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IMPACT ASSESSMENT

PART I

Accompanying document to the

WHITE PAPER

on Insurance Guarantee Schemes

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INTRODUCTION

The recent financial turmoil has made people far more conscious of the existence and limits of consumer protection/guarantee schemes in all financial sectors. In the insurance sector many EU Member States¹ have no consumer² protection arrangements in place, or have implemented guarantee schemes that only cover specific types of insurance. In order to remedy the existing regulatory loopholes and inconsistencies, the report of the de Larosière Group has recommended the setting-up of harmonised Insurance Guarantee Schemes (IGS) throughout the EU.³

In light of this, the Commission announced in its Communication of 4 March 2009 "Driving European recovery" that it would review the adequacy of existing guarantee schemes in the insurance sector and make appropriate legislative proposals. To this end the Commission will adopt in 2010 a White Paper setting out a European approach to IGS including indications on appropriate follow-up measures.

IGS provide protection to consumers when insurers are unable to fulfil their contractual commitments. They thus protect people from the risk that their claims will not be met if their insurance undertaking becomes insolvent. IGS provide protection either by paying compensation to policyholders for their claims, or by securing the continuation of their insurance contract. This can be done either by facilitating the transfer of the policies to a solvent insurer or by directly taking charge of the policies.

The main objectives linked to the establishment of IGS in a national/domestic context are to avoid significant reductions in the wealth of large groups of policyholders, to protect consumers' confidence in the insurance sector and financial markets, to prevent possible slowdowns of the real economy, to avoid a suboptimal allocation of insurance failure losses and to preserve the stability of financial markets. In the broader EU context, IGS also serve the purpose of protecting consumer confidence in the Internal Market, of avoiding potential disputes between Member States on the allocation of the losses stemming from defaulted insurers and of avoiding competitive distortions between EU insurance undertakings.

Guarantee schemes have been set up in other sectors of the financial services industry. All EU Member States have deposit guarantee and investor compensation arrangements and minimum protection standards were harmonised at European level by the 1994 Deposit Guarantee Scheme (DGS) Directive and the 1997 Investor Compensation Scheme (ICS) Directive.⁴ However, there is no such common European framework in the insurance sector.⁵

This Impact Assessment (IA) does not deal with the issue of consumer guarantees related to the activity of occupational pension funds, because relevant EU legislation on occupational pension funds is currently under revision in a parallel workstream eventually leading to an amended draft proposal in the mid-term. The scope of this IA does not extend to reinsurance undertakings either because consumers are, in general, not directly affected by the failure of a reinsurance undertaking.⁶

This IA is structured as follows: Section 1 presents the main procedural issues, including the consultation of interested parties. Section 2 focuses on the six main problem drivers: (i) the fact that policyholders lack important risk-related information; (ii) the fact that policyholders cannot process important risk-related information; (iii) the fact that insurers can fail and produce substantial losses; (iv) the fact that protection of consumers in some Member States is low or insufficient; (v) the fact that protection of consumers in several Member States is uneven; (vi) the fact that cross-border activity in the EU is growing.

Section 3 presents the two main problems generated by these six drivers: the fact that substantial losses can be passed on from insurance undertakings to large groups of consumers

or to taxpayers, and the fact that there is the possibility of a mismatch between consumer risk preferences and the risk of default of insurance undertakings. These two problems are analysed both in a domestic and in a cross-border context. Section 3 also explains the main consequences of each of these problems.

Section 4 highlights what would happen if the EU took no action and examines the case for EU action in the light of the subsidiarity principle and the existence of a legal basis for such action in the EU Treaty. Section 5 introduces the objectives of EU action on IGS. Section 6 analyses the main options available in terms of the nature, the tool and the content of possible EU action. Section 7 analyses the expected economic and social impacts of the retained set of policy options.

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

The Commission's attention was drawn to IGS as long ago as 2001 by Ireland after the collapse of a major UK insurance undertaking - Independent Insurance - which also operated cross-border. To date, the failure of Independent Insurance, which initially affected 190,000 policyholders, has generated some 738 million EUR losses.

1.1. THE COMMISSION WORKING GROUP ON IGS

In 2001, the Insurance Committee, the predecessor of the European Insurance and Occupational Pensions Committee, set up a working group which was mandated to examine IGS related issues. The working group quickly recognised that the subject was probably even more complex in the insurance field than in the banking and securities markets areas where EU Directives already require all Member States to have a national guarantee scheme in place. At the final meeting of the working group at the end of 2005 most Member States indicated that they were in favour of some European coordination in this area, although there was no consensus on the extent and content of such coordination.⁷

1.2. THE OXERA REPORT ON IGS

In order to have a comprehensive picture of the situation in EU Member States and a better insight into the functioning of existing schemes, the Commission contracted Oxera Consulting Ltd to prepare a report - Oxera (2007) - on IGS in the EU both for life and non-life insurance (excluding motor insurance). The report was finalised at the end of November 2007 and was published on the Commission's website in January 2008⁸.

1.3. INVOLVEMENT OF CEIOPS

In its letter of 5 May 2009, the Commission asked CEIOPS⁹ to give its view on the feasibility of the various design features of a possible European approach to IGS and to update the Oxera report's description of existing IGS. Moreover, CEIOPS was asked to give its view on whether, if the EU were to introduce a European regime for IGS, this regime should be extended to the pensions sector. On 30 June 2009, CEIOPS submitted its report¹⁰ to the Commission.

1.4. OTHER CONSULTATIONS

On the basis of the Oxera report, the Commission carried out a public consultation exercise in 2008¹¹. It received 30 contributions, from European and national associations, insurers, supervisors, Ministries, a consumer panel, an IGS and CEIOPS. A public hearing was also held on 2 June 2008. The results of the consultation and hearing were put together in a summary feedback statement which was published on the Commission's website.¹²

In May and June 2009, the Commission met with representatives of CEA, FINUSE, AMICE, CEIOPS, EFRP and EFDI to discuss the content of the forthcoming White Paper. The minutes of the meetings are published on the Commission's website¹³.

1.5. EUROPEAN PARLIAMENT AND COUNCIL

In one of its recommendations arising out of the Equitable Life Committee of Inquiry (No 25)¹⁴, the European Parliament called on the Commission to go ahead swiftly with preparing legislation on IGS.

In addition, Article 242 of the Solvency II Directive¹⁵ entering into force in 2012 requires the Commission to take into account developments and progress on a harmonised and adequately funded EU-wide solution for IGS and to report on this to the European Parliament and to the Council by 2014.

1.6. IMPACT ASSESSMENT BOARD AND INTER-SERVICE STEERING GROUP

An inter-services steering group was set up to monitor progress and to feed in views. The group comprised representatives from SG, the LS, the JRC as well as JLS, COMP, SANCO,

ECFIN, EMPL, ENTR and TAXUD. The minutes of the last steering group meeting have been sent to the IA Board.

The IA Board held its meeting on 10 March 2010 and issued its opinion on 12 March 2010 asking for some modifications to the IA. The main recommendations included:

- a more precise indication of the extent of the problem, explaining why EU intervention is needed and how this initiative relates to other policies in the field;
- a clearer presentation of the objectives and of all relevant policy options, with an analysis of subsidiarity and proportionality aspects;
- a more comprehensive overview of the expected impacts of the options, including alternatives that do not include an IGS;
- a more explicit indication of the planned next steps in the development of policy on IGS.

These proposed amendments were taken on board and a revised draft IA was resubmitted to the IA Board on 12 May 2010. The Board issued its opinion after a written procedure on 28 May 2010. It recognised that the report had been improved on a number of issues mentioned in the Board's first opinion and welcomed the fact that stakeholders will be able to provide feedback on the White Paper and that any follow-up measures will be accompanied by a further IA. In addition, the Board requested:

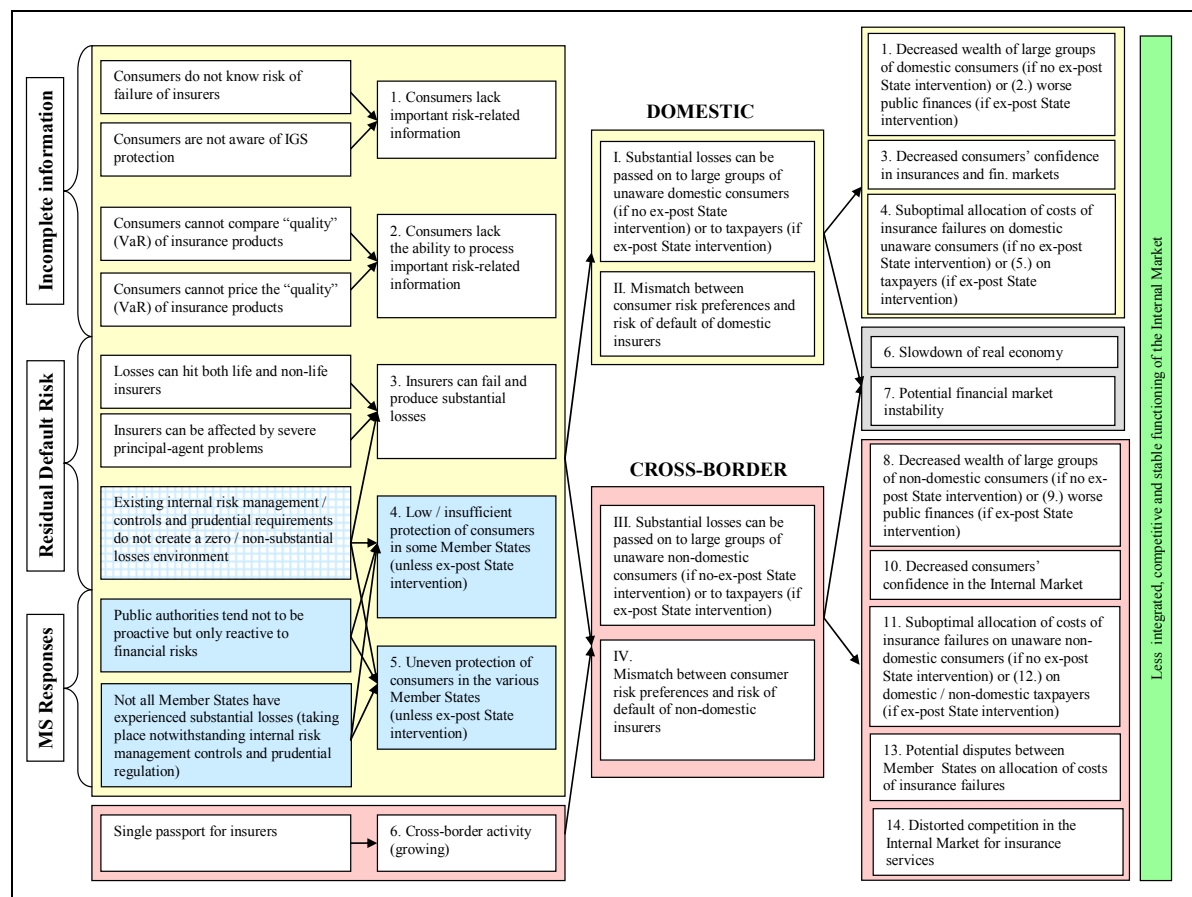
- to explain more clearly the likelihood of a default of insurance undertakings, the need for enhanced consumer protection and the need for relevant action at EU level;
- to simplify the presentation of the objectives and the most relevant policy options;
- to improve the understanding of the report by removing repetitions and unnecessary details.

These recommendations led to a revision and redrafting of the text in order to make the text easier to read. The section on the likelihood of default including the analysis of potential losses to be incurred by policyholders or taxpayers has been further developed (see in particular 2.2). The report explains more clearly the importance of enhanced consumer protection in a domestic and in a cross-border setting (see in particular 3.1 and 3.2). It shows that although alternative measures to EU action exist, they do not sufficiently address the shortfalls identified (see particular 4.2). The sections on objectives and relevant policy options have been streamlined and the relevant analysis has been more focused more clearly on the relevant key elements and questions at stake (see in particular section 5 and 6).

2. PROBLEM DRIVERS

The integrated, competitive and stable functioning of the Internal Market for insurance services is affected by four problems created by six problem drivers. Figure 1 shows the problem drivers (1 to 6) and the problems (I to IV) they lead to, as well as their consequences. In this section, the problem drivers will be discussed one by one. The resulting problems and consequences will then be presented in Section 3.

Figure 1 - Problem tree



2.1. POLICYHOLDERS LACK AND CANNOT PROCESS IMPORTANT RISK-RELATED INFORMATION (PROBLEM DRIVERS 1 AND 2)

For a number of reasons, it is almost impossible for consumers to assess the quality/security of insurance services:

First, there is a significant information gap on the side of policyholders, which prevents them from choosing between insurance services on the basis of their level of security. In fact, while policyholders can compare insurance undertakings' products on the basis of the premiums they would pay for any specific product, they hardly have any reliable information on the risk of failure of individual insurance undertakings. Moreover, policyholders are usually unaware

of the existence (or not) of an IGS protecting them (and up to what coverage level) when they take out an insurance policy.

Second, even if policyholders know about the risk of failure of individual insurance undertakings operating in the market, they can hardly put a price on such a risk.¹⁶

Due to the policyholders' lack and – in general – inability to correctly process important risk-related information¹⁷, they are more exposed to the risk of choosing insurers which are not financially sound. This may lead to a systematic mismatch between policyholders' risk aversion¹⁸ (supposedly high, as they are looking for insurance) and the risk of an insurer's default which they continue to run.

2.2. INSURANCE UNDERTAKINGS CAN FAIL AND PRODUCE SUBSTANTIAL LOSSES (PROBLEM DRIVER 3)

2.2.1. Reasons for insurance failures

Failure of an insurance undertaking may have different origins. These may or may not be linked to financial markets.¹⁹

Non-life insurance undertakings are less concerned by financial market developments. Their losses tend to arise from non-financial liabilities. In fact, losses by non-life insurers are typically caused by higher than expected claims (due, for example, to natural catastrophes, etc.) rather than by investment losses (see **Error! Reference source not found.** for the high variability over time of losses from natural catastrophes and man-made disasters).

Life insurers are much more exposed to financial market developments. Their losses are mainly generated by financial liabilities. Life insurers are certainly exposed to insurance losses from non-financial events as well, such as unexpected rates of mortality due - for example – to pandemics or increased longevity. But market/investment risk is typically the main source of risk for life insurers: indeed, on most policies, life insurers offer an investment performance guarantee to policyholders. When financial markets fall, life insurers are normally hit by losses arising from their financial liabilities.²⁰

In general terms, life insurance undertakings are more exposed to losses:

- When interest rates fall (thus reducing returns on assets or the discount rate applied to liabilities);
- During periods of high market volatility (as an increased volatility increases the value of guarantees to policyholders)
- When there are falls in equity or bond markets, driven by increased spreads.

In the recent financial crisis, for instance, losses to life insurers have mainly been caused by a fall in equity values (see **Error! Reference source not found.**) and by the widening of spreads on corporate bonds (see **Error! Reference source not found.**).²¹ Some important European insurers have reported particularly severe losses and have been forced to inject large amounts of new capital (for example, Allianz, losses of 7.3 billion USD and a capital injection of 2.0 billion USD; Aegon NV, losses of 7.9 billion USD and a capital injection of 4.1 billion USD; AXA, losses of 1.8 billion USD and a capital injection of 2.0 billion USD - see **Error! Reference source not found.**).

Apart from operational causes, losses for insurance undertakings might also be generated by fraud and, more generally, by the severe agency problems that insurance undertakings are potentially subject to. These agency problems are mainly caused by the length and the "inversion" feature of the insurance cycle, i.e. the fact that premiums are cashed in at an early stage and that claims are paid off only at a much later stage.

2.2.2. *The probability of default of insurance undertakings in the EU*

Default occurs when an insurance undertaking is unable to meet its financial obligations. Because of prudential requirements established by EU law, failures of insurance undertakings have not been very frequent in the past. Over the period 1996 to 2001, around 85 insurers have failed. And between 2001 and 2004, at least another 48 insurers (31 non life, 14 life and 3 composites) have defaulted in the EU²².

The Oxera report (see in particular sub-section 4.1.3) provides a calculation of the Probability of Default (PD) by a major European insurer rated by Standard & Poor's and arrives at the average value of 0.065%. This value corresponds with that arrived at by the Commission during the preparation of this Impact Assessment using data from Standard & Poor's on European insurers, updated to the year 2008 (see **Error! Reference source not found.**).

Using Moody's Kealhofer, McQuown and Vasicek (KMV) model, the ECB monitors equity values and their volatilities of insurers and thus calculates the expected probability of default for the Euro area insurance sector. The median expected probability of default calculated by the ECB has increased significantly - to some 0.5% - during the financial crisis (see Figure 1).

This figure is coherent with the default rate in 2008 of major European insurers rated by Standard & Poor's, which rose to 0.404% (see **Error! Reference source not found.**).

Neither the current (Solvency I) nor the future (Solvency II) EU solvency regimes create or can create a zero-failure environment for insurance undertakings.²³ On the basis of both historical data and model estimations, and for the purposes of this IA, one may assume that the PD of insurance undertakings ranges, according to economic conditions, by and large between 0.1% in normal conditions and 0.5% in exceptional conditions such as a financial crisis or the existence of particular conditions of weakness for insurers in a specific EU country.

On the basis of this range of probability of default of insurers, and taking into consideration the number of insurance undertakings present in each Member State, one can estimate the expected number of years between defaults of insurance undertakings in each Member State under normal market conditions to be: in DE 2 years; in UK 2.3 years; in FR 2.6 years; in LU 2.8 years; in IE 2.9 years; in NL 3.3 years; in ES 3.4 years; in IT 4 years (see Table 22). Against this background, it can be concluded that failure of one or more insurance undertakings may be expected to happen in the EU on average once every year.

2.2.3. Failure of an insurance undertaking can produce substantial losses which are passed on to policyholders or taxpayers

Error! Reference source not found. presents the Exposure at Default (EAD) of the insurance sector in each Member State and in the EU. The EAD is an estimation, based on technical provisions, of the maximum losses for society that would occur in each Member State and in the EU in case of failure of the entire insurance sector.²⁴ These hypothetical maximum losses would either hit policyholders or taxpayers, depending on the existence of IGS or on the possible intervention of public authorities. **Error! Reference source not found.** presents EAD/GDP ratios: in the EU EAD of the insurance sector represents 52.69% of GDP.

It is important to bear in mind that losses incurred by policyholders might be different in nature depending on the contract and on how the failure is resolved. Failure of a life insurer may cause the loss of expected policy benefits, which can be significant particularly if the policy was purchased to provide for retirement income. Losses on savings and investment products may equally result in important wealth losses, when guarantees given cannot be honoured. With regard to non-life insurance failures, losses to policyholders may result from the loss of the policy benefit (e.g. protection) as well as from the loss of premiums already paid in advance.

With a probability of default ranging between 0.1% and 0.5%, it is clear follows that not all insurers will default, and not all at the same time. What lessons can we learn from this with regard to future developments?

One recent indicator is the 2009 failure of five insurance undertakings of the Greek Aspis Pronia insurance group, which held about 16% of the Greek life market. This failure has affected an estimated number of 200,000 life insurance and 600,000 non-life insurance policyholders. The estimated loss for consumers and taxpayers is estimated to be higher than 200 million EUR.²⁵ Apart from this recent default, **Error! Reference source not found.** provides other examples of losses generated by selected defaults of European insurers.²⁶ It clearly shows that losses derived from past failures provide only a very general and rough indication of losses that might hit consumers in other Member States in the future.

Another indicator is the identification (see **Error! Reference source not found.**) of the average loss produced by a failed insurer in each country or the loss happening in each country when its largest insurer defaults.²⁷ However, losses in each Member State can easily be higher or much higher than the average loss.²⁸ Likewise, it is also a matter of fact that losses in each Member State will, in general, be lower than those produced by the failure of the largest insurer. It follows, therefore, that both the average loss and the loss produced by the default of the largest insurer represent only a very rough indication of future losses possibly hitting policyholders and beneficiaries in Member States.

Another way chosen by the Commission to estimate the losses that might hit policyholders in the future is to use a reasoned theoretical model. The model in question allows to estimate policyholders' losses combining the effect of various elements, such as: the EAD, the PD, the correlation of defaults between insurers (how probable is it that defaults happen at the same time), the concentration of the insurance market (how many insurers dominate the market), and the severity (Loss Given Default) of the losses in the case of default.

The Methodological report (MR) explains in detail how the Commission, by means of a Vasicek model, has estimated the losses that might hit consumers in each Member State in a one year time horizon.²⁹ The order of magnitude of the estimated loss distributions has been tested on the basis of selected past failures in the EU. Past failures tend to fall in a range between the 75% and the 99% percentile of the estimated loss distributions.³⁰

This means in conditions of serious stress, and in the total absence of IGS in Member States, that losses resulting from failures of insurance undertakings happening in a one year time horizon, that might (with a 99th confidence level) be passed on to policyholders or taxpayers, may amount to:

- 51.5 billion EUR for total (life and non-life) insurance in the whole EU, which is some 4.9% of total EU annual gross written premiums;
- 45.8 billion EUR for life insurance only, which is some 6% of annual gross written life premiums;
- 6.6 billion EUR for non-life insurance only, which is some 2.3% of annual gross written non-life premiums.³¹

In conclusion, when EU insurance undertakings fail, EU policyholders or taxpayers can incur very significant losses.³²

2.3. THE INSUFFICIENT (PROBLEM DRIVER 4) AND UNEVEN (PROBLEM DRIVER 5) PROTECTION OF POLICYHOLDERS

2.3.1. The fragmented landscape of IGS protection in the EU

The question whether an IGS needs to be introduced depends on the risk of failure of insurance undertakings and the potential impact that such failures could have on consumers. Given that clear evidence suggests that the latter can be considerable, the question arises as to the ability of the current (fragmented) framework of IGS to mitigate the risk or insurance failure or to reduce the losses for policyholders and beneficiaries if the risk materialises.

Unlike the banking and securities sectors, the insurance sector is not covered by any European legislation on guarantee schemes. Of the 30 EEA countries, 12 operate one (or in some cases more than one) general IGS as shown in **Error! Reference source not found.** In particular, six countries cover both life and non-life (excluding motor) insurance (ES, FR, LV, MT, RO and UK); three countries cover life insurance only (BG, DE and PL); and another three countries cover non-life insurance only (DK, IE and NO).³³

History, including the recent financial crisis, has shown that public authorities generally tend to be more reactive than proactive towards handling risks of negative shocks hitting the financial sector. This is illustrated by the fact that many IGS were introduced following a major default of one or more insurance undertakings or have been triggered by insurers experiencing serious financial difficulties in a given Member State. Where no IGS exists, this is normally due to the absence to date of major defaults.

2.3.2. Loopholes in the protection of policyholders as a result of the (non) existence of IGS

Given the limited number of existing IGS, a large number of policyholders in the EEA have no IGS protection whatsoever against the risk of failure of an insurance undertaking (both life and non-life (excluding motor insurance)).³⁴ According to the Commission's estimate (see **Error! Reference source not found.**) the share of the EEA market - in terms of gross written premiums - which is not covered by any IGS is 35% for the whole insurance sector, 26% for life and 56% for non-life.

Error! Reference source not found. shows the estimated funds available in existing national IGS. This table read together with Table 31 shows that there might be situations whereby even already existing IGS are not able to fully absorb total losses. For example, notwithstanding the existence of an IGS, major defaults in DE, FR and UK may amount to: 1.3, 1.9 and 2.0 billion EUR respectively in normal times and 6.9, 10.1, 14.1 billion EUR respectively in situations of crisis.

This means that, in a situation of market stress and taking into account existing IGS, losses that might (with a 99th confidence level) be passed on to policyholders or taxpayers for failure of an insurance undertaking happening in a one year time horizon may amount to:

- 46.5 billion EUR for life and non-life (total) insurance together in the whole EU;
- 41.3 billion EUR for life insurance only;
- 5.9 billion EUR for non-life insurance only.³⁵

In conclusion and taking into consideration funds available in existing IGS, significant losses stemming from the failure of insurance undertakings can be passed onto EU policyholders or taxpayers.³⁶

2.3.3. Loopholes in the protection of policyholders as a result of heterogeneous design features of existing IGS

Loopholes in the protection of policyholders can also stem from differences with regard to the design features of existing IGS. There are significant differences between national IGS not only in terms of whether a scheme exists at all and whether it has a general or a specific coverage, but also in relation to other aspects such as: geographical scope (home country principle, host country principle³⁷, etc), eligibility restrictions, protection limits, nature of intervention, funding arrangements, financial capacity, etc.

Error! Reference source not found. provides a detailed analysis of the design features of existing IGS.³⁸ It is very difficult to analyse in detail the consequences (in terms of loopholes in the protection of policyholders in Member States) of all these differences because of the

complexity of the elements involved.³⁹ It has therefore not been possible to carry this out in this IA. Attention has instead been focused on two of the main design features for IGS: policies covered and geographical scope.⁴⁰

2.4. CROSS-BORDER INSURANCE ACTIVITY IN THE INTERNAL MARKET (PROBLEM DRIVER 6)

Sub-section 2.4.1 describes the size and the features of cross-border insurance activity in the EU. Sub-section 2.4.2 quantifies the losses that could hit policyholders from cross-border insurance activity in the EU.

2.4.1. *The non-negligible (and growing) cross-border insurance activity in the EU*

Although cross-border activity⁴¹ is still relatively limited in the major EU insurance markets, it has increased over time and it is likely to increase further in the future. Some major European insurers (for example AVIVA) have, for instance, recently announced their intention to turn their EU subsidiaries into branches.⁴² This should help them to make better use of their capital particularly in light of the fact that Solvency II will not introduce the group support regime as initially proposed by the Commission.

In 2007, the volume of exported insurance services in the EU - in terms of gross written premiums – amounted to 42.8 billion EUR, of which 11.8 billion EUR have been sold via branches and the rest via Free Provision of Services (see **Error! Reference source not found.**). Cross-border insurance activity is mostly related to life insurance, which in 2007 amounted to 33.2 billion EUR (see **Error! Reference source not found.**), while non-life insurance activity covered in total 9.6 billion EUR (see **Error! Reference source not found.**).

Cross-border activity represents 4.10% of total gross premiums written in the EU. The share of EU-wide exported activity varies however quite significantly between Member States. LU (98.89%), IE (57.24%), MT (43.32%), and EE (32.62%) are the Member States where exported activity is the most developed as a share of total activity. The share of EU-wide imported activity is instead relatively homogeneous between Member States. LT (13.45%), LV (12.60%) and CZ (11.97%), are the Member States where imported activity is the most important as a share of total activity (see **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.**)

The highest volumes of exported insurance activity are to be found in IE and LU (see **Error! Reference source not found.** and **Error! Reference source not found.**). Total insurance gross written premiums exported by IE and LU amount in fact to 23.7 and 11.0 billion EUR respectively (81% of the total EU). If one focuses specifically on exported life insurance activity, it can be seen that this is very concentrated in the same two countries (see **Error! Reference source not found.** and **Error! Reference source not found.**): 20.5 and 10.4 billion EUR are the volumes of life insurance premiums exported from IE and LU respectively (93% of the total EU). Exported non-life insurance activity (see **Error! Reference source not found.** and **Error! Reference source not found.**) amounts instead to 9.6 billion EUR (22% of total EU). It is concentrated in a few countries: IE, FR, DE, BE, and DK.

The highest volumes of imported insurance activity are in UK, DE, IT and FR (see **Error! Reference source not found.** and **Error! Reference source not found.**). Total insurance gross written premiums imported amount to 15.5, 6.0, 6.4 and 6.1 billion EUR respectively (77% of the total EU). In terms of imported life insurance activity, the highest concentration is in the same four countries (see **Error! Reference source not found.** and **Error! Reference source not found.**). Imported non-life insurance activity (see **Error! Reference source not found.** and **Error! Reference source not found.**) is instead mainly concentrated in the UK and DE.

2.4.2. *Insufficient protection of cross-border insurance activity by existing IGS*

Error! Reference source not found. shows in detail whether existing IGS cover domestic and cross-border life insurance activity. As set out in **Error! Reference source not found.**, IE and LU do not have a home principle based IGS (see Endnote 37) in place for life insurance and only four Member States (LV, MT, PL, UK) have a host principle based IGS. It follows that 62% (see **Error! Reference source not found.**) of cross-border life-insurance activity is not covered by any IGS today.

Error! Reference source not found. shows in detail to what extent existing IGS cover domestic and cross-border non-life insurance activity. While insurance sold out of IE and FR is covered by a home principle based IGS, insurance sold out of DE, BE, DK, LU and IT is not protected by a similar scheme (**Error! Reference source not found.**). Overall, 23% (see **Error! Reference source not found.**) of non-life cross-border activity in the EU is not covered by any IGS.

Error! Reference source not found. and 42 show the losses that can be "exported" to other Member States when providing cross-border insurance services. In a situation of market stress, losses that might (with a 99th confidence level) result from exported business and hit non-domestic policyholders or non-domestic taxpayers in a one year time horizon, may amount to.⁴³

- 1.80 billion EUR for total insurance, which is around 3.5% of total (life and non-life) annual gross written premiums paid in the EU (or 1.77 billion taking into account existing IGS);
- 1.40 billion EUR for life insurance, which is around 3.1% of life annual gross written premiums paid in the EU (or 1.37 billion EUR taking into account existing IGS);
- 0.25 billion EUR for non-life insurance, which is around 3.8% of non-life annual gross written premiums paid in the EU (or 0.24 billion EUR taking into account existing IGS⁴⁴).

