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DIRECTORATE GENERAL JRC
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Scenario Analysis:
Estimating the effects of changing the funding
mechanisms of EU Deposit Guarantee Schemes

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Executive Summary

The European Commission has just completed the process of review of Directive 94/19/EC on Deposit Guarantee Schemes (DGS). One of the issues considered in this review is the way DGS are financed across MS. Directive 94/19/EC leaves the MS free to choose the way DGS are financed. As a result, funding mechanisms are very heterogeneous among the EU MS, ranging from schemes with regular contributions (ex-ante) to schemes which levy contributions only in case of a crisis (ex-post). Results of an open consultation prepared by the Commission Services pointed out the opinions of stakeholders concerning the harmonisation of the way DGS are financed. A clear majority of the stakeholders expressed their wishes not to harmonise financing mechanisms, arguing that harmonisation would create more costs than benefits.

Some quantitative analyses have been performed to get a more reliable view on possible effects of choosing a standardized financing system. The Unit of Econometric and Statistics Support for Antifraud (IPSC, G09) of the Joint Research Centre (JRC) produced an Interim Report investigating through a scenario analysis the effects of harmonizing the way DGS are financed.

Some of the outcomes of the Interim Report guided the Commission in drafting its Communication on DGS, appeared in autumn 2006. The Communication highlighted that *“harmonisation of funding is not impossible in financial terms, although the costs for industry would be significant in certain Member States”*. The Commission also stressed that a more comprehensive assessment of the expected benefits should include the analysis of the adequacy of current systems, in the view of a crisis with cross-border dimensions. The Commission Communication concluded that at present it is not clear whether the advantages of ex-ante funded systems outweigh the costs incurred and further research is required on this issue.

The present report is an extension of the Interim Report, in terms both of dimension of the dataset and types of analysis performed. With respect to the Interim Report, it includes a larger dataset, e.g. covering also Bulgaria and Romania. Besides this, it includes an open discussion on the collected dataset and it presents the analysis of the opportunity costs encountered by ex-ante systems. The attached annexes include a description of data collected through the survey not directly used in the scenario analysis, and give insight on the functioning of the schemes on a DGS by DGS basis.

The cost implications of harmonising the EU DGS financing system are investigated by building four scenarios and analyzing changes in the contributions of each DGS. The scenarios were defined by Commission Services after considering the information collected by means of a survey distributed across EU DGS. According to data collected, MS have been grouped into categories reflecting their fund adequacy, measured in terms of the ratio between the size of their fund and the total amount of their eligible deposits (coverage ratio). The average coverage ratio in the ex-ante EU-15 countries is around 0,52% while for new MS this ratio is higher (around 0,89%).

Three ex-ante scenarios are considered, characterized by different target levels for the coverage ratio and different definitions of the yearly premium. Two of these scenarios refer to the EU-15 MS, and one refers to the new MS. Finally an ex-post scenario with zero contributions is considered. Depending on the scenario, the contributions are defined either as a fixed percentage of the amount of deposits, or in terms of a target fund to be reached within a determined time-horizon. Although the dataset is not complete, a scenario analysis based on covered deposits is also investigated.

Results based on eligible deposits highlight that a harmonised funding system representing the EU-15 countries with a medium coverage ratio (0,84%) would raise the contributions in most of the MS. For some countries the scenario contributions range from one to nine times the 2005 contributions. Choosing a harmonised system representing the new MS with medium coverage level (0,65%) would mainly influence MS with an ex-post funding systems: only few DGS already adopting an ex-ante mechanism should increase their contributions, and the relative difference between new and 2005 contributions would be almost always less than 20%. A scenario with low coverage ratio (0,16%) would have nearly no impact on the current ex-ante systems, since their coverage ratios are higher than the target for this scenario. For these DGS future interventions would drive the contributions to maintain the fund at the target level.

Concerning DGS which currently do not adopt an ex-ante system, results show that choosing a harmonized ex-ante mechanism with low coverage ratio would imply an aggregated financial burden between 3,2 and 5,4 billion Euro cumulatively over a period of 10 years, depending on how the premium is defined. If a higher coverage ratio is chosen, this load would increase up to 25 billion Euro.

The analysis has also considered the opportunity costs that would be encountered by DGS if a uniform ex-ante system was adopted. The profits that could be gained by the DGS members have been estimated under the hypothesis of investing their contributions in a short term bond issued by the Government, or by considering the average Return On Equity (ROE). When considering the short-term investment, results highlight that the aggregated costs for the EU over a period of 10 years range between 0,3 and 1,7 billion Euro, depending on the scenarios. When dealing with the ROE, these costs vary between 1,2 and 9,3 billion Euro, depending on the scenario.

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1. Introduction

The European Commission has just completed the process of review of the Directive 94/19/EC on Deposit Guarantee Schemes (DGS). One of the issues considered in the review was the way DGS are financed across MS. The Directive 94/19/EC in its recitals states that *“it is not indispensable to harmonise the methods of financing schemes guaranteeing deposits or credit institutions themselves, given, on the one hand, that the cost of financing such schemes must be borne, in principle, by credit institutions themselves and, on the other hand, that the financing capacity of such schemes must be in proportion to their liabilities; whereas this must not, however, jeopardize the stability of the banking system of the Member State concerned...”*.

As a result, the DGS funding mechanisms are very heterogeneous among the MS. Some MS finance their scheme with regular contributions (ex-ante) whereas other schemes levy contributions only in case of crisis (ex-post). In between, there are schemes which both collect ex-ante contributions and ex-post levies with a wide variety of peculiarities.

Results of an open consultation prepared by the Commission Services¹ pointed out the opinions of the stakeholders concerning the harmonisation of the way DGS are financed. A clear majority of the stakeholders expressed their wishes not to harmonise financing mechanisms, arguing that harmonisation would create more costs than benefits.

Some quantitative analyses have been necessary to get a more reliable view on the possible effects of choosing a standardized financing system. The Unit of Econometric and Statistics Support for Antifraud (IPSC, G09) of the Joint Research Centre (JRC) produced an Interim Report² investigating through a scenario analysis the effects of harmonizing the DGS funding mechanism across the EU. Four scenarios were investigated, defined by the Commission Services after considering the information collected by means of a survey distributed across the EU DGS. The Interim Report, as well as the present study, are based on Member States' data collected through this survey; in case of missing/unavailable/confidential information best possible estimations are applied, notwithstanding the fact that possible inaccuracies and inconsistencies might arise.

Some of the outcomes of the Interim Report have already guided the Commission in drafting its Communication on DGS, appeared in autumn 2006³. The Communication has on one hand highlighted that *“harmonisation of funding is not impossible in financial terms, although the costs for industry would be significant in certain Member States”*. On the other hand, the Commission has emphasized that a more comprehensive assessment of the expected benefits should include the analysis of the adequacy of the

¹ http://ec.europa.eu/internal_market/bank/docs/guarantee/consultationpaper_en.pdf
http://ec.europa.eu/internal_market/bank/docs/guarantee/synthesis_consultation_dgs_en.pdf

² http://ec.europa.eu/internal_market/bank/docs/guarantee/report_en.pdf

³ http://ec.europa.eu/internal_market/bank/docs/guarantee/comm9419_en.pdf

current systems in the view of a crisis with cross-border dimensions. The Commission Communication has concluded that at present it is not clear whether the advantages of ex-ante funded systems outweigh the costs incurred and further analysis is required on this issue.

The present report is an extension of the Interim Report, in terms both of dimension of the dataset and types of analysis performed. With respect to the Interim Report, it includes a larger dataset, e.g. covering also Bulgaria and Romania. Besides this, it includes an open discussion on the collected dataset and it presents the analysis of the opportunity costs encountered by ex-ante systems. The attached annexes give insight on the functioning of the schemes on a DGS by DGS basis.

One issue that has not been included in the present analysis, but might influence the impact of harmonizing the way DGS are funded, is the investigation of the effectiveness of the present systems in the event of a banking crisis, eventually with cross border exposure. For instance, the estimation of the overall costs of such a crisis would show whether the present systems can face it. Such an analysis would also suggest what the ideal coverage ratio would be, and would assess whether the adoption of a robust ex-ante mechanism is actually worth compared to the cost encountered when moving from the current system. Further research should be devoted to investigating these (and potentially other) issues.

The remaining of this report is organised as it follows. The next section briefly introduces the survey prepared and distributed by the JRC to collect data on the functioning of the EU DGS. Section 3 describes the dataset used to perform the scenario analysis and illustrates the current situation in the EU DGS. Section 4 introduces the scenarios and the procedure followed for their definition. Section 5 presents the results of the scenario analysis. Section 6 analyses the opportunity costs faced by ex-ante DGS. The last section summarises the main conclusions. Five annexes are attached to the report. Annex I reports additional information per DGS such as the nature of the DGS, their supervisory authority, the list of exclusions of Annex I of Directive 94/19/EC, and the use of set-off and topping up. Annex II presents for each MS the level of coverage, the type of funding systems adopted and it compares the reasons for these choices. Summary tables per DGS describing their main characteristics are provided in Annex III. Annex IV and Annex V consist of the list of definitions and the survey distributed to the EU DGS.

2. Survey

In order to perform the scenario analysis, a survey was prepared by JRC to collect DGS data on a DGS by DGS basis. The survey, which is included in Annex V of the present report, concentrated not only on the aspects relevant to the analysis of the way DGS are financed, but aimed at a more general overview of the DGS functioning across MS. The European Forum for Deposits Insurers (EFDI)⁴ guided the JRC in drafting the survey and provided JRC with the details of contact persons for each DGS⁵. JRC presented the survey to the EU DGS members of EFDI at the EU subgroup EFDI meeting held in Berlin in June 2006. At this meeting the EU DGS members of EFDI also had the option to discuss their answers at a JRC help desk.

JRC had the chance to present some results of the scenario analysis during the Annual Meeting of EFDI, held in Palermo in November 2006. A second help desk was set up at this meeting in order to ask DGS representatives for confirmation on data, check on confidentiality issues, and clarify some doubts on information to be included in the final report.

Unless specified otherwise, data collected with this survey are the source for the analysis presented in the next sections.

⁴ <http://www.efdi.net/>

⁵ JRC thanks the EFDI for the support provided in preparing and distributing the survey across its EU members.

3. The current situation

This section presents some data collected through the survey, focussing on the information relevant for the definition of the scenario analysis, including the levels of coverage applied in the EU, the amount of deposits, the size of the DGS funds, and the DGS income and expenditures. The last paragraph opens a discussion on the database built through the survey and on the types of data that might be needed by the EC for future reviews of the DGS Directive.

Note that the year of reference for the analysis is 2005. This implies that relevant data on deposits are as of 2004 (in general contributions are calculated using data of the previous year), data on the size of the fund is as of 2004 (the fund of 2005 includes 2005 contributions), while data on the contributions are as of 2005. However, in the next section (level of coverage) the current situation is presented.

3.1. Level of coverage

Directive 94/19/EC defines a minimum level of coverage of € 20.000. Each MS is free to choose the maximum level of coverage. In a tentative approach to understand if the choice of a particular funding mechanism is related to the level of coverage chosen in a country, some information on the levels of coverage applied across the EU has been collected.

The levels vary across MS ranging from the minimum level of coverage of € 20.000 in five MS (BE, GR, ES, LU, AT) to € 103.291 in Italy. Note that three new MS (EE⁶, LV⁷, and LT⁸) are still in a transitional period for full adoption of the Directive and are allowed a lower level of coverage than the minimum.

Directive 94/19/EC allows in addition the possibility of coinsurance. This option gives the MS the opportunity to deduct a certain percentage from the amount to be reimbursed. In this report, the guaranteed amount obtained after applying coinsurance is referred to as payout limit. If no coinsurance is applied, the level of coverage equals its payout limit. Figure 1 shows for each country the level of coverage (grey bars) and the payout limit (white bars) currently applied across MS. Coinsurance is applied in twelve MS (CZ, DE, EE, IE, CY, LT, HU, MT, AT⁹, PL, SK, and UK). All of them use 10% coinsurance but four MS reimburse entirely deposits up to a fixed amount¹⁰. Table 1 shows some statistics on the coverage level and payout limit.

For some examples on the differences between the level of coverage and the payout limit Annex IV can be consulted. The table in Annex II reports for each MS the level of coverage (column 2), the payout limit

⁶ For Estonia, according to the transitional period agreed, the guarantee and compensation limit for deposits shall correspond to the limit of € 20.000 by the 31st of December 2007 at the latest. A limit of € 14.203 is currently applied.

⁷ For Latvia, according to the transitional period agreed, the guarantee and compensation limit for deposits shall correspond to the limit of € 20.000 by the 1st of January 2008. A limit of € 15.000 is currently applied.

⁸ For Lithuania, according to the transitional period agreed, the guarantee and compensation limit for deposits shall correspond to the limit of € 20.000 by the 1st of January 2008. A limit of € 17.377 is currently applied.

⁹ In Austria 10% coinsurance is applied only to legal entities.

¹⁰ In Lithuania, Hungary, Poland, and UK deposits up to respectively € 2.896, € 3.955, € 1.000, and € 2.918 are entirely covered.

(column 3), and the motivations for choosing this level (column 4). The motivations for the choice of the level of coverage provided by MS are very general and do not highlight any connection with the type of funding mechanism applied (columns 5 and 6 of the table).

