendix G).

APPENDIX G – Stock-based contribution systems (“contributions©”)

1 – Flow-driven vs stock-driven

In a flow-based contribution system, where flows of contributions are calculated and paid by member banks each year, the total amount of resources contributed by any member bank over time, net of profit and losses of the Fund (this including the drain caused by interventions) could be reconstituted (see Appendix C). This gives for each member bank the stock of its net contributions, i.e. the total of its flows of contributions, net of all accountings uses.

The aggregation of all stocks of contributions of member banks is then equal to the Net Value of the Fund, or seen another way, the Net Value of the Fund could be broken down into member banks’ stocks of net contributions.

In a stock-based system, stocks guide flows, rather than the opposite as in flow-based systems. The core requirement put on banks (and the main calculation made) is directly on the level of stock expected from each member bank for a given year.

2 – Definition and calculation of stock-based contributions (contributions©)

A member's contribution© to the deposit guarantee scheme is defined as the total resources which that member has to contribute, within the total resources (Net Value) of the deposit insurer at a given time.

Another way to put it is that a stock-based contribution system is one where the resources of the Fund are totally redeemed or used, and then raised again the very same day, either at the same level or at another one.

In its simplest form, the contribution© of member i for year n , $C©_{i,n}$ is calculated as the product of its covered deposits $CD_{i,n}$, its risk factors $ARW_{i,n}$ and a contribution rate to the stocks $CR©_n$:

$$C©_{i,n} = CR©_n \times CD_{i,n} \times ARW_{i,n}^{40}$$

The formula used for a stock-based system is then the same than for a flow-based system, the difference being that:

- the formula defines the contribution as a stock;
- the premium rate is a stock-based premium rate, which gives the targeted Net Value of the Fund in proportion of the risk base for that year⁴¹;

⁴⁰ In order to limit the volatility of contributions year after year, parameters of a given year (covered deposits and risk factors) may be taken as a sliding average over several periods (e.g. three years).

⁴¹ The formula can make explicit or not a μ_n adjustment coefficient ($\mu_n = \sum_i CD_{i,n} / \sum_i ARW_{i,n} \times CD_{i,n}$), depending whether the DGS prioritizes a contribution rate $CR©_n$ and then a Net Value, in proportion of its risk base (as the case here) or in proportion of its covered deposit base (as for the QAFM regulatory requirement).

If μ_n is introduced, and in case QAFM and the Net Value are equal, then the stock-based contribution rate corresponds to the usual coverage level of the Fund (e.g. 0.5 to 0.8% targeted for 2024).

- the flow of contributions raised a given year is inferred from a comparison between the expected level of stock-based contributions of each member bank for a given year, with the level of stock-based contributions observed for each of them in the accountings of the Fund;
- then, in case the contribution[©] of a member bank for a given year is lower than the previous year, the difference is simply reimbursed by the deposit insurer – it will be balanced by higher contributions on some other banks which would have captured higher shares of the deposit base or would show a degraded risk profile.

Being linked to the Net Value of the Fund, contributions[©], once raised, record all evolutions in the life of the Fund: for instance, if the Fund has to bear a loss because of a payout, all contributions[©] will decrease proportionally. More generally, all profits and losses of the Fund impact the observed contributions[©] of member banks, i.e. the net amount they have contributed to, within the Net Value of the Fund.

At any time, the Net Value of the Fund, aggregation of all contributions[©], can be written as a proportion of its risk base:

$$NV_n = \sum_i C_{i,n}^{\odot} = CR_{\odot,n} \times \sum_i CD_{i,n} \times ARW_{i,n}^{42}$$

the proportionality coefficient being the stock-based contribution rate. This rate should be seen either ex post, when observed taking account of profits and losses of the year, or targeted ex ante, when defining the expected level of contributions[©] or Net Value for the year.

3 – Purpose and implications of a stock-based contribution system

In a stock-based contribution system, the resources that any individual member bank has contributed to the Fund fully reflect, at any given time, the risk that this member poses for the community: contributions[©] follow the evolution of the risk base, i.e. covered deposits and risk factors, where it is, with a constant match between the risk base and the composition of the resources.

This mitigates moral hazard and eliminates any disruption or discontinuity of contribution formulas when the Fund slows down or accelerates its reserves accumulation policy, or when the Fund's target size is achieved. Also, all banks have the same contribution structure: same contribution rate $CR_{\odot,n}$ in the stock of resources collected at any time.

As an implication, a shift of covered deposits (or risks) from a bank to another one leads the Fund to redeem the corresponding stock-contribution to the first bank and to raise that contribution (with possibly another risk factor) on the second one.

More generally, additions, departures, changes in activity are captured through instant adjustments of contributions[©]. This actually means that the sign-off/ sign-in fee mechanism is a built-in feature of a stock-based contribution system: for instance, the departure of a bank to another DGS naturally leads to the redemption of its contribution[©] (similar to a

⁴² In case an adjustment coefficient has been introduced and with $CR_{\odot,n}'$ being the corresponding contribution rate (instead of $CR_{\odot,n}$), the formulas give:

$$C_{i,n}^{\odot} = \mu_n \times CR_{\odot,n}' \times CD_{i,n} \times ARW_{i,n}$$

$$NV_n = \sum_i C_{i,n}^{\odot} = \mu_n \times CR_{\odot,n}' \times \sum_i CD_{i,n} \times ARW_{i,n} = CR_{\odot,n}' \times \sum_i CD_{i,n}$$

sign-off fee), the integration of a new member bank leads to raise an according contribution[©] (similar to a sign-in fee).

As a matter of fact, the formulas highlighted for sign-off and sign-in fees in Appendix D, allow to fully assimilate sign-off/ sign-in fees with contributions[©]:

$$Sign\ off_{tb} = \frac{NV}{\sum_i ARW_i \times CD_i} \times CD_{tb} \times ARW_{tb} = CR^{\odot} \times CD_{tb} \times ARW_{tb}$$

$$Sign\ in_{tb} = \frac{NV}{\sum_{i \neq tb} ARW_i \times CD_i} \times CD_{tb} \times ARW_{tb} = CR^{\odot} \times CD_{tb} \times ARW_{tb}$$

implying that:

$$Sign\ off_{tb} = C^{\odot}_{tb}$$

$$Sign\ in_{tb} = C^{\odot}_{tb}$$

This means then that the sign-off/ sign-in fee mechanism as defined in this paper in section 4B is both compatible with, and equivalent to the use of a stock-based contribution system.

Some differences between sign-off/ sign-in fees and stock-based contributions can still be made:

- the sign-off/ sign-in fees mechanism can be applied by all deposit insurers, whether they use a flow-based or a stock-based contribution system;
- stock-based contributions work for any change in the covered deposit base, even if there is no official transfer from a DGS to another DGS;
- the sign-off/ sign-in fee mechanism incorporates an adjustment when the sign-in fee is lower than the sign-off fee (see Section 5D).

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