Error! Reference source not found. demonstrates for each Member State the losses that might hit domestic policyholders or taxpayers from (imported) cross-border insurance which is not covered by existing (home and host) IGS available funds. In a situation of market stress and taking into account the coverage of existing home and host state principle based IGS in the EU, losses that might (with a 99th confidence level) result from imported business and hit domestic policyholders or domestic taxpayers in a cross-border context in a one year time horizon, may amount to:

- 1.05 billion EUR for total insurance;
- 0.82 billion EUR for life insurance;
- 0.14 billion EUR for non-life insurance.⁴⁵

It follows from the above that significant losses stemming from defaults of insurance undertakings operating in a cross-border setting might be exported to non-domestic policyholders. Similarly domestic policyholders might suffer important losses if they have purchased policies from a defaulting insurance undertaking in another Member State, when these losses are not covered by IGS in the home and/or the host Member State.

3. PROBLEMS AND CONSEQUENCES

3.1. SUBSTANTIAL LOSSES PASSED ON TO LARGE GROUPS OF POLICYHOLDERS OR TAXPAYERS (PROBLEMS I AND III)

As shown in Error! Reference source not found., any insurance failure may affect up to several hundreds of thousands of policyholders. Quantifying and estimating the exact number has not been possible in this IA, as statistics on the number of the policyholders of individual insurance undertakings in Member States are currently not available to the Commission.

Alternatively, when an insurer fails, the State may intervene ex-post, and absorb the losses caused by a failing insurance undertaking. In this case, the totality of taxpayers is hit by the

losses produced by the failure. Even if the effect on individual taxpayers might be limited, overall, the effect on public finances could be significant.

3.1.1. Negative consequences of losses passed on to policyholders in a domestic context (no ex-post State intervention)

Losses passed on to policyholders can substantially reduce their wealth and income, particularly for households.

Life insurance policies are generally important components of households' savings. Protecting life insurance policies, therefore, means securing people's life savings and thus protection them and their families from financial hardship. It can be estimated that policyholders' equity in the life EU insurance system amounts to some 5,696 billion EUR (see **Error! Reference source not found.**). By contrast, losses that policyholders may incur under present conditions may amount to 41.3 billion EUR.

In the non-life insurance sector, the reduction in policyholders' wealth may also be important but it presents different features. These losses generally affect only those policyholders with outstanding (or already incurred but as yet unreported) claims against the failed insurer, i.e. only a percentage of all policyholders.⁴⁶ In concrete figures, the aggregate value for non-life claims can be estimated at around 821 billion EUR (see **Error! Reference source not found.**) while the estimated losses to be incurred by policyholders in the non-life sector are around 5.9 billion EUR.

Furthermore, the failure of insurance undertakings together with the absence of policyholder protection mechanisms, are likely to decrease consumer confidence in the insurance industry. This may result in a weaker insurance sector, and may eventually generate financial contagion between insurers. An OECD study (Yasui T. (2001)) reports for example that "the insurance industry is built on public's confidence in the business, which is in fact vulnerable", so that "without the ability to appropriately assess the risks of individual companies, the general public may lose their confidence in the soundness of other insurers", and "the bankruptcy case of a given insurer may cast doubts as to the soundness of other insurers and induce a run on them. Such a run was actually observed in some countries, particularly on companies of poor reputation", similarly to the banking sector, as "the line of reasoning is in fact analogous to the argument of the banking sector".⁴⁷

In addition, unprotected insurance failures may lead to a slowdown of the real economy for two reasons. First, the reduction in policyholders' wealth can severely affect their consumption behaviour. Second, when insurance companies fail, the economy's overall ability to manage risk is reduced.⁴⁸ There is evidence that the collapse of insurance

undertakings can significantly harm the development of the economy over the following months or years.⁴⁹ The likelihood of such disruptions is clearly greater where the insurance market is concentrated or the collapse affects many undertakings at the same time.

Finally, losses of insurance undertakings passed on to policyholders can also cause or deepen financial market turbulence and instability as policyholders can react to losses with sudden mistrust for the whole insurance sector leading them to surrender their policies *en masse*. To put it differently, when a large number of policyholders decide to surrender their policies at the same time, this may lead to an exacerbated downward spiral in stock market prices as insurers may have to sell large quantities of assets in order to obtain the necessary liquidity.⁵⁰

To summarize, when substantial losses are passed onto large groups of domestic policyholders, and if there are no consumer protection mechanisms in place (and the State does not intervene ex-post) to absorb these losses, this may trigger a series of important negative consequences.

3.1.2. Negative consequences of losses passed on to taxpayers in a domestic context (ex-post State intervention)

Losses passed on to domestic taxpayers may lead to a deterioration of domestic public finances which may obviously be more important if the losses are substantial loss and the state of public finances is weak. **Error! Reference source not found.** shows the estimated losses of policyholders as a percentage of GDP: these may amount up to 0.42% of EU GDP. During the recent financial crisis several Member States have, for example, intervened after approval by the Commission to support insurance undertakings through state aid: absorbing impaired assets (e.g. Dexia: 3,1 billion EUR and ING: 0.75 billion EUR) or recapitalising them (e.g. Aegon: 3.0 billion EUR; Ethias: 1.5 billion EUR; ING: 4.75 billion EUR; KBC: 1.5 billion EUR).

Moreover, losses from insurance failures that are absorbed by public finances also eventually lead, due to public budget constraints, to a reduction in public spending (for example on public services offered to citizens) for an amount equal to the loss. This may, depending on the amounts involved, have significant long-run effects on the real economy.

3.1.3. Negative consequences of losses passed on to policyholders in a cross-border context (no ex-post State intervention)

Losses passed onto non-domestic policyholders can cause substantial reductions in their wealth. **Error! Reference source not found.** shows that in 2007 the embedded EU value for

non-domestic policyholders in the insurance sector as a share of GDP was 1.70%. This includes an estimated value of 178.7 billion EUR covered by life-insurance policies (**Error! Reference source not found.**) and 31.1 billion EUR attributed to the non-life sector. With regard to losses that non-domestic consumers might incur, taking into account existing IGS, these may amount up to 0.82 billion EUR (life insurance) and 0.14 billion EUR (non-life insurance) respectively.

Furthermore, the failure of insurance undertakings without any policyholder protection mechanisms in place in the home and/or host Member State may decrease consumer confidence in the Internal Market.

Finally, disputes at political level may arise between Member States regarding the allocation and, where appropriate, compensation across countries of the losses generated by the failure of insurance undertakings operating cross border.

3.1.4. Negative consequences of losses passed on to taxpayers in a cross-border context (ex-post State intervention)

Losses passed on to non-domestic taxpayers may have a negative impact on the public finances of another Member-State which may obviously be more important when the loss is substantial and the state of public finances is weak.

Furthermore, the losses from insurance failures that are absorbed by the public finances of another Member State also eventually lead, due to public budget constraints, to a reduction in public spending (for example on public services offered to citizens) for an amount equal to the loss. This may, depending on the amounts involved, have significant long term effects on the real economy.

In addition, when non-domestic taxpayers are asked to absorb the losses of a defaulted insurance undertaking operating cross-border, this may adversely affect public opinion in the Member State(s) concerned as well as upset consumer confidence in the Internal Market. Finally, disputes at political level may arise between Member States regarding the allocation, and where appropriate, compensation across countries of the losses generated by the failure of insurance undertakings operating cross-border.

3.2. MISMATCH BETWEEN THE RISK PREFERENCE OF CONSUMERS AND THE RISK OF DEFAULT OF AN INSURER (PROBLEMS II AND IV)

3.2.1. Sub-optimal allocation of losses from insurance failure in a domestic or cross-border context (on policyholders or taxpayers)

As set out above, individual policyholders are hardly able to process important risk-related information which leads him/her to underestimate the risk of his/her insurer going bankrupt. This creates a mismatch with the risk preference of policyholders which may cause a suboptimal allocation of the losses caused by the failure, because consumers are convinced that they are insured and that they will consequently not be affected by the loss resulting from a default.

The resulting welfare problem stems from the absence of an efficient insurance market. An inefficient insurance market does not allow society to maximise social welfare as some parts of society remain exposed to an excessive amount of risk compared with their individual risk preference as well as with their efforts to be insured/protected against negative shocks. In other words, a welfare loss occurs because of an insufficient redistribution of negative shocks in society.⁵¹ This argument holds true unless the public authority – a Member State – intervenes ex-post to absorb losses. This, in turn, creates another problem as the cost from absorbing the losses will in that case be incurred by the totality of taxpayers which may produce further efficiency losses.⁵²

3.2.2. Distorted competition in the Internal Market for insurance services

The coexistence of different systems of IGS (including their total absence in some Member States) may create uneven levels of protection for policyholders purchasing insurance services in a Member State. This argument is particularly important in the context of an internal market that enables and encourages consumers to buy insurance cross-border.

To illustrate this point, a different protection of policyholders takes place in an (importing) Member State in the following situations (see also **Error! Reference source not found.**):

- an IGS is in place in the exporting Member State based on the home state principle, while there is no IGS in the importing Member State (cross-border activity is more protected than domestic activity);
- an IGS is in place in the exporting Member State based on the host state principle, and in the importing Member State based on the home state principle (cross-border activity less protected than the domestic activity);

- an IGS is in place in the exporting Member State based on the home plus host state principle, while there is no IGS in the importing Member State (cross-border activity more protected than the domestic activity);
- no IGS is established in the exporting Member State, while there is an IGS in the importing Member State based on the home state principle (cross-border less protected than domestic activity).

Error! Reference source not found. and 48 show the cases of an uneven level of protection in (importing) Member States with regard to cross-border life and non-life insurance activity.

Differences in IGS treatment between domestic and foreign EU insurers may result in an unlevel playing field and may cause distortions in competition between these two groups of insurers. These competitive distortions are closely related to the general inability of consumers to correctly process complex risk-related information. Consumers may, for instance, prefer to buy policies that are covered by an IGS to the detriment of insurers offering policies that are not covered. On the other hand, belonging to an IGS entails additional costs which will ultimately be borne by policyholders. Alternatively, consumers might prefer to buy lower priced insurance services because they are incapable of appreciating correctly the importance of IGS protection. This would again distort competition to the detriment of insurers which offer protected insurance products.⁵³

3.3. SUB-OPTIMAL DEVELOPMENT OF THE INTERNAL MARKET FOR INSURANCE SERVICES

Ideally, in a perfectly functioning internal market, cross-border and domestic activity should receive the same protection under IGS. **Error! Reference source not found.** clearly shows that such is not the case. A large part of cross-border activity (54%) in the EU remains unprotected as compared with domestic activity (34%). In other words, existing national IGS are designed in such a way that domestic insurance activity is better protected than cross-border activity.

For life insurance, 62% of cross-border activity is not covered (as compared to 25% of domestic life activity), while only 23% of cross-border non-life activity lacks relevant protection (as compared to 57% of domestic non-life activity).

There is, in conclusion, an important discrepancy in the coverage provided by existing IGS with regard to domestic and cross-border insurance activity. This argument holds particularly true for the life insurance sector.

4. BASELINE SCENARIO, POSSIBLE ALTERNATIVES, SUBSIDIARITY AND LEGAL BASIS FOR ACTION, INTERNATIONAL COMPARISONS

It follows from the above that the coexistence of different national approaches to IGS raises concerns about comprehensive and even consumer protection in the EU. It may also lead to competitive distortions and may hinder the development of a single market in insurance. The question now arises whether these problems can be best addressed by Member States and whether there are adequate alternatives to specific EU action on IGS.

4.1. HOW WOULD THE SITUATION EVOLVE WITHOUT ACTION AT EU LEVEL?

Despite the introduction of a more risk-based solvency regime, Solvency II will not create a zero-failure environment. A certain residual default risk will continue to exist. In the case of failure, the loss will be passed on to policyholders.

Although existing IGS regimes lead to an uneven and insufficient protection of policyholders within and across Member States, there are no signs that Member States are taking or planning initiatives in order to remedy the situation.

On the other hand, the scale of cross-border insurance activity in the EU is expected to increase. This is not only due to growing market integration in Europe, but also to the recently introduced Solvency II requirements. The lack of recognition of group support has already prompted some international insurance groups to turn some or all of their EU subsidiaries into branches. An increasing number of branches might alter the existing IGS landscape in the EU, thereby possibly exacerbating the existing shortfalls.

4.2. ARE THERE VIABLE ALTERNATIVES TO SPECIFIC EU ACTION ON IGS?

The importance of introducing an IGS depends on the risk of failure of insurance undertakings and the potential impact that such failures could have on consumers. This raises the question as to what alternative protection mechanisms are available at national or at European level to mitigate the risk of insurance failure or to reduce the losses for policyholders if the risk materialises.

Prudential regulation and risk management: The Solvency II Framework Directive¹ which will become applicable by 31 December 2012 provides for a risk-based, economic approach

¹ Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (recast), OJ L 335, 17.12.2009, pp. 1-155.

to solvency. It requires insurance and reinsurance undertakings to hold sufficient capital to cover their obligations over a 1-year time horizon subject to a 99.5% VaR confidence level. This should ensure that failure of an insurer occurs no more often than once in every 200 cases. Effective risk management and comprehensive governance structures are cornerstones of the future solvency system, in addition to capital requirements and appropriate supervisory powers of varying degrees of intensity. In spite of the many safeguards contained in the new solvency regime, Solvency II will not amount to a zero-failure regime. It is widely acknowledged that it would be too costly to set solvency requirements at a level that would be sufficient to absorb all unexpected losses.

Preferential treatment of policyholders in winding-up proceedings: in the event of the winding up of an insurance undertaking, current EU winding-up legislation offers Member States a choice between two alternatives in national law for giving priority treatment to policyholders over other creditors of the insurer in liquidation². However, reliance on winding-up proceedings may not be workable in practice. Firstly, there may not be a sufficient amount of assets for the protection of policyholders giving rise to uncertainty over whether policyholders will be compensated. Secondly, winding-up proceedings of insurance undertakings are not only complex but also expensive and time-consuming. This may create serious liquidity shortages for policyholders with outstanding claims at the time of insolvency, if their claims cannot be satisfied within a reasonable period of time.

Case-by-case government intervention: case-by-case solutions such as ex-post government interventions, while by their nature flexible, also have serious drawbacks. Unequal interventions may raise concerns regarding fairness and transparency, as relevant decisions are made on an ad-hoc basis rather than according to a set of pre-designed rules. In addition, case-by-case intervention may be perceived as privileging larger undertakings thereby incentivising risk and creating moral hazard through the assurance of safety nets for which others have to pay. Ad-hoc interventions may create uncertainty both for policyholders and, depending on their financing, for taxpayers and the industry.

Additional information and enhanced transparency: Approaches which enhance transparency and information requirements seek to strengthen policyholders' capacity to choose the most appropriate insurance product for themselves. These approaches rely on the assumption that relevant information is properly understood and incorporated in the decision-making process of policyholders. Particularly in Member States where the policies of domestic and incoming insurers are subject to different levels of IGS protection, enhanced information may in principle alleviate concerns about consumer protection within Member States. However, it is highly unlikely that policyholders are capable of understanding and processing all relevant information, particularly with regard to cross-border insurance business. Moreover, additional information does not address the issue of the differential consumer protection between different Member States and the fragmented IGS landscape within the EU as such, i.e. the lack of IGS in many Member States.

4.3. SUBSIDIARITY ANALYSIS AND LEGAL BASIS

² See Article 10 of Directive 2001/17/EC of the European Parliament and of the Council of 19 March 2001 on the reorganisation and winding-up of insurance undertakings, OJ L110, 20.04.2001, pp. 28-39.

In its sentence of 4 December 1986 (Case 205/84), the European Court of Justice gave four reasons why policyholders need special protection:

- 1) insurance is a highly particular service because it is linked to future events, the occurrence of which is uncertain at the time a contract is concluded;
- 2) an insured person may find himself in a very precarious position if he does not obtain payment after filing a claim for compensation;
- 3) it is very difficult for a person seeking insurance to assess the terms of a contract and the outlook for the insurer's future financial position;
- 4) insofar as insurance has become a mass phenomenon, it is just as essential to protect the interests of third parties.

Although action at Member State level could in principle contribute to address some aspects of the problems that have been identified, it would also leave some important aspects untouched.

In particular, Member States acting on their own would not be able to appropriately address the problems due to the coexistence of inconsistent features in the mechanisms set up to protect policyholders. It follows, that in accordance with the principles of subsidiarity and proportionality as set out in Article 5 TFEU, the objectives of the proposed action cannot be sufficiently achieved by Member States and can therefore be better achieved by the EU. Relevant proposals will not go beyond what is necessary to achieve the objectives pursued. Only EU action can ensure that all policyholders and beneficiaries acquiring insurance policies in the EU benefit from equal and comprehensive protection in the event that an insurance undertaking defaults, which also ensures a level playing field and thereby promotes further integration within the Internal Market.

The legal basis for EU action in the insurance field is to be found in the Treaty provisions related to free provision of services. According to Article 3 of the EU Treaty, the EU pursues the objective of an Internal Market characterised by the free movement of goods, persons, services, and capital. Article 26 of the Treaty of the Functioning of the European Union (TFEU) further states that the Internal Market shall constitute an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of the TFEU Treaty. Any follow-up action is likely to be based on Article 53 (2) of the TFEU which is the legal basis to adopt EU measures aimed at achieving the Internal Market in financial services.

4.4. IGS OUTSIDE EUROPE

A number of countries outside the EU have already established IGS. In North America schemes for life and non-life insurance have been established in Canada and in the USA.

Already in the 1970s the USA established distinct IGS, covering the life and non-life sector respectively, in each State. Before doing business in another State, insurance undertakings must be licensed in that State and must adhere to its IGS. Sub-section 4.6 of the Olera report provides an overview of the main operational characteristics of the US IGS system.⁵⁴

In the Asia-Pacific region, Japan and Korea have established national schemes, covering both life and non-life insurance. Regarding Japan, the Non-life Insurance Policyholders Protection Corporation and the Life Insurance Policyholders Protection Corporation were established in 1998.⁵⁵ The OECD reports the existence of IGS for life and non-life insurance also in Malaysia, Taiwan, Singapore and the Philippines.⁵⁶

5. OBJECTIVES OF AN EU ACTION

Taking into account the domestic and the cross-border context, potential future EU action on IGS protection should pursue the following objectives:

MAIN OBJECTIVES

5.1. OBJECTIVE 1: ENSURE AN EVEN AND COMPREHENSIVE PROTECTION OF POLICYHOLDERS

EU action on IGS should ensure an adequately high and even protection of policyholders, sufficiently reducing the risk that the non-payment of claims by insurers will mean substantial losses passed on to policyholders or taxpayers. Relevant action should therefore ensure the following:

1. that protection mechanisms are present in all Member States to protect policyholders and that their resources are adequate in all Member States;
2. that the geographical scope of protection schemes does not maintain or produce loopholes in the protection of policyholders in any Member State;⁵⁷
3. that other design features of protection schemes do not maintain or produce loopholes in policyholder protection in any Member State. This is particularly important as the geographical scope is strongly intertwined with other design features: when these are not sufficiently homogeneous, loopholes in the protection of policyholders in Member States can arise in spite of a harmonised geographical scope throughout the EU.

SUPPORTING OBJECTIVES

5.2. OBJECTIVE 2: AVOID COMPETITIVE DISTORTIONS

A harmonised framework on IGS protection at EU level should also aim at contributing towards a level playing field between insurance companies and improving competitive neutrality of business conducted by domestic undertakings and incoming EU insurers who operate under the freedom to provide services or who provide insurance via branches.

5.3. OBJECTIVE 3: REDUCE ADVERSE INCENTIVES

EU action should ensure that the design features of the protection mechanisms minimise the risk of moral hazard for policyholders, insurers and supervisors/public authorities. It has been argued that the existence of a safety net in the form of an IGS, may lead consumers to be less inclined to assess the financial situation of the insurer that they contract with and to make a prudent selection. However, given the difficulty for consumers to correctly assess risk related information it can be argued that the introduction of a protection mechanism will not provide for the wrong incentives. Similarly a harmonised framework on IGS should prevent taxpayers from ultimately bearing the costs of an undertaking's mismanagement by introducing a legal framework which is financed by the undertakings themselves and that does not incentivise excessive risk-taking.

When there is a safety net to protect the interests of policyholders, supervisors might feel less pressured to carry out their supervision. The design of the protection mechanism should therefore also ensure that potential moral hazard problems in relation with supervision are minimised.

5.4. OBJECTIVE 4: ENSURE COST EFFICIENCY

EU action on IGS must strike the right balance between the benefits to policyholders and the costs linked to the protection offered. This means that both welfare costs of protection as set-up costs need to be minimised. In the end, an IGS that is not cost efficient will lead to higher costs for policyholders.

Minimise welfare costs of protection

From a societal point of view, the effects associated with the introduction of protection mechanisms in the case of insurance failure are to a large extent distributional.⁵⁸ If a protection mechanism exists, the losses in the case of failure are shifted from the policyholders concerned to a larger population. In other words, the protection funds will absorb an amount of losses that is equal to the losses that would hit consumers (or taxpayers) in the absence of a protection mechanism.⁵⁹

Under this distributional angle, the argument that the introduction of a protection mechanism will lead to excessive costs for society must be seen in the right perspective: the costs - in terms of financial volume - of the default of an insurer remain by and large the same, but resources to absorb them are paid by different groups of individuals and thus might entail welfare costs of different degrees.⁶⁰ Welfare costs are very difficult to estimate quantitatively, but they can be assessed qualitatively in the light of the allocation of losses caused by an insurance failure. Furthermore, welfare costs can be determined by induction when looking at the resources needed by the protection mechanism chosen: the higher the resources mobilised, the higher the possibility of welfare costs. Finally, welfare costs can also be qualitatively analysed in terms of possible adverse incentives produced by IGS.

Minimise set-up and operational costs of protection

Welfare losses represent the main costs for society that can stem from the creation of a protection mechanism. However, when a protection mechanism is set up, it generally also entails set-up and operational financial costs. These costs must also be taking into account in assessing whether the benefits of protecting policyholders' claims outweigh the possible costs linked to the protection offered. The objective of minimising set-up and operational costs also includes the objective of respecting the existing supervisory structure as much as possible as well as to adequately taking into account European rules on state aid. As competitive distortions between insurance undertakings operating in the same Member State may also be generated when protection is linked to implicit or explicit Member State support, state-supported funding mechanisms that can create competitive distortions should be avoided.

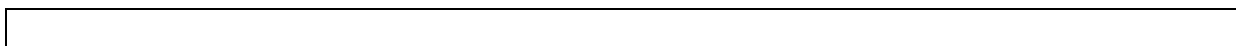
5.5. OBJECTIVE 5: ENSURE MARKET CONFIDENCE AND STABILITY

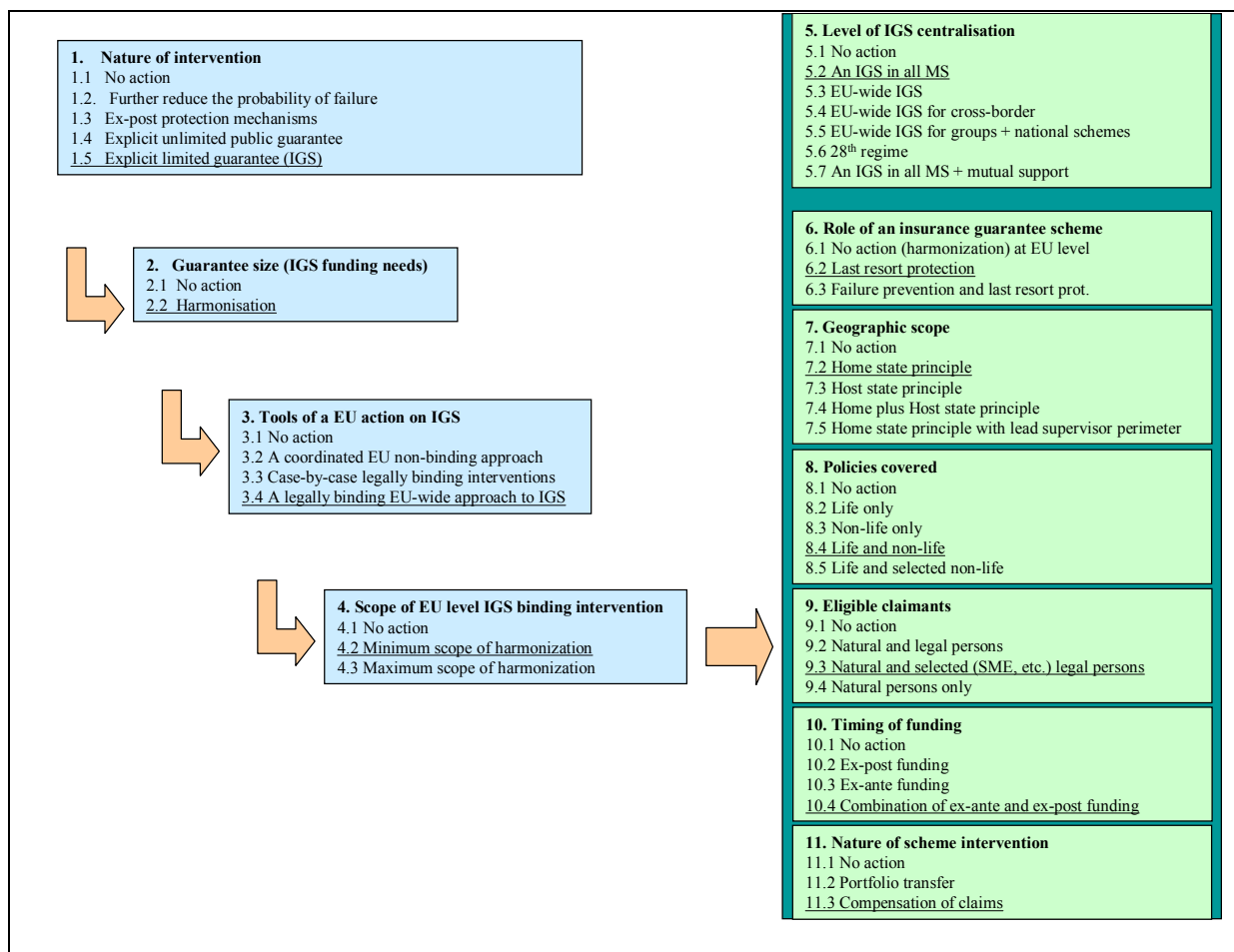
EU action on IGS should finally aim at enhancing market confidence and furthering the stability of the EU internal market in insurance services. By increasing consumer confidence in insurance undertakings and products, an IGS may contribute to promote consumer demand and finally enhance the stability of the financial system.

6. ANALYSIS OF AVAILABLE POLICY OPTIONS

In order to enhance readability, Figure 2 shows all available policy options that are analysed in this IA. An extended list of policy options is set out in Annex A.

Figure 2 - Option tree





As the option tree shows, the first (1 to 4) group of alternative options requires the selection of a preferred option before identifying the next group of alternative options. When certain options are not mutually exclusive, this is indicated in the analysis. The second group of options (5 to 11) represent different design features of an IGS scheme. They do not follow from one another, but they are closely intertwined and therefore need to be put in a common context. The policy options discussed below will be analysed in terms of their compliance with the objectives identified above. The following score system has been used for the assessment of the options: from slightly positive (+) to strongly positive (+++); from slightly negative (-) to strongly negative (---); no or negligible impact: void.

6.1. THE NATURE OF A POSSIBLE EU ACTION

- Option 1.1: No action

Preserving the status quo implies a continuation of the coexistence of very different national approaches to policyholders' protection. These differences generate uneven and inappropriate levels of policyholders' protection in several Member States and may hinder the harmonious development and functioning of the EU Internal Market for insurance services.

- Option 1.2: Further reduce the probability of failure of insurance undertakings

Failures can be prevented by strengthening the risk management system in insurance undertakings or by enhancing prudential supervision, particularly through an increase of the solvency requirements.

1.2.1. Strengthening the risk management system

The risk management system encompasses the whole range of processes present in the operational activity of insurance undertakings that aim at ensuring that an insurance undertaking is able to correctly and professionally manage its risks. However, practice suggests that even a very solid risk management system cannot fully exclude the risk of default. Solvency II substantially strengthens the system of governance in general and the risk management system (and function) in particular. Introducing further legal constraints in this regard would most likely be opposed by stakeholders because of the additional costs and administrative burden that would follow from this.

1.2.2. Enhanced prudential supervision and higher solvency requirements

If designed in an appropriately risk-sensitive way, solvency requirements can mitigate a potentially excessive risk-taking behaviour by insurance undertakings, limit the probability that they fail and therefore protect (up to a certain extent) the economy and society from the negative consequences linked to their failure.