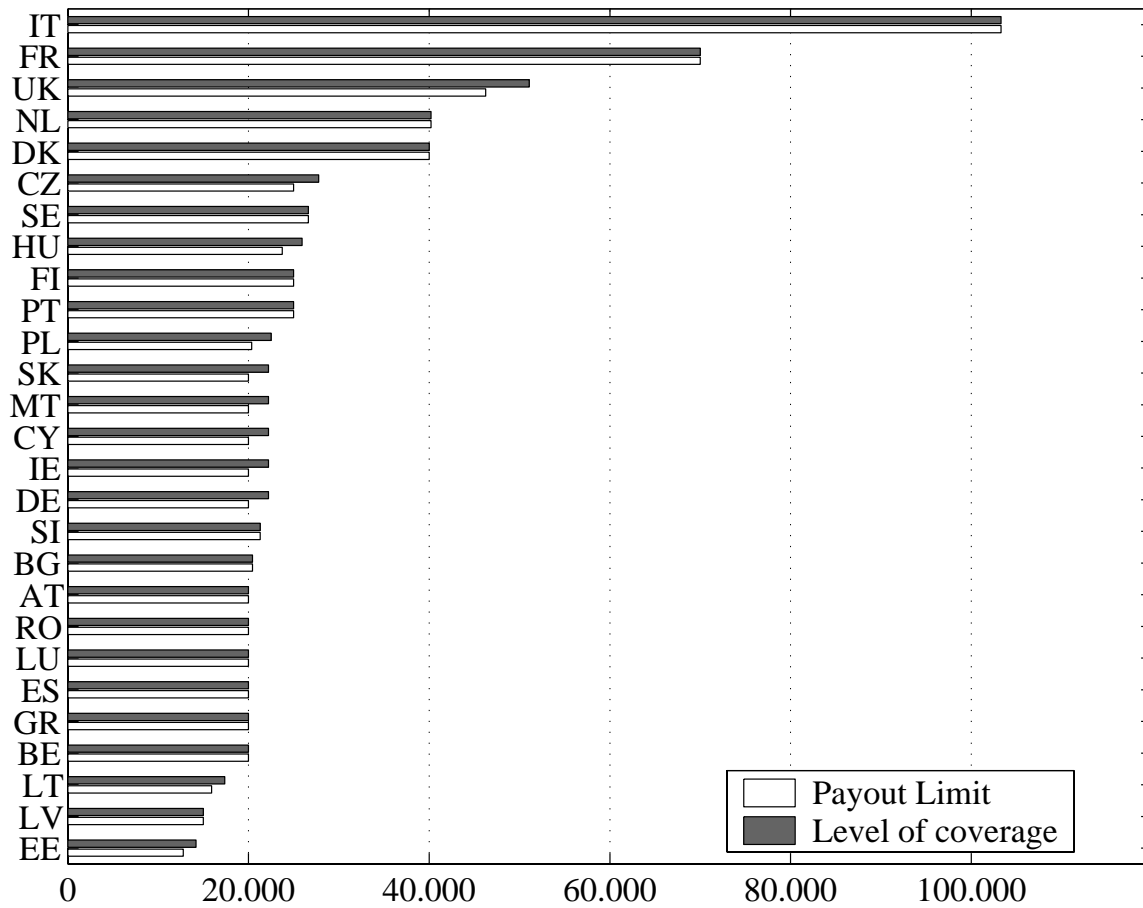


Figure 1: Bar plot of the levels of coverage and payout limits currently applied across the EU MS
Austria applies 10% coinsurance to legal entities; the payout limit is € 18.000 for this category.

Table 1: Statistics on the level of coverage and payout limit as of 01/01/2007.

	Coverage Level (€)			Payout Limit (€)		
	Average	Standard Deviation	Median	Average	Standard Deviation	Median
EU-27	28.772	19.036	22.222	27.812	19.131	20.000
EU-15	35.043	23.786	25.000	34.426	23.766	25.000
New MS	20.932	3.972	21.758	19.544	3.465	20.000

Source: Survey data.

3.2. Data on deposits

The crucial data for the scenario analysis consist of data on the amount of deposits, because they are the basis for the calculation of the contributions to be collected. The existing schemes are currently considering different amounts of deposits to define their contributions. Some DGS consider the total amount of deposits of their members, excluding those deposits left out from any repayment by virtue of Article 2 of the Directive¹¹. In the present report, this amount will be referred to as total amount of deposits.

Since Directive 94/19/EC allows MS to exclude from guarantee certain classes of deposits¹², other MS define the premium leaving out the categories of deposits not repayable under their national law. In the present report, the total amount of deposits obtained after the application of these exclusions will be referred to as total amount of eligible deposits. More details on the exclusions applied by each MS can be found in Annex I.

Finally, some countries take as basis for the premium the amount of deposits obtained from the eligible deposits once the level of coverage in their national legislation is applied. In the present report, this amount will be referred to as total amount of covered deposits. Note that the real exposure faced by the DGS is the amount of covered deposits, since it represents the amount of money which is actually reimbursable by the DGS.

In order to differentiate between these types of deposits and build a complete dataset, the list of definitions and example in Annex IV has been attached to the survey. Each DGS was asked to provide data on the total amount of deposits, total amount of eligible deposits, and total amount of covered deposits for the years 2000-2005. Table 2 (columns two to four) reports for each DGS these amounts for 2004, the year with the widest information. It also reports in the last column the size of the fund for the DGS cumulating members' contributions.

¹¹ According to Article 2 of the Directive 94/19/EC: "The following shall be excluded from any repayment by guarantee schemes:

- a) subject to Article 8 (3), **deposits made by other credit institutions on their own behalf and for their own account,**
- b) all instruments which would fall within the definition of 'own funds' in Article 2 of Council Directive 89/299/EEC of 17 April 1989 on the **own funds of credit institutions,**
- c) deposits arising out of transactions in connection with which there has been a criminal conviction for money laundering as defined in Article 1 of Council Directive 91/308/EEC of 10 June 1991 on prevention of the use of the financial system for the purpose of money laundering."

¹² According to Article 7(2) of the Directive 94/19/EC "Member States may provide that certain depositors or deposits shall be excluded from guarantee or shall be granted a lower level of guarantee. Those exclusions are listed in Annex I of the Directive."

Table 2: Deposits and fund size in thousands of Euro (T€) for 2004 per DGS.

	Total amount of deposits (T€)	Total amount of eligible deposits (T€)	Total amount of covered deposits (T€)	Fund size (T€)
BE	443.016.000	200.641.000	N.A.	694.800
BG	8.835.015	8.142.503	4.456.767	130.976
CZ	52.033.000	48.388.000	27.299.000	157.500
DK	136.123.568	N.A.	52.612.115	473.329 ¹³
DE1	N.A.	N.A.	N.A.	N.A.
DE2	1.042.565.227	463.126.083	N.A.	N.A.
DE3	513.172.000	N.A.	N.A.	N.A.
DE4 ¹⁴	569.800.000	N.A.	N.A.	N.A.
EE	4.138.000	3.150.000	1.096.631	54.261
GR	154.732.608	104.124.554	N.A.	603.657
ES1	N.A.	205.550.000	92.395.000	1.748.300
ES2	N.A.	47.410.000	27.581.000	344.000
ES3	N.A.	320.905.000	176.284.000	2.713.000
FR	1.015.849.000	884.809.396	N.A.	1.400.000
IE	206.434.700	N.A.	N.A.	273.100
IT1	1.474.328.045	477.039.340	360.561.330	0
IT2	105.611.253	49.571.211	41.506.840	0
CY1	22.663.793	19.610.345	5.929.310	4.640
CY2	7.044.828	5.537.931	2.525.862	2.033
LV	7.304.001	7.008.760	1.289.441	33.309
LT	6.480.000	5.034.000	N.A.	128.500
LU	516.754.552	86.013.863	13.118.600	0
HU	39.687.767	32.670.651	N.A.	211.038
MT ¹⁵	(*)6.565.845	(*)5.567.229	(*)4.606.486	1.995
NL	57.000.000	N.A.	22.000.000	0
AT1	68.000.000	N.A.	38.000.000	0
AT2	87.000.000	N.A.	42.000.000	0
AT3	20.000.000	N.A.	10.000.000	0
AT4	9.000.000	N.A.	4.000.000	0
AT5	57.000.000	N.A.	22.000.000	0
PL	N.A.	78.044.351	N.A.	242.399
PT1	148.760.000	111.671.000	58.200.000	1.118.000
PT2	7.589.940	7.182.250	N.A.	196.821
RO	15.596.674	8.763.493	5.258.289	103.609
SI	N.A.	11.449.997	6.762.970	0
SK	21.809.266	10.762.679	10.659.440	-151.902 ¹⁶
FI	75.326.000	72.273.000	35.359.000	330.000
SE	153.315.744	N.A.	54.320.112	1.607.432
UK	1.555.918.020	1.061.543.833	N.A.	10.479

Source: Survey data; (*) Estimates from the dataset, for not available.

¹³ The Danish fund is made up of liquid cash (145.432 thousands Euro in 2004); the rest is in the form of pledges.

¹⁴ Data for DE4 have not been declared by the DGS but obtained by its financial statement publicly available at <http://www.dsgv.de/download/aktuelles/Geschaeftszahlen2005-en.pdf>

¹⁵ Due to the fact that before February 2006, the Maltese DGS only covered deposits in Maltese Liri, data collected through the survey referred only to these deposits. In order to include also deposits in other EU-currencies, the data were adjusted following other information provided by the Maltese scheme itself.

¹⁶ In years 1999–2001 4 banks were declared by the National Bank of Slovakia as unable to pay out deposits. The fund held by the DGS was not enough to pay out the total amount of compensations. The National Bank of Slovakia provided the DGS with a loan for compensation disbursements. A residual loan was taken over by commercial banks.

Note that in six MS (DE¹⁷, ES¹⁸, IT¹⁹, CY²⁰, AT²¹, PT²²) several DGS are operating.

As can be seen from Table 2, the DGS from new MS provided almost all data. For some EU-15 DGS (DE1, DE4, and NL) no data were gathered. Other DGS (BE, DK, DE2, DE3, GR, ES, FR, IE, LT, HU, PL, PT2, SI, SE, UK) did not report all types of deposits or inconsistencies with the definitions provided in Annex IV were observed. In some cases this is due to the fact that the DGS do not control data on all types of deposits but only on those data used to calculate contributions; in other cases data on deposits are confidential.

In Table 3 aggregated values of deposits per MS are summarised. In order to complete the database, several estimates are included in this table. Results presented in this report are based on the aggregated data per MS as shown in Table 3. Several DGS in a MS will thus be considered as a single DGS.

In order to reproduce the total amount of deposits for DE, ES, NL, PL, and SI, Eurostat²³ has been consulted. Concerning the total amount of eligible deposits, for DE and NL Eurostat has been used to obtain an estimate. Approximations for the amounts of eligible deposits of DK, IE, and SE are obtained by applying a ratio to the total amount of deposits of these MS. This ratio, obtained by the dataset, represents an estimate of the total amount of eligible deposits over the total amount of deposits for these countries.

¹⁷ In Germany, the compensation system is quite complex because of historical reasons and differs from any other EU system. Six compensation schemes are operating. Two schemes are statutory and protect credit institutions under public law or ownership (DE1) and private (DE2) law. Two are institutional and protect cooperatives banks (DE3) and saving banks together with the Landesbanken (DE4). Moreover there are two voluntary schemes which give additional protection to private and public credit institutions. These schemes are not included in the analysis as their members are also members of DE1 or DE2. More information on the deposit protection in Germany can be found in http://www.bundesbank.de/download/volkswirtschaft/mba/2000/200007mba_art02_deposprotect.pdf

¹⁸ In Spain three DGS are operating, representing Private Banks (ES1), Cooperative Banks (ES2), and Saving Banks (ES3).

¹⁹ In Italy two DGS are operating, one covers Cooperative Banks (IT2); the second one covers the other institutions (IT1).

²⁰ In Cyprus two DGS are operating. One covers Cooperative Banks and Cooperative Credit Institutions (CY2), the second one covers the other institutions (CY1).

²¹ In Austria five DGS are operating. They cover private commercial banks, rural cooperative banks ("Raiffeisenbanken"), private savings banks ("Sparkassen"), industrial cooperative banks ("Volksbanken"), and privatised provincial mortgage banks ("Landes-Hypothekenbanken").

²² In Portugal two DGS are operating, one covers Cooperative Banks included in SICAM which is a Mutual Agriculture Integrated System (PT2); the second one covers the other institutions (PT1).

²³ <http://epp.eurostat.ec.europa.eu>

Table 3: Deposits and fund size in T€ for 2004 per MS.

	Total amount of deposits (T€)	Total amount of eligible deposits (T€)	Total amount of covered deposits (T€)
BE	443.016.000	200.641.000	(*)103.972.413
BG	8.835.015	8.142.503	4.456.767
CZ	52.033.000	48.388.000	27.299.000
DK	136.123.568	(*)130.606.413	52.612.115
DE	(e)1.803.863.000	(e)1.188.935.000	(*)616.107.577
EE	4.138.000	3.150.000	1.096.631
GR	154.732.608	104.124.554	(*)53.957.472
ES	(e)694.856.820	573.865.000	296.260.000
FR	1.015.849.000	884.809.396	(*)704.816.553
IE	206.434.700	(*)128.751.429	(*)66.719.149
IT	1.579.939.298	526.610.551	402.068.170
CY	29.708.621	25.148.276	8.455.172
LV	7.304.001	7.008.760	1.289.441
LT	6.480.000	5.034.000	(*)2.588.968
LU	516.754.552	86.013.863	13.118.600
HU	39.687.767	32.670.651	(*)17.299.981
MT	(*)6.565.845	(*)5.567.229	(*)4.606.486
NL	(e)447.757.000	(e)406.507.000	(*)210.652.427
AT²⁴	241.000.000	180.000.000	116.000.000
PL	(e)86.002.250	78.044.351	(*)41.326.566
PT	156.349.940	118.853.250	(*)61.943.201
RO	15.596.674	8.763.493	5.258.289
SI	(e)14.687.370	11.449.997	6.762.970
SK	21.809.266	10.762.679	10.659.440
FI	75.326.000	72.273.000	35.359.000
SE	153.315.744	(*)147.101.781	54.320.112
UK	1.555.918.020	1.061.543.833	(*)845.598.688
EU	9.474.084.059	6.054.766.010	3.764.605.171

Source: Survey data; (*) Estimates from the dataset; (e) Eurostat data.

Separate approximations of the ratio, which are summarised in Table 4, are calculated for each of these MS using the dataset. For DK and SE a ratio of around 95,95% is used by considering the total amount of eligible deposits over the total amount of deposits in Finland. The ratio of Finland has been applied to estimate the amount of eligible deposits for DK and SE, as these three MS have, to some extent, the same types of eligible deposits (see also Annex I). For IE, a ratio of nearly 62,37% is obtained by averaging all available EU-15 ratios²⁵.

²⁴ The five Austrian DGS provided an aggregated estimate for the amount of total, eligible, and covered deposits.

²⁵ The ratios of Finland (95,95%) and Luxembourg (16,65%) are excluded because these values are outlying with respect to the distribution of the other EU-15 countries.

Table 4: Procedure for the estimation of the 2004 amount of eligible deposits.

	Total amount of deposits (T€) (A)	Ratio (rounded to 2 decimals) (B)	Total amount of eligible deposits (T€) = (A) * (B)
DK	136.123.568	95,95%	130.606.413
SE	153.315.744		147.101.781
IE	206.434.700	62,37%	128.751.429

Source: Survey data.

Estimates for the amount of covered deposits are also included in Table 3 for all MS with missing values. As Eurostat does not contain data any on the amount of covered deposits, these values are in most cases estimated by applying a ratio to the amount of eligible deposits. Different ratios are calculated to differentiate between MS. Since the amount of covered deposits depends on the level of coverage, the EU-15 MS are apportioned into those applying a level of coverage lower than € 25.000 and those with higher level of coverage. The twelve new MS are treated separately.

For those EU-15 MS with a level of coverage lower than € 25.000 and with a missing value for the amount of covered deposits (BE, DE, GR, IE, NL²⁶), the ratio to obtain the covered deposits is calculated by averaging the available ratios of the amount of covered over eligible deposits of EU-15 MS with a level of coverage lower than € 25.000²⁷ (the average being around 51,82%). For those EU-15 MS with a level of coverage higher than € 25.000 and with a missing value for the amount of covered deposits (FR, UK), the ratio to obtain estimates for covered deposits is calculated by averaging the available ratios of EU-15 MS with a level of coverage higher than € 25.000²⁸ (the average being nearly 79,66%). Note that PT is treated separately, since one of the two DGS provided data on the total amount of covered over eligible deposits (the ratio is 52,12%). An estimate of the total amount of covered deposits for the second Portuguese DGS is obtained from these data.