It is however impossible to set solvency requirements at a level which is high enough to absorb all losses. Capital requirements would in such a case be so high that insurance undertakings would no longer be able to offer their services at a price which is affordable for consumers. In a worst case scenario this would lead to the implosion of the whole insurance market. Statistical evidence⁶¹ shows that solvency requirements are optimally designed when they are sufficient to absorb losses of insurance undertakings in all cases except for those exceptional circumstances that would require too much capital. Solvency II requires insurance undertakings to hold sufficient capital to cover their obligations over a 1-year time horizon subject to a 99.5% VaR confidence level. This ensures that failure of an insurer occurs no more often than once in every 200 cases.

- Option 1.3: Introduce a protection of policyholders after failure of an insurance undertaking has occurred

1.3.1. Improved transparency under a *caveat emptor* approach⁶²

Enhancing the information available to policyholders (about the existence of IGS and the level of IGS protection provided) should enable them to make a more informed choice between insurers. It would allow them to make their choice not only on the basis of the price offered in the market, but also on the basis of the intrinsic quality of the offer (in terms of the risk of failure of the insurer).

However, the adoption of such a *caveat emptor* approach is likely to be ineffective because policyholders are unaware of important risk-related information and are incapable to correctly process important but complex risk-related information (problem drivers 1 and 2). If the EU were to increase transparency, it would still be very unlikely that the great majority of policyholders would fully understand and be capable to appropriately process the complex risk-related information they receive.

In conclusion, a transparency measure would not overcome the shortfalls of the existing status quo, with the consequence of maintaining uneven or inappropriate levels of policyholder protection in several Member States. The Oxera report argues that adopting a *caveat emptor* approach might not be acceptable, especially when substantial losses or a large number of claimants are involved.

1.3.2. Legal priority for consumers in winding-up

Notwithstanding common principles contained in the Winding-up Directive 2001/17/EC as recasted by the Solvency II Directive 2009/138/EC, winding-up procedures vary substantially between Member States. In addition, winding-up proceedings inherently include the risk of an insufficient amount of assets for the protection of policyholders, giving rise to uncertainty over whether policyholders will be compensated. Moreover, winding-up proceedings are in any case complex and very expensive processes taking a long time. They can, therefore, hardly provide an effective and immediate protection for policyholders.

- Option 1.4: Explicit unlimited guarantee from public authorities

An explicit unlimited guarantee from public authorities has the obvious drawback of using (potentially a very large amount of) taxpayers money and thereby affecting public finances. It would entail a sub-optimal allocation of insurance failure losses leading to a reduction in

welfare, resulting from a too-large redistribution of failure losses. Moreover, a guarantee from public authorities can also create a moral hazard behaviour (insurers might be less inclined, for example, to limit their risks through reinsurance contracts).

- Option 1.5: Explicit limited guarantee (Insurance Guarantee Scheme)

In the event that insurers fail, a guarantee scheme/fund can absorb insurers' losses up to its financial endowments.

Statistical evidence suggests that high levels of security for consumers can be best achieved by combining (lower) capital requirements with a guarantee scheme rather than having (higher) solvency requirements without a guarantee scheme. A guarantee scheme somehow bundles the protection from losses in excess of insurers' capital (*tail risk*)⁶³ thereby reducing their variability (and as a consequence the funding needed to absorb them) if the number of insurers participating in the scheme is sufficiently large. Furthermore, a guarantee scheme may spread the funding needed to provide protection against these excess losses among a higher number of consumers and therefore provide the same level of protection at a lower cost. These ideas are represented in **Error! Reference source not found.**, which shows how the "centralisation" of the tail risk of insurance undertakings facilitates a consistent distribution of excess losses (losses in excess of solvency requirements plus excess capital, if any) for the guarantee scheme.

Another important argument in favour of IGS is that they, if properly designed, may reduce the problems of a suboptimal allocation of insurance failure losses. Without IGS in place either the policyholders of the defaulted insurer or the totality of taxpayers absorb losses causing a reduction in social welfare in both cases. An IGS that covers losses, includes the entire community of policyholders to absorb them. This can minimize the allocation problem of insurance failure losses and therefore maximise social welfare. It is also argued that IGS may contribute to the development of competitive markets. In other words, IGS can be seen as a "smooth exit mechanism for incompetent insurers from the market".⁶⁴

As recalled in sub-section 4.4 of the Oxera report, IGS also have the advantage of: (1) being able to guarantee a speedy payment to policyholders; (2) minimise and possibly bring to zero the loss incurred by policyholders; (3) introduce an element of predictability and certainty on the effects of the failure of an insurance undertaking for its policyholders.

The most commonly raised argument against introducing IGS is the potential incentive to a moral hazard behaviour that IGS may create for policyholders, insurers and supervisors. As indicated above, there is sufficient evidence suggesting that this argument is not as strong as it might seem.

Similarly, the Oxera report notes that although there is very little evidence on how the introduction of IGS can influence the proper/inappropriate allocation of economic incentives, it may be concluded that the proper design of IGS features can in general address and appropriately manage potential moral hazard effects.

Regarding set up and operational costs, the Oxera report notes in section 5 that in the absence of failure, financial costs associated with running an IGS are minimal, and that when failures occur, operational costs are small/negligible compared with the actual resources needed to provide the guarantee. According to the Oxera report they can be estimated to be around 0.5% or less of the funding endowments.

In the 2008 public consultation, there were split views in relation to IGS related EU actions. Some respondents favoured them, while others were in favour of maintaining the status quo or improving transparency. In the consultation there were also split views regarding the possibility to mitigate the possible moral-hazard drawbacks of IGS through an appropriate design, so as to finally obtain IGS that improve competition and the functioning of the insurance market. Respondents in favour of IGS stressed how IGS would be effective in solving the problems/consequences identified in this IA: increased consumer protection, increased consumer confidence, increased financial stability, level playing field between insurers. They also stressed that EU action on IGS could encourage the development of the single market. In contrast, respondents against IGS stressed the difficulty to sufficiently minimise the constraints such as costs or adverse economic incentives, so that drawbacks would outweigh benefits.

Table 1 contains an evaluation of the arguments discussed above. The preferred policy option is therefore Option 1.5 (Explicit Limited Guarantee / IGS).

Table 1 - Summary of policy options' evaluations – The nature of a possible public authority intervention

Options	Objectives										
	Effectiveness		Costs			Incentives			Ease Imp.		Cost-effectiveness
	High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
1.1 No action											
1.2.1 Strengthening internal risk management	+		--		--				--	--	--
1.2.2 Higher Solvency requirements	+		--		--				--	--	--
1.3.1 Improve transparency									-	-	
1.3.2 Legal priority during winding -up	+				---				--	--	
1.4 Explicit unlimited Guarantee	++	++	---	---			---		---		--
1.5 Explicit limited Guarantee (IGS)	++	++	-		-		-		-	-	++

6.2. THE GUARANTEE SIZE (IGS FUNDING NEEDS)

It is important to bear in mind that IGS are designed to cover the most extreme losses that occur with a very low probability. **Error! Reference source not found.** illustrates the choice of IGS scheme size/funding in terms of coverage of risk of failure. The vertical red line in **Error! Reference source not found.** shows the cut-off point up to which a chosen level of IGS funding will be able to protect policyholders from losses.

The target fund of an IGS,⁶⁵ is influenced by many parameters, among which two appear to be the most important: the probability of default (PD) of insurance undertakings and the level of targeted security for policyholders. As has been set out above, the PD for insurers oscillates between 0.1% and 0.5% depending on market conditions. Besides the probability of default of insurance undertakings, IGS funding needs/financial endowments are mostly influenced by the level of security provided to consumers: the higher the security provided by an IGS, the higher the required IGS financial endowments/funding needs. A key decision is therefore the level of security that an IGS is expected to provide to policyholders.

In practical terms, the level of security provided to policyholders is determined in relation to the part (statistically, the *percentile*)⁶⁶ of the IGS loss distribution that the IGS financial endowments can cover.⁶⁷ The percentile (level of security) chosen should not only provide a high level of security for consumers but also be financially realistic: i.e. it should have the potential to achieve the objective of a sufficiently high protection of policyholders, without requiring excessive resources.

In order to identify an appropriate level of protection offered by IGS, the coverage levels of existing national schemes have been analysed, and past cases of large insurance failures have been examined, estimating how many resources would be needed to protect policyholders against similar failures across the EU. It appears from this analysis that existing IGS protect consumers from losses up to a percentile that ranges between the 75th and the 99th.⁶⁸ On the basis of available evidence, three funding levels are considered: 75%, 90%, and 99%.

The following list of policy options can be drawn up with regard to the level of IGS financial endowments, taking into consideration both the probability of default of insurers and the level of security for consumers:⁶⁹

- Option 2.1: No action (harmonization) at EU level
- Option 2.2: Harmonization at EU level
- Sub-option 2.2.1: Low risk, low security (PD=0.1%, percentile=75%)
- Sub-option 2.2.2: Low risk, medium security (PD=0.1%, percentile=90%)
- Sub-option 2.2.3: Low risk, high security (PD=0.1%, percentile=99%)
- Sub-option 2.2.4: High risk, low security (PD=0.5%, percentile=75%)
- Sub-option 2.2.5: High risk, medium security (PD=0.5%, percentile=90%)
- Sub-option 2.4.6: High risk, high security (PD=0.5%, percentile=99%)

While option 2.1 is inconsistent with the objective of providing a high and even level of protection to policyholders in all Member States, the choice between the various sub-options in option 2.2 clearly depends on a cost-benefit analysis.

The benefit must be considered in terms of the security provided to consumers, which is expressed in percentiles, with higher percentiles meaning higher security. In addition, **Error! Reference source not found.** and 50 provide a more tangible indication of the security offered to policyholders in terms of the biggest failure that IGS financial endowments under the various policy options can cope with in the life and non-life sector.

It appears very clearly that IGS are not able to deal alone with the biggest failures⁷⁰, but their capacity to do so increases when financial endowments are higher. Options 2.2.1 and 2.2.4 would only allow to compensate losses that arise from the failure of small insurance firms, in the order of the 16th biggest insurance undertaking and above in the respective Member State. Option 2.2.2 protects policyholders against the losses of medium size insurance undertakings, covering losses in the range of the 11th – 15th biggest insurance undertaking's failure, but not above that. Options 2.2.3 and 2.2.5 are quite similar in their coverage and they are providing higher protection against medium-size insurer failures than the previously described options. They cover up to the 11th – 6th biggest insurance undertaking in most Member States. Finally, option 2.2.6 (high risk/high protection) is protecting policyholders against the failure of one among the biggest five insurance undertakings in many Member States, and against the failure of the 6th-10th biggest insurers in others. Only in three countries (UK, SWE, LU) it would not cover the losses caused by failure of the 10th biggest insurance undertaking.

An analysis of the funding needs of an IGS should also take into account the annual costs that a certain funding may impose on society, in case resources are anticipated but losses do not eventually materialise. **Error! Reference source not found.** indicates the share of annual premiums that correspond to each funding need. For example, the funding needs for option 2.2.3 (PD=0.1%, percentile=99%), taking into consideration a cost of capital of 6% (in line with Solvency II quantitative impact studies,) amounts to an annual cost of 0.08% of annual premiums.

Table 2 presents a summary evaluation of the various policy options related to the size of the guarantee offered by IGS. On the basis of the preliminary conclusions drawn by the Commission so far, it shows a tentative preference for option 2.2.3 which would ensure a high level of protection under normal market conditions while equally ensuring a sufficiently high level of protection in times of stress.

Table 2 - Summary of policy options' evaluations – The guarantee limit (IGS funding needs)

Options	Objectives										Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
2.1 No action											
2.2.1 Harmonization low risk, low protection (PD=0.1%, alpha=75%)	+	+	-		-				-	-	+
2.2.2 Harmonization low risk, medium protection (PD=0.1%, alpha=90%)	+	+	-		-				-	-	+
2.2.3 Harmonization low risk, high protection (PD=0.1%, alpha=99%)	++	++	--		-				--	-	+++
2.2.4 Harmonization high risk, low protection (PD=0.5%, alpha=75%)	+	+	-		-				-	-	+
2.2.5 Harmonization high risk, medium protection (PD=0.5%, alpha=90%)	++	++	---		-				--	-	++

2.4.6 Harmonization high risk, high protection (PD=0.5%, alpha=99%)	++	++	---		-				---	-	+
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6.3. TOOLS FOR AN EU ACTION ON IGS

- Option 3.1: No action

Leaving relevant action to Member States would mean preserving existing loopholes as well as uneven levels of policyholder protection in several Member States, unless all Member States would decide to coordinate and adopt IGS along appropriately coherent principles. Even if action at national level were taken, Member States acting on their own would not be able to address the problem of inconsistencies in the geographical scope and other design features of IGS.

- Option 3.2: A coordinated EU non-binding approach to IGS to be followed by Member States on a voluntary basis

Current shortfalls could also be corrected by means of soft law instruments, such as recommendations, communications, guidelines and codes of conduct. By adopting these tools, the Commission might indicate the IGS design features that it considers most appropriate. However, these instruments do not have any legally binding force and Member States would be asked to remedy the highlighted shortfalls on a voluntary basis.

Even in the case of positive reactions by Member States, it is difficult to foresee how non coordinated responses by Member States could effectively address the problems determined by the absence of a comprehensive and consistent framework for IGS in the EU.

- Option 3.3: Case-by-case legally binding interventions (infringements)

Unsatisfactory situations of IGS protection could be addressed through selective policy interventions that, in practice, could take the form of formal infringement proceedings against Member States so as to determine appropriate changes in national IGS or their set-up.

Although selective measures might occasionally close existing gaps in policyholders' protection in some Member States, it can be assumed that they would fail to effectively address the problems linked to the absence of a comprehensive and consistent framework for IGS in the EU. The 2008 public consultation clearly showed no support for case-by-case interventions.

- Option 3.4: A legally binding EU-wide approach to IGS

The introduction of a legally binding EU-wide approach to IGS is most likely the best way to provide an adequate remedy to the existing loopholes and inequalities in policyholder protection. Moreover it seems to be the most adequate and proportional tool to guard against the need for taxpayer involvement. In case of binding legislative measures on IGS at EU level, two possible legal instruments are available:

EU Regulation

Regulations are normative acts defined in Article 288 of the TFEU. They have general application, are binding in their entirety and directly applicable in all Member States, thus leaving the national authorities hardly any flexibility with regard to their implementation. Given the existing fragmented landscape on IGS and the absence of any EU coordination/harmonization in this field to date, it can be assumed that a Regulation would excessively restrict Member State action to implement an EU framework for IGS.

EU Directive

Another legal instrument provided for by Article 288 of the TFEU is that of the Directive. It has individual application, meaning that it is binding upon those to whom it is addressed. It requires Member States to achieve a certain result but, unlike a regulation, leaves them free to choose their own forms and methods. In the view of the Commission there are strong arguments for choosing the legal form of a Directive in case of binding measures on IGS, given the complexity of the issue and the required degree of flexibility with regard to the national implementation of each design feature.

Table 3 presents a summary evaluation of the various policy options related to the choice of the tool for EU action on IGS. In conclusion, and in view of the above considerations, the Commission prefers a legally binding EU-wide approach to IGS based on a Directive.

Table 3 - Summary of policy options' evaluations – Tools for a EU intervention on IGS

Options	Objectives										
	Effectiveness		Costs			Incentives			Ease Imp.		Cost-effectiveness
	High protection policyholders	Even protection policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
3.1 No action											
3.2 A coordinated EU non binding approach					-						
3.3 Case-by-case intervention (infringements)	+	+			-				-	-	
3.4.1 EU Regulation	++	++			-				--	--	
3.4.2 EU Directive	++	++			-				--	-	

6.4. MINIMUM VS MAXIMUM HARMONISATION

Even if binding measures were to be introduced in the EU, there are still many ways in which an IGS can be designed and an analysis of the various options available is therefore necessary.

- Option: 4.1: No action

A coherent IGS framework at EU level would not be achievable without harmonising the scope of the action. Therefore, in case of no action, the objectives would not be fulfilled.

- Option: 4.2: Minimum scope of harmonisation

Harmonisation of the following design features seems necessary in order to ensure a minimum level of coherence and effectiveness at EU level:

- Level of centralisation: Should an IGS be created at national or at European level?
- Role: Should an IGS operate as a last resort protection mechanism or should it have a wider role?
- Geographical scope: Should an IGS operate on the basis of the home or host country principle (or on a combination of the two)?
- Policies covered: Which classes of insurance (life, non-life, etc.) should the IGS cover?
- Eligible claimants: Which policyholders/claimants (natural persons, legal persons, SME, etc.) are to benefit from IGS?
- Timing of funding: Should the IGS be funded ex-ante or ex-post (or a combination of the two)?
- Nature of scheme intervention: Should the IGS simply compensate losses or should it also be designed to secure the continuity of policies (portfolio transfer)?

During the 2008 public consultation most respondents said to be in favour of minimum harmonisation, though some preferred maximum harmonisation. The vast majority of respondents were in favour of harmonising the geographical scope. A large number of respondents were also in favour of harmonising policies covered and eligible claimants. Fewer respondents supported harmonisation of the nature of the intervention and the timing of the funding. It was also stressed that a too limited approach might put into question the relevance of an EU action.

In its advice, CEIOPS (2009b) recommends adoption of a minimum harmonisation approach in order to fill the gaps in the current protection of policyholders in the EU. In the 2009 informal stakeholders meetings, the CEA indicated that a majority of CEA members would be in favour of minimum harmonisation whilst a minority would be in favour of maximum harmonisation. Should the minimum harmonisation approach be chosen, at least the following design features should be harmonised: geographical scope, policy covered and eligible claimants. AMICE, EFRP and EFDI agreed with the CEA. FINUSE was of the view that more design features should be harmonised.

- Option 4.3: Maximum scope of harmonisation

Maximum harmonisation at EU level means that national legislation may not exceed the terms of EU legislation. In other words, provisions adopted at EU level have to be considered as exhaustive, leaving Member States no further room for manoeuvre with regard to the adoption of supplementary procedures. A possible set of additional design features to be considered in this case might comprise the following:

- Pooling/separation of funding: Should the IGS funds be pooled (or kept separated) between classes of insurance activity (life , non-life, etc.)?
- Compensation limits and reductions in benefits: Should there be restrictions (and if so, which ones) in IGS payments per claimant or per policy?
- Exclusions from eligible claimants: Should specific situations be excluded from protection by an IGS?
- IGS contributions: How should insurance undertakings contribute to the IGS fund?
- Ownership, management and administration: How are IGS set up, managed and administered?
- Advertising/information requirements: How can insurance undertakings communicate IGS-related information to their customers?

Although maximum harmonisation is better suited to enhance completion of the Internal Market, there seems to be a great deal of reluctance among Member States to adopt such an approach.

Table 4 presents a summary evaluation of the three policy options dealing with the level of harmonisation of the various IGS design features. In view of the existing differences relating to IGS protection in Member States, and given the wide consensus among stakeholders, the preferred option is that of minimum harmonisation.

Table 4 Summary of policy options' evaluations – Scope of a possible EU level IGS binding intervention

		Objectives									Cost-effectiveness	
		Effectiveness		Costs			Incentives			Ease Imp.		
Options		High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders		Administrative burden
4.1 No action (no harmonization of the scope)												

4.2 Minimum Harmonisation	+	+							-	-	++
4.3 Maximum Harmonisation	++	++							---	---	+

Conclusion: On the basis of the evidence provided in this IA, the White Paper will propose to introduce a Directive in order to ensure that IGS exist in all Member States and that they comply with a minimum set of design features as proposed under option 4.2.⁷¹

7. EXPECTED ECONOMIC AND SOCIAL IMPACT OF RETAINED POLICY OPTIONS

As there is currently no legislation on IGS at EU level, information on the economic and social impact of an EU action in this field remains rather abstract and general. The impact mainly depends on the way in which the specific design features are implemented. For more reliable information it is therefore necessary to continue the analysis based on a set of pre-defined policy options.

At the current stage, the Commission is interested in collecting feedback from stakeholders on its White Paper. Therefore preferences expressed on specific IGS design features are meant as preliminary ones, which remain open to the feedback of stakeholders.

Annex B presents the analysis carried out so far by the Commission on the IGS specific design features mentioned in option 4.2, and illustrates the considerations which have been taken into account by the Commission when setting out preliminary preferences. Conducting an open dialogue with stakeholders on these preliminary preferences will allow the Commission to monitor and possibly update its evaluation of the various policy options when drafting follow-up measures, and to assess and possibly confirm whether the retained options on IGS design features satisfy the main objectives set out in this IA. A further impact assessment will therefore accompany follow-up measures, which will analyse in detail the possible combinations of IGS design features, and choose in a more definitive way the optimal vector of features for an IGS solution at EU level.⁷²

On the basis of the analysis contained in Annex B, the Commission's preliminary preferences with regard to the IGS design features mentioned under the minimum harmonization approach as set out under option 4.2 are the following:

- Level of centralisation: the Commission prefers introducing an IGS in all Member States because this is consistent with the existing national micro-prudential supervisory framework;
- Role: the Commission believes that the role of an IGS should be that of solely acting as a last resort protection mechanism in order to avoid as much as possible moral hazard problems in the behaviour of insurance undertakings and possible state aid issues;
- Geographical scope: in the Commission's view, the home state principle is the preferable policy option, especially because of its consistency with the existing supervisory framework;
- Policies covered: the Commission prefers to cover life policies and selected non-life policies as this strikes the right balance between ensuring a sufficiently large and solid protection of consumers on the one hand, and limiting costs on the other hand;
- Eligible claimants: the Commission believes that covering natural persons and selected legal persons (including SME) is the best way to strike the right balance between ensuring a sufficiently large and solid protection for consumers on the one hand, and cost efficiency on the other hand;
- Timing of funding: the Commission has a preference for of ex-ante funding which could be complemented by ex-post funding where necessary. This will ensure the immediate availability of funds while limiting costs to industry and consumers;
- Nature of scheme intervention: the Commission strongly encourages portfolio transfer where it is reasonably practicable to do so and justified in terms of costs and benefits. However, when all other means are exhausted, IGS should at least compensate losses of policyholders and beneficiaries.

The table below summarises the preferred set of tentative policy options as examined in this IA.

Table 5 - Summary of policy options' evaluations – Retained policy options

Options	Objectives										
	Effectiveness		Costs			Incentives			Ease Imp.		Cost-effectiveness
	High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
1.3.5 Explicit Limited Guarantee (IGS)	++	++	-		-		-		-	-	

2.2.3 Harmonization low risk, high protection (PD=0.1%, alpha=99%)	++	++	--		-				--	-	+++
3.4.2 EU Directive	++	++			-				--	-	+++
4.2 Minimum Harmonization	+	+							-	-	++
5.2 An IGS in all MS	++	++	-		-				-	-	++
6.2 Last resort protection	++	+	--		-				-	-	++
7.2 Home state principle	++	+	-		-				--	-	+++
8.5 Life and selected non- life policies	+++	+++	--		-				--	-	+++
9.3 Natural and selected legal persons (incl. SME)	++	++	--		-				--	-	+++
10.4 Combination of ex-post and ex-ante funding	++	++	--		--		-		--	--	++
11.2 Portfolio Transfer	++	++	--		-				--	-	+++

The expected economic and social impact of these retained policy options is presented in the following .

7.1. IMPACT ON POLICYHOLDERS

Action taken at EU level can be expected to benefit policyholders by increasing their protection in the event that insurance undertakings are unable to fulfil their commitments. On the other hand, insurance undertakings are expected to pass a part of their contributions on to consumers which most likely will result in an increase of their premiums.

This point can be illustrated by a (theoretical) example: If, (compared to a situation where no IGS existed), IGS are established at the level of each Member State, based on the home state principle and covering life and non-life policies, (up to the 99th percentile and based on a scenario of PD=0.1%), this would require EU policyholders to contribute to the creation of funds amounting to a total of 13 billion EUR (see Table 6). This currently corresponds to 1.24% of annual gross written premiums. Applying this target level over, for instance, a 10-year time horizon would translate into an annual contribution of 0.124% of gross written premiums by each contributing undertaking/policyholder.⁷³

These funds should be considered as additional premiums. Policyholders are paying to insure themselves against the possibility that their insurance undertaking defaults. The payments provided by policyholders can be considered to be roughly equivalent to the expected value of the losses they would avoid in case their insurance undertaking defaults. The financial costs for policyholders can be computed considering a cost of capital of 6% (in line with Solvency II quantitative impact studies). For an IGS with a funding endowment of 1.24% of annual premiums, this would translate into financial costs of 0.08% of annual premiums.

7.2. IMPACT ON INSURANCE UNDERTAKINGS

EU action on IGS will affect insurance undertakings in different ways, depending on whether they operate in Member States already having an IGS or not. In those cases where no IGS has been established so far, insurance companies might face – in all circumstances in the case of ex-ante funding and whenever insurance undertakings fail in case of ex-post funding – financial costs due to the introduction of the IGS if they are not able to pass their IGS contributions entirely onto consumers.

These funds, unlike the case of policyholders, constitute a financial cost (and not an anticipation of funds) for insurance undertakings, as losses hitting insurance undertakings in case of default only depend on capital (and not on premiums paid).

7.3. IMPACT ON TAXPAYERS

The introduction of IGS in all Member States can be expected to benefit taxpayers as there will be less need in the future to use their money in the case of default of an insurance undertaking. Based on the practical example set out above this would save taxpayers money up to 13 billion EUR (see Table 6) upon a timeframe, for example, of 5 or 10 years. It is important to bear in mind that EU action on IGS will affect taxpayers in Member States in different ways, depending on whether they are resident in a Member State already having an IGS or not.

7.4. IMPACT ON EXISTING IGS SCHEMES

EU action will affect existing IGS to the extent that the framework established at EU level deviates from the national IGS framework already in place. Main impacts may, in particular, include:

IGS funding needs: The size of existing IGS funds may be affected. A preliminary rough calculation of the respective amounts (only if positive, i.e. an increase in funds), can be derived from the last column of **Error! Reference source not found.** DK, for example, would roughly need to raise its endowments by 217.20 million EUR. A further analysis for existing ex-ante funded IGS is also performed in Table 3.12 of the Methodological report where the impact on IGS funds is analysed in terms of the implied change in the level of security provided to policyholders.

Geographical scope: Currently, only MT (life and non-life) and NO (non-life) are operating an IGS on a host country principle basis, while LV (life and non-life), UK (life and non-life), PL (life) operate their IGS on a home plus host country principle basis. These schemes would need to modify their geographical scope and start operating on a home country principle basis.

Nature of scheme intervention: Currently only six IGS (DE life, FR life, UK life, FR non-life, NO non-life and ES) operate portfolio transfer, while the other existing IGS limit themselves to paying compensation to claimants.

Policies covered: Unless a precise scope of non-life policies considered is defined, it is not possible to draw definitive conclusions on the expected impact. However, it is likely that existing IGS in DK, IE, and NO would have to extend their scope of protection to life insurance products.

Eligible claimants: As the precise scope of selected legal persons has not yet been defined, no definitive conclusions on the expected impact can be drawn. However, it is likely that existing IGS in LV and PL for life insurance and in IE, LV and MT for non-life insurance have to extend the scope of their eligible claimants.

Timing of funding: As the extent of ex-ante funding has not yet been defined, it is not possible to draw definitive conclusions on the expected impact. However, it is likely that existing IGS in PL life, UK life and non-life, IE non-life and NO non-life would have to

introduce an ex-ante funding element in addition to their current ex-post funding arrangements.

7.5. IMPACT ON SMALL OR MEDIUM ENTERPRISES (SME'S)

Action taken at EU level can be expected to benefit SME's by increasing their protection in the event that insurers are unable to fulfil their commitments. On the other hand, introducing IGS protection for SME's throughout the EU will have an impact on SME's, as insurers will pass a part of their contributions on to SME's which will result in an increase of their premiums. These funds should be considered as additional premiums which they are paying to insure themselves against the possibility that their insurance undertaking defaults. The payments provided by each SME can be considered roughly equivalent to the expected value of the losses they would avoid in case their insurance undertaking defaulted. Moreover, the impact on SME will depend to whether they are already protected or not by an existing IGS in the various national frameworks.

7.6. IMPACT ON SUPERVISORY AUTHORITIES

Supervisory authorities in Member States that do not have yet an IGS in place, might need to be involved in their set-up and possibly also start managing them, while those authorities that already manage IGS, would have to ensure that their scheme is compliant with the proposed design features. A more precise analysis of the impact on supervisory authorities will be considered in the impact assessment accompanying the follow-up measures once the precise set of IGS design features will be definitively decided.

7.7. INTERNATIONAL IMPACT

As a general rule, third country insurance undertakings that provide or want to provide insurance services in the EU must have their branches authorised in at least one EU Member State.⁷⁴ This means that after the authorisation these branches of third country insurance undertakings fall within the scope of this IA. The impact on third country insurers can therefore be expected to be the same as for EU-EEA insurers.

7.8. ENVIRONMENTAL IMPACT

Environmental impacts are expected to be marginal.

7.9. IMPACT ON FINANCIAL STABILITY

The retained policy options are expected to bring benefits to financial stability, as they ensure that failures up to a relevant size do not produce threats to financial stability (since IGS are able to absorb them).