Concerning the new MS, estimates of missing data on the amount of covered deposits (HU, PL) are obtained by estimating the average ratio of the amount of covered over eligible deposits of the new MS providing these data (the average being almost 59,76%²⁹). For Lithuania the ratio of the amount of covered deposits to the amount of eligible deposits available for 2005 (51,43%) has been applied to the total amount of eligible deposits in 2004.

²⁶ NL has just increased its level of coverage up to € 40.000. Before 31/12/2006 the level of coverage was € 20.000.

²⁷ The ratio of the amount of covered deposits to the amount of eligible deposits of Luxembourg was excluded from the average ratio because the Luxembourg ratio is extremely low (15,25%) compared to the others and can be considered as an outlier. Note that in this case the highest ratio (58,18%) has not been excluded since it is close to the average (51,82%) and the dataset on covered deposits is extremely poor.

²⁸ This ratio is only based on the two Italian DGS with the highest level of coverage of € 103.291.

²⁹ The ratios of Latvia (18,40%) and Slovakia (99,04%) are excluded because these values are outlying, the average ratio for new MS being 52,95%.

Table 5 summarises the amount of eligible deposits, the ratios applied and the estimates obtained for the amount of covered deposits.

Table 5: Procedure for the estimation of the 2004 amount of covered deposits.

	Total amount of eligible deposits (T€) (A)	Ratio (rounded to 2 decimals) (B)	Total amount of covered deposits (T€) = (A) * (B)
BE	200.641.000	51,82%	103.972.413
DE	^(e) 1.188.935.000		616.107.577
GR	104.124.554		53.957.472
IE	^(*) 128.751.429		66.719.149
NL	^(e) 406.507.000		210.652.427
FR	884.809.396	79,66%	704.816.553
UK	1.061.543.833		845.598.688
PT2	7.182.250	52,12%	3.743.201
LT	5.034.000	51,43%	2.588.968
HU	32.670.651	52,95%	17.299.981
PL	78.044.351		41.326.566

Source: Survey data; ^(*) Estimates from the dataset; ^(e) Eurostat data.

3.3. Functioning of the schemes

Directive 94/19/EC leaves MS free to choose the funding mechanism of their DGS. The systems currently applied are very heterogeneous both in terms of type of mechanism (ex-ante, ex-post, or other) and premium definition.

Funding mechanism

Some DGS establish a fund by collecting premia on a regular basis; on the opposite, other DGS gather contributions only in case of a failure; in between a wide range of intermediate settings can be found. The last two columns of the table in Annex II show for each MS the type of funding mechanism (ex-ante, ex-post, other) and the reasons behind this choice.

The classification of the DGS according to their funding mechanism reflects the definitions of ex-ante and ex-post systems attached to the survey (see Annex IV). Classifying the DGS according to the definitions introduced has posed some problems since sometimes there is not an exact match between the DGS funding legislation and the above mentioned definitions. For instance, in some cases it is not clear whether extraordinary contributions shall be considered as ex-post contributions. Sometimes the definitions have been slightly relaxed in order to allow the classification of the DGS³⁰. Note that with respect to the Interim Report the classification of the DGS depending on their funding mechanism has been modified following discussions with the DGS representatives. Figure 2 represents in a pie-plot the classification of the EU funding systems according to the categories “ex-ante”, “ex-post”, “other”. The plot refers to the MS and not to the single DGS since in no case a MS with more than a single DGS adopts different funding systems.

Most of the MS (16) adopts an ex-ante system where regular contributions are collected. This classification as an ex-ante scheme does not rule out any extraordinary contributions in case the fund is insufficient to cover the costs of an intervention. Note that some ex-ante DGS cease to collect contributions once a specified target for the fund is reached.

Ex-post schemes, with no regular contributions for interventions, can be found in six countries (IT, LU, NL, AT, SI, UK).

Five DGS (DK, CY, MT, PL, and RO) do not meet the requirements to be classified neither as ex-ante, nor as ex-post. In particular, the Polish scheme can be considered as a mixed system: ex-ante contributions are levied in advance for an assistance fund, and ex-post contributions are gathered for compensation purposes in case of a member’s failure. Also Denmark can be considered a mixed scheme since only a part of the contribution (at least 25%) is paid to the fund and the rest takes the form of pledges to guarantee payment,

³⁰ Note that although the French DGS defines itself both ex-ante and ex-post, following the introduced notation it is classified as an ex-ante scheme because it levies contributions on a yearly basis in order to have some liquidity. More details on the French funding system can be found in Annex III.

if the need arises. In Romania the contributions are defined in terms of a determined ex-ante part plus an ex-post part which consists of stand-by lines of credit granted yearly by every member. The Maltese DGS has a hybrid nature, with ex-ante contributions collected to maintain a target size for the fund, and ex-post levies in case of need. Finally, regulations governing the operation of the Cypriot scheme foresee three different types of contribution: initial (ex-ante), supplementary and special (ex-post).

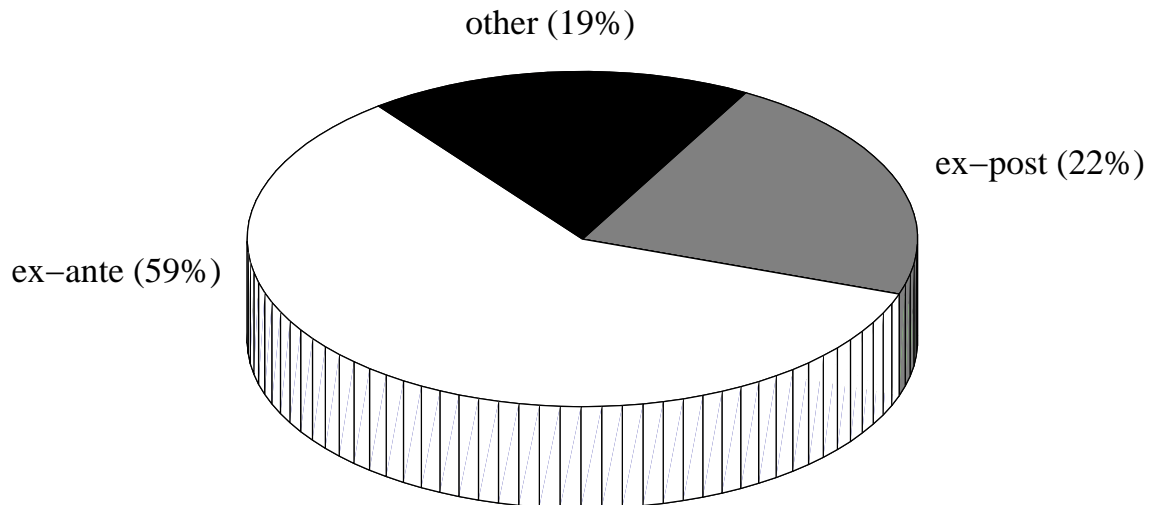


Figure 2: Pie of the funding mechanism per MS.

Premium definition

In most of the cases DGS contributions are defined as a fixed percentage of the amount of deposit (total, eligible, or covered) held by the members. Half (19 over 38) of the DGS use the eligible deposits as basis for their premium; 26% consider covered deposits; the rest use different approaches (e.g. balance sheet).

For the ex-ante DGS which do not include any risk-based adjustment and use eligible deposits as basis for contributions, the percentages currently applied vary between 0,0175% in BE and 0,50% in BG. Only few MS of the EU-15 apply a fixed percentage to the amount of eligible deposits (BE 0,0175%, GR 0,0623%, ES 0,05%); the percentages applied are higher in new MS, with an average around 0,29% (the average does not include SK, due to the high fee collected in order to face the shortcoming of the fund).

Only eight DGS (DE3, FR, IT1, PL, PT1, PT2, FI, and SE) include risk-based information of their members in the definition of their premium. In France a synthetic risk indicator is estimated based on the solvency, the diversification, the operating profitability, and the maturity transformation of the each member. This indicator is used to increase or decrease the annual premium. A similar mechanism is applied in one Italian DGS which classifies members into groups according to an aggregated indicator related to the risk, the solvency,

the maturity transformation, and the economic performance. Depending on the group, the contribution is adjusted. The two schemes in Portugal and the one in Finland use a solvency indicator to raise or lower the annual contributions. In Sweden the fee depends on the members' relative capital adequacy ratio: a higher ratio leads to a lower fee. One DGS in Germany categorises its members in rating classes using the last annual financial statement. Again, this classification results in different corrections for the annual contribution. Further, in Poland, although the system is flat-rate, the risk-weighted total balance sheet assets used as the base for the annual premiums takes the risk of the members into consideration. Finally, note that although Hungary's premium is not defined in terms of a risk indicator estimated for each member, each individual premium can be increased up to 150% of the normal fee when a member is involved in risky business (e.g. the member did not comply with the prescribed minimal capital requirement, its capital adequacy index did not achieve the statutory minimum). A similar procedure is presently applied in Romania, in the light of the introduction of a fully risk-based system.

Annex III presents a description of the premium paid by DGS members on a DGS by DGS basis.

3.4. Data on the size of the fund

In the last column of Table 2 the 2004 size of the fund of each DGS is reported. The size of the fund has been provided by almost all DGS. To measure the adequacy of the DGS' funds, the following coverage ratio is defined:

$$\text{Coverage Ratio} = \frac{\text{Size of the Fund (2004)}}{\text{Total Amount of Eligible Deposits (2004)}}$$

Table 6 shows the values of the ratio for the EU-15 MS (left column) and the twelve new MS (right column). Countries are ranked in decreasing order of coverage ratio. Note that for Germany the calculation of the coverage ratio is not possible since data on the size of fund has been supplied by none of German DGS. Ex-post systems with zero size of fund (IT, LU, NL, AT, SI) are not included in the table. Although the UK DGS is classified as an ex-post system, the DGS holds a small fund inherited by a previous scheme. This is the reason why UK is included in this table and its ratio is so small.

Table 6: EU-15 and new MS ranked by decreasing coverage ratio.

EU-15	Coverage ratio (%)	New MS	Coverage ratio (%)
PT	1,11	LT	2,55
SE	1,09	EE	1,72
ES	0,84	BG	1,61
GR	0,58	RO	1,18
FI	0,46	HU	0,65
DK	0,36	LV	0,48
BE	0,35	CZ	0,33
IE	0,21	PL	0,31
FR	0,16	MT	0,04
UK	0,001	CY	0,03
		SK	-1,41

Source: Survey data.

Figure 3 plots the coverage ratios in increasing order. The straight black line in the picture represents the EU average coverage ratio (around 0,70%) using data of Table 6 (excluding Slovakia's negative coverage ratio). The average coverage ratio in the EU-15 countries is around 0,52% (0,57% when excluding UK). When considering new MS, the average coverage ratio is higher (0,89%). The standard deviations in EU-15 and new MS are respectively 0,38% and 0,84%.

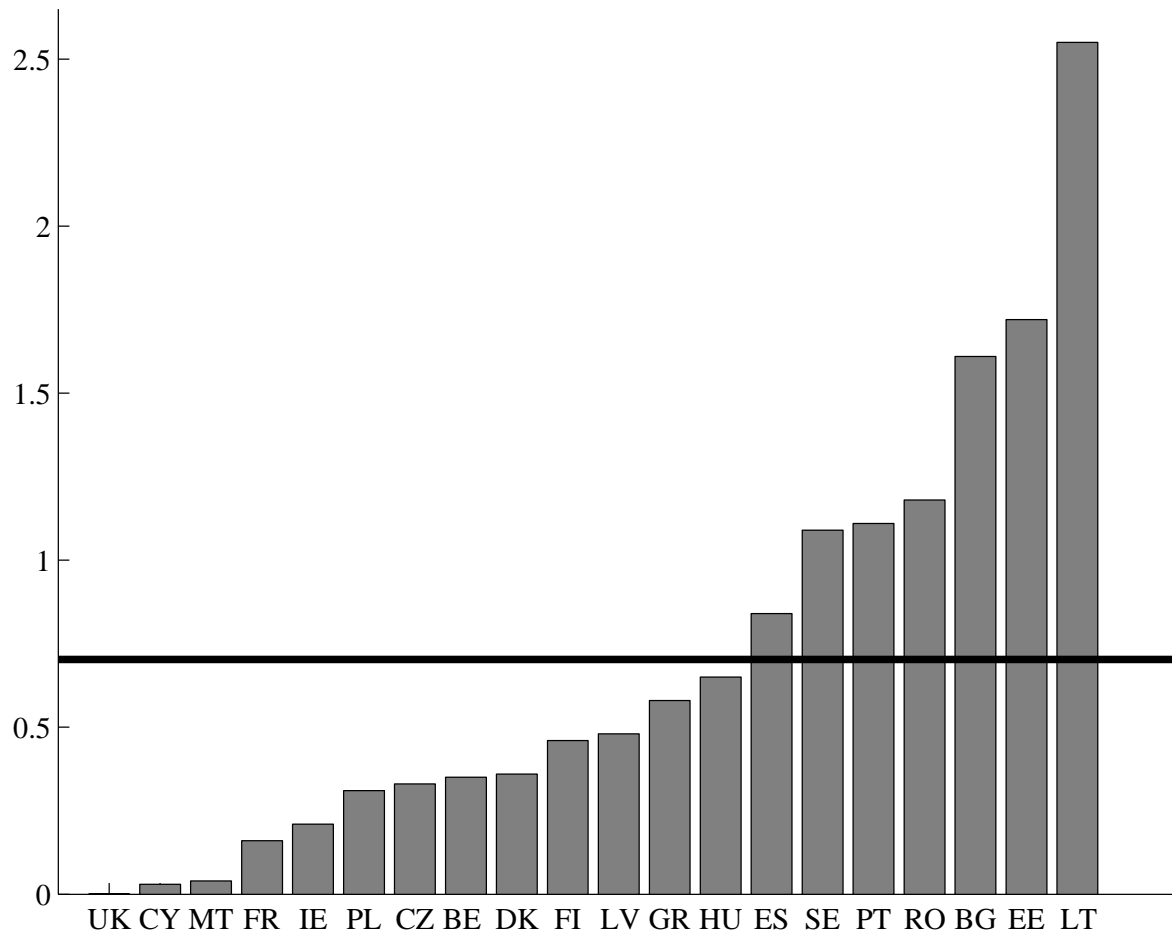


Figure 3: Coverage ratios in the EU MS where a fund is established.

3.5. Data on contributions and expenses

In order to compare 2005 DGS contributions and scenario contributions after harmonising the functioning of the schemes, the survey also included several questions on the schemes' expenses and on the yearly aggregated contributions by members. Table 7 contains contributions and administrative costs per MS in 2005. It also reports in the first column the 2004 size of the fund, which could have been used to cover 2005 expenses, especially for those MS which did not collect any contributions in 2005. For few MS some values are not available (DE, IE, AT, and SI). The last column of the table reports the number of defaults per MS since 1994: in general there are few cases of major cross-border failures, the great part of defaults being classified as small scale events. Sometimes the term "default" may include failures covered by the scheme even though it was not a bank that failed but another financial institution covered by the DGS under national legislation. For this last point and for other reasons discussed elsewhere, more deep investigations on failures/defaults are required.

Although the survey asked for information on total expenses, results are not quoted in the report since relevant differences arise among the ways DGS have defined their expenses, even in the same country.

Some investigations have been performed in order to understand whether there exists a relationship between the ways DGS can intervene and the amount of contributions collected. In fact, several DGS intervene only to compensate depositors in case a default occurs, whereas other MS (BE³¹, BG³², ES³³, FR³⁴, IT³⁵, AT³⁶, PL³⁷, and PT³⁸) also intervene in other instances (e.g. to provide financial assistance to their members in order to prevent a failure). Note that in Germany DE1 and DE2 intervene only to compensate depositors; DE3 has only preventive interventions, while for DE4 types of interventions are unknown since it has not answered the survey.

Detailed information on the types of interventions foreseen can be found in Annex III.

³¹ Interventions in BE: preventive interventions under strict conditions (settlement, financial re-organization, take over of a participant in deficiency), and compensation of depositors.

³² Interventions in BG: starting from 01/01/07, participation in the increase of the capital of an ailing bank and compensation of depositors.

³³ Interventions in ES: preventive interventions (financial aid, subsidies, guarantees, loans under favourable conditions, etc.), reorganisation of institutions, and compensation of depositors.

³⁴ Interventions in FR: preventive interventions and compensation of depositors.

³⁵ Interventions in IT: support intervention (financing, guarantees, acquisition of equity interests), transfer of asset and liabilities, and compensation of depositors.

³⁶ Interventions in AT: receivership, payment stop, and compensation of depositors. Additional information is not publicly available.

³⁷ Interventions in PL: preventive intervention (loans, guarantees, endorsements, and acquisition of a member's debt), and compensation of depositors.

³⁸ Interventions in PT1: cooperation in action to restore the solvency and liquidity conditions of its members, and compensation of depositors.

Interventions in PT2: allowances, loans and guarantees in favour of the members, acquisition of members' credits and assets, and compensation of depositors.

It could be the case that DGS which define other interventions than compensation of depositors have a lower size of the fund, as less pay-out problems could be expected; on the other hand it could be that these DGS would need more fund to as more assistance is offered. However, none of these conclusions can be derived from the coverage ratios in Table 6. In fact, coverage ratios of DGS intervening preventively are neither at the top of the table, nor at the bottom.

Table 7: Fund size in 2004, contributions, administrative costs in 2005, and historical number of defaults.

	2004 Fund size (€)	2005 Contributions (€)	2005 Administrative costs (€)	Defaults (since 1994)
BE	694.800.000 ⁴⁰	41.855.000 ³⁹	659.000 ⁴⁰	1
BG	130.976.107	32.252.292	678.996	3
CZ	157.500.000	5.600.000	700.000	12
DK	473.329.032	0	148.493	3
DE	N.A.	N.A.	N.A.	N.A.
EE	54.260.882	9.980.608	120.571	2
GR	603.656.669	73.914.664	688.672	1
ES	4.805.300.000	308.000.000	2.500.000	2
FR	1.400.000.000	152.000.000	2.500.000	0
IE	273.100.000	75.556.200 ⁴⁰	N.A.	0
IT	0	4.001.963	4.104.388	4
CY	6.672.414	660.345	8.466	0
LV	33.309.474	14.887.292	0	0
LT	128.500.000	26.065.802	249.073	2
LU	0	0	171.157	1
HU	211.037.931	6.240.361	1.186.380	5
MT	1.995.423	933.878	14.997	0
NL	0	0	0	1
AT	0	0	N.A.	4
PL	242.399.314	32.189.119	4.930.052	94
PT	1.314.821.424	54.814.885	202.402	0
RO	103.608.500	43.364.002	1.051.307	6
SI	0	0	N.A.	0
SK	-151.902.336	81.151.003	326.320	4
FI	330.000.000	37.000.000	56.000	0
SE	1.607.431.878	52.191.511	351.493	0
UK	10.478.689	0	1.225.741	22

Source: Survey data, N.A. for not available.

³⁹ Note that data for the Belgian DGS refer both to depositors and investors compensation schemes, which are indistinguishable.

⁴⁰ The 2005 contributions for Ireland are estimated using the premium definition applied in the Irish DGS, after a discussion with the DGS representative.

In order to compare the amount of contributions across MS and to analyse its range of variability, two ratios have been calculated:

$$R_1 = \frac{\text{Contribution (2005)}}{\text{Total Amount of Eligible Deposits (2004)}}$$

$$R_2 = \frac{\text{Contribution (2005)}}{\text{Total Amount of Covered Deposits (2004)}}$$

Figure 4 plots in a bar-histogram the ratios obtained distinguishing between DGS that foresee preventive interventions besides compensation of depositors (left side of the bar plot), and DGS that operate only as a pay-box (right side of the bar plot). In each of the two classes (only pay-box and not only pay-box) the countries have been apportioned between EU-15 and new MS, and then ordered by growth of R_2 .

Note that the plot and the following discussion does not include data from DK, IT, LU, NL, AT, SI, and UK since their contributions for 2005 are zero. Also Germany is not included in the graph since data on the contributions are not available.

The figure confirms that no general conclusions can be drawn characterising the DGS that intervene preventively⁴¹ with respect to those that work only as pay-box of depositors⁴². In fact the behaviour of DGS that can intervene preventively is quite similar to a wide class of DGS acting only as pay-box. However, it is clear that the behaviour of new MS that operate only as pay boxes is extremely diverse (CY, CZ, MT, HU with low ratios on one side, and LV, EE, BG, RO, LT, and SK on the other). On the other hand, considering all EU-15 MS together, there is almost no difference between DGS that only intervene for a member's default and DGS with more types of interventions.

⁴¹ Note that in this analysis BG is classified as a pay-box since preventive interventions are allowed only from 01/01/07. The data instead refer to 2004 and 2005.

⁴² Due to other factors that have not been taken into account in this analysis, there still might be a relationship between the size of the fund and the preventive assistance offered by some of the DGS.

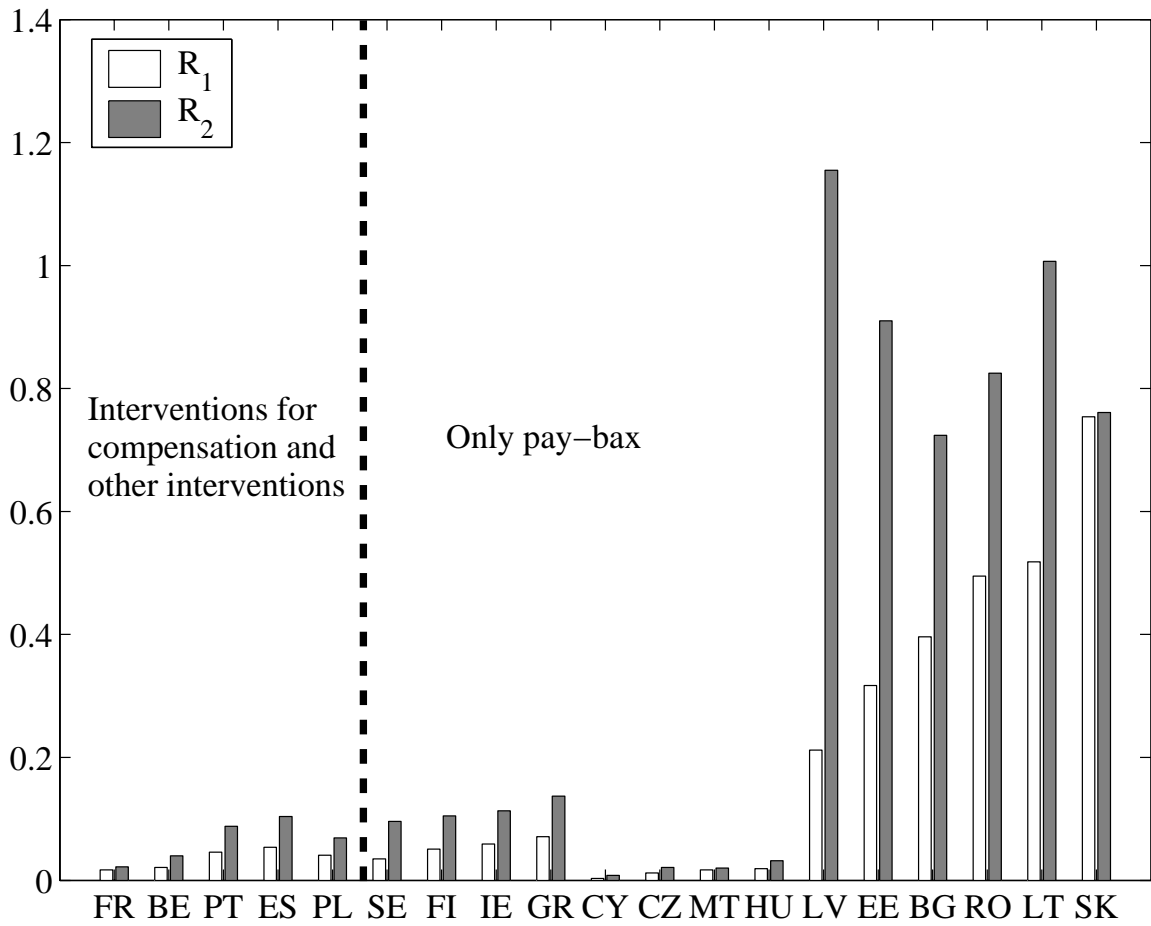


Figure 4: Bar plot of the ratios of the contributions over the total amount of deposits.

3.6. Open discussion on the dataset

The previous paragraphs presented some of the data collected through the survey. The complete dataset is actually more wide-ranging both in terms of type of data and in terms of the time period covered by the survey (see Annex V). All data have been subject to quality checks of different types.

The qualitative information on DGS (e.g. nature of the DGS, description of the premium, etc...) has been compared with data from other sources such as DGS web sites and/or DGS statutes/bylaws/acts of banks. In general, most of the DGS provided good descriptive information, which has been confirmed by the publicly available sources. The comparison of the premiums across DGS has posed some difficulties as different terminologies are applied by DGS with respect to the one introduced by JRC survey.

Concerning the quantitative information requested, many DGS have not covered the entire scope of the questionnaire or data supplied are confidential; when focussing on the information necessary to perform the scenario analysis, only 12 DGS out of 38 provided all data. As already shown in Table 2 for the year 2004, the database on the amount of total and eligible deposits is not complete: there are missing data for six countries; when considering the covered deposits, the dataset is extremely poor with missing data for eleven countries.

Data on the size of the fund are available for all MS except for Germany. The database is also quite rich of data on yearly contributions (2005), as data is only missing/confidential for four MS.

There are two possible explanations for missing data: on one hand some DGS have raised confidentiality problems; on the other DGS themselves do not have the requested information because, for instance, they receive from the supervisory authority only the data which are necessary to compute their contribution base. Whenever possible, the quantitative data supplied by the DGS have been compared with data from a previous survey by the European Commission⁴³, with data from the financial statements made available by some (but not all) DGS, and with data from Eurostat. Many problems have arisen in the analysis of the quantitative information, especially in verifying whether the data supplied by DGS were actually consistent with the different definitions of deposits introduced in the survey.

Although the use of estimates might pose some uncertainties in the robustness of the dataset, in case of missing data on deposits Eurostat has been consulted to fill in the gaps, or data are estimated through the procedure presented in Section 3.2. Note that if financial statements are not publicly available on DGS web sites, there are no alternative sources to fill in the missing data on the size of the fund and on contributions of the DGS.

⁴³ http://ec.europa.eu/internal_market/bank/docs/guarantee/report_en.pdf

Considering all the problems encountered in the construction of the dataset, the application of a common terminology across the EU DGS would be of great help for comparison purposes and in the light of future harmonisation of some aspects of DGS functioning.

Comparing the definitions introduced in the present survey with the terminology applied across MS (for instance in the description of the yearly premium basis), some problems arise. For instance in some cases DGS' statutes refer to deposits without specifying which type they concern with; in other cases it is unclear whether they refer to the amount of eligible or covered deposits. As a consequence it might be constructive in future survey to ask DGS to comment on the data they provide with reference to the definitions, i.e. compare available data to the definitions introduced.

Finally, concerning the term "covered deposits", although the proposed definition does not pose any ambiguity, we suggest referring to covered deposits only in terms of "amount" of covered deposits instead of "number" of covered deposits. This would avoid any possible misinterpretations due to the fact that the number of eligible deposits equals the number of covered deposits.

The construction of a more comprehensive DGS dataset would certainly be of help for monitoring the functioning and the efficiency of the schemes in the EU, for the periodic review of the level of coverage foreseen in Directive 94/19/EC, and/or in the light of possible harmonisation of some DGS aspects. In particular:

- 1) A database of aggregated figures for the total amount of eligible deposits and total amount of covered deposits per DGS represents the minimum set of data needed to build a robust analysis on the effectiveness of the level of coverage. Although the present survey has highlighted the difficulty in gathering data on the number of deposits, this information would be relevant to understand the actual capability of the system to insure small depositors.
- 2) This analysis would be more complete if data on distributions and frequencies of deposits were available. For instance it would be useful to define classes of deposits (e.g. 0 - 10.000 €, 10.000 € - 20.000 €, 20.000 € - 30.000 €, and so on) and collect separate information for the number and amount of deposits laying in each class. The 2005 JRC report on minimum level of coverage⁴⁴ has already presented how these data could be potentially used to assess the impact of changes in the minimum level of coverage.
- 3) When analysing aspects related to the way DGS are funded, data on yearly amount of contributions are necessary to assess the costs of changing the funding mechanism.

⁴⁴ http://ec.europa.eu/internal_market/bank/docs/guarantee/report_en.pdf

- 4) An exhaustive and detailed description of the premium would complete the picture of the present funding systems, especially in the light of the inclusion of risk-based elements, as supported by the Commission in its Communication.
- 5) Data on the size of the fund, eventually expressed in terms of a coverage ratio, are needed to assess the DGS' funds adequacy. It would be more appropriate if this coverage ratio was expressed using covered deposits instead of eligible deposits as basis for calculations.
- 6) Finally, a comprehensive dataset on the interventions occurred (number of interventions, types of interventions, and amount of disbursements) could be used to estimate the severity of a bankruptcy and to assess the DGS fund adequacy.

A final remark is related to the use of the payout limit as introduced in Annex IV. Following the definitions, the final amount to be reimbursed has to be calculated as the minimum between the payout limit and the part of the eligible deposit covered. Some DGS has suggested that in the common practice the amount to be reimbursed is obtained taking the minimum between the level of coverage and the part of eligible deposits guaranteed. In our opinion, the definition proposed in Annex IV is the one to be applied, notwithstanding some MS still make confusions between the two concepts (coverage level and payout limit). To clarify this point, we make the following additional example.