7.10. IMPACT ON THE ECONOMY

The retained policy options are expected to bring two main benefits to the economy. First, a level playing field will be created that avoids competitive distortions between domestic and non-domestic insurers. Second, the possibility of sub-optimal allocation of losses on policyholders and taxpayers will be reduced. This should, in turn, have positive effects improving the economy's growth path.

7.11. IMPACT ON SOCIAL WELFARE

The retained policy options may improve social welfare for three reasons:

- increased protection of policyholders;
- less use of taxpayers' money;
- insignificant welfare losses while redistributing insurance default losses.

Increased protection of policyholders is the most important impact on social welfare resulting from the introduction of a harmonised framework of IGS protection at EU level. Protecting policyholders – who in general are highly risk averse – from uncertainty and financial losses, is expected to increase social welfare substantially.

With regard to taxpayers, the options chosen have a significant positive impact in terms of saving taxpayers' money. As taxpayers can be assumed to be in part low risk averse, guarding against the need of taxpayers' involvement can be interpreted as a source of increased social welfare.

7.12. ADMINISTRATIVE BURDEN

Administrative burden cannot be assessed with precision at this stage, but will be subject to burden measurement under the standard cost model in the impact assessment accompanying any follow-up measure. In any case, the preferred options are not expected to lead to any

significant administrative burden, especially because they are in line with the existing structure of supervision.

8. FOLLOW-UP MEASURES – MONITORING AND EVALUATION

The IA clearly provides evidence supporting the need for a legally binding EU solution on IGS protection based on minimum harmonization in order to ensure that IGS exist in all Member States and that they comply with a minimum set of design features.

The Commission, while drafting follow-up measures, will monitor and update its assessment of the various policy options linked to the proposed EU solution for IGS. In particular, the Commission will carefully evaluate the feedback received and take it into account when coming forward with a legislative proposal. The Commission will sum up the contributions received by the first half of 2011. An impact assessment will then be conducted and the Commission will put forward a legislative proposal on insurance guarantee schemes which will be presented to the Council and to the European Parliament.

ANNEXES

Annex A LIST OF POLICY OPTIONS

1 The nature of a possible EU action

- **Option 1.1:** No action
- **Option 1.2:** Further reduce the probability of failure of insurance undertakings
 - **Sub-option 1.2.1:** Strengthening the risk management system
 - **Sub-option 1.2.2:** Enhanced prudential supervision and higher solvency requirements
- **Option 1.3:** Introduce a protection of policyholders after failure of an insurance undertaking has occurred
 - **Sub-option 1.3.1:** Improved transparency under a *caveat emptor* approach
 - **Sub-option 1.3.2:** Legal priority for consumers in winding-up
- **Option 1.4:** Explicit unlimited guarantee from public authorities
- **Option 1.5:** Explicit limited guarantee (Insurance Guarantee Schemes)

2 The guarantee size (IGS funding needs)

- **Option 2.1:** No action (harmonization) at EU level
- **Option 2.2:** Harmonization at EU level
 - **Sub-option 2.2.1:** Low risk, low security (PD=0.1%, percentile=75%)
 - **Sub-option 2.2.2:** Low risk, medium security (PD=0.1%, percentile=90%)
 - **Sub-option 2.2.3:** Low risk, high security (PD=0.1%, percentile =99%)
 - **Sub-option 2.2.4:** High risk, low security (PD=0.5%, percentile=75%)
 - **Sub-option 2.2.5:** High risk, medium security (PD=0.5%, percentile=90%)
 - **Sub-option 2.2.6:** High risk, high security (PD=0.5%, percentile=99%)

3 Tools for an EU action on IGS

- **Option 3.1:** No action (Only spontaneous action at Member States level)
- **Option 3.2:** A coordinated EU non-binding approach to IGS to be followed by Member States on a voluntary basis

- **Option 3.3:** Case-by-case legally binding interventions (Infringements)
- **Option 3.4:** A legally binding EU-wide approach to IGS
 - **Sub-option 3.4.1:** EU Regulation
 - **Sub-option 3.4.2:** EU Directive

4 Minimum vs. maximum harmonisation

- **Option: 4.1:** No action
- **Option: 4.2:** Minimum scope of harmonisation
- **Option: 4.3:** Maximum scope of harmonisation

5 Level of IGS centralisation (Single EU-wide scheme vs. national schemes)

- **Option 5.1:** No action (harmonisation) at EU level
- **Option 5.2:** An IGS in all Member States
- **Option 5.3:** A single EU-wide IGS replacing (where relevant) national schemes
- **Option 5.4:** An EU-wide IGS that covers only policies written and sold cross-border via branches and/or free provision of services, plus national schemes covering domestic insurance activity;
- **Option 5.5:** An EU-wide IGS that covers only insurers who are part of a group supervision regime (including subsidiaries) plus national schemes for all other relevant policies (domestic and cross-border)
- **Option 5.6:** Complement existing IGS with a 28th regime
- **Option 5.7:** Introducing an IGS in all Member States complemented by a system of mutual support between national IGS.

6 Role of an insurance guarantee scheme

- **Option 6.1:** No action (harmonisation) at EU level
- **Option 6.2:** IGS as a last resort protection mechanism
- **Option 6.3:** Preventing failure and providing last resort protection

7 Geographical scope

- **Option 7.1:** No action (harmonisation) at EU level
- **Option 7.2:** Home country principle
- **Option 7.3:** Host country principle.

- **Option 7.4:** Home plus host country principle.
- **Option 7.5:** Home country principle with lead supervisor

8 Policies covered

- **Option 8.1:** No action (harmonisation) at EU level
- **Option 8.2:** Protection of life policies only
- **Option 8.3:** Protection of non-life policies only
- **Option 8.4:** Protection of both life and non-life policies
- **Option 8.5:** Protection of both life and selected non-life policies

9 Eligible claimants

- **Option 9.1:** No action (harmonisation) at EU level;
- **Option 9.2:** Natural and legal persons;
- **Option 9.3:** Natural and selected legal persons (including SME's);
- **Option 9.4:** Natural persons only;

10 Timing of funding

- **Option 10.1:** No action (harmonisation) at EU level;
- **Option 10.2:** Ex-post funding
- **Option 10.3:** Ex-ante funding
- **Option 10.4:** Combination of ex-post and ex-ante funding

11 Nature of scheme intervention

- **Option 11.1:** No action (harmonisation) at EU level
- **Option 11.2:** Portfolio transfer
- **Option 11.3:** Compensation of claims

A number of options will not be specifically dealt with in the White Paper but may become relevant for a legally binding EU solution on IGS at a later stage. Some or all of them will then be addressed in a separate Impact Assessment. These options include the following:

- Pooling (or not) of funding between classes of insurance activity;

- Compensation limits and other reductions in benefits (restrictions to IGS payments);
- Compensation limits and other reduction in benefits – per customer or per policy;
- Exclusions from eligible claimants;
- Allocation of contributions among insurers;
- Capping the level of contributions that can be raised in any time period;
- Ownership, management and administration; and
- Advertising/information requirements.

POSSIBLE CONTENT OF A LEGALLY BINDING EU SOLUTION FOR IGS FOLLOWING A MINIMUM HARMONISATION APPROACH: PRELIMINARY ANALYSIS OF THE OPTIONS⁷⁵

LEVEL OF IGS CENTRALISATION (SINGLE EU-WIDE SCHEME VS. NATIONAL SCHEMES)

- Option 5.1: No action (harmonisation) at EU level

Maintaining the status quo implies a continuation of the existing fragmented landscape for IGS. This may hinder, for the reasons explained in this IA, the correct functioning of the Internal Market for insurance services, by creating conditions of uneven and insufficient policyholder protection in several Member States.

In the 2008 public consultation, there were split views with regard to keeping the status quo. Some respondents preferred this, while others were in favour of EU action.

- Option 5.2: An IGS in all Member States

The creation of an IGS in all Member States is consistent with the existing national micro-prudential supervisory framework.

Funding needs for the EU when opting for a home country principle national scheme in each Member State are those presented in Table 6.

Table 6 - Funding needs for the EU with national (home country principle) IGS (m €)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Absolute Values						
Total	4 529	12 213	51 477	673	2 209	13 001
Life	4 010	10 833	45 751	595	1 958	11 554
Non-Life	580	1 559	6 577	86	282	1 660
As Share of Total Premiums						
Total	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%
Life	0.53%	1.43%	6.02%	0.08%	0.26%	1.52%
Non-Life	0.20%	0.55%	2.30%	0.03%	0.10%	0.58%

Source: Methodological report, Table 3.8. For a full analysis and figures for each Member State see sub-section 3.2 or the MR.

If IGS cover both life and non-life (i.e. total) insurance, the Member State (see Table 3.2, MR) with the highest funding need is the UK. The Member State with the lowest funding need is LV. As a percentage of written premiums, the Member State with the highest funding need is SE, while the Member State with the lowest funding need is BG.

If IGS only cover life insurance (see Table 3.4, MR), the Member State with the highest funding need is the UK. The Member State with the lowest funding need is LV. As a percentage of written premiums, the Member State with the highest funding need is SE, while the Member State with the lowest funding need is LV.

If IGS only cover non-life insurance (see Table 3.6, MR), the Member State with the highest funding need is DE. The Member State with the lowest funding need is LT. As a percentage of written premiums, the Member State with the highest funding need is DE, while the Member State with the lowest funding need is HU.

The 2008 public consultation showed that if an EU action were to be taken, there would be support for introducing an IGS in all Member States.

In the 2009 informal meetings with stakeholders, CEA, AMICE, FINUSE and EFDI showed support for this option.

- Option 5.3: A single EU-wide IGS replacing (where relevant) national schemes

The creation of a single EU-wide IGS that covers all relevant policies written and purchased within the EU would overcome the problems stemming from the existence of various different national legal frameworks. However, a single EU-wide IGS would not be consistent with the existing national micro-prudential supervisory framework.

Funding needs for the EU when opting for a single EU-wide IGS are presented in Table 7.

Table 7 – Funding needs for the EU with a single EU-wide scheme and comparison with funding needs under national IGS (m €)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total	Funding needs under HOME	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under 1 single EU IGS	5 297	12 108	41 418	877	2 354	10 551
	Relative difference	16.95%	-0.86%	-19.54%	30.32%	6.56%	-18.85%
Life	Funding needs under HOME	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under 1 single EU IGS	4 698	10 739	36 738	778	2 088	9 359
	Relative difference	17.16%	-0.86%	-19.70%	30.72%	6.64%	-19.00%
Non-Life	Funding needs under HOME	580	1 559	6 577	86	282	1 660
	Funding needs under 1 single EU IGS	678	1 549	5 298	112	301	1 350
	Relative difference	16.90%	-0.66%	-19.45%	29.90%	6.76%	-18.68%

L

Source: Methodological report, Table 4.29. For a full analysis and figures for each Member State see sub-sections 4.5 and A5.4 of the MR.

If a single EU-wide scheme were established, funding needs would change compared to the case of an IGS in each Member State in a way which is very dependent on the level of security chosen. If the level of security chosen is high, funding needs decrease with a global saving of funds. If instead the level of targeted security is low, funding needs increase⁷⁶.

The impact in each Member State on IGS funding needs when opting for a single EU-wide IGS instead of national schemes based upon the home country principle for total insurance (life and non-life), as well as life and non-life insurance separately are shown in Tables 20, 22 and 24 of Annex 5 to the MR respectively.

The 2008 public consultation showed that there was no support for introducing a single EU-wide IGS.

- Option 5.4: An EU-wide IGS that covers only policies written and sold cross-border via branches and/or free provision of services, plus national schemes covering domestic insurance activity

The creation of an EU-wide IGS that covers only cross-border business, i.e. policies written and sold cross-border via branches and/or FPS, can address the specific problems that arise in the cross-border context whilst maintaining national flexibility when it comes to purely domestic business.

In practice, however, such a solution is likely to create a number of complications. First of all, an EU-wide IGS for cross-border business would not be consistent with the existing national

micro-prudential supervisory framework. Furthermore, insurers with cross-border business would need to take part in both the cross-border scheme and their national scheme. Uneven protection levels between and within Member States would also continue, especially if domestic and cross-border business protection were different.

Overall, the funding needs for the EU under this option are the same as under option 5.2. The funding needs specific to domestic national IGS and to the single EU-wide IGS covering cross-border insurance activity are presented in Table 8.

Table 8 - Funding needs for the EU with domestic national schemes supplemented by an EU-wide IGS covering cross-border (branches and freedom to provide services) activity (m €)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total	Funding needs under HOME	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under domestic	4 357	11 766	49 673	647	2 127	12 545
	Relative difference	-3.80%	-3.66%	-3.51%	-3.90%	-3.72%	-3.51%
	Funding needs for Cross Border IGS	172	447	1 804	26	82	457
Life	Funding needs under HOME	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under domestic	3 876	10 486	44 352	575	1 894	11 200
	Relative difference	-3.34%	-3.20%	-3.06%	-3.45%	-3.26%	-3.06%
	Funding needs for Cross Border IGS	134	347	1 399	21	64	354
Non-Life	Funding needs under HOME	580	1 559	6 577	86	282	1 660
	Funding needs under domestic	554	1 495	6 330	82	270	1 597
	Relative difference	-4.39%	-4.09%	-3.76%	-4.60%	-4.22%	-3.78%
	Funding needs for Cross Border IGS	25	64	247	4	12	63

Source: Methodological report, Table 4.19. For a full analysis and figures for each Member State see sub-sections 4.3 and A5.2 of the MR.

While the great majority of Member States would not contribute much of their funding endowments to the EU-wide cross-border IGS, a few of them would have to contribute a very large share. The Member State with the highest contribution would be LU (96.24%), followed by IE (57.67%) and MT (43.32%)⁷⁷.

The funding needs in the EU as a whole when opting for a single EU-wide IGS covering cross-border insurance activity (branches only) complemented by national IGS in all Member States for domestic business are overall the same as under option 5.2. The funding needs specific to domestic national IGS and those for the single EU-wide IGS covering cross-border insurance activity are shown in Table 9.

Table 9 - Funding needs for the EU with national schemes for domestic activity supplemented by an EU-wide IGS covering all cross-border (branches only) activity (m €)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total	Funding needs under home	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under domestic+FPS	4 474	12 065	50 852	665	2 182	12 843
	Relative variation	-1.21%	-1.21%	-1.22%	-1.21%	-1.21%	-1.21%
	Funding needs for Cross Border IGS	55	148	626	8	27	158
Life	Funding needs under home	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under domestic+FPS	3 985	10 763	45 445	592	1 945	11 477
	Relative variation	-0.64%	-0.65%	-0.67%	-0.63%	-0.64%	-0.67%
	Funding needs for Cross Border IGS	26	70	306	4	13	77
Non-Life	Funding needs under home	580	1 559	6 577	86	282	1 660
	Funding needs under domestic+FPS	562	1 515	6 406	84	274	1 616
	Relative variation	-2.97%	-2.80%	-2.60%	-3.09%	-2.88%	-2.62%
	Funding needs for Cross Border IGS	17	44	171	3	8	43

Source: Methodological report, Table 4.24. For a full analysis and figures for each Member State see sub-sections 4.4 and A5.3 of the MR.

While a majority of Member States would not contribute much of their funding endowments to the EU-wide cross-border IGS, a few of them would have to contribute a significant share. The Member State with the highest contribution would be EE (32.62%), followed by IE (12.21%) and CY (12.56%)⁷⁸.

- Option 5.5: An EU-wide IGS that only covers insurance undertakings that are part of a group supervision regime (including subsidiaries) plus national schemes for all other relevant policies (domestic and cross-border)

It would be possible to set up an EU-wide IGS that covers only those insurers who are part of a strengthened group supervision regime – yet to be established - or that covers only systemically important insurers (including their subsidiaries). However, this is likely to create the same complications of option 5.4. In addition, there is the question-mark over the financing of such a scheme, as this would mean that Member States supervising a large group would have to compensate for the failure of the entire group throughout Europe. Finally, in highly concentrated markets it could be very difficult for the remaining insurers to set up a national scheme.

The 2008 public consultation showed that an EU wide guarantee fund for insurance undertakings which are part of a group supervision regime was supported by some respondents.

In the 2009 informal meetings with stakeholders, the EFRP showed support for this option.

- Option 5.6: Complement existing IGS with a 28th regime

Existing national IGS could be complemented by a 28th regime. Whilst options 5.3 and 5.4 would replace national schemes for cross-border insurance activity, a 28th regime would simply complement national IGS. Depending on its design, a 28th regime might not only add additional complexity to the system, but could also cause the same complications that arise under option 5.4.

The funding needs EU wide for Option 1.6 depend on the operational characteristics of the national IGS and of the 28th regime. Given certain assumptions, the overall funding needs might be the same as under Option 5.2.

- Option 5.7: Introducing an IGS in all Member States complemented by a system of mutual support between national IGS

With a mutual support system between national IGS, any scheme that lacks sufficient funds would be financially supported by all the other schemes. To ensure that the potential costs are transparent and predictable, such a system would require an agreed fund-raising mechanism setting out the proportion each IGS is contributing, and under which circumstances.

Such a mechanism might create moral hazard problems and Member States that have not experienced any insurance failure may feel that they are subsidising failing insurers (and their customers) in other Member States.

The funding needs for this option depend on the operational characteristics of the national IGS and on the characteristics of the mutual support. Given certain assumptions the funding needs for the whole EU might be the same as under Option 5.2.

In its advice, CEIOPS (2009b) argues that the main advantages of this option are a mitigation of the funding problems particularly in small national markets because of the concentration in those markets and a broader distribution of the losses. CEIOPS also indicates that if there are national differences between the scopes of coverage of the various national IGS, the mutual support system should be limited to the scope harmonised across the EU. CEIOPS observes that this may limit the benefits from the creation of a mutual support system. Finally, CEIOPS also notes that it would not be fair if a national IGS that is funded ex ante supports the IGS of

another Member State which is funded ex post, at least if the financial difficulties of the latter could have been avoided through ex ante funding.

Table 10 presents a summary of the arguments which make the Commission come forward in the White Paper with the solution of an IGS in all Member States as a preliminary preferred solution.

Table 10 Summary of policy options' evaluations – Level of IGS centralisation (Single EU-wide scheme vs. national schemes)

Options	Op. Objectives		Constraints								Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High protection policyholders	Even protection policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
5.1 No action at EU level											
5.2 An IGS in all MS	++	++	-		-				-	-	++
5.3 Single EU-wide IGS	++	++	-	--	--			-	--	--	
5.4 EU-wide IGS cross-border activity + national schemes	++	++	-	--	--			-	--	--	
5.5 EU-wide IGS lead-supervisor + national schemes	++	+	-	--	---			-	--	---	
5.6 28th regime	++	+		--	---			-	--	---	
5.7 IGS in all MS + system of mutual support	+++	++	-	--	---			-	--	---	+

ROLE OF AN INSURANCE GUARANTEE SCHEME

- Option 6.1: No action (harmonization) at EU level

The understanding of the Commission is that all existing IGS perform the role of a last resort mechanism.

In the 2009 informal meetings with stakeholders, FINUSE and representatives of the DGS sector supported the view of leaving decisions on the role of an IGS to Member States.

- Option 6.2: IGS as a last resort protection mechanism

The role of an IGS as a last resort protection mechanism is to protect policyholders, but not to prevent a crisis or to stop an insurance undertaking from getting into financial difficulties or becoming insolvent. This is the job of the supervisory authority and of other prudential regulatory tools such as solvency requirements.

In its advice, CEIOPS (2009b) recommends that IGS are set up as a last resort protection mechanism.

In the 2009 informal meetings with stakeholders, CEA, AMICE, CEIOPS and EFRP were concerned that extending the role of an IGS to preventing the failure of an insurance undertaking would create competitive distortions and increase moral hazard. They also considered it unfair that industry might be called upon to help a competitor that would eventually stay in the market. CEA, AMICE, CEIOPS and EFRP were in favour of limiting the role of IGS to providing last resort protection.

- Option 6.3: Preventing failure prevention and providing last-resort protection

IGS may also be that of intervene to prevent the failure of an insurance undertaking. The IGS would guide the insurance undertaking through its financial difficulties and ensure that it stays in business.

Giving an IGS this wider role presents important disadvantages. Indeed, it creates distortions of competition and increases moral hazard. It may also be considered unfair to ask other insurance undertakings to help a competitor stay in business.

It should be remembered that, compared to the banking sector, there is less cause for concern in the insurance sector over liquidity problems (leading to failure). Consequently,

introducing a "preventing failures" function in the insurance field does not seem as valuable as it might be in the banking sector.

Table 11 presents a summary of the arguments which make the Commission support the view that the role of an IGS should be that of solely acting as a last resort protection mechanism.

Table 11 Summary of policy options' evaluations – Role of an IGS

Options	Op. Objectives		Constraints								Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High protection policyholders	Even protection policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
6.1 No action at EU level											
6.2 Last resort protection	++	+	--		-				-	-	++
6.3 Prevention of failure and last resort protection	+++	+	--		-		---	-	---	-	+

GEOGRAPHICAL SCOPE

- Option 7.1: No action (harmonization) at EU level

Some national IGS are based on the home country principle (for life insurance: BG, DE, ES, FR, RO; for non-life insurance: DK, ES, FR, IE, RO), while others (for life insurance: MT; for non-life insurance: MT, NO) are structured around the host country principle, and some others (for life insurance: LV, PL, UK; for non-life insurance: LV, UK) are structured under the home plus host country principle.

Preserving the status quo would maintain existing conditions of insufficient and uneven protection of policyholders in several Member States.

- Option 7.2: Home country principle

The main advantage of the home country principle (see Endnote 37) is its consistency with the supervisory framework, since the home country supervisor is responsible for prudential regulation, including solvency requirements, and for starting the winding-up process. This is of particular importance if the IGS serves to facilitate the transfer of portfolio. Moreover, the home country principle is the principle followed for guarantee schemes in the banking and securities sector. Finally, an important consideration supporting the home country principle is that the administration of an IGS is closely linked with rules regarding insolvency and liquidation, which are under the responsibility of the home Member State. Funding needs are as assessed under option 5.2.

The Oxera report states that the main advantages of the home country principle are: correspondence with the current supervisory structure, ease and efficiency in handling cases, acceptance by the insurance industry, alignment with the approach followed for DGS and ICS, ease of treatment of insurance default cases and administrative feasibility. The main disadvantages identified in the report are: the possible uneven protection of consumers within a Member State (if the level of protection is not harmonised), unlevel playing field between domestic and non-domestic insurers (if the level of protection is not harmonised), incentives to moral hazard of public authorities in case of preponderant cross-border (compared to domestic) activity of domestic insurers.

In the 2008 public consultation, the vast majority of respondents showed a preference for the home country principle, as this approach is consistent with the EU supervisory framework. Most respondents were however not in favour of the idea that subsidiaries should also participate in and be covered by the IGS of the Member State in which the group supervisor is located (in case of a group support regime).

In its advice, CEIOPS (2009b) expresses a preference for the home country principle.

In the 2009 informal stakeholders meetings, all participants supported the home country principle.

- Option 7.3: Host country principle

The main advantage of a host country principle (see Endnote 37) is that it ensures that there is no uneven policyholder protection in all Member State, thus preventing any possible distortions of the level playing field between insurers competing in the same country.

Adopting a host state principle nonetheless has its drawbacks. First, it duplicates administrative costs as it requires insurers with cross-border business to take part in two or more IGS. Second, IGS intervention might be difficult in practice: the authorities that operate the scheme would not be the ones that conduct and supervise the winding-up proceedings, and this is likely to cause difficulties.

If one opts for a national IGS in each Member State based on the host country principle, the funding needs are as shown in Table 12. Funding needs would be reduced by some 0-1% compared with home country based national schemes in each Member State.

Table 12 - Funding needs for the EU with national host country principle IGS, compared with national home country principle IGS (m €)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total	Funding needs under HOME	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under HOST	4 516	12 180	51 345	671	2 203	12 968
	Relative variation	-0.28%	-0.27%	-0.26%	-0.29%	-0.27%	-0.26%
Life	Funding needs under HOME	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under HOST	4 008	10 828	45 733	595	1 957	11 549
	Relative variation	-0.05%	-0.04%	-0.04%	-0.06%	-0.05%	-0.04%
Non-Life	Funding needs under HOME	580	1 559	6 577	86	282	1 660
	Funding needs under HOST	573	1 543	6 519	85	279	1 645
	Relative variation	-1.14%	-1.02%	-0.89%	-1.23%	-1.08%	-0.89%

Source: Methodological report, Table 4.14. For a full analysis and figures for each Member State see sub-sections 4.2 and A5.1 of the MR.

Opting for a national IGS in each Member State according to the host country principle instead of the home country principle is estimated to have important distributional (between Member States) effects (see sub-section 4.2 of the MR and Table 4 of Annex 5 to the MR). While in the great majority of Member States funding needs change only slightly (between -5% and +5%), they change considerably for a few Member States. In particular, the most important increase in funding needs is in NO (14.78%) as the Norwegian insurance market is covered for some 17% by branches of insurance undertakings based in other EU-EEA countries. The biggest decrease in funding needs is in EE (-30.00%) as some 33% of the activity of Estonian insurance undertakings takes place via branches in other EU Member States.

The picture changes somewhat if IGS protection is limited to cover life policies. While for most Member States the variation in the funding needs is relatively modest, the situation becomes important for a few Member States. In particular, the most important increases in funding needs are in LV (43.40%), LT (13.78%) and CZ (13.31%) as in these Member States the market is covered to a large extent by branches of insurances established in other EU-EEA countries. The most important decreases in the funding needs are in EE (-53.39%) and Cyprus (-12.87%) as from these Member States a part of life insurance policies are sold in other EU Member States via branches.

The picture changes again when IGS protection is limited to non-life policies. While for most Member States the variation in the funding needs is relatively modest, the change becomes important for a few Member States. In particular, the most important increase in funding needs is NO (72.36%) as in NO the market is covered for more than half by branches of insurance undertakings based in other EU-EEA countries. The most important decreases in funding needs are in IE (-35.54%) and DK (-16.71%) as a part of non-life insurance policies are sold via branches from these Member States in other EU Member States.

The Oxera report states that the main advantages of the host country principle are: an even level of protection of all policyholders in all Member States and a level playing field between insurers competing in the same Member State. The main disadvantages are: possible double payments of insurers with cross-border business (if there is an IGS under the home state principle in their Member State of origin), misalignment with the supervisory structure, possible difficulties in the treatment of insurance undertakings' defaults, and difficult acceptance by the insurance industry and by supervisors.

In the 2008 public consultation only very few respondents showed support for the host country principle.

- Option 7.4: Home plus host country principle

The home plus host country principle can bring an effective solution to the problems of an isolated country. When adopted at the EU level, however, it does not provide substantial additional benefits compared to the home country principle (in the case of a sufficient harmonisation of the IGS design features). The benefits of this regime are far outweighed by the drawbacks/complexity added to the system.

- Option 7.5: Home country principle with lead supervisor

The Oxera report states that the main advantages of a national IGS with a lead supervisor are the following: an even consumer protection across Member States in the event of failure of an entity belonging to the group, the neutrality of the IGS with respect to the decision to enter a Member State via a branch or a subsidiary. The disadvantages identified in the Oxera report are: uneven consumer protection in Member States for insurance undertakings authorised and supervised in that Member State, unlevel playing field between insurers competing in the same Member State, incentive for moral hazard behaviour of public authorities in case of preponderant cross-border (compared to domestic) activity of domestic insurers.

In conclusion, the Commission believes at this stage that the adoption of IGS on the basis of the home country principle provides the most benefits to consumers and minimises the problems of implementation. This solution is therefore put forward as the Commission's preferred option. Table 13 presents a summary of the arguments supporting this conclusion.

Table 13 Summary of policy options' evaluations – Geographic Scope

	Op. Objectives		Constraints								
	Effectiveness		Costs			Incentives			Ease Imp.		Cost-effectiveness
Options	High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
7.1 No action at EU level											
7.2 Home state principle	++	+	-		-				--	-	+++
7.3 Host state principle	++	++	-	-	-			-	--	--	+
7.4 Home + Host principle	+++	++	--	-	-			-	--	--	++
7.5 Home state principle with lead supervisor perimeter	++	+	-	-	-			-	--	--	++

POLICIES COVERED

- Option 8.1: No action (harmonization) at EU level

In those countries that have already set up an IGS, the scope of coverage is rather heterogeneous: BG, DE, and PL only cover life policies, while ES, FR LV, MT, RO and UK protect both life and non-life policies. Finally, DK, IE and NO only protect non-life policies.

Preserving the status quo means that uneven protection of policyholders within and between Member States is maintained.

- Option 8.2: Protection of life policies only

The collapse of a life insurer can often cause very severe financial hardship for large groups of consumers. It is therefore advisable to include life policies in an IGS in order to provide a high level of protection to retail consumers.

In the 2009 informal stakeholders meetings, CEA reported that a majority of its members considered were in favour of covering only life policies as the practical relevance of covering non-life policies was lower. AMICE and EFDI supported this view.

It should however be noted that even if the average loss to policyholders is generally smaller in the case of a non-life insurer going into default, there are instances where losses to individual policyholders and third party claimants may well exceed that of a typical life insurance product.

- Option 8.3: Protection of non-life policies only

The severe consequences which may result for policyholders from failure of a life insurer make this option not advisable.

- Option 8.4: Protection of both life and non-life policies

Since substantial losses can be passed on to the holders of both life and non-life policies, policyholders will receive a more complete and appropriate protection if the EU acts to protect both types of policy – albeit in different ways and under different rules. However, doubts exist, also in view of the comments of some stakeholders, on whether this full coverage is entirely justified.

In its advice, CEIOPS (2009b) recommends that IGS cover both life and non-life policies.

In the 2009 informal stakeholders meetings, CEIOPS and FINUSE supported the protection of both life and non-life policies.

- Option 8.5: Protection of both life and selected non-life policies

The Oxera report argues that there may be reasons to exclude particular classes of non-life insurance from protection and to include only liability insurance, compulsory insurance and

retail policies. The Oxera report also states that if the IGS protection is limited to natural persons only, a case can be made for excluding certain policies (e.g. marine, aviation and transit) from the scope of IGS protection as they cover commercial risks only.

In the 2009 informal stakeholders meetings, the EFRP explained that if the IGS is a genuinely last resort protection measure, life and a selection of non-life policies should be covered.

Table 14 presents a summary of the reasons why the Commission believes that preference should be given to covering life and selected non-life insurance policies.

Table 14 Summary of policy options' evaluations – Policies covered

Options	Op. Objectives		Constraints								Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High policyholders protection	Even policyholders protection	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
8.1 No action at EU level											
8.2 Life policies only	++	++	--		-				-	-	++
8.3 Non-life policies only	+	+	-		-				--	-	+
8.4 Life and non-life policies	+++	+++	---		-				--	-	++
8.5 Life and selected non-life policies	+++	+++	--		-				--	-	+++

ELIGIBLE CLAIMANTS

- Option 9.1: No action (harmonization) at EU level

Existing IGS restrict the eligibility of claimants in various uncoordinated ways. In life insurance, while a majority of Member States (DE, ES, FR, MT, RO) provide coverage to basically all policyholders, two Member States (BG, UK) only provide coverage to natural persons and SME, and two other Member States (LV, PL) only provide coverage to natural persons. In non-life insurance, some Member States (ES, FR, RO) provide coverage to all policyholders. Some other Member States (IE, LV, MT) only protect natural persons, and three Member States (DK, NO, UK) protect both natural persons and SME.

Preserving this situation is not advisable as it would maintain uneven levels of protection within and between Member States for various classes of policyholders.

- Option 9.2: Natural and legal persons

Covering all natural and legal persons might be excessively expensive. It may also not be fully justified because of the main objective of IGS, i.e. the protection of retail customers.

- Option 9.3: Natural and selected legal persons (including SME's)

In order to reduce funding needs, eligibility could be restricted to those claimants who meet certain criteria.

One possibility might be to exclude large corporate policyholders from protection of non-compulsory insurance policies. Not only are these policyholders better equipped to assess the financial soundness of insurers, but they also have access to a network of insurance brokers who can scan the market and find insurers with the skills, capacity and financial strength to underwrite the risk. Finally, large corporate policyholders can also diversify their risks by purchasing policies with various insurance companies or seek other forms of protection.

Another possibility could be to limit coverage to natural persons and SME's. In that case, particular care would have to be taken in defining an SME.

The Oxera report indicates that eligible claimants should be consumers and possibly small businesses.

In the 2009 informal stakeholders meetings, FINUSE expressed a view in favour of protecting natural persons and SME's. FINUSE acknowledged however that it would be difficult to give a proper definition of SME.

- Option 9.4: Natural persons only

One possibility is to restrict IGS protection to natural persons only. However, this might raise concerns about inadequate protection for legal persons that resemble retail customers.

In its advice, CEIOPS (2009b) recommends that eligible claimants should be at least all natural persons, and that Member States should be allowed to extend the scope of coverage to other claimants.

In the 2009 informal stakeholders meetings CEA and EFDI expressed preference for protecting natural persons only as the main objective of IGS is consumer protection and not company protection. EFDI suggested that Member States should be given the possibility to introduce additional cover for SME's at national level.

Table 15 presents a summary of the reasons why the Commission believes that eligibility of natural and selected legal persons (including SME's) should be retained as the preferable option.

Table 15 Summary of policy options' evaluations – Eligible claimants

Options	Op. Objectives		Constraints								Cost-effectiveness
	High protection	Even protection	Costs			Incentives			Ease Imp.		
	policyholders	policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
9.1 No action at EU level											
9.2 Natural and legal persons	++	++	--		-				--	-	++

9.3 Natural and selected legal persons (incl. SME)	++	++	--		-				--	-	+++
9.4 Natural persons only	+	+	--		-				-	-	+

TIMING OF FUNDING

- Option 10.1: No action (harmonization) at EU level

Currently, the majority of existing schemes covering life insurance are funded ex-ante or involve a sizeable element of ex-ante funding (BG, DE, ES, FR, LV, MT, RO). Exceptions are UK and PL. In non-life insurance, Member States with an important component of ex-ante funding are DK, ES, FR, LV, MT and RO, while the UK, NO and IE have ex-post funded IGS.

The lack of any IGS harmonisation at EU level would imply maintaining a situation in which there are considerable differences between schemes in terms of when contributions are collected. These differences have an impact on the protection of policyholders in Member States.

In the 2009 informal stakeholders meeting, CEA, EFDI and AMICE expressed a preference for no harmonisation at EU level with regard to the timing of funding. On the other hand, CEIOPS argued that harmonisation of the timing of funding was important.

- Option 10.2: Ex-post funding

In an ex-post funded scheme, resources remain with the contributing institutions until a failure occurs, and levies are paid to the scheme only once losses arise. It follows that set-up and operational costs are limited. Ex-post funding is more subject to *moral hazard* as failed institutions never contribute to the IGS.

The Oxera report states that the main advantages of ex-post funding are: the very low set-up and administrative costs, the lower cost for insurance undertakings, the possibility that collected funds are tailored on actual default losses. The main disadvantages are: the difficulty to ensure a prompt pay-out to policyholders, the fact that failed insurance

undertakings do not contribute to the loss caused by their failure, that funds are collected in a possibly more pro-cyclical way, the fact that it might in the end not be possible to collect funds from the insurance industry due to their weak general conditions.

- Option 10.3: Ex-ante funding

In a pre-funded scheme, funds are raised in anticipation of possible future failures, with resources transferred to, and managed by, the IGS via a system of levies on industry. The first advantage therefore is the fact that money is readily available to protect consumers should a failure occur. Moreover, ex-ante funding is less subject to moral hazard problems because insurers that become insolvent will have already contributed to the IGS.⁷⁹ Finally, ex ante funding is more likely to avoid the pro-cyclicality associated with ex-post funded schemes. It is obvious that set-up and operational costs tend to be higher here than in the case of ex-post funding.

The Oxera report states that the main advantages of ex-ante funding are: that funds are in principle more quickly available to the IGS, that failed insurance undertakings contribute to the loss of their failure, that funds are collected in a possibly less pro-cyclical way. The main disadvantages are: the higher set-up, administrative and operational costs and the possibility that collected funds are insufficient (if not complemented by ex-post funding).

In its advice, CEIOPS (2009b) recommends that IGS should be required to make payments as soon as practicable after claims have been assessed. However CEIOPS does not express itself clearly in favour of ex-ante or ex-post funding.

In the 2009 informal stakeholders meeting, CEA stated that the insurance industry saw no merit in ex-ante funding.

- Option 10.4: Combination of ex-post and ex-ante funding

When part of the IGS funding is ex-ante and part is ex-post, some of the funds would be immediately available to the IGS without imposing too high ex-ante costs / mobilization of funds on industry and consumers.

In the 2009 informal stakeholders meeting, CEIOPS favoured a combination of ex-ante and ex-post funding.

In conclusion, the Commission believes that an appropriate combination of ex-ante and ex-post funding is preferable. Table 16 presents a summary of the arguments that support this conclusion.

Table 16 Summary of policy options' evaluations – Timing of funding

Options	Op. Objectives		Constraints								Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High protection policyholders	Even protection policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
10.1 No action at EU level											
10.2 Ex-post funding	+	+	-	-	-		-		-	-	
10.3 Ex-ante funding	++	++	--		--		-		--	--	+
10.4 Combination of ex-post and ex-ante funding	++	++	--		--		-		--	--	++

NATURE OF SCHEME INTERVENTION (PORTFOLIO TRANSFER/COMPENSATION)

IGS can work in different ways. In the first scenario, IGS secure the continuity of the policies by, for instance, facilitating their transfer to a solvent insurer or taking direct charge of them (portfolio transfer). In the second scenario, IGS compensate policyholders or beneficiaries for their losses if an insurance undertaking becomes insolvent (compensation of claims).

- Option 11.1: No action (harmonization) at EU level

In life insurance, existing IGS are split between those that provide compensation (BG, LV, MT, PL, RO) and those that ensure portfolio transfer (DE, FR, ES, UK). In non-life insurance

the majority of IGS provide compensation (DK, IE, LV, MT, RO, UK), while portfolio transfer is ensured in FR, NO and ES.

The absence of any harmonisation at EU level concerning the nature of the intervention of IGS schemes would imply maintaining a situation of uneven levels of policyholder protection in Member States.

In its advice, CEIOPS (2009b) recommends to leave flexibility to Member States regarding the question whether IGS should only deal with compensation of claims or portfolio transfer.

- Option 11.2: Portfolio Transfer

From a policyholder protection point of view, continuity of insurance cover may be more advantageous than compensation, particularly in those cases where policyholders would otherwise find it difficult to get equivalent cover (on similar terms) with an alternative insurer.

The Oxera report notes that from a consumer protection point of view and in order to limit wider market impacts, continuity may be preferable, particularly for life insurance policyholders. In the case of non-life insurance, the arguments for continuity may be less relevant, since contracts are generally short-term. Nevertheless there may be instances where there could be benefits for an IGS to secure continuity of non-life policies e.g. where policies are 'non-standard' or the failed insurer has a significant share of the market and it is difficult for policyholders to find alternative cover quickly at the same price if supply is restricted.

- Option 11.3: Compensation of Claims

All the funding needs presented above for the various options of the IGS design features are based on the assumption of portfolio transfer. If IGS provide compensation (only) both for life and non-life insurance, the funding needs for the whole EU under option 5.2 are those presented in Table 17.

Table 17 - Funding needs for total insurance for the EU with national IGS providing compensation only and comparison with the portfolio transfer case (m €)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Funding needs under Home with portfolio transfer	4 529	12 213	51 477	673	2 209	13 001
Funding needs under Home; compensation only	4 182	11 266	47 419	622	2 039	11 978
Relative difference	-7.65%	-7.75%	-7.88%	-7.59%	-7.70%	-7.87%

Source: Methodological report, Table 4.31. For a full analysis and figures for each Member State see sub-sections 4.6 and A5.5 of the MR.

If IGS provide compensation (only) for life insurance only, the funding needs for the whole EU under option 5.2 are those presented in Table 18.

Table 18 - Funding needs for life insurance for the EU with national IGS providing compensation only and comparison with the portfolio transfer case (m €)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Funding needs under Home with portfolio transfer	4,010	10,833	45,751	595	1,958	11,554
Funding needs under Home; compensation only	3,749	10,122	42,723	557	1,830	10,790
Relative difference	-6.52%	-6.56%	-6.62%	-6.49%	-6.54%	-6.61%

Source: Methodological report, Table 4.35. For a full analysis and figures for each Member State see sub-sections 4.6 and A5.5 of the MR.

Finally, if IGS provide compensation (only) for non-life insurance only, the funding needs for the whole EU under option 5.2 are those presented in Table 19.

Table 19 - Funding needs for non-life insurance for the EU with national IGS providing compensation only and comparison with the portfolio transfer case (m €)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Funding needs under Home with portfolio transfer	580	1 559	6 577	86	282	1 660
Funding needs under Home; compensation only	428	1 142	4 764	64	207	1 203
Relative difference	-26.14%	-26.76%	-27.57%	-25.73%	-26.45%	-27.50%

Source: Methodological report, Table 4.37. For a full analysis and figures for each Member State see sub-sections 4.6 and A5.5 of the MR.

The total funding needs tend to be lower (some 7%) because not all policies need to be protected, but only those that actually lead to a real claim against the insurer.

Table 20 presents a summary of the reasons why the Commission believes that portfolio transfer is the preferred option.

Table 20 Summary of policy options' evaluations – Nature of scheme intervention

Options	Op. Objectives		Constraints								Cost-effectiveness
	Effectiveness		Costs			Incentives			Ease Imp.		
	High protection policyholders	Even protection policyholders	Resources needed	Correct allocation of losses	Set-up and operational costs	Consumers moral hazard	Insurers moral hazard	Supervisors / public authorities moral hazard	Consensus among stakeholders	Administrative burden	
11.1 No action at EU level											
11.2 Portfolio Transfer	++	++	--		-				--	-	+++
11.3 Compensation of claims	+	+	-		-				-	-	++

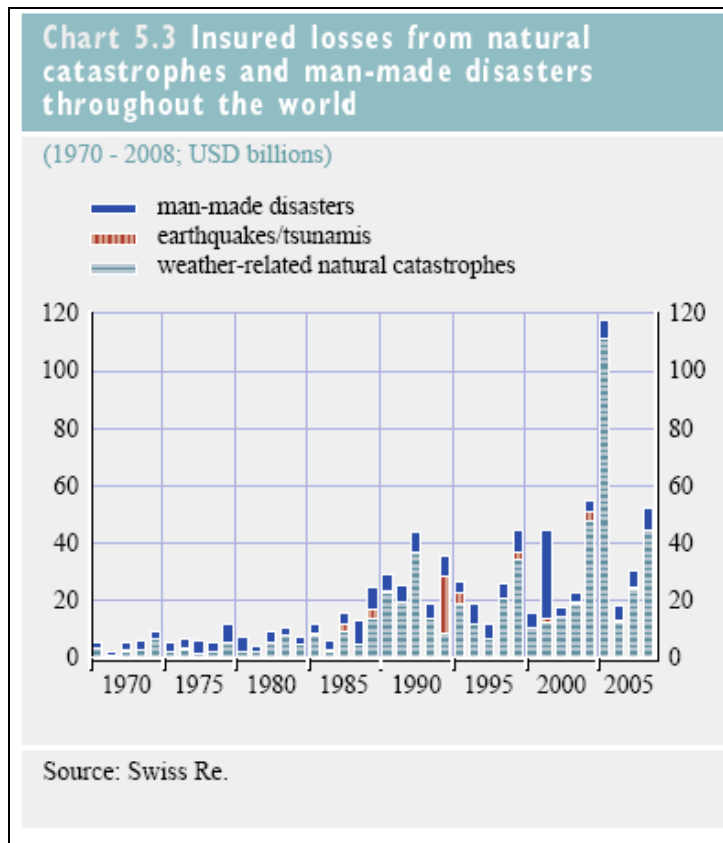
Annex B METHODOLOGICAL REPORT ON THE DERIVATION OF IGS LOSS DISTRIBUTIONS

See separate document

Annex C SUPPLEMENTARY TABLES TO THE METHODOLOGICAL REPORT

1. Additional statistics on distribution of losses and balance sheets of insurers

Figure 0.1 - Insured losses from natural catastrophes and man-made disasters throughout the world



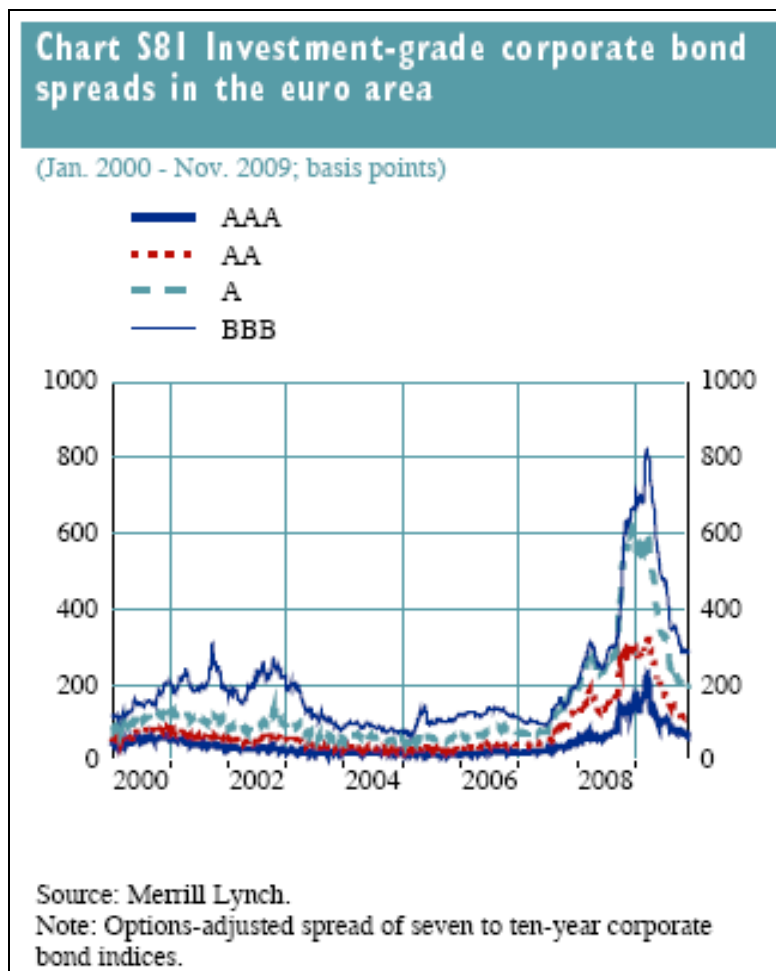
Source: European Central Bank (European Central Bank 2009)

Figure 0.2 - Stock prices in the Euro area



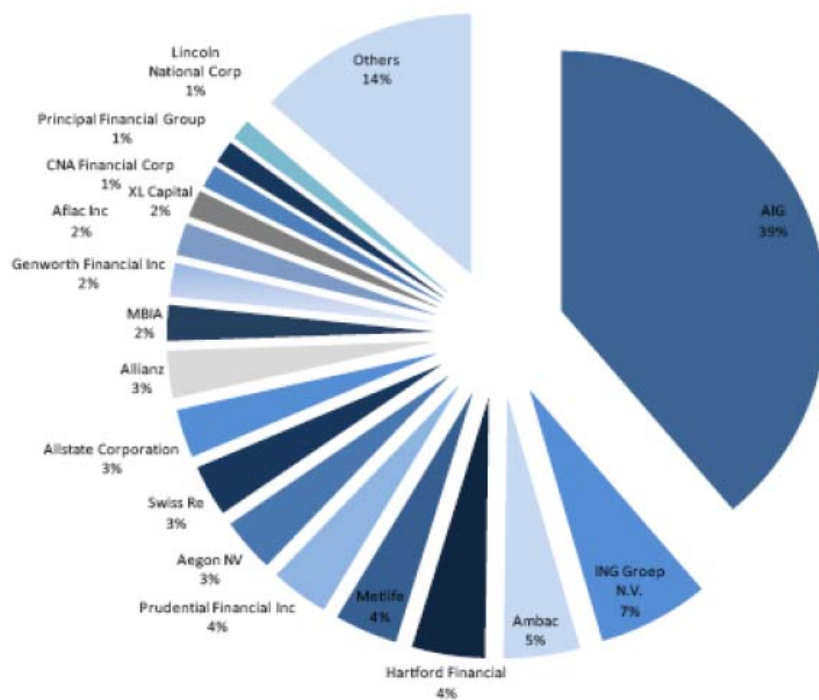
Source: European Central Bank (European Central Bank 2009)

Figure 0.3 - Investment-grade corporate bond spreads in the Euro area



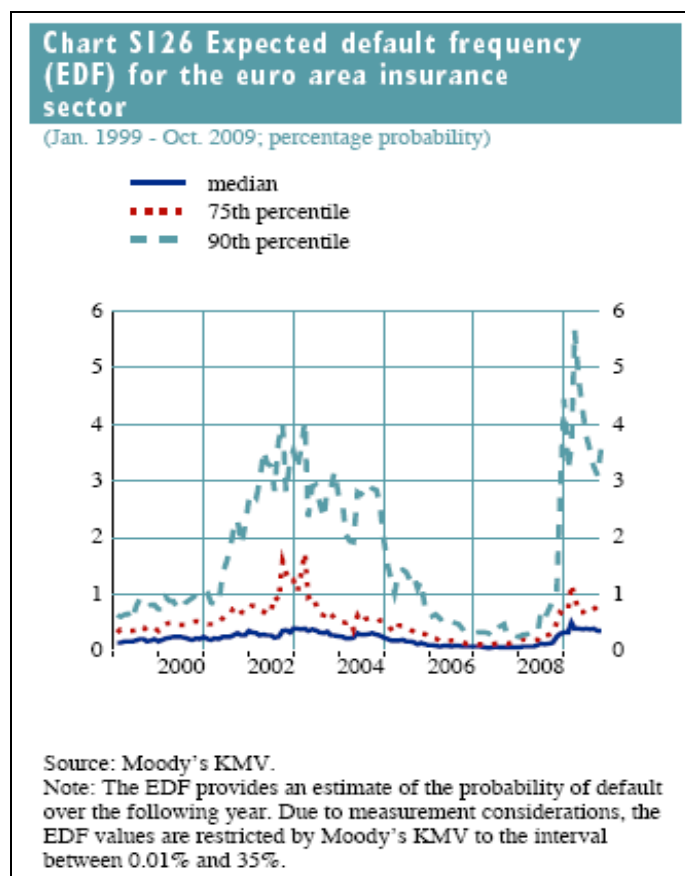
Source: European Central Bank (European Central Bank 2009)

Figure 0.4 - Write-downs and losses at selected insurance companies (since beginning 2007, total of USD 261.2 billion)



Source: Schich (2009)

Figure 0.5 – Expected default frequency for the euro area insurance sector



Source: European Central Bank (European Central Bank 2009)

2. Additional descriptive statistics

Table 0.21: Estimated average number of defaults per year and average time between defaults.

	Average number of defaults per year (PD=0.1%)	Average number of defaults per year (PD=0.5%)	Years between defaults (PD=0.1%)	Years between defaults (PD=0.5%)
AT	0.08	0.39	13.0	2.6
BE	0.16	0.78	6.4	1.3
BG	0.04	0.20	25.0	5.0

CY	0.04	0.18	27.8	5.6
CZ	0.05	0.26	19.2	3.8
DE	0.50	2.52	2.0	0.4
DK	0.19	0.97	5.2	1.0
EE	0.02	0.10	52.6	10.5
ES	0.29	1.46	3.4	0.7
FI	0.04	0.18	28.6	5.7
FR	0.39	1.94	2.6	0.5
GR	0.08	0.40	12.5	2.5
HU	0.05	0.24	20.8	4.2
IE	0.35	1.74	2.9	0.6
IS	0.01	0.06	83.3	16.7
IT	0.24	1.22	4.1	0.8
LI	0.06	0.32	15.9	3.2
LT	0.03	0.14	35.7	7.1
LU	0.36	1.78	2.8	0.6
LV	0.02	0.11	45.5	9.1
MT	0.04	0.22	23.3	4.7
NL	0.30	1.50	3.3	0.7
NO	0.13	0.67	7.5	1.5
PL	0.08	0.41	12.3	2.5
PT	0.08	0.41	12.2	2.4
RO	0.04	0.21	23.8	4.8
SE	0.21	1.03	4.9	1.0
SK	0.04	0.18	28.6	5.7
SL	0.02	0.10	52.6	10.5
UK	0.43	2.14	2.3	0.5
EU	4.15	20.74	0.24	0.05

EEA	4.36	21.79	0.23	0.05
EU avg	0.29	1.46	3.4	0.7
EU-EEA avg	0.28	1.42	3.5	0.7

Note: based on average probabilities of default and ignoring correlation. EU and EEA averages are weighted by number of insurers in each country in 2007.

Source: CEIOPS data, own elaboration

Table 0.22: Losses of historical selected defaults.

Country	Biggest failure	Year of default	Sector	Total loss (m€)	Total loss (as % of total premiums)	Number of policyholders / claims
RO	Metropol	2003	Composite	2.9	0.2%	8 427 (3 573 paid)
FR	Europavie	2000	Life	0.4	0.0%	N.A.
DE	Mannheimer	2003	Life	100.0	0.1%	344 000
IE	ICI	1985	Non life	315.0	8.1%	N.A.
ES	Reunión	1992	Non life	35.4	0.1%	N.A.
FR	International Claims Services SA	1999	Non life	10.2	0.0%	260
UK	Independent Insurance	2001	Non life	738.0	0.8%	190 000
UK	Chester Street	2001	Non life	146.5	0.2%	N.A.
DK	Plus Forsiking A/S	2002	Non life	12.4	0.2%	N.A.

Source: Oxera report(Oxera 2007) and CEIOPS updates (CEIOPS 2009b; CEIOPS 2009a)

Table 0.23: Estimated average and largest losses under different default probability scenarios (m €).

	Life			Non-Life		
	Average Loss PD=0,1%, (LGD=15%)	Average Loss PD=0,5%, (LGD=15%)	Largest loss (LGD=15%)	Average Loss PD=0,1%, (LGD=15%)	Average Loss PD=0,5%, (LGD=15%)	Largest loss (LGD=15%)
AT	8.73	43.64	2'117.93	1.65	8.24	379.80
BE	25.22	126.12	5'491.50	2.89	14.43	479.11
BG	0.03	0.15	7.44	0.03	0.16	4.28
CY	0.41	2.04	107.48	0.05	0.26	8.21
CZ	0.98	4.91	312.04	0.28	1.41	66.06
DE	114.78	573.89	10'662.79	37.30	186.48	3'335.71
DK	17.71	88.57	2'707.70	1.51	7.56	273.26
EE	0.08	0.38	36.98	0.02	0.08	5.49
ES	24.74	123.70	2'418.82	7.51	37.56	1'372.05
FI	5.56	27.82	1'705.75	1.18	5.92	326.19
FR	178.44	892.22	29'584.48	25.21	126.05	3'505.44
GR	1.14	5.72	207.78	0.25	1.27	37.12
HU	0.79	3.96	120.90	0.05	0.26	10.86
IE	22.12	110.58	4'099.66	2.01	10.07	436.71
IS	0.02	0.11	9.86	0.10	0.49	29.88
IT	58.37	291.84	15'157.57	4.89	24.47	1'086.66
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.08	0.39	18.94	0.02	0.12	4.88
LU	11.49	57.43	1'627.13	0.53	2.67	130.87
LV	0.01	0.06	5.05	0.03	0.14	5.69
MT	0.19	0.97	38.78	0.09	0.44	14.26
NL	39.95	199.74	8'880.76	12.39	61.97	2'499.79
NO	11.92	59.60	3'947.70	1.17	5.85	260.47

PL	2.56	12.79	981.34	0.52	2.62	243.93
PT	6.04	30.22	1'303.30	0.75	3.74	244.26
RO	0.12	0.59	32.87	0.10	0.48	26.30
SE	28.73	143.63	4'735.41	8.05	40.27	2'018.13
SI	0.31	1.53	115.49	0.22	1.09	84.02
SK	0.34	1.72	90.30	0.07	0.37	29.23
UK	305.10	1'525.50	27'864.42	15.53	77.67	2'533.59
EU	854.03	4 270.14	120 432.62	123.16	615.78	19 161.88
EU-EEA	865.97	4 329.85	124 390.18	124.42	622.12	19 452.23

Note 1: Numbers in Italic refer to estimates based on approximate market structure

Note 2: losses are calculated assuming a Loss Given Default of 15%

Source: Methodological report, Table A4.1 and own elaboration.

Table 0.24: Updated calculation of average and stressed Probabilities of Default (PD).

Rating Grade (S&P)	Probability of default over one year (S&P)		Number of Leading European Insurance groups in each rating class, by year				
	In 2008 (during financial crisis)	Average (1981-2008)	2005	2006	2007	2008	2009
AAA	0	0	0	0	0	0	0
AA+	0	0	0	0	0	0	0
AA	0.43%	0.02%	2	2	3	3	1
AA-	0.40%	0.03%	5	7	7	6	5
A+	0.31%	0.05%	6	5	8	8	6
A	0.21%	0.06%	6	6	3	3	9
A-	0.58%	0.08%	6	6	5	5	5
BBB+	0.18%	0.16%	0	1	1	1	0
BBB	0.59%	0.28%	1	1	1	0	0
BBB-	0.71%	0.28%	0	0	0	2	2
BB+	1.14%	0.68%	0	0	0	0	0
BB	0.63%	0.89%	0	0	0	0	0
Average	0.404%	0.065%					
Adjusted average (to account for unrated companies)		0.100%					

Note: Average PD is calculated as weighted average of average historical PD over period 1981-2008) weighted by number of companies in each rating class over last 5 years. Average PD in 2008 is calculated as weighted average of observed default rates during 2008 weighted by number of companies in each rating class in 2008.