Consider a country with level of coverage of € 22.222 and coinsurance of 10%. The payout limit is € 20.000 (this is obtained applying 10% coinsurance to € 22.222. In formula $€ 20.000 = € 22.222 \times (1-10\%) = € 22.222 \times 90\%$). Consider a DGS with three eligible deposits with size € 22.000 (Deposit 1), € 23.000 (Deposit 2), € 26.000 (Deposit 2).

In our definition, the amount of covered deposits is obtained as the minimum between the **payout limit** and the part of eligible deposits covered:

$$\text{Deposit 1: } \min(€ 20.000, (1-10\%) \times € 22.000) = \min(€ 20.000, € 19.800) = € 19.800$$

$$\text{Deposit 2: } \min(€ 20.000, (1-10\%) \times € 23.000) = \min(€ 20.000, € 20.700) = € 20.000$$

$$\text{Deposit 3: } \min(€ 20.000, (1-10\%) \times € 26.000) = \min(€ 20.000, € 23.400) = € 20.000$$

$$\text{Total amount of covered deposits} = € 59.800 (€ 19.800 + € 20.000 + € 20.000).$$

If the coverage level would be used in the estimation, the amount of covered deposits is obtained as the minimum between the **coverage level** and the part of eligible deposits covered:

$$\text{Deposit 1: } \min(€ 22.222, (1-10\%) \times € 22.000) = \min(€ 22.222, € 19.800) = € 19.800$$

$$\text{Deposit 2: } \min(€ 22.222, (1-10\%) \times € 23.000) = \min(€ 22.222, € 20.700) = € 22.222$$

$$\text{Deposit 3: } \min(€ 22.222, (1-10\%) \times € 26.000) = \min(€ 22.222, € 23.400) = € 22.222$$

$$\text{Total amount of covered deposits} = € 64.244 (€ 19.800 + € 22.222 + € 22.222).$$

4. Scenario Analysis

The goal of the scenario analysis is to get an insight of the possible cost implications of harmonising the DGS funding mechanism. In the scenarios this harmonisation is achieved by choosing a DGS funding mechanism currently applied in one of the MS and imposing this mechanism to all MS (e.g. applying the same premium definition or the same target coverage ratio). This will introduce in each MS different contributions with respect to those currently faced. By comparing new and 2005 contributions in each MS, the cost implications of harmonising the funding mechanism can be assessed.

4.1 Scenarios' choice

The definition of the scenarios is built on the gathered database in order to reproduce existing DGS and not to be based on artificially-created DGS. The choice is restricted by some limitations in the dataset, in particular the availability of real data on the amount of covered deposits (see Section 3.2). Note that the choice of the scenarios (as the entire study) does not prejudge further action of the Commission and is not intended to favour any MS or region.

Four scenarios are investigated: three ex-ante scenarios and one ex-post scenario. Two of the ex-ante scenarios represent EU-15 DGS, whereas the third ex-ante scenario characterises new MS. This choice is intended to reflect the different circumstances of new MS: lower level of coverage (see Figure 1), smaller amount of deposits (see Table 2 and Table 3), higher number of failures (see last column of Table 7), and the transitional period agreed to be conform to Directive 94/19/EC.

The coverage ratios introduced in Section 3.4 (see Table 6) are used as basis for defining the scenarios: MS have been categorised into the classes shown in Table 8. The last column of this table reports the density of each category, defined as the relative importance of the class in terms of amount of eligible deposits. Scenarios are defined in order to represent different categories of coverage.

Besides the coverage ratio, also the premium definition in each DGS is taken into account for the selection of the scenarios to be considered. The premium is always defined on the basis of a measure of exposure (e.g. amount of eligible deposits or amount of covered deposits). Since the dataset on the amount of eligible deposits is much richer compared to the one on covered deposits, only countries defining their premium on the basis of the eligible deposits are selected to define a scenario. This excluded some MS like DK, FI, and SE.

The first and second scenarios consider a medium coverage ratio (relative weight of the class 16,27%): Spain is chosen to represent the EU-15 (scenario 1), Hungary the new MS (scenario 2). In the third scenario a low coverage ratio is applied across MS (relative weight of the class 25,61%) and France is chosen to

represent this category of coverage. Finally, also an ex-post scenario with zero contributions is included as this category represents a significant part (37,53%) of the EU-depositors in 2004.

Table 8: Classification of countries according to the coverage ratio.

Category	Coverage ratio	MS	Proportion of EU eligible deposits
High	> 1,5%	BG, EE, LT	0,27%
Medium	0,5% - 1,5%	GR, ES, HU, PT, RO, SE	16,27%
Low	0,1% - 0,5%	BE, CZ, DK, FR, IE, LV, PL, FI	25,61%
Very low	< 0,1%	CY, MT	0,51%
Ex Post		IT, LU, NL, AT, SI, UK ⁴⁵	37,53%
Deficit		SK	0,18%
N.A.		DE	⁴⁶ 19,64%

Source: Survey data.

The following sections give specifications on how the yearly contributions are defined in each scenario. Recall that the year of reference for this analysis is 2005, i.e. contributions of 2005 for the DGS are compared with contributions obtained for the scenarios.

4.2 Scenario 1: Spain, medium coverage ratio

For the first scenario Spain is considered. This scenario is included to represent an EU-15 MS with a medium coverage ratio of 0,84%. Two different sub-scenarios are considered. In the first sub-scenario the yearly contributions in all EU-MS are defined starting from the Spanish definition of the premium; in the second sub-scenario a target coverage ratio is applied across EU-MS.

- a. **Scenario 1a.** In Spain three DGS are operating to protect respectively Saving Banks, Private Banks, and Cooperative Banks. Three different premiums are collected by these DGS, but all premiums have the same basis for calculation. This basis is the amount of eligible deposits plus 5% of the value of securities and financial instruments. As the value of securities and financial instruments is not available in the dataset, the scenario is only based on the amount of eligible deposits and the premium is defined as a percentage of this basis. The exclusion of the value of securities and financial instruments is not expected to influence the results of the analysis to a great extent.

The percentages currently applied to the contribution basis in Spain are reported in Table 9. Saving Banks have to apply the smallest percentage of 0,04%, whereas Cooperative Banks have to contribute levies with the highest percentage of 0,08%. The percentage for Private Banks of 0,06% falls within this

⁴⁵ Although UK DGS is an ex-post system, the scheme holds a small fund inherited from the previous system.

⁴⁶For Germany this value is based on the estimates obtained for the amount of eligible deposits.

range. For the scenario analysis these three percentages are combined in a single percentage to be applied to the total amount of eligible deposits in each MS.

The weighted percentage of 0,05%, where the weights are based on the total amount of eligible deposits, is calculated as demonstrated in Table 9. The annual contributions of this first sub-scenario are thus defined as 0,05% of the total amount of eligible deposits.

Table 9: Procedure to obtain the percentage defining the scenario 1a contributions.

	Total amount of eligible deposits in € (A)	Weight (B = A/Total A)	Percentage applied in premium definition (C)	Product (B*C)
Private Banks (ES 1)	205.550.000.000	35,82%	0,06%	0,02%
Cooperative Banks (ES2)	47.410.000.000	8,26%	0,08%	0,01%
Savings Banks (ES3)	320.905.000.000	55,92%	0,04%	0,02%
Total	573.865.000.000			0,05%

Source: Survey data.

- b. **Scenario 1b.** All three Spanish DGS define a target level for the size of the fund as 1% of their basis for contributions (equal to the amount of eligible deposits and 5% of the value of securities and financial instruments). According to the DGS statutes, when this target size is reached, payment of contributions shall be suspended. In this scenario a target size for the fund is set to 1% of the total amount of eligible deposits in each MS. The value of securities and financial instruments is unknown and thus not considered in this analysis. It is assumed that contributions to build this target size are collected in a maximum of ten years⁴⁷, depending on the size of the fund already cumulated. In subsequent analysis this choice can be corrected to cover a wider or smaller time range.

The annual premium is thus defined as 0,1% of the amount of eligible deposits of a MS⁴⁸. Note that this premium is collected only in case the target for the fund is not reached. This implies that, depending on the 2004 size for the fund, for some MS no contributions need to be levied, or the time period to reach the target level will be smaller than ten years. Finally, as the Slovakian DGS had a deficit for the size of the fund in 2004 (minus € 151.902.336), the annual contributions obtained in this scenario are increased by one tenth of the total deficit.

⁴⁷ In order to reach the target size of the fund in a maximum time period of ten years, contributions should be corrected on a yearly basis in order to account for e.g. interventions or changes in the total amount of eligible deposits. These adjustments are not included in the present analysis which for simplicity compares the 2005 contributions with the contributions obtained for the scenario.

⁴⁸ Note that the contributions of scenario 1b are two times the contributions of scenario 1a. However, in the hypothesis that no defaults occur, scenario 1b contributions will only be levied for a maximum period of 10 years, whereas scenario 1a contributions will be collected annually, with no time horizon limit.

For more details on the functioning of the Spanish DGS, please refer to Annex III or to their website⁴⁹.

4.3 Scenario 2: Hungary, medium coverage ratio

The second scenario is defined by considering the functioning mechanism of Hungary, a new MS with a medium coverage ratio (0,65%). In this scenario, the yearly total annual premium is fixed at 0,02% of the total amount of eligible deposits of the scheme. This percentage reflects the average percentage applied to the amount of eligible deposits in Hungary in 2005. A more thorough description of the Hungarian DGS can be found in Annex III or on the HU DGS website⁵⁰.

4.4 Scenario 3: France, low coverage level

The third scenario is defined considering the French DGS, which is representative of an EU-15 DGS with low coverage ratio (0,16%). For the French DGS the premium definition depends on risk-based information, which requires data on a bank-by-bank basis. No sufficient data is available for replicating such type of premium in other MS. However, the French DGS has a target size of the fund of € 1.500.000.000⁵¹, so implying a target coverage level of 0,17% in 2004.

Scenario 3 is defined by setting this coverage ratio in all EU-MS. In each MS a different target size for the fund is thus obtained. Following the assumptions described for scenario 1b, the premium is collected only in case the DGS fund is below the target level and a maximum time period of ten years is assumed in order to reach the target size of the fund.

As the banking environment in some MS might be more stable than in other MS, three different sub-scenarios are built in order to account for differences in the financial systems:

- a. **Scenario 3a:** The first sub-scenario refers to a financially secure system where the target coverage ratio of 0,17% is decreased by 25%. This implies a yearly contribution defined as $(0,75) \cdot (0,017\%)$ of the amount of eligible deposits.
- b. **Scenario 3b:** The second sub-scenario considers the French target coverage ratio of 0,17%. This implies a yearly contribution defined as 0,017% of the amount of eligible deposits.

⁴⁹ Spanish DGS website: <http://www.fgd.es>

⁵⁰ Hungarian DGS website: <http://www.oba.hu>

⁵¹ This information follows from a private conversation between DG-MARKT and the French DGS representative. The reference law is the Regulation 99-06 of 9 July 1999, relating to the resources and operation of the deposit guarantee fund, available at http://www.garantiedesdepots.fr/spip/registrements_99_06.php

- c. **Scenario 3c:** The last sub-scenario refers to a financially unstable system where the target coverage ratio of 0,17% is increased by 25%. This implies a yearly contribution defined as $(1,25) \cdot (0,017\%)$ of the amount of eligible deposits.

A similar technique is applied by the French DGS on a bank-by-bank basis to account for synthetic risk (a score related to capital adequacy and operating profitability). For Slovakia the same correction applied in scenario 1b is used.

More information on the premium definition in France is available on FR DGS website⁵². Note that the definition of the scenario on the basis of a target level for the coverage ratio does not include any specification on the way DGS have to apportion the yearly contributions among their members. Following the example of France, the DGS can include risk-based information (e.g. capital adequacy ratio or risk weighted assets) or can decide to uniformly allocate the total contributions.

4.5 Scenario 4: Ex-post

In the last scenario, the aggregated impact to move from the present funding mechanisms to an ex-post system with zero contributions is analyzed. It is assumed that this corresponds to taking minus the contributions of 2005⁵³. Note that Slovakia is not included in this scenario since its fund is presently in deficit.

⁵² French DGS website: <http://www.garantiedesdepots.fr>

⁵³ Note that for schemes which are not ex-post this assumption does not consider how the existing fund will be managed (e.g. if it will be reimbursed), nor it includes administrative costs.

5. Results

This section presents the results of the analysis obtained by applying the scenarios defined above across EU-MS. As already outlined, the amount of eligible deposits is chosen as the basis for the computation of the premium. However, since the real exposure of the DGS is the amount of covered deposits, the scenario analysis is repeated using the total amount of covered deposits (eventually estimated) as a basis for calculation of the premium in each MS. Results based on the covered deposits are briefly discussed in the second part of this section.

5.1 Results based on eligible deposits

Table 10 reports the results of the scenario analysis. Columns two and three give an overview of the 2004 funds' size and of the 2005 contributions. The fourth and fifth columns show premiums to be collected under the first scenario (Spain, medium coverage ratio); the sixth column lists the contributions for the second scenario (Hungary, medium coverage ratio); contributions for the third scenario (France, low coverage ratio) are presented in columns from seven to nine. Finally, results of the ex-post scenario are shown in the last column of the table. Note that the actual contributions of the three MS chosen to define the scenarios are close to the simulated contributions.

In Figure 5 and in Figure 6 2005 contributions are compared with contributions of the scenarios. Figure 5 refers to EU-15 MS and Figure 6 shows results for new MS. Since many MS have zero-contributions in scenario 3, the figures present two separate plots, one referring to MS with non-zero contributions in scenario 3 (top plots), the other reporting results for the remaining MS (bottom plot). MS have been ranked according to decreasing scenario 2 contributions.

In the following, the impact of choosing one of the scenarios is presented. Note that the discussion exclude DE, as the impact of changing the system cannot be assessed since no data on the current premium and current funds are available.

Table 11 summarizes the possible increase in the contributions under each scenario. It also shows the aggregate values per type of funding system, and for the whole EU. Moreover, the EU aggregate is presented as percentage of the total amount of eligible deposits. This value might help in understanding whether the impact of harmonising the funding mechanism could be affordable by the EU banking system.

- Scenario 1b (EU-15, medium coverage ratio) is clearly the scenario with the highest contributions. This reflects the fact that it corresponds to the highest coverage ratio chosen. The 2005 contributions for few MS (BG, EE, LV, LT, PT, RO, SK, and SE) are higher than the contributions for this scenario. For scenario 1a, this number of MS increases: namely BG, EE, GR, ES, IE, LV, LT, RO, SK, and FI.

The largest increase when comparing 2005 contributions for ex-ante DGS with scenario 1 contributions are observed in FR for the EU-15, and in CZ, HU for the new MS. In these countries the scenario 1b contributions can even be four to nine times the actual contributions. For scenario 1a the impact is lower and contributions for these countries are at maximum three to four times the actual contributions.