Source: CEIOPS, Standard&Poor's, Oxera report, own elaboration

Table 0.25: Updated table of IGS characteristics (Part I)

	Life								Non-Life								Total
	BG	DE	FR	LV	MT	PL	RO	UK	DK	FR	IE	LV	MT	NO	RO	UK	ES
A. Nature of intervention																	
Pure compensation to claimants	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Continuation of contracts		X	X					X _{a.1}		X				X			X
B. Eligible claimants Nature																	
Natural persons only				X		X					X	X	X				
Natural persons + SMEs	X							X	X					X		X	
Natural and legal persons except financial institutions			X														
All natural and legal persons		X			X		X			X					X		X
C. Compensation limits and reductions																	
Capping payouts	X		X	X	X _{c.1}	X					X	X		X			n/a
Capping payouts for non-compulsory insurance					X			X					X	X		X	
Level of coverage in %	70		100	100	75	50	100	90	100	90 _{c.2}	65 _{c.3}	50	75	90	100	90	n/a
Level of coverage for compulsory insurance in %					100			100					100	100 _{c.4}		100	
Fixed deductible									X								
Other reduction in benefits		X															X
D. Funding																	
Ex-ante	X	X	X	X	X		X		X	X		X	X		X		X
Power to levy additional contributions		X			X		X		X	X			X		X		X
Ex-post			X			X		X _{d.1}			X			X		X _{d.1}	
Capping the level of contributions in a time period	n.a.	X	X	X			X	X		X	X	X		X	X	X	n.a.
Risk weighting		X															
Target level	X	X			X				X	X			X				
Fund size or target fund available m€		640	569	0.80	2.33		17.1		40.3	250		2.8	2.33		84.5		1 331
E. Other sources of funding																	
Borrowing power		X	X		X				X				X				
Credit facility from members in place			X														
State guarantee on borrowing									X								
Additional guarantees as private initiative large failures		X															

Table 0.26: Updated table of IGS characteristics (Part II)

	Life								Non-Life								Total
	BG	DE	FR	LV	MT	PL	RO	UK	DK	FR	IE	LV	MT	NO	RO	UK	ES
F. Geographic scope																	
Home state principle	X	X	X	X		X	X	X	X	X	X _{f.1}	X			X	X	X
Host state principle		f.2		X _{f.3}	X _{f.4}	X	f.2	X		X _{f.5}	X _{f.6}	X _{f.3}	X _{f.4}	X	f.2	X	f.7
Restrictions based on residency of policyholder/claimant					X _{f.8}			X		X				X		X	
G. Types of policies covered																	
Without exclusions	X	X	X			X	X	X			X				X		
With exclusion				X	X				X	X		X	X	X		X	X
H. Establishment																	
Date	'07	'04	'99	'98	'04	'91	'05	'75	'03	'03	'64	'98	'04	'93	'05	'75	1984
I. Ownership																	
Public	X			X	X		X		n.a.		X	X	X	X	X		X _{i.1}
Private		X	X			X		X	n.a.	X						X	
J. Management																	
Public - Independent											X			X			X
Public - Supervisor				X	X _{j.1}		X	X _{j.2}	X _{j.2}			X	X _{j.1}		X	X _{j.2}	
Private	X _{j.3}	X	X			X				X							

Notes: Belgium is not included as reported by Oxera as the Belgian IGS only has one participant; (a.1) only in case of a long term life insurance continuation; (c.1) maximum payout for any single insurer capped to MTL 1mil (around Eur 2'329'000); (c.2) policyholders 90%, third party claimants 100%; (c.3) individual claims are unlimited but there is a total payout limit of 700m euro; (c.4) 100% is for residential property and compulsory liability insurance; (d.1) levies are raised for costs expected during the next 12 months; (f.1) home state for protection and host state for contribution; (f.2) participation of foreign branches not required and not permitted; (f.3) all contracts not covered by a home scheme need to be covered by the scheme; (f.4) unless branches of EU insurer protected to an equivalent level; (f.5) mandatory for insurers providing insurance which is mandatory by law or regulation; (f.6) required to participate but protected only if wound up under Irish law; (f.7) branches not protected but required to contribute for non-life risks located in Spain; (f.8) the fund covers claims arising under a contract protecting a a risk situated in Malta or originating a commitment in Malta; (i.1) Public ownership and management, but formally a private right corporation; (j.1) The fund responds to the National Supervisory Authority but it is not foreseen that it will receive staff in case of a default; (j.2) Privately managed, with a board appointed by regulator; (j.3) Managed by representatives chosen by industry and vetted by supervisor. Subject to supervision of insurance supervisor.

Sources: CEIOPS update to the Oxera report (CEIOPS 2009b; CEIOPS 2009a)

Table 0.27: Estimated funds available to existing IGS (m €).

	Estimated funds available	Sector
BG*	<i>0,70</i>	Life
DE	640,00	Life
DK	40,30	Non life
ES	1 331,00	Life +Non life
FR	569//250	Life//Non life
IE*	<i>26,48</i>	Non life
LV	<i>0.8//2.8</i>	Life//Non life
MT	<i>2.33//2.33</i>	Life//Non life
NO*	<i>16,04</i>	Non life
PL*	<i>39,03</i>	Life
RO	17.10//84.50	Life//Non life
UK*	<i>1 766//316</i>	Life//Non life

Note 1: * – ex-post funded scheme

Note 2: Funds available for schemes with ex-ante payment are based on figures reported by Oxera and CEIOPS. Funds available for schemes with ex-post payment are estimated (*numbers in italics*) based on average fund size of ex-ante schemes with respect to Gross Premium Written

Source: Oxera Report (Oxera 2007), CEIOPS update (CEIOPS 2009b; CEIOPS 2009a), own elaboration

Table 0.28: Estimated funding needs as a share of gross premiums written in each country.

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.32%	0.98%	4.74%	0.04%	0.17%	1.18%
BE	0.42%	1.28%	6.16%	0.06%	0.22%	1.54%
BG	0.08%	0.21%	0.88%	0.01%	0.04%	0.22%
CY	0.34%	1.08%	5.46%	0.05%	0.18%	1.36%
CZ	0.18%	0.51%	2.27%	0.03%	0.09%	0.57%
DE	0.52%	1.33%	5.21%	0.08%	0.25%	1.32%
DK	0.56%	1.42%	5.54%	0.09%	0.26%	1.41%
EE	0.10%	0.47%	3.68%	0.01%	0.06%	0.85%
ES	0.37%	0.95%	3.80%	0.06%	0.18%	0.96%
FI	0.45%	1.67%	10.00%	0.05%	0.26%	2.43%
FR	0.51%	1.38%	5.88%	0.07%	0.25%	1.49%
GR	0.19%	0.51%	2.20%	0.03%	0.09%	0.55%
HU	0.17%	0.41%	1.57%	0.03%	0.08%	0.40%
IE	0.28%	0.74%	3.11%	0.04%	0.13%	0.79%
IS	0.18%	0.64%	3.70%	0.02%	0.10%	0.90%
IT	0.35%	1.02%	4.74%	0.05%	0.18%	1.19%
LI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
LT	0.13%	0.38%	1.67%	0.02%	0.07%	0.42%
LU	0.58%	1.37%	4.92%	0.09%	0.26%	1.25%
LV	0.07%	0.23%	1.08%	0.01%	0.04%	0.27%
MT	0.24%	0.80%	4.28%	0.03%	0.13%	1.06%
NL	0.30%	0.85%	3.78%	0.04%	0.15%	0.95%
NO	0.32%	1.24%	7.91%	0.04%	0.18%	1.90%
PL	0.12%	0.44%	2.51%	0.01%	0.07%	0.61%
PT	0.23%	0.73%	3.67%	0.03%	0.12%	0.91%
RO	0.11%	0.27%	1.01%	0.02%	0.05%	0.26%

SE	0.74%	2.21%	10.51%	0.10%	0.38%	2.63%
SI	0.14%	0.55%	3.47%	0.02%	0.08%	0.83%
SK	0.14%	0.45%	2.41%	0.02%	0.07%	0.60%
UK	0.43%	1.14%	4.62%	0.07%	0.21%	1.17%
EU	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%
EU-EEA	0.43%	1.17%	4.95%	0.06%	0.21%	1.25%

Note: estimates based on the home state principle, under different scenarios for the ‘over the cycle’ probability of default and levels of protection.

Source: Methodological report, Table 3.2 - CEIOPS (CEIOPS 2008), CEA (CEA 2009), own elaboration.

Table 0.29: Ranking group, in terms of market share, of largest company in the Life insurance sector covered by IGS under different funding scenarios.

	PD=0.1% $\alpha=75\%$	PD=0.1% $\alpha=90\%$	PD=0.1% $\alpha=99\%$	PD=0.5% $\alpha=75\%$	PD=0.5% $\alpha=90\%$	PD=0.5% $\alpha=99\%$
AT	2	..	2	1
BE	..	4	3	4	3	2
BG	1
CY	3	..	..	1
CZ	3	..	3	1
DE	4	4	4	2
DK	3	3	3	2
EE	2	..	..	1
ES	..	4	4	4	4	2
FI	3	3	3	3	3	2
FR	..	4	4	4	4	2
GR	..	4	4	4	4	2
HU	2	..	3	2
IE	2	..	2	2
IS	1
IT	..	4	3	4	4	2
LI	3	3	2
LT	2
LU	..	3	3	3	3	3
LV	2	2	2	2	2	1
MT	2	2	2	2	2	2
NL	2	..	2	2
NO	4	3	3	3	3	1
PL	4	4	4	1
PT	..	4	3	4	3	2
RO	3	3	2	2	2	2

SE	4	4	3	4	3	3
SI	..	..	3	..	3	1
SK	..	4	3	4	3	1
UK	4	4	4	4	4	3

Legend: **1** = company size rank is between 1 and 5; **2** = company size rank is between 6 and 10; **3** = company size rank is between 11 and 15; **4** = company size rank is below 15; **..** = not defined using current data

Note: funding needs estimated under home state principle and different scenarios for mean “over the cycle” probability of default and coverage level

Source: Methodological report, Table 3.2, CEIOPS (CEIOPS 2008), CEA (CEA 2009), own elaboration.

Table 0.30: Ranking group, in terms of market share, of largest company in the Non life insurance sector covered by IGS under different funding scenarios

	PD=0.1% $\alpha=75\%$	PD=0.1% $\alpha=90\%$	PD=0.1% $\alpha=99\%$	PD=0.5% $\alpha=75\%$	PD=0.5% $\alpha=90\%$	PD=0.5% $\alpha=99\%$
AT	..	..	2	..	2	1
BE	..	4	4	4	4	2
BG	..	..	3	..	3	3
CY	..	..	..	..	..	2
CZ	..	3	3	3	3	2
DE	4	4	4	4	4	2
DK	..	3	3	3	3	2
EE	..	..	2	..	2	1
ES	..	4	4	4	4	1
FI	4	3	2	3	3	2
FR	4	4	4	4	4	1
GR	..	..	4	..	4	2
HU	..	..	3	3	3	2
IE	3	3	3	3	3	2
IS	..	..	..	..	..	..
IT	4	4	3	4	3	1
LI	..	3	3	3	3	2
LT	..	..	3	..	3	2
LU	..	3	3	3	3	2
LV	3	3	3	3	3	2
MT	4	4	3	4	3	2
NL	..	2	2	2	2	2
NO	..	3	3	3	3	2
PL	..	..	3	4	4	1
PT	..	4	4	4	4	2
RO	..	3	3	3	3	2

SE	4	4	3	4	3	2
SI	..	3	2	3	3	1
SK	..	4	3	4	3	1
UK	..	4	4	4	4	2

Legend: **1** = company size rank is between 1 and 5; **2** = company size rank is between 6 and 10; **3** = company size rank is between 11 and 15; **4** = company size rank is below 15; **..** = not defined using current data

Note: funding needs estimated under home state principle and different scenarios for mean “over the cycle” probability of default and coverage level

Source: Methodological report, Table 3.2, CEIOPS (CEIOPS 2008), CEA (CEA 2009), own elaboration.

Table 0.31: Ratio of gross maximum losses to GDP under different loss scenarios.

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.0153%	0.0468%	0.2276%	0.0021%	0.0080%	0.0568%
BE	0.0354%	0.1068%	0.5127%	0.0048%	0.0183%	0.1282%
BG	0.0010%	0.0026%	0.0108%	0.0001%	0.0005%	0.0027%
CY	0.0114%	0.0360%	0.1817%	0.0015%	0.0060%	0.0452%
CZ	0.0048%	0.0134%	0.0595%	0.0007%	0.0024%	0.0150%
DE	0.0310%	0.0791%	0.3105%	0.0048%	0.0147%	0.0788%
DK	0.0449%	0.1143%	0.4467%	0.0070%	0.0213%	0.1134%
EE	0.0012%	0.0058%	0.0455%	0.0001%	0.0008%	0.0105%
ES	0.0150%	0.0386%	0.1538%	0.0023%	0.0071%	0.0390%
FI	0.0119%	0.0436%	0.2620%	0.0014%	0.0067%	0.0636%
FR	0.0497%	0.1356%	0.5768%	0.0073%	0.0244%	0.1457%
GR	0.0029%	0.0080%	0.0343%	0.0004%	0.0014%	0.0087%
HU	0.0045%	0.0111%	0.0423%	0.0007%	0.0021%	0.0108%
IE	0.0602%	0.1621%	0.6787%	0.0089%	0.0294%	0.1717%
IS	0.0027%	0.0096%	0.0554%	0.0003%	0.0015%	0.0135%
IT	0.0176%	0.0517%	0.2404%	0.0025%	0.0090%	0.0603%
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.0015%	0.0043%	0.0190%	0.0002%	0.0008%	0.0048%
LU	0.1707%	0.4057%	1.4575%	0.0276%	0.0777%	0.3711%
LV	0.0008%	0.0024%	0.0115%	0.0001%	0.0004%	0.0029%
MT	0.0202%	0.0669%	0.3559%	0.0026%	0.0108%	0.0879%
NL	0.0368%	0.1045%	0.4664%	0.0053%	0.0185%	0.1174%
NO	0.0138%	0.0533%	0.3401%	0.0015%	0.0079%	0.0818%
PL	0.0034%	0.0121%	0.0698%	0.0004%	0.0019%	0.0171%
PT	0.0166%	0.0520%	0.2603%	0.0022%	0.0087%	0.0648%
RO	0.0009%	0.0022%	0.0085%	0.0001%	0.0004%	0.0022%

SE	0.0452%	0.1355%	0.6448%	0.0062%	0.0233%	0.1614%
SI	0.0051%	0.0197%	0.1250%	0.0006%	0.0029%	0.0301%
SK	0.0029%	0.0096%	0.0509%	0.0004%	0.0016%	0.0126%
UK	0.0744%	0.1954%	0.7948%	0.0112%	0.0358%	0.2014%
EU	0.0366%	0.0988%	0.4164%	0.0054%	0.0179%	0.1052%
EU-EEA	0.0361%	0.0976%	0.4141%	0.0054%	0.0176%	0.1045%

Note: funding needs estimated under home state principle and different loss scenarios for mean “over the cycle” probability of default and loss frequency.

Source: Methodological Report, Table 3.2, Table 3.2; Eurostat; own elaboration

3. estimates of Coverage and protection of cross border flows

Based on the approximate estimation of bilateral trade flows presented in the Annex on Cross Border Insurance Activity, it is possible to estimate the possible amounts of losses which could be passed on to policy-holders and claimants across borders. As in the Methodological report, due to the absence of more detailed data, a proportionality assumption is going to be used to attribute quotas of Exposure At Default to imported and exported flows of premiums.

Table 0.32: Estimated shares of domestic and imported premiums not covered, at least partially, by any IGS.

	Life			Non Life			Total Insurance		
	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import
AT	100%	100%	99%	99%	100%	45%	100%	100%	88%
BE	100%	100%	98%	92%	100%	22%	98%	100%	71%
BG	4%	0%	99%	99%	100%	45%	66%	66%	78%
CY	100%	100%	95%	96%	100%	33%	98%	100%	78%
CZ	99%	100%	93%	98%	100%	36%	99%	100%	87%
DE	5%	0%	98%	98%	100%	27%	49%	48%	74%
DK	100%	100%	99%	1%	0%	47%	76%	75%	94%
EE	100%	100%	99%	95%	100%	32%	97%	100%	50%
ES	4%	0%	99%	1%	0%	45%	2%	0%	88%
FI	100%	100%	99%	99%	100%	45%	100%	100%	89%
FR	4%	0%	99%	1%	0%	49%	3%	0%	95%
GR	100%	100%	98%	98%	100%	35%	99%	100%	81%
HU	100%	100%	99%	99%	100%	45%	100%	100%	93%
IE	99%	100%	85%	18%	0%	41%	94%	97%	75%
IS	100%	100%	99%	99%	100%	45%	99%	100%	65%
IT	100%	100%	94%	96%	100%	31%	99%	100%	85%
LI	99%	100%	99%	45%	100%	45%	99%	100%	98%
LT	99%	100%	93%	96%	100%	33%	98%	100%	83%
LU	100%	100%	97%	90%	100%	30%	88%	100%	84%
LV	0%	0%	0%	0%	0%	0%	0%	0%	0%
MT	0%	0%	0%	0%	0%	0%	0%	0%	0%
NL	100%	100%	99%	99%	100%	45%	100%	100%	80%

NO	100%	100%	97%	55%	100%	0%	88%	100%	22%
PL	4%	0%	99%	99%	100%	45%	24%	22%	94%
PT	100%	100%	99%	99%	100%	45%	100%	100%	95%
RO	4%	0%	99%	1%	0%	45%	2%	0%	81%
SE	100%	100%	99%	99%	100%	45%	100%	100%	91%
SI	100%	100%	99%	99%	100%	45%	100%	100%	79%
SK	100%	100%	99%	99%	100%	45%	100%	100%	93%
UK	0%	0%	0%	0%	0%	0%	0%	0%	0%
EU avg	26%	25%	62%	56%	57%	23%	35%	34%	54%
EU-EEA avg	27%	26%	63%	56%	58%	19%	35%	34%	53%

Note: Import flows calculated using approximate estimate of bilateral flows based on proportionality assumptions. All exports exiting a country with a home principle IGS are considered 'covered' (at least partially), all imports entering a country with a host state principle IGS are considered 'covered' (at least partially).

Source: Table 2.1, Annex on cross-border insurance activity in the EU-EEA, Tables 2.6-2.8; own elaboration.

Table 0.33: Estimates of net losses after intervention of existing IGS under different loss scenarios (m €).

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	41.56	126.82	616.39	5.63	21.59	153.91
BE	118.45	357.71	1 717.44	16.17	61.22	429.37
BG	0.00	0.05	2.41	0.00	0.00	0.09
CY	1.82	5.74	28.98	0.24	0.96	7.21
CZ	6.06	17.09	75.76	0.87	3.03	19.08
DE	113.31	1 281.86	6 899.74	0.00	0.00	1 273.98
DK	61.72	219.19	973.91	0.00	7.97	217.20
EE	0.19	0.90	7.11	0.02	0.12	1.64
ES	0.00	0.00	288.01	0.00	0.00	0.00

FI	21.33	78.33	470.36	2.48	12.01	114.23
FR	122.76	1 749.60	10 109.65	0.00	0.00	1 942.11
GR	6.58	18.09	77.66	0.96	3.25	19.61
HU	4.51	11.23	42.79	0.71	2.11	10.88
IE	87.77	281.05	1 261.37	0.00	29.26	299.25
IS	0.40	1.43	8.27	0.05	0.22	2.02
IT	272.42	800.06	3 717.40	37.98	138.92	932.40
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.43	1.22	5.44	0.06	0.22	1.37
LU	63.97	152.01	546.08	10.34	29.11	139.03
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	14.77	0.00	0.00	0.14
NL	209.47	594.48	2 652.50	29.96	105.03	667.70
NO	22.97	135.12	947.64	0.00	6.41	215.76
PL	0.00	0.00	178.05	0.00	0.00	14.00
PT	27.09	84.78	424.36	3.60	14.24	105.62
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	149.65	448.61	2 135.34	20.54	77.07	534.33
SI	1.76	6.80	43.21	0.20	1.01	10.40
SK	1.60	5.27	27.97	0.20	0.86	6.91
UK	0.00	1 911.02	14 163.42	0.00	0.00	2 033.31
EU	1 312.45	8 151.91	46 480.12	129.96	507.98	8 933.77
EU-EEA	1 335.82	8 288.46	47 436.03	130.01	514.61	9 151.55

Note 1: Loss scenarios as per table 3.2 of methodological report. IGS fund sizes as per Table 0.27. Home principle loss distribution is used for all countries.

Note 2: Countries with an IGS in place are indicated in grey

Source: Table 0.27, Methodological Report, Table 3.2.

Table 0.34: Estimates of losses exported to other countries after intervention of existing home principle IGS, under different loss scenarios (m €).

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.15	0.44	2.16	0.02	0.08	0.54
BE	6.11	18.46	88.63	0.83	3.16	22.16
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.39	1.24	6.26	0.05	0.21	1.56
CZ	0.02	0.04	0.19	0.00	0.01	0.05
DE	1.31	13.60	72.66	0.00	0.00	13.51
DK	3.91	12.95	56.27	0.00	0.82	12.83
EE	0.06	0.30	2.32	0.01	0.04	0.54
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.93	3.42	20.53	0.11	0.52	4.98
FR	6.72	39.72	209.27	0.00	0.00	43.62
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	50.72	162.18	727.49	0.00	16.99	172.67
IS	0.00	0.01	0.06	0.00	0.00	0.02
IT	3.24	9.52	44.22	0.45	1.65	11.09
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.00	0.01	0.03	0.00	0.00	0.01
LU	61.57	146.30	525.56	9.95	28.01	133.80
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.48	1.58	8.42	0.06	0.26	2.08
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.71	2.74	17.45	0.08	0.41	4.20
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.26	0.81	4.03	0.03	0.14	1.00

RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.02	0.00	0.00	0.01
SK	0.00	0.02	0.08	0.00	0.00	0.02
UK	0.00	0.00	0.00	0.00	0.00	0.00
EU	135.86	410.58	1 768.16	11.51	51.89	420.47
EU-EEA	136.57	413.33	1 785.67	11.59	52.30	424.69

Note 1: Loss scenarios as per table 3.2 of methodological report. Losses exported calculated proportionally to export flows illustrated in tables 2.9 and 2.10 of Annex on Cross Border insurance activity in the EU-EEA. A quota of IGS funds proportional to the share of exports is used to reduce losses i.e. it is assumed that losses are equally distributed between domestic and cross-border activities).

Note 2: Countries with an existing home IGS in place are indicated in grey

Source: Table 0.27; Annex on cross border insurance activity in the EU-EEA, Tables 2.9 and 2.10; Methodological report, Table 5 of Annex 5.

Table 0.35: Estimates of losses imported by any EU country under different loss scenarios, net of protection offered by existing home state principle IGS and existing host state principle IGS (m €).

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	1.12	3.42	14.85	0.09	0.42	3.52
BE	4.54	13.89	59.99	0.37	1.69	14.19
BG #	0.02	0.07	0.32	0.00	0.01	0.08
CY	0.11	0.32	1.41	0.01	0.04	0.33
CZ	1.21	3.71	16.09	0.10	0.46	3.81
DE #	18.02	53.68	231.04	1.52	6.92	55.34
DK #	1.75	5.34	23.18	0.15	0.67	5.50
EE	0.03	0.08	0.33	0.00	0.01	0.08
ES #	3.69	11.28	48.97	0.31	1.40	11.61
FI	0.40	1.21	5.24	0.03	0.15	1.24
FR #	17.54	50.73	214.70	1.54	7.04	51.82
GR	0.45	1.38	6.00	0.04	0.17	1.42
HU	0.28	0.86	3.72	0.02	0.11	0.88
IE #	4.00	11.90	50.57	0.53	1.63	11.98
IS	0.01	0.04	0.16	0.00	0.00	0.04
IT	18.99	58.13	251.92	1.55	7.14	59.64
LI	0.32	0.97	4.19	0.03	0.12	0.99
LT	0.13	0.41	1.76	0.01	0.05	0.42
LU	0.63	2.24	10.62	0.01	0.20	2.44
LV #	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00
NL	5.03	15.38	66.79	0.42	1.91	15.84
NO	0.00	5.66	74.34	0.00	0.00	10.44
PL #	0.00	0.00	0.00	0.00	0.00	0.00
PT	1.23	3.76	16.30	0.10	0.47	3.87

RO	0.08	0.23	1.02	0.01	0.03	0.24
SE	1.91	5.85	25.38	0.16	0.73	6.02
SI	0.09	0.27	1.16	0.01	0.03	0.27
SK	0.12	0.36	1.57	0.01	0.04	0.37
UK #	0.00	0.00	0.00	0.00	0.00	0.00
EU	81.35	244.50	1 052.93	7.00	31.33	250.93
EU-EEA	81.68	251.16	1 131.62	7.02	31.46	262.40

Note 1: Countries with an host IGS in place are indicated in grey; currently their whole fund is reduced with the average domestic losses; # indicates countries with a home state principle IGS

Note 2: Net losses scenarios as per Table 0.34 (A quota of IGS funds proportional to the share of exports is used to reduce losses exported). Losses imported calculated proportionally to import flows illustrated in table 2.9 and 2.10 of Annex on Cross Border insurance activity in the EU-EEA. Losses imported by each country are reduced by amount of any host-state principle IGS present there. (The funds of the IGS are reduced by the average amount of expected losses generated by domestic companies).

Source: Table 0.27; Annex on cross border insurance activity in the EU-EEA – Tables 2.9 and 2.10; Methodological Report - Table 5 of Annex 5.

4. Preliminary analysis: comparison of potential losses stemming from Aspis group insolvency with results of model used in the Methodological Report.

Aspis group, a large insurance group making up roughly 13% of the total insurance sector in Greece, has seen its license to trade in the insurance sector revoked in September 2009. In the run-up to the revocation, EPEIA (the Greek regulator) asked Aspis group to provide a financial resurrection plan for the first time in 2008. In 2009 EPEIA asked the company to provide a total of 237 Eur million in cash guarantees which, after negotiations with the company, were reduced to 203.5 Eur million. A final request for a financial resurrection plan was advanced by EPEIA in September 2009 and license was revoked upon failure by Aspis to produce such plan.

The amount of guarantees requested by the regulator can be interpreted as the best estimate of the capital gap which needs to be filled to allow the company to continue operations.

Using the terminology of the IGS IA Methodology Report, this corresponds to the concept of expected losses used in the in case of a 'portfolio transfer' intervention.

By using a rather strong proportionality assumption, the part of this amount referring to losses in the non-motor lines of business³ can be estimated as 140 Eur million (see Table 0.36)⁴.

The funding needs for an IGS, calculated based on Greek market data and different assumptions on default probabilities, are presented in Table 0.37 (taken from MR Table 3.2).

As it can be seen, these numbers are much lower than the currently expected loss of 140 Eur million.

This can be explained by considering that, in terms of the probability distribution of losses generated by the model employed in the IGS Methodology Report, an insolvency of this size⁵ can be interpreted as an exceptional event, which should have happened in the Greek market with a probability lower than 0.5% or α above 99.5% (see Figure 0.6)⁶.

Therefore, even in case an IGS holding funds between 0.55% and 2.2% of total gross premiums written in the Greek market had been in place, the losses would still have required a State intervention in order to grant protection to all claimants and policy holders.

Nonetheless, if such an IGS had been in place, it would have held resources corresponding to roughly 15% to 50% of the total intervention necessary, resulting in a marked reduction of taxpayer-financed state involvement.

Table 0.36: Estimated loss according to MR model assumptions and implied LGD based on estimated EAD

Variable	Source	Unit	Calc.	Value
Total GR Exposure at default (excl. motor) (2007)	MR table 2.2	m€	A	9 495

³ All calculations in the IGS IA Methodology Report exclude motor insurance, as it is covered by its own separate arrangements.

⁴ Although the model employed in the IGS IA Methodology Report is not meant to be used for making predictions on individual default cases, the magnitudes in this real-life case appear to be in line with the assumptions used there:

- the amount of the expected losses implied by the assumption of the model used in the IGS IA Methodology Report, in case of a default of the size of Aspis (13% of the market, proportionally reduced to exclude motor insurance) is 192 Eur million, as illustrated in Table 0.36, while the regulator seems to expect a loss of around 140 Eur million.
- reversing the argument: the Loss Given Default (LGD) implied by a final loss of 140 Eur million (excluding Motor) and by an estimation of the exposure at default based on proportionality assumptions is 10.92% (see Table 0.36), while the loss given default assumed in the methodology report model is 15%.

⁵ A loss of 3.96% of gross premiums written in the domestic market (excluding Motor).

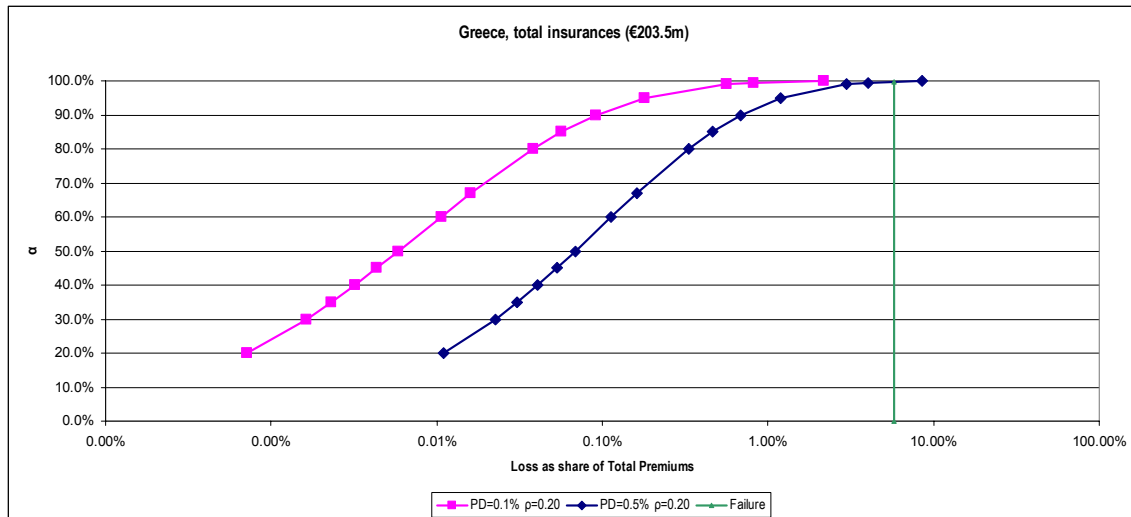
⁶ This probability is calculated based on the assumption that individual insurers have a default probability of 0.5% which is the maximum target probability of default under Solvency II. Under the assumptions that the probability of default of a single insurer is 0.1% the probability of such an event should be lower than 0.05% or an α of 99.95%.

Total GR Gross Premiums Written (excl. motor) (2007)	MR table 2.2	m€	B	3 537
Total GR Gross Premiums Written (incl. motor) (2007)	MT table 4.3	m€	C	5 141
Company Total Gross Premiums Written (2009)	internal communication	m€	D	694
Market share of Company	calculation		$E=D/C$	13.50%
Share of Motor in Greek market	calculation		$F=(C-B)/C$	31.20%
Share of company without motor on market without motor stays constant due to proportionality assumptions				
Share of EAD attributed to company is equal to market share attributed to company				
Amount of EAD attributed to company	calculation	m€	$G=A*E$	1282
Estimated loss using MR model = $EAD*LG D(15\%)$	calculation	m€	$H=G*15\%$	192
Estimation of gap by Greek supervisor (incl. motor)	internal communication	m€	I	203.5
Estimation of gap by Greek supervisor (excl. motor)	calculation	m€	$J=I*(1-F)$	140.0
Implied LGD (excl. Motor)	calculation		$K=J/G$	10.92%

Table 0.37: IGS funding needs for Total Insurance sector under Home state principle for different confidence levels and default probabilities; funding needs in absolute values and as a share of total gross premiums written

		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
GR	Funding needs (m€)	6.58	18.09	77.66	0.96	3.25	19.61
	Share of Premiums	0.19%	0.51%	2.20%	0.03%	0.09%	0.55%

Figure 0.6: Position of the losses generated by the Aspis default on the estimated loss distribution function for the total insurance sector in Greece, under home state principle and two different probabilities of default



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Annex D ANNEX ON CROSS-BORDER INSURANCE ACTIVITY IN THE EU-EEA

1. IGS Coverage

Table 0.38: Summary of geographic scope of existing IGS.

	Life		Non-Life non-motor		Non-Life motor	
	Geographic scope		Geographic scope		Geographic scope	
	Home	Host	Home	Host	Home	Domestic
AT					x	
BE					x	
BG	x					x
CY					x	
CZ					x	
DE	x				x	
DK			x		x	
EE					x	
ES	x		x		x	
FI					x	
FR	x		x	x (1)	x	
GR					x	
HU					x	
IE			x		x	

IS						
IT					x	
LI					x	
LT						x
LU						x
LV	x	x	x	x		x
MT		x		x		x
NL					x	
NO				x		
PL	x	x			x	
PT					x	
RO	x		x			
SE					x	
SI					x	
SK					x	
UK	x	x	x	x	x	

Notes: (1) only for companies selling mandatory insurance

Source: Methodological report, Table 3.13 - Oxera report (Oxera 2007), CEIOPS updates (CEIOPS 2009), Agreements and Conventions related to the implementation of the 4th Motor Directive (Council of Bureaux 2009).

Annex E

Table 0.39: Coverage of life insurance by existing national IGS in EU-EEA countries

Life	Importing Countries		Exporting Countries																												
	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United Kingdom	
Austria	■		■			■			■	■																					
Belgium		■	■			■			■	■																					
Bulgaria	•	•	■	•	•	■	•	•	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Cyprus			■	■	■	■			■	■	■																				
Czech Rep.			■		■	■			■	■	■																				
Germany	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Denmark			■			■	■	■	■	■	■																				
Estonia			■			■	■	■	■	■	■																				
Spain	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Finland			■			■			■	■	■																				
France	•	•	■	•	•	■	•	•	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Greece			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Hungary			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Iceland			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Ireland			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Italy			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Liechtenstein			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Lithuania			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Luxembourg			■			■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Latvia	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Malta			■			■			■	■	■																				
Netherlands			■			■			■	■	■																				
Norway			■			■			■	■	■																				
Poland	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Portugal			■			■			■	■	■																				
Romania	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Sweden			■			■			■	■	■																				
Slovenia			■			■			■	■	■																				
Slovakia			■			■			■	■	■																				
United Kingdom	•	•	■	•	•	■	•	•	■	■	■	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Note and legend: The table shows the cases in which an IGS covers life insurance activity, taking into consideration the existence of possible cross-border interactions between Member States. Countries listed on rows export insurance services to countries listed on columns.

White cell: no IGS coverage.

Small black dot: exports are covered by an IGS, but domestic insurance activity in the importing country is not covered.

Big black dot: exports are not covered by an IGS, but domestic insurance activity in the importing country is covered.

Black cell: both exports and domestic activity in the importing country are covered by an IGS.

Source: Oxera report (Oxera 2007), CEIOPS updates (CEIOPS 2009), own graphical presentation

Table 0.40: Coverage of non-life insurance by existing national IGS in EU-EEA countries

Non-Life Non- motor	Importing Countries		Exporting Countries																												
	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United Kingdom	
Austria	■						■		■		■				■																
Belgium		■					■		■		■				■																
Bulgaria			■				■		■		■				■																
Cyprus				■			■		■		■				■																
Czech Rep.					■		■		■		■				■																
Germany						■			■		■				■																
Denmark	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Estonia							■	■	■		■				■																
Spain	•	•	•	•	•	•	■	■	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Finland							■		■	■	■				■																
France	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Greece							■		■		■	■	■	■	■																
Hungary							■		■		■		■	■	■																
Iceland							■		■		■		■	■	■																
Ireland	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Italy							■		■		■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Liechtenstein							■		■		■				■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Lithuania							■		■		■				■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Luxembourg							■		■		■				■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Latvia	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Malta							■		■		■				■																
Netherlands							■		■		■				■							■	■	■	■	■	■	■	■	■	■
Norway							■		■		■				■							■	■	■	■	■	■	■	■	■	■
Poland							■		■		■				■								■	■	■	■	■	■	■	■	■
Portugal							■		■		■				■								■	■	■	■	■	■	■	■	■
Romania	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•
Sweden							■		■		■				■								■	■	■	■	■	■	■	■	■
Slovenia							■		■		■				■								■	■	■	■	■	■	■	■	■
Slovakia							■		■		■				■								■	■	■	■	■	■	■	■	■
United Kingdom	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•

Note and legend: The table shows the cases in which an IGS covers non-life insurance activity, taking into consideration the existence of possible cross-border interactions between Member States.

Countries listed on rows export insurance services to countries listed on columns.

White cell: no IGS coverage.

Small black dot: exports are covered by an IGS, but domestic insurance activity in the importing country is not covered.

Big black dot: exports are not covered by an IGS, but domestic insurance activity in the importing country is covered.

Black cell: both exports and domestic activity in the importing country are covered by an IGS.

Source: Oxera report (Oxera 2007), CEIOPS updates (CEIOPS 2009), own graphical presentation

Table 0.41: Uneven protection of policyholders within Member States

		Importing Member State			
		Home IGS	Host IGS	Home and Host IGS	No IGS
Exporting Member State	Home IGS				+
	Host IGS	-			
	Home and Host IGS				+
	No IGS	-			

Legend: + = The cross border activity is more protected than the domestic one

- = The cross border activity is less protected than the domestic one

Note: Uneven policyholders' protection due to IGS design features other than geographic scope are also possible (not considered in the Table).

Source: own elaboration.

Table 0.42: Life insurance – Cases of uneven protection of policyholders within each Member State.

Life Exporting Countries	Importing Countries		Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United Kingdom					
	Austria			-																																	
Belgium				-																																	
Bulgaria	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Cyprus																																					
Czech Rep.																																					
Germany	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Denmark																																					
Estonia																																					
Spain	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Finland																																					
France	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Greece																																					
Hungary																																					
Iceland																																					
Ireland																																					
Italy																																					
Liechtenstein																																					
Lithuania																																					
Luxembourg																																					
Latvia	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Malta																																					
Netherlands																																					
Norway																																					
Poland	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Portugal																																					
Romania	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						
Sweden																																					
Slovenia																																					
Slovakia																																					
United Kingdom	+	+			+	+		+	+			+		+	+	+	+	+	+	+	+	+		+	+		+		+	+	+						

Legend: + / - = The cross border activity is more / less protected than the domestic one

Source: Oxera report (Oxera 2007), CEIOPS updates (CEIOPS 2009), own graphical presentation

Table 0.43: Non-life insurance – Cases of uneven protection of policyholders within each Member State.

Non-Life Non-motor Exporting Countries	Importing Countries	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenste	Lithuania	Luxembou	Latvia	Malta	Netherland	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United King
		Austria							-																						
Belgium								-																							
Bulgaria								-																							
Cyprus								-																							
Czech Rep.								-																							
Germany								-																							
Denmark		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Estonia								-																							
Spain		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Finland								-																							
France		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Greece								-																							
Hungary								-																							
Iceland								-																							
Ireland		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Italy								-																							
Liechtenstein								-																							
Lithuania								-																							
Luxembourg								-																							
Latvia		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Malta								-																							
Netherlands								-																							
Norway								-																	+	+		+	+	+	
Poland								-																							
Portugal								-																							
Romania		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	
Sweden								-																							
Slovenia								-																							
Slovakia								-																							
United Kingdom		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+	

Legend: + / - = The cross border activity is more / less protected than the domestic one

Source: Oxera report (Oxera 2007), CEIOPS updates (CEIOPS 2009), own graphical presentation

Table 0.44: Life insurance - coverage limits and deductions across Member States

Table 0.45: Non-life insurance - coverage limits and deductions across Member States

№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№	№		№						
																																											№	№							
№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1	№1

2. Cross Border Activity

2.1. Exports

Official data by CEIOPS provides a breakdown of export flows of insurance by business line (life, non-life and composite companies) and by channel, in terms of gross premiums written. (CEIOPS 2008)

A breakdown into life and non-life business lines is obtained by attributing premiums of composite companies based on a comparison with CEA data (CEA 2009), which applies a life/non-life classification to data provided voluntarily by members of the national associations of insurers.

Data in non-life insurance is reduced in each country proportionally to the share of motor insurance in order to obtain an estimate of total premiums written in all non-motor sub-lines of non-life insurance.

Table 0.46: Exports of insurance services towards other EEA countries, total insurance sector (m€).

	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	45.47	45.47	0.35%	0.35%
BE	1 052.62	1 409.73	3.77%	5.06%
BG	0.00	0.00	0.00%	0.00%
CY	12.09	60.09	2.28%	11.32%
CZ	7.22	8.44	0.22%	0.25%
DE	1 060.28	1 496.05	0.73%	1.03%
DK	769.61	887.45	4.20%	4.85%
EE	63.00	63.00	32.62%	32.62%
ES	0.00	0.00	0.00%	0.00%
FI	196.00	205.28	4.17%	4.36%
FR	2 424.69	2 809.34	1.30%	1.51%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	4 881.60	23 714.40	11.78%	57.24%
IS	0.00	1.74	0.00%	0.78%
IT	281.52	808.66	0.36%	1.03%
LI	1.55	2 777.48	0.06%	99.27%
LT	0.94	1.51	0.29%	0.46%
LU	851.35	10 984.09	7.67%	98.89%
LV	7.59	7.59	3.38%	3.38%
MT	1.72	196.64	0.38%	43.32%
NL	0.00	0.00	0.00%	0.00%
NO	6.24	220.56	0.05%	1.81%
PL	1.00	1.00	0.01%	0.01%

PT	106.96	108.90	0.93%	0.94%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.64	0.00%	0.05%
SK	2.67	3.47	0.23%	0.30%
UK	0.00	0.00	0.00%	0.00%
EU	11 766.33	42 811.76	1.13%	4.10%
EU-EEA	11 774.12	45 811.54	1.11%	4.32%

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009)

Table 0.47: Exports of insurance services towards other EEA countries, Life business line (m€).

	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	19.56	19.56	0.27%	0.27%
BE	283.60	498.88	1.28%	2.25%
BG	0.00	0.00	0.00%	0.00%
CY	5.00	53.00	1.40%	14.83%
CZ	4.48	4.93	0.22%	0.24%
DE	158.37	399.50	0.21%	0.53%
DK	73.25	89.70	0.56%	0.68%
EE	63.00	63.00	53.39%	53.39%
ES	0.00	0.00	0.00%	0.00%
FI	196.00	196.00	7.04%	7.04%
FR	314.58	446.67	0.23%	0.33%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	3 215.00	20 462.00	8.56%	54.47%
IS	0.00	0.00	0.00%	0.00%
IT	161.30	463.87	0.26%	0.76%
LI	0.00	2 735.17	0.00%	99.26%
LT	0.00	0.00	0.00%	0.00%
LU	841.16	10 415.00	8.33%	103.19%
LV	0.00	0.00	0.00%	0.00%
MT	0.24	5.47	0.11%	2.55%
NL	0.00	0.00	0.00%	0.00%
NO	0.00	0.00	0.00%	0.00%
PL	1.00	1.00	0.01%	0.01%

PT	92.07	93.13	1.00%	1.01%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.41	0.00%	0.09%
SK	0.00	0.00	0.00%	0.00%
UK	0.00	0.00	0.00%	0.00%
EU	5 428.61	33 212.11	0.71%	4.37%
EU-EEA	5 428.61	35 947.28	0.70%	4.66%

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009)

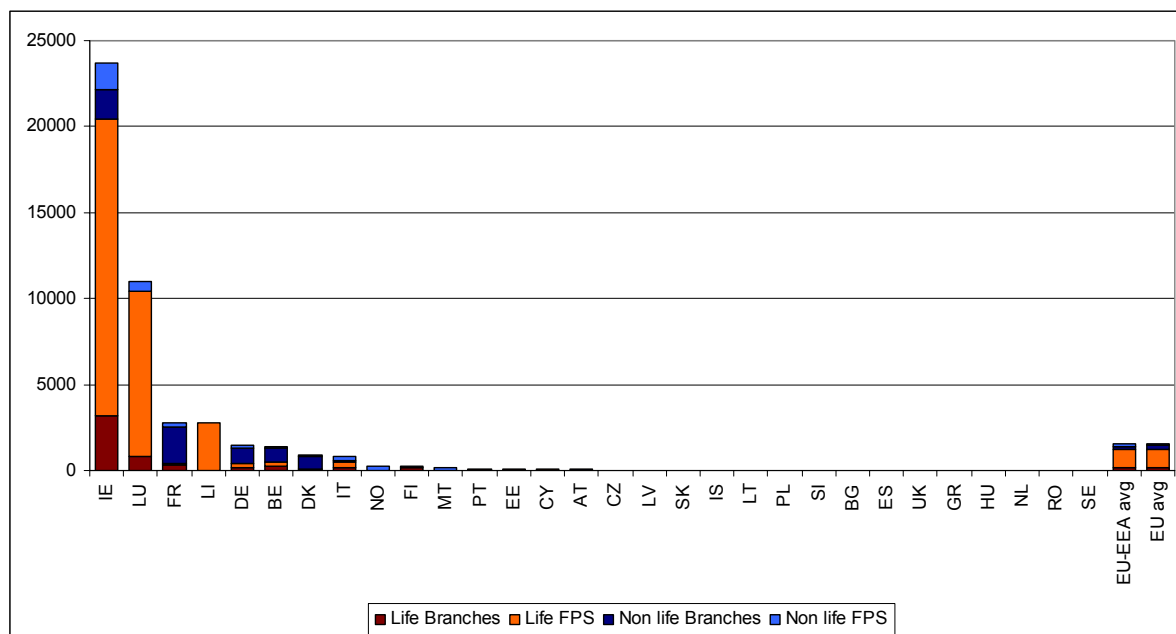
Table 0.48: Exports of insurance services towards other EEA countries, Life business line (m€).

	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	25.91	25.91	0.44%	0.44%
BE	769.02	910.85	13.48%	15.96%
BG	0.00	0.00	0.00%	0.00%
CY	7.09	7.09	4.09%	4.09%
CZ	2.75	3.52	0.21%	0.27%
DE	901.90	1 096.55	1.30%	1.58%
DK	696.36	797.75	13.62%	15.60%
EE	0.00	0.00	0.00%	0.00%
ES	0.00	0.00	0.00%	0.00%
FI	0.00	9.28	0.00%	0.48%
FR	2 110.11	2 362.67	4.28%	4.79%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	1 666.60	3 252.40	43.12%	84.15%
IS	0.00	1.74	0.00%	0.92%
IT	120.22	344.79	0.71%	2.03%
LI	1.55	42.31	3.66%	100.00%
LT	0.94	1.51	0.77%	1.24%
LU	10.19	569.09	1.00%	56.12%
LV	7.59	7.59	4.43%	4.43%
MT	1.48	191.18	0.62%	79.67%
NL	0.00	0.00	0.00%	0.00%
NO	6.24	220.56	0.27%	9.42%
PL	0.00	0.00	0.00%	0.00%

PT	14.88	15.77	0.63%	0.67%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.23	0.00%	0.03%
SK	2.67	3.47	0.85%	1.11%
UK	0.00	0.00	0.00%	0.00%
EU	6 337.72	9 599.65	2.22%	3.36%
EU-EEA	6 345.50	9 864.26	2.20%	3.42%

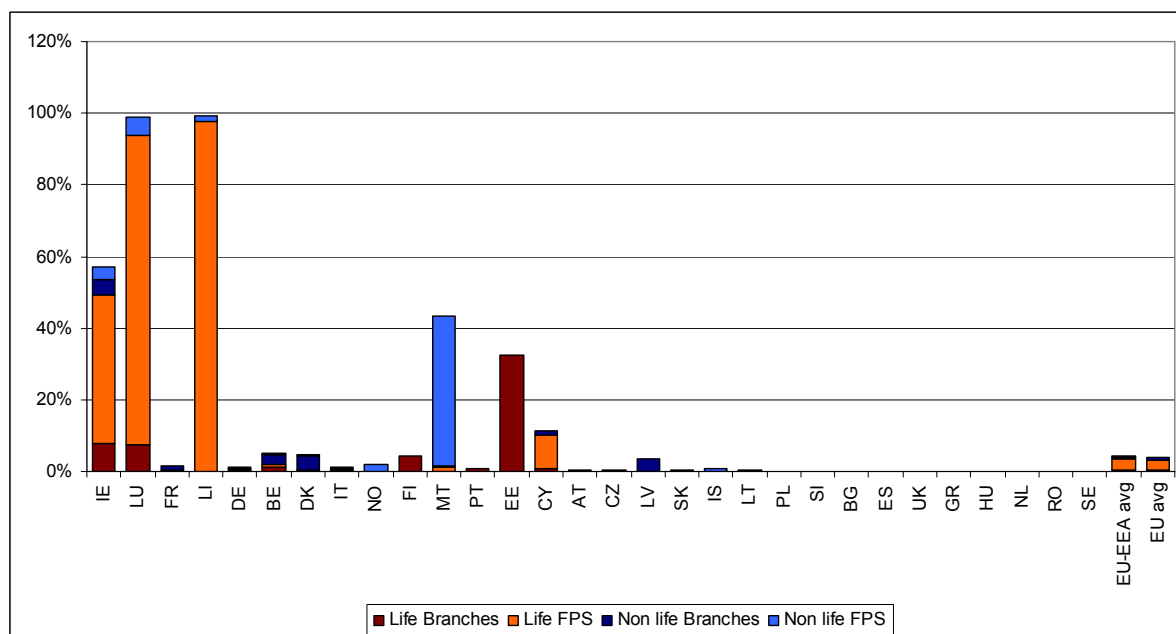
Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009)

Figure 0.7: Total insurance sector, exports of insurance services to other EEA countries, by branches and via Free Provision of Services, in absolute terms (m €).



Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

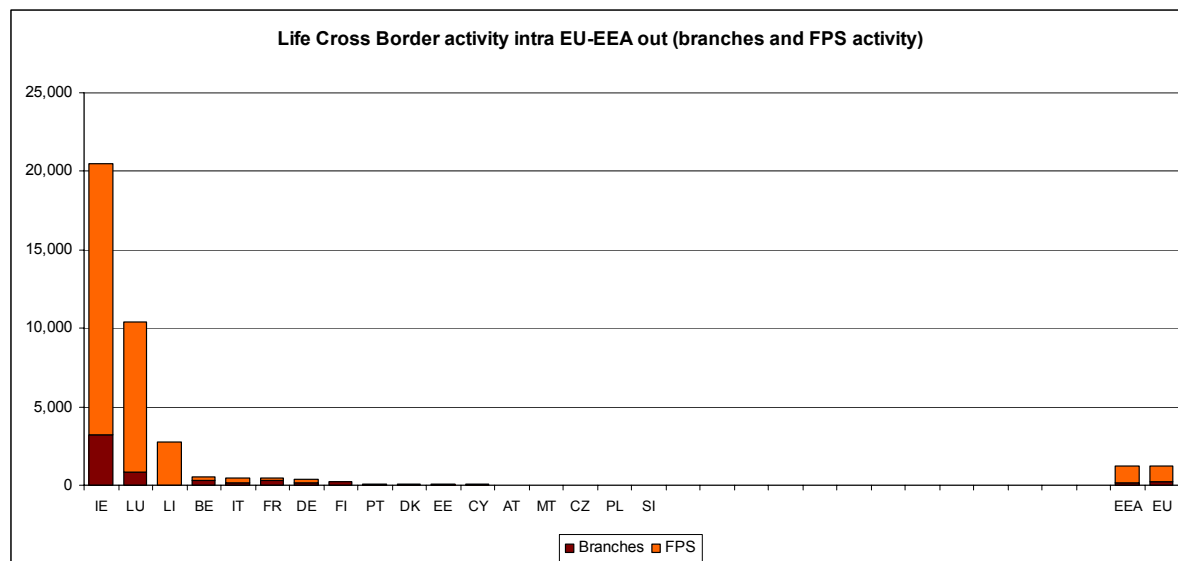
Figure 0.8: Total insurance sector, exports of insurance services to other EEA countries, by branches and via Free Provision of Services, as a share of total home activity.



Note: Countries ordered by exports of insurance services in absolute terms

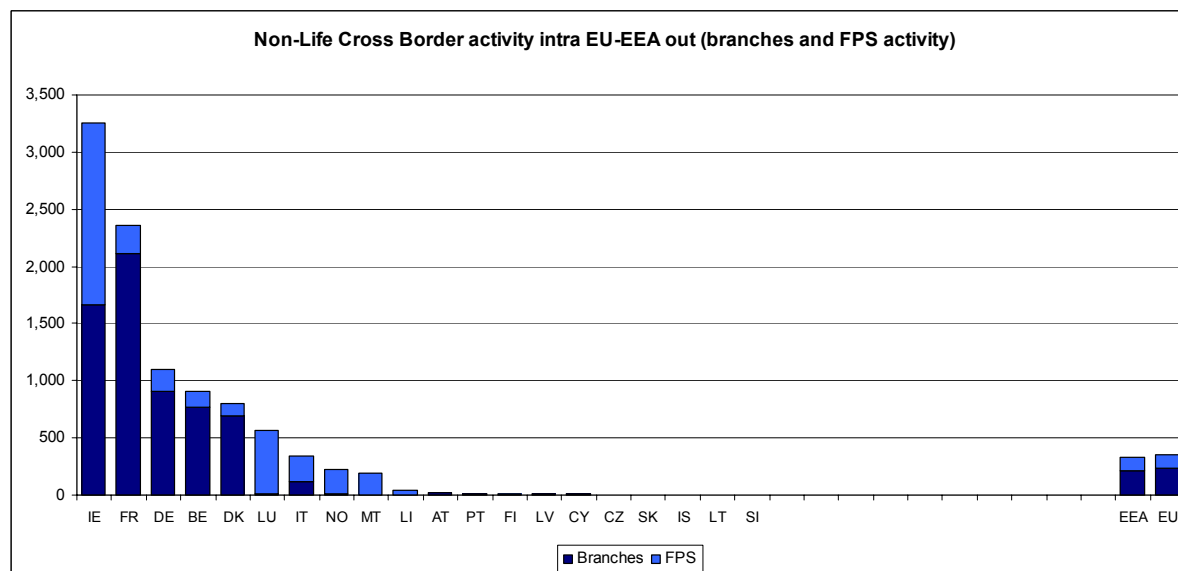
Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Figure 0.9 - Life insurance, exports of insurance services to other EEA countries, by branches and via Free Provision of Services, in absolute terms (m €).



Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Figure 0.10 - Non-life insurance, exports of insurance services to other EEA countries, by branches and via Free Provision of Services, in absolute terms (m €).



Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Table 0.49: Estimates of EAD corresponding to export flows within the EEA (m €)

	Estimates of EAD corresponding to exports						
	Life			Non-Life			Total
	Exports via branches	Exports via FPS	Total Life exports	Exports via branches	Exports via FPS	Total non-life exports	Total exported via all channels
AT	159.4	0.0	159.4	48.6	0.0	48.6	208.0
BE	2 150.3	1 632.3	3 782.5	2 592.3	478.1	3 070.4	6 852.9
BG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CY	38.0	364.8	402.8	14.1	0.0	14.1	416.9
CZ	14.4	1.4	15.9	4.0	1.1	5.1	20.9
DE	1 612.1	2 454.5	4 066.6	3 222.9	695.5	3 918.5	7 985.1
DK	655.8	147.3	803.1	1 371.9	199.7	1 571.6	2 374.7
EE	271.9	0.0	271.9	0.0	0.0	0.0	271.9
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FI	2 611.9	0.0	2 611.9	0.0	38.1	38.1	2 650.0
FR	2 741.0	1 151.0	3 892.0	7 193.9	861.1	8 054.9	11 946.9
GR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HU	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IE	12 619.7	67 698.9	80 318.5	5 788.8	5 508.1	11 296.9	91 615.5
IS	0.0	0.0	0.0	0.0	6.0	6.0	6.0
IT	1 021.6	1 916.4	2 938.0	230.5	430.6	661.1	3 599.1
LI	0.0	20 841.1	20 841.1	4.5	117.2	121.7	20 962.8
LT	0.0	0.0	0.0	1.2	0.7	1.9	1.9
LU	6 381.6	72 633.3	79 014.9	35.8	1 960.9	1 996.7	81 011.5
LV	0.0	0.0	0.0	8.5	0.0	8.5	8.5
MT	1.5	31.6	33.0	3.6	465.6	469.2	502.2
NL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO	0.0	0.0	0.0	20.8	714.4	735.2	735.2

PL	2.5	0.0	2.5	0.0	0.0	0.0	2.5
PT	403.1	4.6	407.7	31.5	1.9	33.4	441.1
RO	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SI	0.0	1.9	1.9	0.0	0.4	0.4	2.3
SK	0.0	0.0	0.0	4.2	1.3	5.5	5.5
UK	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EU	30 684.8	148 037.8	178 722.6	20 503.1	10 643.2	31 146.3	209 868.9
EEA	30 684.8	168 878.9	199 563.7	20 528.3	11 480.8	32 009.2	231 572.9

Source: Table 0.46-Table 0.48; Methodological Report, Table 2.2; CEIOPS (CEIOPS 2008)

Table 0.50: Ratios of estimated ‘exported’ EAD to GDP, Total insurance sector, exports via branches and via FPS (GDP in m €)

	GDP	Total EAD home/GDP	Total EAD exported/GDP
AT	270 782.4	25.55%	0.077%
BE	334 948.0	55.95%	2.046%
BG	28 898.6	1.43%	0.000%
CY	15 951.1	19.19%	2.613%
CZ	127 330.5	6.61%	0.016%
DE	2 428 200.0	41.75%	0.329%
DK	227 024.9	56.45%	1.046%
EE	15 626.6	3.91%	1.740%
ES	1 052 730.0	20.42%	0.000%
FI	179 536.0	25.06%	1.476%
FR	1 894 646.0	71.66%	0.631%
GR	226 437.0	4.12%	0.000%
HU	101 086.5	5.56%	0.000%
IE	189 751.2	84.78%	48.282%
IS	14 932.3	5.34%	0.040%
IT	1 546 177.4	27.28%	0.233%
LI	3 363.1	627.92%	623.317%
LT	28 576.6	2.39%	0.007%
LU	37 465.8	213.87%	216.228%
LV	21 111.0	1.30%	0.040%
MT	5 458.7	34.47%	9.201%
NL	568 664.0	61.36%	0.000%
NO	283 366.4	30.80%	0.259%
PL	311 001.7	6.61%	0.001%
PT	163 051.5	27.78%	0.271%
RO	124 728.5	1.14%	0.000%

SE	331 147.2	74.05%	0.000%
SI	34 568.2	10.12%	0.007%
SK	54 897.6	5.09%	0.010%
UK	2 044 133.0	104.57%	0.000%
EU	12 363 930.0	52.69%	1.698%
EU-EEA	12 665 591.8	52.30%	1.829%

Source: Table 0.49; Eurostat, own elaboration

2.2. Imports

Official data lacks information on imports of insurance services via Freedom of Provision of Services (FPS) within the EEA and also lack information on the origins of flows of insurance services imported via branches. In order to obtain an estimate of the total imports in each country it is therefore necessary to distribute the exports of each country across all importing countries.