- In scenario 2 (new MS, medium coverage ratio) around half of the MS are presently collecting higher contributions (BE, BG, EE, GR, ES, IE, LV, LT, PL, PT, RO, SK, FI, SE). This scenario mainly influences MS with an ex-post funding systems. In fact, only three ex-ante schemes (CZ, FR, and HU) should slightly increase their values, the total increase being only of 30 million Euro for these MS.
- In scenario 3 (EU-15, low coverage ratio) the majority of MS (BE, BG, CZ, DK, EE, GR, ES, IE, LV, LT, HU, PL, PT, RO, SK, FI, and SE) should not collect any contributions in the first year, as their fund is already sufficiently high. For these DGS future interventions will determine the contributions to maintain the fund at the target level. Note that under scenario 3a and 3b there is null impact for ex-ante systems.

In general, as can be expected, the impact is particularly high for ex-post schemes: the total yearly increase for these DGS ranges between 0,3 (scenario 3a) to 2,3 (scenario 1b) billion Euro. The impact on schemes classified as “other” (DK, CY, MT, PL, and RO) is not relevant, being always at least one order of magnitude lower than the impact on ex-post schemes.

The total EU contributions (last row of Table 10) for scenario 1 are 3 to 4 times the actual 2005 contributions; for scenario 2 the contributions are of the same size; noteworthy the contributions for scenario 3 are lower than the total EU contributions paid in 2005, due to the fact that many ex-ante schemes will not need to collect any contribution.

Considering the entire EU banking system, the impact of harmonizing the funding mechanism choosing one of the ex-ante scenarios varies between 0,3 (scenario 3a) to 3,8 (scenario 1b) billion Euro (one but last row of Table 11). When comparing these amount with the total volume of eligible deposits (last row of Table 11), the relative increment obtained lays between 0,005% (scenario 3a) and 0,06% (scenario 1b). In order to get an exhaustive overview of the global impact, note that the EU average contributions for the ex-ante DGS is around 0,15% of the eligible deposits (excluding SK, which is operating in order to cope with its deficit).

Scenarios 1b and 3 are all defined by setting a target size for the fund for all MS. Figure 7 and Figure 8 show the size of the fund in 2004 for the MS and all target levels for the scenarios. The same categorization of MS from the previous figures is taken.

The time length needed to reach the targets differs from one MS to the other, depending on the 2004 size of their funds. However, in the hypothesis of no interventions, following the definition of these scenarios all MS

will reach the target size in a maximum period of ten years. In general, for the ex-ante, the contribution period to reach the target sizes of scenario 1b is less than the maximum period of ten years. All ex-post schemes, and SK (which is currently in deficit), will need to contribute for all ten years in order to reach the target level for scenario 1b and scenario 3.

Finally, in the ex-post scenario, the impact on the current situation will be equal to minus the present contributions, which are the highest in GR, ES, FR, IE, PT, and SE where the total contributions in 2005 are higher than 50 million Euro.

5.2 Results based on covered deposits

In order to get an impression of the impact of using covered deposits instead of eligible deposits as basis for calculations, the same analysis with the same scenarios is repeated. Table 12 and Table 13 show the new figures. As the total amount of covered deposits is smaller than the total amount of eligible deposits, the new estimated contributions are smaller than those based on eligible deposits. In fact, considering the EU aggregated increase of contributions, the average ratio (over scenarios) between results based on covered and results based on eligible is 0,65%. One remarkable difference is that there will be null increase of contributions for ex-ante MS both in scenarios 2 and 3. Again, members with an ex-post system will be supposed to face the major impact.

The approach based on covered deposits will lead to an overall increase of contributions ranging between 0,2 (scenario 3a) and 2,3 (scenario 1b) billion Euro. In relative terms, compared with the total amount of eligible deposits, the increase lays between 0,003%(scenario 3a) and 0,04 (scenario 1b).

Table 10: Results of the scenario analysis (annual contributions) based on the total amount of eligible deposits.

	2004 Fund (T€)	2005 Premium (T€)	Premium Scenario 1, EU-15 medium coverage		Premium Scenario 2 New MS Medium Coverage (T€)	Premium Scenario 3, EU-15, Low Coverage, Risk Adjusted			Impact Scenario 4 (T€)
			Scenario 1a (T€)	Scenario 1b (T€)		Scenario 3a, low risk (T€)	Scenario 3b, medium risk (T€)	Scenario 3c, high risk (T€)	
BE ⁵⁴	694.800	41.855	100.321	200.641	40.128	0	0	0	-41.855
BG	130.976	32.252	4.071	0	1.629	0	0	0	-32.252
CZ	157.500	5.600	24.194	48.388	9.678	0	0	0	-5.600
DK	473.329	0	(*)65.303	(*)130.606	(*)26.121	(*)0	(*)0	(*)0	0
DE	N.A.	N.A.	(e)594.468	N.A.	(e)237.787	N.A.	N.A.	N.A.	N.A.
EE	54.261	9.981	1.575	0	630	0	0	0	-9.981
GR	603.657	73.915	52.062	104.125	20.825	0	0	0	-73.915
ES	4.805.300	308.000	286.933	573.865	114.773	0	0	0	-308.000
FR	1.400.000	152.000	442.405	884.809	176.962	0	104.176	188.022	-152.000
IE	273.100	75.556	(*)64.376	(*)128.751	(*)25.750	(*)0	(*)0	(*)497	-75.556
IT	0	4.002	263.305	526.611	105.322	67.143	89.524	111.905	-4.002
CY	6.672	660	12.574	25.148	5.030	3.206	4.275	5.344	-660
LV	33.309	14.887	3.504	7.009	1.402	0	0	0	-14.887
LT	128.500	26.066	2.517	0	1.007	0	0	0	-26.066
LU	0	0	43.007	86.014	17.203	10.967	14.622	18.278	0
HU	211.038	6.240	16.335	32.671	6.534	0	0	0	-6.240
MT	1.995	934	(*)2.784	(*)5.567	(*)1.113	(*)710	(*)946	(*)1.183	-934
NL	0	0	(e)203.254	(e)406.507	(e)81.301	(e)51.830	(e)69.106	(e)86.383	0
AT	0	0	90.000	180.000	36.000	22.950	30.600	38.250	0
PL	242.399	32.189	39.022	78.044	15.609	0	0	0	-32.189
PT	1.314.821	54.815	59.427	0	23.771	0	0	0	-54.815
RO	103.608	43.364	4.382	0	1.753	0	0	0	-43.364
SI	0	0	5.725	11.450	2.290	1.460	1.946	2.433	0
SK	-151.902	81.151	5.381	25.953	2.153	16.562	17.020	17.477	N.A.
FI	330.000	37.000	36.137	72.273	14.455	0	0	0	-37.000
SE	1.607.432	52.192	(*)73.551	(*)0	(*)29.420	(*)0	(*)0	(*)0	-52.192
UK	10.479	0	530.772	1.061.544	212.309	135.347	180.420	225.578	0
EU	12.431.275	1.052.659	3.027.383	4.589.976	1.210.953	310.175	512.679	695.350	-1.052.659

Source: Survey data: (*) Estimates for data on deposits, (e) Eurostat data, N.A. for not available.

⁵⁴ Recall that the Belgian 2004 fund and 2005 contributions include both the depositors and the investors compensation schemes. The comparison between these values and the scenario results underestimates the real impact of changing the funding system in this country.

Table 11: Increase in the contributions to be paid by the MS for each scenario. Eligible deposits are used as basis for calculations.

	Increase in Premium Scenario 1, EU-15 Medium Coverage		Increase in Premium Scenario 2 New MS Medium Coverage (T€)	Increase in Premium Scenario 3, EU-15 Low Coverage, Risk Adjusted		
	Scenario 1a (T€)	Scenario 1b (T€)		Scenario 3a, Low Risk (T€)	Scenario 3b, Medium Risk (T€)	Scenario 3c, High Risk (T€)
BE	58.466	158.786	0	0	0	0
BG	0	0	0	0	0	0
CZ	18.594	42.788	4.078	0	0	0
DK	65.303	130.606	26.121	0	0	0
DE	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
EE	0	0	0	0	0	0
GR	0	30.210	0	0	0	0
ES	0	265.865	0	0	0	0
FR	290.405	732.809	24.962	0	0	36.022
IE	0	53.195	0	0	0	0
IT	259.303	522.609	101.320	63.141	85.522	107.903
CY	11.914	24.488	4.369	2.546	3.615	4.684
LV	0	0	0	0	0	0
LT	0	0	0	0	0	0
LU	43.007	86.014	17.203	10.967	14.622	18.278
HU	10.095	26.430	294	0	0	0
MT	1.850	4.633	180	0	13	249
NL	203.254	406.507	81.301	51.830	69.106	86.383
AT	90.000	180.000	36.000	22.950	30.600	38.250
PL	6.833	45.855	0	0	0	0
PT	4.612	0	0	0	0	0
RO	0	0	0	0	0	0
SI	5.725	11.450	2.290	1.460	1.946	2.433
SK	0	0	0	0	0	0
FI	0	35.273	0	0	0	0
SE	21.359	0	0	0	0	0
UK	530.772	1.061.544	212.309	135.347	180.462	225.578
ex-ante	403.530	1.345.357	29.333	0	0	36.022
ex-post	1.132.061	2.268.123	450.423	285.694	382.259	478.825
other	85.900	205.583	30.670	2.546	3.627	4.933
EU	1.621.491	3.819.063	510.426	288.240	385.887	519.779
EU as % of eligible	0,0268%	0,0631%	0,0084%	0,0048%	0,0064%	0,0086%

Source: Survey data.

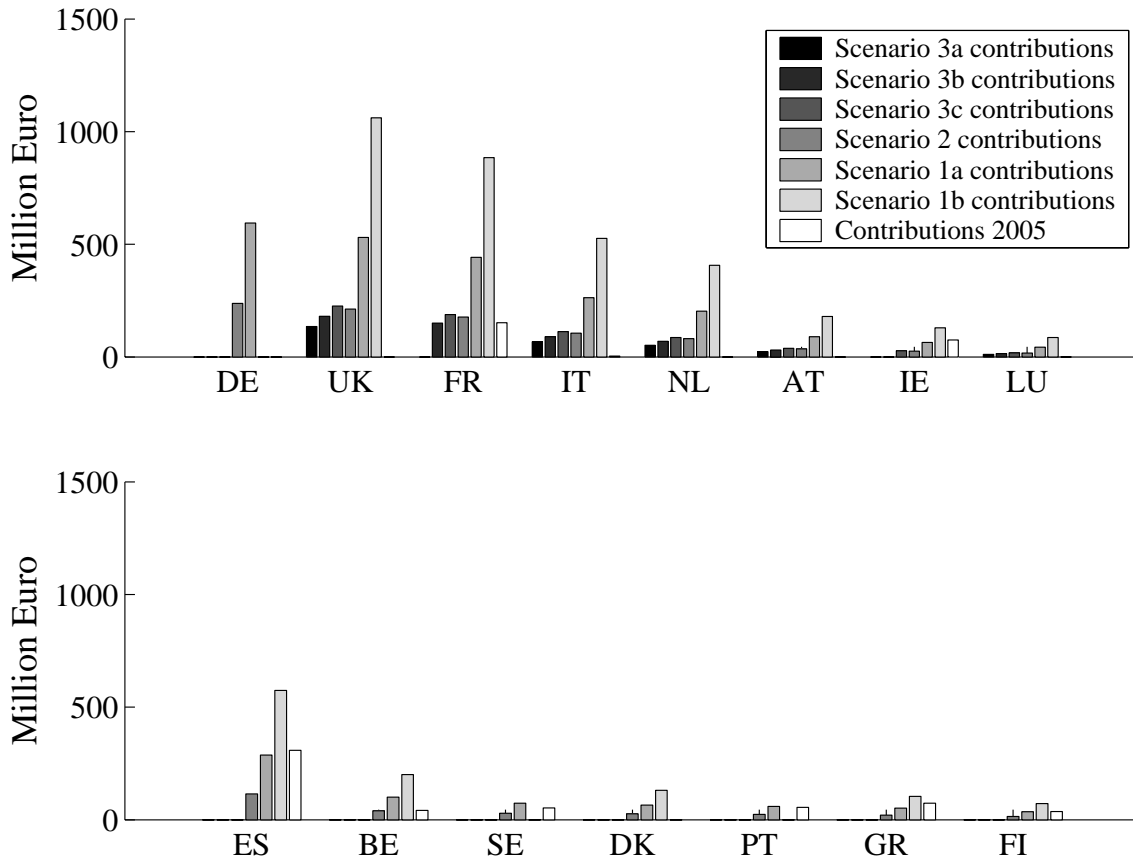


Figure 5: 2005 contributions and scenario contributions for EU 15 MS.

The top panel includes the MS which would pay contributions under scenario 3, while MS shown in the bottom panel would not.

Source: Survey data.

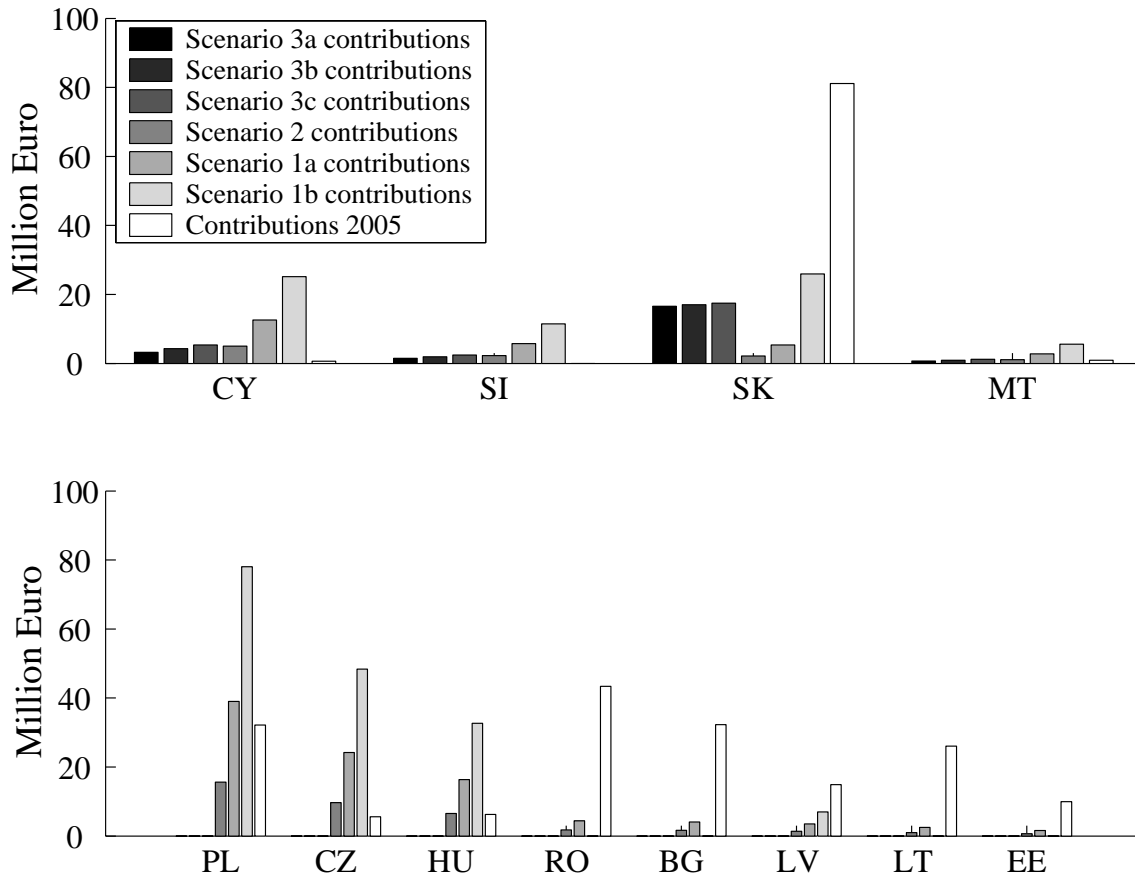


Figure 6: 2005 contributions and scenario contributions for the new MS.

The top panel includes the MS which would pay contributions under scenario 3, while MS shown in the bottom panel would not.

Source: Survey data.

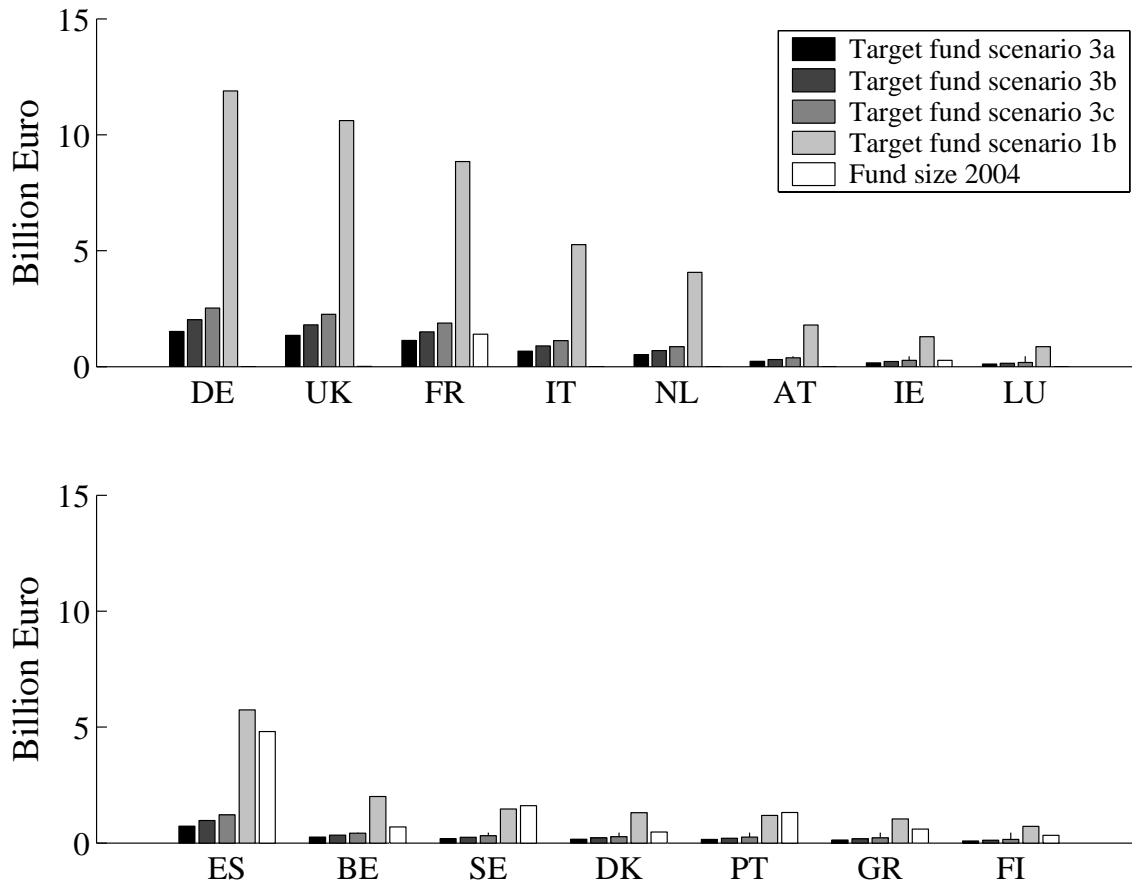


Figure 7: Size of the fund (2004) and target levels in scenario analysis for EU 15 MS.

The top panel includes the MS which would pay contributions under scenario 3, while MS shown in the bottom panel would not.

Source: Survey data.

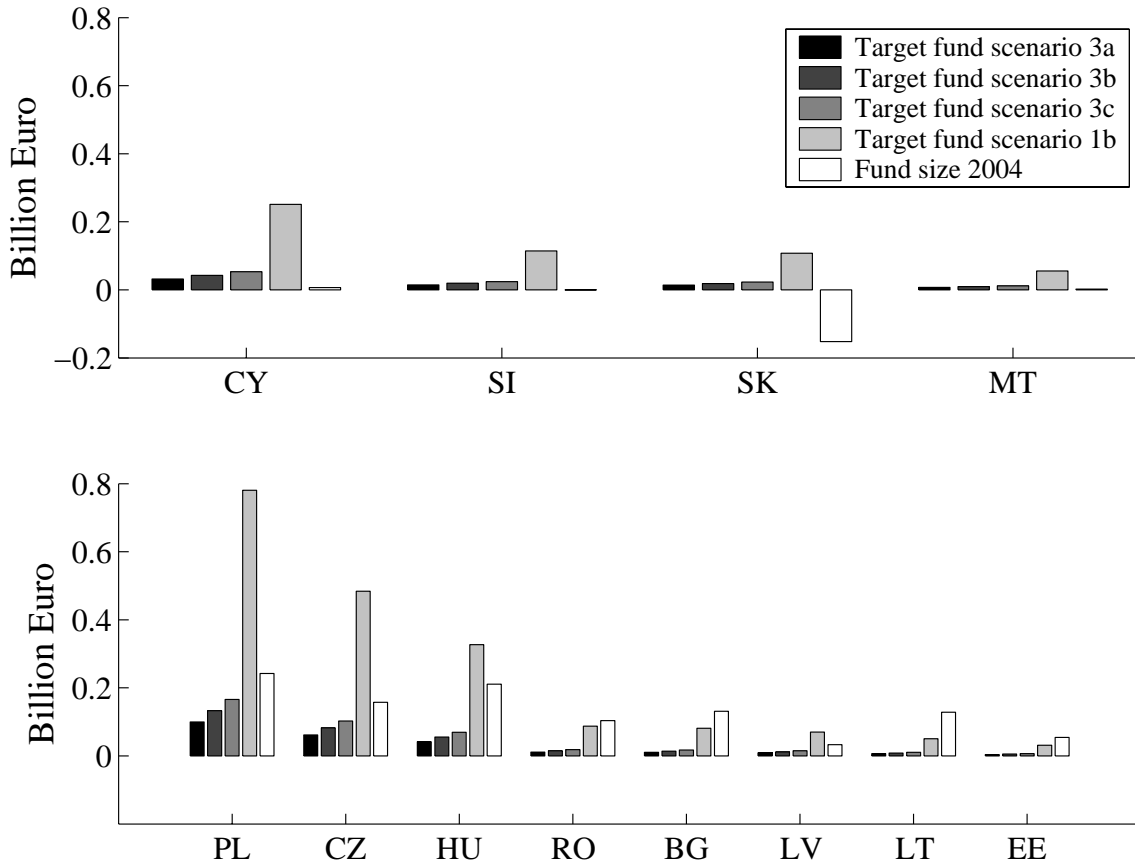


Figure 8: Size of the fund (2004) and target levels in scenario analysis for the new MS.

The top panel includes the MS which would pay contributions under scenario 3, while MS shown in the bottom panel would not.

Source: Survey data.

Table 12: Results of the scenario analysis (annual contributions) based on the total amount of covered deposits.

	2004 Fund (T€)	2005 Premium (T€)	Premium Scenario 1, EU-15 Medium Coverage		Premium Scenario 2 New MS Medium Coverage (T€)	Premium Scenario 3, EU-15, Low Coverage, Risk Adjusted			Impact Scenario 4 (T€)
			Scenario 1a (T€)	Scenario 1b (T€)		Scenario 3a, Low Risk (T€)	Scenario 3b, Medium Risk (T€)	Scenario 3c, High Risk (T€)	
BE	694.800	41.855	(*)51.986	(*)103.972	(*)20.794	(*)0	(*)0	(*)0	-41.855
BG	130.976	32.252	2.228	0	891	0	0	0	-32.252
CZ	157.500	5.600	13.650	27.299	5.460	0	0	0	-5.600
DK	473.329	0	26.306	52.612	10.522	0	0	0	0
DE	N.A.	N.A.	(*)308.054	N.A.	(*)123.222	N.A.	N.A.	N.A.	N.A.
EE	54.261	9.981	548	0	219	0	0	0	-9.981
GR	603.657	73.915	(*)26.979	(*)0	(*)10.791	(*)0	(*)0	(*)0	-73.915
ES	4.805.300	308.000	148.130	0	59.252	0	0	0	-308.000
FR	1.400.000	152.000	(*)352.408	(*)704.817	(*)140.963	(*)0	(*)0	(*)97.735	-152.000
IE	273.100	75.556	33.360	66.719	13.344	0	0	0	-75.556
IT	0	4.002	201.034	402.068	80.414	51.264	68.352	85.439	N.A.
CY	6.672	660	4.228	8.455	1.691	1.078	1.437	1.797	-660
LV	33.309	14.887	645	0	258	0	0	0	-14.887
LT	128.500	26.066	1.294	0	518	0	0	0	-26.066
LU	0	0	6.559	13.119	2.624	1.673	2.230	2.788	0
HU	211.038	6.240	8.650	0	3.460	0	0	0	-6.240
MT	1.995	934	2.303	4.606	921	587	783	979	-934
NL	0	0	(*)105.326	(*)210.652	(*)42.130	(*)26.858	(*)35.811	(*)44.764	0
AT	0	0	58.000	116.000	23.200	14.790	19.720	24.650	N.A.
PL	242.399	32.189	20.663	41.327	8.265	0	0	0	-32.189
PT	1.314.821	54.815	(*)30.972	(*)0	(*)12.389	(*)0	(*)0	(*)0	-54.815
RO	103.608	43.364	2.629	0	1.052	0	0	0	-43.364
SI	0	0	3.381	6.763	1.353	862	1.150	1.437	0
SK	-151.902	81.151	5.330	25.850	2.132	16.549	17.002	17.455	-81.151
FI	330.000	37.000	17.680	23.590	7.072	0	0	0	-37.000
SE	1.607.432	52.192	27.160	0	10.864	0	0	0	-52.192
UK	10.479	0	422.799	845.599	169.120	107.814	143.752	179.690	0
EU	12.431.275	1.052.659	1.882.303	2.653.448	752.921	221.475	290.237	456.734	-1.052.659

Source: Survey data: (*) Estimates for data on deposits, (e) Eurostat data, N.A. for not available.

Table 13: Increase in the contributions to be paid by the MS for each scenario. Covered deposits are used as basis for calculations.

	Increase in Premium Scenario 1, EU-15 medium coverage		Increase in Premium Scenario 2 New MS Medium Coverage (T€)	Increase in Premium Scenario 3, EU-15, Low Coverage, Risk Adjusted		
	Scenario 1a (T€)	Scenario 1b (T€)		Scenario 3a, low risk (T€)	Scenario 3b, medium risk (T€)	Scenario 3c, high risk (T€)
BE	10.131	62.117	0	0	0	0
BG	0	0	0	0	0	0
CZ	8.050	21.699	0	0	0	0
DK	26.306	52.612	10.522	0	0	0
DE	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
EE	0	0	0	0	0	0
GR	0	0	0	0	0	0
ES	0	0	0	0	0	0
FR	200.408	552.817	0	0	0	0
IE	0	0	0	0	0	0
IT	197.032	398.066	76.412	47.262	64.350	81.438
CY	3.567	7.795	1.031	418	777	1.136
LV	0	0	0	0	0	0
LT	0	0	0	0	0	0
LU	6.559	13.119	2.624	1.673	2.230	2.788
HU	2.410	0	0	0	0	0
MT	1.369	3.673	0	0	0	45
NL	105.326	210.652	42.130	26.858	35.811	44.764
AT	58.000	116.000	23.200	14.790	19.720	24.650
PL	0	9.137	0	0	0	0
PT	0	0	0	0	0	0
RO	0	0	0	0	0	0
SI	3.381	6.763	1.353	862	1.150	1.437
SK	0	0	0	0	0	0
FI	0	0	0	0	0	0
SE	0	0	0	0	0	0
UK	422.799	845.599	169.120	107.814	143.752	179.690
ex-ante	220.999	636.633	0	0	0	0
ex-post	793.098	1.590.199	314.838	199.259	267.012	334.766
other	31.243	73.217	11.553	418	777	1.181
EU	1.045.340	2.300.049	326.391	199.676	267.789	335.947
EU as % of eligible	0,0173%	0,0380%	0,0054%	0,0033%	0,0044%	0,0055%

Source: Survey data.

6. Opportunity costs

One issue which has not been covered in the scenario analysis but that might have a strong influence in assessing the impact of harmonising the DGS funding mechanisms is the opportunity cost faced by the members of those DGS for which a fund is established. In fact members of ex-post schemes can make profits out of the contributions that they would to pay under an ex-ante system. In this section this opportunity costs are analysed both relative to the current situation and with reference to the scenarios presented in Sections 4 and Section 5. Two hypotheses for opportunity costs are investigated:

1. In the first case it is assumed that the contributions to the DGS are kept by DGS members and treated as additional money shareholders invest in the company. In this way, extra income is produced by the DGS members. This gain can be measured using the Return On Equity (ROE), defined as the ratio of the net profit after taxes to the total shareholders' equity. The EU-ROE values for 2005 are available on the European Central Bank web site⁵⁵. The average ROE value is 15,17% for EU-15 MS and 16,76% for the new MS. An estimate of the annual opportunity costs is obtained by multiplying the ROE of each MS by the 2005 contributions paid to the DGS.
2. In the second case it is hypothesised that the DGS members invest the contributions in short-term securities⁵⁶. The average short-term interest rate for 2005 is 2,35% and 3,63% for the EU-15 MS and the new MS respectively. The yearly profit is obtained by multiplying the short-term interest rate per MS by the 2005 contributions paid to the DGS.

Clearly these hypotheses are arbitrary to some extent. However at present the way virtual funds are invested by the members of ex-post systems is not known.

Table 14 and Table 15 show the results of this analysis for the contributions collected by ex-ante systems in 2005 (column 2), and for the scenarios' contributions (columns 3 to 8). The tables refer to the scenarios built considering the amount of eligible deposits as basis for calculations. Focussing on the opportunity costs related to the scenarios, the range goes from 48,3 (scenario 3a) to 768,4 (scenario 1b) million Euro when computed using the ROE; in the other case, the costs vary between 10,6 (scenario 3a) and 133,4 (scenario 1b) million Euro. In the scenarios the costs are almost entirely faced by the EU-15 countries, covering from 93% to 97% of the total. Among the EU-15 countries, UK is in charge of the highest costs, due to the high amount of eligible deposits, to the ROE value (18,56%) and to interest on short term securities value (4,8%), higher than the average EU-15 values.

⁵⁵ 2006 - Report on EU banking sector stability, ECB publication:
<http://www.ecb.int/pub/pdf/other/eubankingsectorstability2006en.pdf>

For Bulgaria the average ROE of the new MS is applied. For Romania the source is the 2006 Financial Stability Report published by the National Bank of Romania: http://www.bnro.ro/def_en.htm

⁵⁶ Three-month interbank money market rate, source DG-ECFIN (Directorate General Economic and Financial Affairs), AMECO database:
http://ec.europa.eu/economy_finance/indicators/annual_macro_economic_database/ameco_applet.htm

A deeper insight of the opportunity costs in the EU-DGS system can be obtained considering not the annual contributions, but the entire fund cumulated by DGS over the years⁵⁷. Therefore, the same analysis has been repeated using data on the funds hold by DGS and on the targets funds to be achieved in scenarios 1b and 3 within 10 years.

Table 16 and Table 17 present these results. Considering the ROE, the costs for the EU are around 2,4 billion Euro; in the scenarios the costs range between 1,2 (scenario 3a) and 9,3 (scenario 1b) billion Euro. Supposing the investment in short term securities implies a cost of 0,3 billion Euro for the existing funds of the DGS. Finally, in the scenarios these costs vary between 0,2 (scenario 3a) and 1,7 (scenario 1b) billion Euro.

⁵⁷ Note that the DGS for which a fund is established can make profits by investing it. In the survey most of the ex-ante DGS declared that they indeed invests their fund. However, we do not have any evidence that the profit gained by the DGS is redistributed among its members.

Table 14: Opportunity costs with respect to the ROE for each MS relative to the 2005 contributions and the scenarios contribution.

	ROE Opportunity Costs 2005 Premium (T€)	ROE Opportunity Costs Scenario 1a Premium (T€)	ROE Opportunity Costs Scenario 1b Premium (T€)	ROE Opportunity Costs Scenario 2 Premium (T€)	ROE Opportunity Costs Scenario 3a Premium (T€)	ROE Opportunity Costs Scenario 3b Premium (T€)	ROE Opportunity Costs Scenario 3c Premium (T€)
BE	6.421	15.389	30.778	6.156	0	0	0
BG	5.366	677	0	271	0	0	0
CZ	992	4.285	8.570	1.714	0	0	0
DK	0	9.149	18.298	3.660	0	0	0
DE	N.A.	56.118	N.A.	22.447	N.A.	N.A.	N.A.
EE	862	136	0	54	0	0	0
GR	11.553	8.137	16.275	3.255	0	0	0
ES	52.884	49.266	98.533	19.707	0	0	0
FR	28.409	82.685	165.371	33.074	0	19.470	35.141
IE	14.613	12.450	24.901	4.980	0	0	96
IT	532	35.020	70.039	14.008	8.930	11.907	14.883
CY	55	1.051	2.102	420	268	357	447
LV	4.054	954	1.908	382	0	0	0
LT	3.217	311	0	124	0	0	0
LU	0	4.228	8.455	1.691	1.078	1.437	1.797
HU	2.210	5.786	11.572	2.314	0	0	0
MT	126	377	753	151	96	128	160
NL	0	29.838	59.675	11.935	7.609	10.145	12.681
AT	0	13.410	26.820	5.364	3.420	4.559	5.699
PL	6.013	7.289	14.579	2.916	0	0	0
PT	8.524	9.241	0	3.696	0	0	0
RO	6.678	675	0	270	0	0	0
SI	0	927	1.854	371	236	315	394
SK	7.726	512	2.471	205	1.577	1.620	1.664
FI	4.296	4.195	8.391	1.678	0	0	0
SE	10.183	14.350	0	5.740	0	0	0
UK	0	98.511	197.023	39.405	25.120	33.494	41.867
EU	174.656	464.968	768.367	185.987	48.344	83.433	114.830

Source: Survey data: for the ROE, ECB 2006 Report on EU banking sector stability.

Table 15: Opportunity costs with respect to the short term interest rate for each MS relative to the 2005 contributions and the scenarios contribution.

	Short-term Interest Rate Opportunity Costs Premium 2005 (T€)	Short-term Interest Rate Opportunity Costs Scenario 1a Premium (T€)	Short-term Interest Rate Opportunity Costs Scenario 1b Premium (T€)	Short-term Interest Rate Opportunity Costs Scenario 2 Premium (T€)	Short-term Interest Rate Opportunity Costs Scenario 3a Premium (T€)	Short-term Interest Rate Opportunity Costs Scenario 3b Premium (T€)	Short-term Interest Rate Opportunity Costs Scenario 3c Premium (T€)
BE	921	2.207	4.414	883	0	0	0
BG	935	118	0	47	0	0	0
CZ	112	484	968	194	0	0	0
DK	0	1.437	2.873	575	0	0	0
DE	N.A.	13.078	N.A.	5.231	N.A.	N.A.	N.A.
EE	240	38	0	15	0	0	0
GR	1.626	1.145	2.291	458	0	0	0
ES	6.776	6.313	12.625	2.525	0	0	0
FR	3.344	9.733	19.466	3.893	0	2.292	4.136
IE	1.662	1.416	2.833	567	0	0	11
IT	88	5.793	11.585	2.317	1.477	1.970	2.462
CY	28	541	1.081	216	138	184	230
LV	462	109	217	43	0	0	0
LT	626	60	0	24	0	0	0
LU	0	946	1.892	378	241	322	402
HU	418	1.094	2.189	438	0	0	0
MT	30	89	178	36	23	30	38
NL	0	4.472	8.943	1.789	1.140	1.520	1.900
AT	0	1.980	3.960	792	505	673	842
PL	1.706	2.068	4.136	827	0	0	0
PT	1.206	1.307	0	523	0	0	0
RO	3.643	368	0	147	0	0	0
SI	0	229	458	92	58	78	97
SK	2.353	156	753	62	480	494	507
FI	814	795	1.590	318	0	0	0
SE	992	1.397	0	559	0	0	0
UK	0	25.477	50.954	10.191	6.497	8.662	10.828
EU	27.981	82.851	133.407	33.140	10.560	16.224	21.453

Source: Survey data: for the short term interest rate, DG-ECFIN (Directorate General Economic and Financial Affairs), AMECO database.

Table 16: Opportunity costs with respect to the ROE for each MS relative the 2005 funds and the scenarios target funds.

	ROE Opportunity Costs 2005 Fund (T€)	ROE Opportunity Costs Scenario 1b Target Fund (T€)	ROE Opportunity Costs Scenario 3a Target Fund (T€)	ROE Opportunity Costs Scenario 3b Target Fund (T€)	ROE Opportunity Costs Scenario 3c Target Fund (T€)
BE	109.374	307.783	39.242	52.323	65.404
BG	930	13.548	1.727	2.303	2.879
CZ	30.727	85.695	10.926	14.568	18.210
DK	66.665	182.980	23.330	31.107	38.883
DE	N.A.	1.122.355	143.100	190.800	238.500
EE	5.702	2.722	347	463	578
GR	107.611	162.747	20.750	27.667	34.584
ES	895.433	985.326	125.629	167.505	209.382
FR	275.678	1.653.709	210.848	281.130	351.413
IE	65.273	249.005	31.748	42.331	52.914
IT	0	700.392	89.300	119.067	148.833
CY	648	21.024	2.681	3.574	4.468
LV	13.490	19.085	2.433	3.244	4.056
LT	20.077	6.212	792	1.056	1.320
LU	0	84.552	10.780	14.374	17.967
HU	81.069	115.719	14.754	19.672	24.590
MT	409	7.532	960	1.281	1.601
NL	0	596.752	76.086	101.448	126.810
AT	0	268.200	34.196	45.594	56.993
PL	66.964	145.787	18.588	24.784	30.980
PT	214.682	184.817	23.564	31.419	39.274
RO	22.124	13.496	1.721	2.294	2.868
SI	0	18.538	2.364	3.151	3.939
SK	N.A.	10.246	1.306	1.742	2.177
FI	43.538	83.909	10.698	14.265	17.831
SE	326.258	286.996	36.592	48.789	60.987
UK	1.835	1.970.225	251.204	334.938	418.673
EU	2.348.486	9.299.350	1.185.667	1.580.890	1.976.112

Source: Survey data: for the ROE, ECB 2006 Report on EU banking sector stability.

Table 17: Opportunity costs with respect to the short term interest rate for each MS relative to the 2005 funds and the scenarios target funds.

	Short-term Interest Rate Opportunity Costs Fund 2005 (T€)	Short-term Interest Rate Opportunity Costs Scenario 1b Target Fund (T€)	Short-term Interest Rate Opportunity Costs Scenario 3a Target Fund (T€)	Short-term Interest Rate Opportunity Costs Scenario 3b Target Fund (T€)	Short-term Interest Rate Opportunity Costs Scenario 3c Target Fund (T€)
BE	15.686	44.141	5.628	7.504	9.380
BG	162	2.361	301	401	502
CZ	3.470	9.678	1.234	1.645	2.056
DK	10.468	28.733	3.664	4.885	6.106
DE	N.A.	261.566	33.350	44.466	55.583
EE	1.584	756	96	129	161
GR	15.147	22.907	2.921	3.894	4.868
ES	114.732	126.250	16.097	21.463	26.828
FR	32.450	194.658	24.819	33.092	41.365
IE	7.425	28.325	3.611	4.815	6.019
IT	0	115.854	14.771	19.695	24.619
CY	333	10.814	1.379	1.838	2.298
LV	1.536	2.173	277	369	462
LT	3.905	1.208	154	205	257
LU	0	18.923	2.413	3.217	4.021
HU	15.335	21.889	2.791	3.721	4.651
MT	97	1.782	227	303	379
NL	0	89.432	11.403	15.203	19.004
AT	0	39.600	5.049	6.732	8.415
PL	18.999	41.364	5.274	7.032	8.790
PT	30.373	26.148	3.334	4.445	5.556
RO	12.067	7.361	939	1.251	1.564
SI	0	4.580	584	779	973
SK	N.A.	3.121	398	531	663
FI	8.250	15.900	2.027	2.703	3.379
SE	31.773	27.949	3.564	4.751	5.939
UK	475	509.541	64.966	86.622	108.277
EU	324.268	1.657.015	211.269	281.692	352.116

Source: Survey data: for the short term interest rate, DG-ECFIN (Directorate General Economic and Financial Affairs), AMECO database.

7. Conclusions

This report has investigated via a scenario analysis possible cost implications of harmonising the funding mechanism of EU-DGS. Four different funding systems currently applied across the MS have been imposed to all the others, hereby introducing different contributions than the contributions actually faced by DGS members. By comparing new and real contributions in each MS, the cost implications of harmonising the funding mechanism have been assessed. Three ex-ante scenarios, characterized by different target levels for the coverage ratio and different definition of the yearly premium, have been investigated. Two of these scenarios refer to the EU-15 MS, and one refers to the new MS. Finally an ex-post scenario with zero contributions is considered.

Results highlights that a harmonised funding system representing the EU-15 countries with a medium coverage ratio (0,84%) would raise the contributions in most of the MS. For some MS the scenario contributions can be even 4 to 9 times the real contributions. Choosing a harmonised system representing the new MS with medium coverage level (0,65%) would mainly influence MS with an ex-post funding systems. Only few DGS already adopting an ex-ante system should increase their contributions and the relative difference between the new and actual contributions would be almost always less than 20%. Finally, a scenario with low coverage ratio (0,17%) will have nearly no impact on the current systems applied across MS, since their current coverage ratios are higher than the target ratios. For these DGS future interventions will determine the contributions to maintain the fund to the target level.

In general, as can be expected, the impact would be high for ex-post schemes: the total yearly increase in the contributions for these DGS would range between 0,3 to 2,3 billion Euro, depending on the scenario.

Considering the EU as a whole, in the case of a scenario with a coverage ratio of 0,84%, the total contributions would be 3 to 4 times the total EU 2005 contributions. When considering a coverage ratio equal to 0,65% the levies would be of the same size of the 2005 contributions, although the apportioning among MS would be significantly different. A scenario with a coverage ratio of 0,16% would imply contributions lower than the total EU 2005 contributions, due to the fact that many ex-ante schemes will not need to collect any contribution.

The increase in the EU aggregated contributions when choosing one of the ex-ante scenario varies between 0,3 and 3,8 billion Euro, depending on the scenario. When comparing these amounts with the total volume of eligible deposits, the relative increment obtained lays between 0,005% and 0,06%. Note that the EU average contributions for the ex-ante DGS is around 0,15% of the eligible deposits.

When using the covered deposits as basis for premium estimation, the impact of harmonizing the way DGS are funded is less strong. In fact, considering the EU aggregated increase of contributions, the average ratio (over scenarios) between results based on covered and results based on eligible is 0,65%.

The analysis has also considered the opportunity costs that would be encountered by DGS if a more standardized ex-ante funded system was chosen. The profit that could be gained by the DGS members have been estimated under the hypothesis of investing the contributions in a short term bond issued by the Government, or by considering the average Return On Equity (ROE). EU aggregated results highlight that when considering the short-term investment the costs cumulated over a period of 10 years range between 0,2 and 1,7 billion Euro, depending on the scenarios. When dealing with the ROE, these costs vary between 1,2 and 9,3 billion Euro, depending on the scenario.

One issue that has not been included in the present analysis, but might influence the impact of harmonizing the way DGS are funded, is the investigation of the effectiveness of the present systems in the event of a banking crisis, eventually with cross borders exposure. For instance, the estimation of the overall costs of such a crisis would show whether the present systems can face it and what costs would be encountered if the “doing nothing option” were chosen. This analysis would suggest what relationship exists between the coverage ratio and the cost of such a crisis, and would assess whether the adoption of a specified system is actually worth compared to the price paid in moving from the current systems. This study would need the collection of more detailed data on occurred defaults and, in general, on crises and all types of intervention. Besides this, further research and data collection should explore the relevance of using covered deposits, which represent the actual exposure faced by DGS, instead of eligible deposits as basis for calculation. The lack of data on covered deposits and the consequent use of estimates influences and limits the conclusions that can be drawn from the related analysis.

Finally, a complete picture of the opportunity costs faced by DGS would be obtained by analyzing the way ex-ante DGS invest their funds.

Further research should be devoted to investigate these (and potentially other) issues.