Imports via FPS are attributed proportionally to the size of each country's insurance market. This is justified by the fact that commerce of services within EU states seem to depend mostly on the relative size of their markets and on their legal and cultural similarities (Walsh 2006; Henk Kox & Arjan Lejour 2005), so that shares dependent on the size of markets should represent an acceptable first approximation of the real flows. The data obtained in this way has been compared with an alternative estimate based on shares of total imports via EEA branches, and estimated were closer than 10% for most countries, with the exception of import flows into Iceland and some of flows of life insurance imported from Ireland by most countries.

In order to obtain an estimate of the origin of flows of imports via branches, total exports via EEA branches are redistributed in all countries proportionally to their shares of total imports via EEA branches as reported in CEIOPS data. Total imports in each country estimated in this way slightly differ from total imports as reported by CEIOPS but differences seem to be contained in the vast majority of cases.

After an estimate of the origins of flows of imports is produced, an estimate of all bilateral trade flows in insurance services through the EEA can be obtained by summing these two quantities.

A summary of total estimated imports for each EEA country is presented in Table 0.51 - Table 0.53.

Table 0.54 and Table 0.55 present the estimated bilateral trade flows of imports among each EEA country.

Table 0.51: Imports of insurance services from other EEA countries, Total insurance sector (m€).

	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	369.19	0.00%	2.84%
BE	609.35	1 566.23	2.19%	5.62%
BG	0.00	7.99	0.00%	2.26%
CY	20.64	35.10	3.89%	6.61%
CZ	298.99	399.55	8.96%	11.97%
DE	2 108.86	6 003.87	1.46%	4.15%
DK	0.00	593.69	0.00%	3.24%
EE	5.05	8.30	2.61%	4.30%
ES	0.00	1 216.18	0.00%	2.85%
FI	0.00	131.54	0.00%	2.80%
FR	0.00	6 115.76	0.00%	3.29%
GR	32.44	149.02	0.92%	4.21%
HU	0.00	92.35	0.00%	3.38%
IE	1 493.23	2 112.94	3.60%	5.10%
IS	0.00	3.86	0.00%	1.73%
IT	3 732.10	6 431.71	4.76%	8.20%
LI	0.00	104.12	0.00%	3.72%
LT	33.85	43.83	10.39%	13.45%
LU	92.40	367.16	0.83%	3.31%
LV	23.95	28.27	10.67%	12.60%
MT	15.72	27.47	3.46%	6.05%
NL	0.00	1 658.58	0.00%	2.36%
NO	1 806.09	2 239.92	14.83%	18.39%
PL	0.00	302.31	0.00%	3.50%

PT	0.00	<i>405.78</i>	0.00%	<i>3.51%</i>
RO	0.00	<i>25.29</i>	0.00%	<i>2.42%</i>
SE	0.00	<i>630.33</i>	0.00%	<i>3.10%</i>
SI	0.00	<i>28.71</i>	0.00%	<i>2.30%</i>
SK	0.00	<i>38.97</i>	0.00%	<i>3.36%</i>
UK	2 340.12	<i>15 512.19</i>	0.67%	<i>4.41%</i>
EU	10 806.70	<i>44 302.31</i>	1.03%	<i>4.25%</i>
EU-EEA	12 612.79	<i>46 650.21</i>	1.19%	<i>4.40%</i>

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Table 0.47: Imports of insurance services from other EEA countries, Life business line (m€)

	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	293.29	0.00%	4.11%
BE	115.87	1 011.32	0.52%	4.56%
BG	0.00	4.94	0.00%	4.10%
CY	13.00	25.30	3.64%	7.08%
CZ	275.24	358.85	13.53%	17.64%
DE	925.08	3 988.40	1.23%	5.31%
DK	0.00	539.75	0.00%	4.09%
EE	0.00	2.27	0.00%	1.92%
ES	0.00	966.03	0.00%	4.12%
FI	0.00	106.59	0.00%	3.83%
FR	0.00	5 555.60	0.00%	4.07%
GR	4.98	108.11	0.20%	4.32%
HU	0.00	83.07	0.00%	4.12%
IE	1 025.00	1 629.84	2.73%	4.34%
IS	0.00	1.40	0.00%	4.09%
IT	2 967.00	5 461.43	4.83%	8.89%
LI	0.00	103.63	0.00%	3.76%
LT	28.12	36.52	13.79%	17.90%
LU	29.68	293.67	0.29%	2.91%
LV	23.00	25.18	43.40%	47.51%
MT	3.08	11.89	1.44%	5.56%
NL	0.00	1 088.85	0.00%	4.12%
NO	106.00	511.20	1.08%	5.20%
PL	0.00	277.68	0.00%	4.12%
PT	0.00	375.28	0.00%	4.08%

RO	0.00	<i>17.09</i>	0.00%	<i>4.11%</i>
SE	0.00	<i>534.81</i>	0.00%	<i>4.12%</i>
SI	0.00	<i>18.25</i>	0.00%	<i>4.12%</i>
SK	0.00	<i>34.93</i>	0.00%	<i>4.12%</i>
UK	9.78	<i>12 579.31</i>	0.00%	<i>4.12%</i>
EU	5 419.83	<i>35 428.25</i>	0.71%	<i>4.67%</i>
EU-EEA	5 525.83	<i>36 044.48</i>	0.72%	<i>4.67%</i>

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Table 0.53: Imports of insurance services from other EEA countries, Non-life business line (m€)

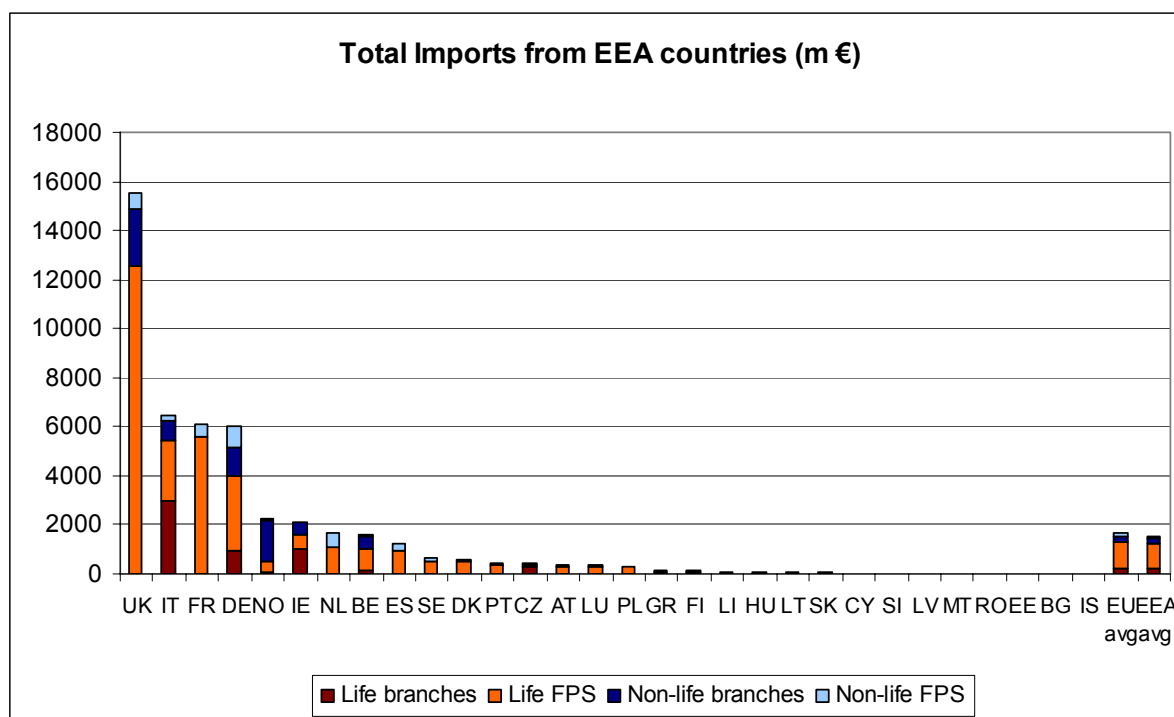
	(m €)		(as a share of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	75.90	0.00%	1.30%
BE	493.48	554.91	8.65%	9.72%
BG	0.00	3.05	0.00%	1.31%
CY	7.64	9.80	4.41%	5.66%
CZ	23.75	40.70	1.82%	3.12%
DE	1 183.78	2 015.47	1.70%	2.90%
DK	0.00	53.94	0.00%	1.05%
EE	5.05	6.03	6.72%	8.02%
ES	0.00	250.15	0.00%	1.30%
FI	0.00	24.95	0.00%	1.30%
FR	0.00	560.16	0.00%	1.14%
GR	27.46	40.91	2.66%	3.96%
HU	0.00	9.28	0.00%	1.30%
IE	468.23	483.10	12.11%	12.50%
IS	0.00	2.46	0.00%	1.30%
IT	765.10	970.28	4.50%	5.70%
LI	0.00	0.49	0.00%	1.16%
LT	5.73	7.31	4.71%	6.00%
LU	62.72	73.49	6.19%	7.25%
LV	0.95	3.09	0.55%	1.80%
MT	12.64	15.58	5.27%	6.49%
NL	0.00	569.73	0.00%	1.30%
NO	1 700.09	1 728.72	72.63%	73.85%
PL	0.00	24.63	0.00%	1.30%
PT	0.00	30.50	0.00%	1.29%

RO	0.00	<i>8.20</i>	0.00%	<i>1.30%</i>
SE	0.00	<i>95.52</i>	0.00%	<i>1.30%</i>
SI	0.00	<i>10.46</i>	0.00%	<i>1.30%</i>
SK	0.00	<i>4.04</i>	0.00%	<i>1.29%</i>
UK	2 330.34	2 932.88	5.04%	6.34%
EU	5 386.87	8 874.06	1.88%	3.10%
EU-EEA	7 086.96	10 605.73	2.46%	3.68%

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

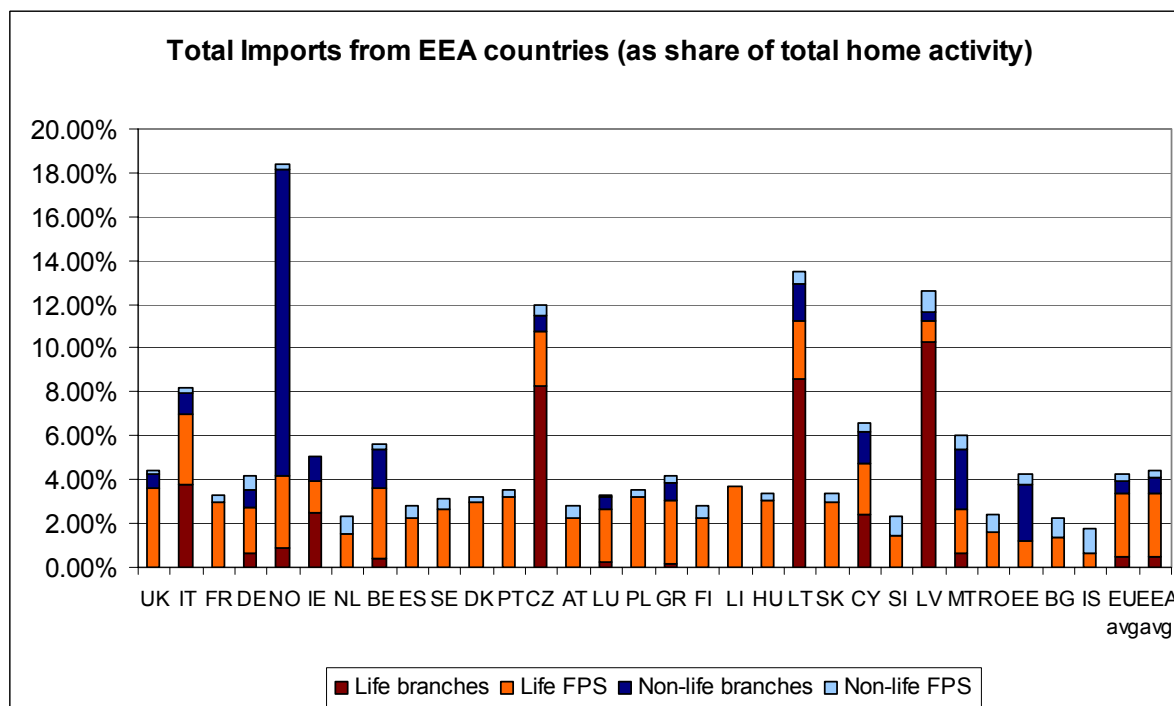
Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Figure 0.11: Total insurance sector, imports of insurance services from other EEA countries, by branches and via Free Provision of Services, in absolute terms (m €).



Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Figure 0.12: Total insurance sector, imports of insurance services from other EEA countries, by branches and via Free Provision of Services, as a share of home activity.



Note: Countries ordered by imports of insurance services in absolute terms

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Table 0.54: Approximate estimate of bilateral flows of trade within the EEA based on proportionality assumption, Life business line (m €)

Life business line, approximate estimate of bilateral flows of trade within the EEA, branches plus FPS																		
Importer	Exporter (BG, ES, GB, GR, HU, IS, LT, LV, ML, NO, RO, SE, SK reported zero exports and are omitted)																	Total Imports (EEA)
	AT	BE	CY	CZ	DE	DK	EE	FI	FR	IE	IT	LI	LU	MT	PL	PT	SI	
AT		2.06	0.45		2.43	0.16			1.43	167.83	3.06	25.52	30.11	0.05				293.29
BE	0.41		1.48	0.11	11.63	2.01	1.32	4.11	11.18	536.39	16.71	78.48	234.73	0.15	0.02	1.36	0.01	1023.37
BG		0.03			0.04				0.03	2.83	0.05	0.43	1.52					4.34
CY	0.05	0.77		0.01	0.55	0.18	0.15	0.46	0.80	16.34	0.35	1.07	5.77			0.22		27.32
CZ	0.37	15.02	0.38		10.18	3.63	3.14	3.76	16.03	244.47	18.22	7.28	67.81	0.03	0.05	4.53		401.68
DE	3.27	70.20	5.54	0.83		13.30	10.55	32.81	68.38	2423.33	30.52	268.87	1030.76	0.55	0.17	15.52	0.04	4101.31
DK		3.73	0.82		4.58				2.75	303.15	5.63	47.00	165.32	0.03		0.02		539.75
EE		0.02			0.02				0.01	1.30	0.02	0.20	0.70					2.27
ES		6.73	1.47	0.01	8.13	0.51			4.32	553.01	10.07	84.07	236.73	0.16		0.03	0.01	966.03
FI		0.75	0.16		0.30	0.06			0.54	61.02	1.11	3.28	32.75	0.02				106.53
FR		33.23	8.50	0.08	47.32	2.36				3196.58	58.22	485.35	1715.57	0.33		0.13	0.07	5555.60
GB	0.03	88.82	13.14	0.19	106.86	6.80	0.11	0.35	64.52	7202.44	131.66	1033.87	3863.22	2.08		0.53	0.16	12580.85
GR	0.02	0.33	0.16		1.05	0.12	0.06	0.18	0.81	62.53	1.33	8.38	32.45	0.02		0.03		108.83
HU		0.58	0.13		0.70	0.04			0.42	47.56	0.87	7.23	25.52	0.01				83.07
IE	3.63	63.67	3.08	0.83	47.27	14.34	11.63	36.36	65.55		73.36	123.11	531.50	0.28	0.13	17.13	0.02	1058.07
IS					0.01					0.80	0.01	0.12	0.43					1.40
IT	10.50	173.25	6.53	2.57	123.50	40.67	33.83	105.24	181.73	3562.35		219.37	1228.52	0.55	0.54	43.52	0.03	5738.68
LI		0.80	0.17		0.36	0.06			0.58	64.38	1.18		34.87	0.02				103.63
LT	0.10	1.53	0.04	0.02	1.04	0.38	0.32	1.00	1.64	24.83	1.86	0.73	6.88			0.47		40.32
LU	0.11	4.23	0.61	0.03	4.25	0.60	0.34	1.05	3.63	233.34	5.84	33.16		0.06		0.51		293.77
LV	0.08	1.22	0.02	0.02	0.81	0.31	0.26	0.82	1.32	17.68	1.47	0.13	4.13			0.38		28.78
MT	0.01	0.22	0.02		0.18	0.05	0.04	0.11	0.22	7.25	0.23	0.77	3.18			0.05		12.38
NL		7.65	1.66	0.02	3.23	0.58			5.54	623.32	11.35	34.76	334.53	0.18		0.04	0.01	1088.85
NO	0.38	8.40	0.71	0.10	7.08	1.62	1.21	3.76	8.10	307.67	10.31	35.26	140.71	0.07	0.02	1.78		527.78
PL		1.35	0.42		2.35	0.15			1.41	158.36	2.30	24.17	85.31	0.05				277.68
PT		2.64	0.57		3.18	0.20			1.31	214.84	3.31	32.66	115.30	0.06				375.28
RO		0.12	0.03		0.14				0.03	3.78	0.18	1.43	5.25					17.09
SE		3.76	0.81		4.53	0.28			2.72	306.15	5.58	46.54	164.31	0.03		0.02		534.81
SI		0.13	0.03		0.15				0.03	10.44	0.13	1.53	5.61					18.25
SK		0.25	0.05		0.30	0.02			0.18	13.33	0.36	3.04	10.73					34.33
Tot Exports (EEA)	13.56	438.88	53.00	4.33	339.50	83.70	63.00	136.00	446.67	20462.00	463.87	2735.17	10415.00	5.47	1.00	33.13	0.41	35347.28

Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

Table 0.55: Approximate estimate of bilateral flows of trade within the EEA based on proportionality assumption, Non-Life business line (m €)

Non-Life business line (excluding motor), approximate estimate of bilateral flows of trade within the EEA, branches plus FPS																						
Exporter (BG, EE, ES, GB, GR, HU, IL, PL, RO, SE, SI reported zero exports and are omitted)																						
importing	AT	BE	CY	CZ	DE	DK	FI	FR	IE	IS	IT	LI	LT	LU	LV	MT	NO	PT	SI	SK	Total Imports (EEA)	
AT		2.33		0.02	5.33	2.13	0.13	6.27	33.07	0.04	4.95	0.84	0.01	11.61		3.33	4.47	0.02		0.02	75.30	
BE	1.80		0.43	0.21	79.83	50.28	0.16	152.22	152.12	0.03	13.55	0.82	0.08	10.50	0.53	3.42	4.34	1.05		0.20	471.63	
BG		0.12			0.21	0.03		0.25	1.33		0.20	0.03		0.47		0.16	0.18				3.05	
CY	0.03	0.98			1.32	0.81		2.45	2.87		0.23	0.03		0.34		0.11	0.14	0.02			9.39	
CZ	0.03	3.44	0.02		4.82	2.81	0.04	8.47	13.37		1.56	0.13		2.63	0.03	0.88	1.03	0.05		0.01	39.46	
DE	4.33	173.23	1.19	0.65		141.44	2.28	426.41	687.83	0.42	80.80	10.21	0.30	138.57	1.27	46.58	54.11	2.70	0.06	0.64	1773.06	
DK		2.13		0.01	3.90		0.14	4.53	24.18	0.03	3.62	0.62		8.43		2.87	3.27	0.01		0.01	53.94	
EE	0.02	0.63			0.84	0.52		1.53	1.70		0.16	0.01		0.16		0.05	0.06	0.01			5.77	
ES		3.85		0.05	17.57	7.02	0.64	20.68	108.39	0.12	16.30	2.78	0.04	38.27		12.36	14.75	0.06	0.02	0.05	250.15	
FI		0.33			1.76	0.70		2.07	10.30	0.01	1.63	0.28		3.83		1.30	1.47				24.35	
FR		24.04		0.13	42.83	17.15	1.56		266.06	0.23	33.73	6.73	0.10	33.42		31.63	36.00	0.15	0.04	0.13	560.16	
GB	8.52	235.52	2.33	1.03	338.35	245.30	1.54	743.66	843.32	0.23	83.58	7.21	0.40	35.56	2.50	31.63	38.22	5.04	0.04	1.01	2811.71	
GR	0.10	3.73	0.03	0.01	5.14	3.08	0.03	3.23	12.77		1.40	0.16		2.10	0.03	0.70	0.82	0.06		0.01	39.48	
HU		0.37			0.65	0.26	0.02	0.77	4.04		0.60	0.10		1.42		0.48	0.55				3.28	
IE	1.71	55.65	0.47	0.13	73.33	46.75	0.07	141.53		0.01	10.62	0.40	0.07	4.71	0.50	1.46	2.10	0.33		0.18	340.86	
IS		0.10			0.17	0.07		0.20	1.07		0.16	0.03		0.38		0.13	0.15				2.46	
IT	2.80	37.88	0.77	0.34	132.31	81.34	0.56	245.35	288.28	0.10		2.61	0.14	34.63	0.82	11.53	13.82	1.66	0.01	0.34	915.34	
LI		0.02			0.03	0.01		0.04	0.22		0.03			0.08		0.03	0.03				0.49	
LT	0.02	0.73			0.33	0.61		1.84	2.13		0.21	0.02		0.25		0.08	0.10	0.01			7.01	
LU	0.23	7.82	0.06	0.03	10.48	6.52	0.03	19.73	21.33		2.02	0.16	0.01		0.07	0.67	0.82	0.13		0.03	70.14	
LV		0.20			0.30	0.15		0.46	1.17		0.16	0.02		0.33		0.11	0.13				3.04	
MT	0.05	1.60	0.01		2.15	1.33		4.02	4.53		0.44	0.04		0.43	0.01		0.20	0.03			14.32	
NL		22.43		0.12	40.01	16.00	1.45	47.10	248.24	0.27	37.12	6.34	0.03	87.16		23.51	33.53	0.14	0.04	0.12	563.73	
NO	6.22	133.48	1.70	0.67	261.88	167.31	0.08	508.71	441.34	0.01	34.31	0.71	0.23	7.12	1.82	1.33		3.58		0.65	1638.35	
PL		0.37			1.73	0.63	0.06	2.04	10.73	0.01	1.60	0.27		3.77		1.28	1.45				24.63	
PT		1.20			2.14	0.86	0.08	2.52	13.23	0.01	1.39	0.34		4.67		1.58	1.80				30.50	
RO		0.32			0.58	0.23	0.02	0.68	3.57		0.53	0.03		1.25		0.42	0.48				8.20	
SE		3.76		0.02	6.71	2.68	0.24	7.30	41.62	0.05	6.22	1.06	0.01	14.61		4.35	5.63	0.02		0.02	95.52	
SI		0.41			0.73	0.23	0.03	0.86	4.56		0.68	0.12		1.60		0.54	0.62				10.46	
SK		0.16			0.28	0.11	0.01	0.33	1.76		0.26	0.04		0.62		0.21	0.24				4.04	
Total exported (EEA)	25.31	310.85	7.09	3.52	1096.55	797.75	9.28	2362.67	3252.40	1.74	344.79	42.31	1.51	569.09	7.59	191.18	220.56	15.77	0.23	3.47	9864.26	

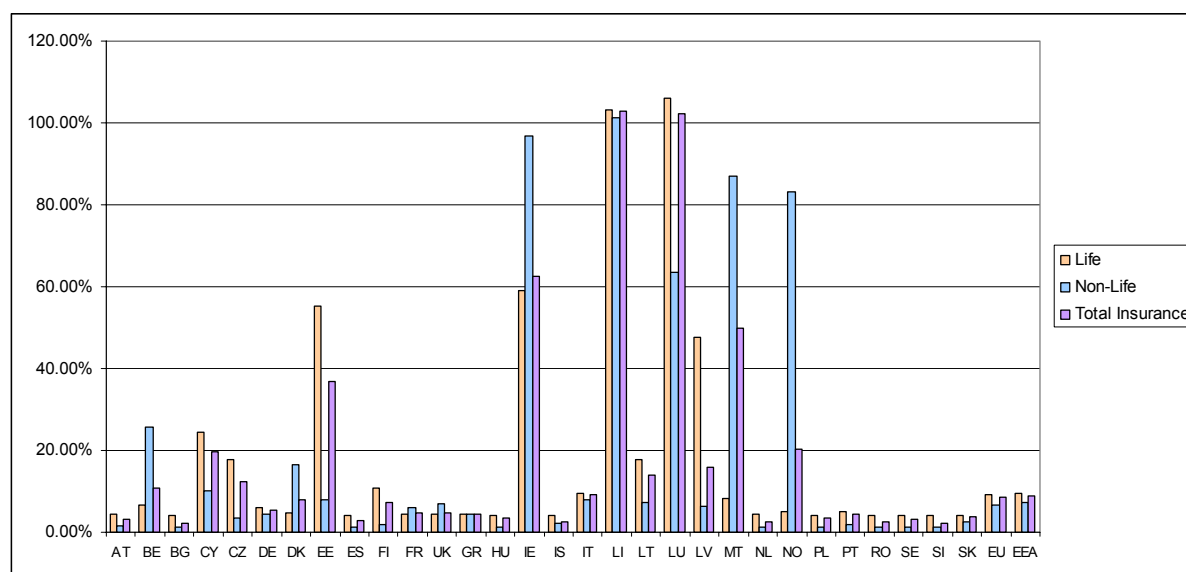
Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

2.3. Trade openness

Based on the export and estimated import data presented in previous sections it is possible to calculate an index of openness to trade in the insurance sector for all EEA countries. The trade openness index, a standard indicator used in international trade economics, is defined as the share of imports plus exports over total production within any given sector.

Here, as we are interested in openness towards EU/EEA members, imports and exports considered are only those to and from other EU/EEA countries.

Figure 0.13: Trade openness index towards trade with other EEA members for all EEA Member States and overall for EU and EEA.



Source: CEIOPS (CEIOPS 2008) and CEA (CEA 2009), own elaboration

3. References

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¹ Because information is available for the entire EU-EEA area, this Impact Assessment (IA) has been developed not only for the 27 EU Member States but also for EEA countries: Norway, Iceland and Lichtenstein. In order to enhance readability, the term "Member State" is used in this Impact Assessment as a synonym of "country" and therefore it might also refer to EEA countries.

² In the context of this IA consumers include policyholders, beneficiaries and, in the case of non-life insurance, third parties who may seek compensation. Therefore, the terms "consumer" and "policyholder/beneficiary" will be used interchangeably.

³ "Recommendation 5: The Group considers that the Solvency 2 Directive must be adopted and include a balanced group support regime, coupled with sufficient safeguards for host Member States, a binding mediation process between supervisors and the setting-up of harmonised insurance guarantee schemes.", http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf

⁴ Directive 1994/19/EC as amended by Directive 2009/14/EC on Deposit Guarantee Schemes and Directive 1997/9/EC on Investor Compensation Schemes.

⁵ The various types of guarantee schemes, while all providing a certain level of consumer protection, have in part different objectives.

DGS are designed to compensate depositors for deposits at banks up to a specified limit if the bank is not in a position to repay them. The objective is twofold: from the consumer protection perspective, a part of the depositors' wealth is protected from losses due to bank failures; from a financial stability perspective, the confidence that deposits are protected reduces the likelihood of bank runs and thus contributes to preserving the stability of the financial system.

The ICS Directive applies instead to investment firms (including credit institutions) who provide investment services under the MiFID Directive (Directive 2004/39/EC on Markets in Financial Instruments). The ICS Directive provides for clients of investment firms to be compensated in two situations. Firstly, if an investment firm is unable to repay money owed or belonging to a client and held on his behalf in connection with investment services. Secondly, if an investment firm is unable to render a financial instrument belonging to the client and held, administered or managed on the client's behalf. However, the Directive does not cover reductions in the value of the investments, i.e. if the value of the investments' underlying assets decline, the value of the market declines or if an issuer or fund fails.

⁶ Nonetheless, reinsurance can produce contagion effects when insurance undertakings default. In order to analyse contagion, it is however necessary to dispose of firm level data which is not available to the

Commission at the moment. In the Oxera (2007) report it can be read how reinsurance policies are typically outside the scope of IGS protection.

⁷ The proceedings of the activities of the Working Group can be consulted on

http://ec.europa.eu/internal_market/insurance/guarantee_en.htm#docs

⁸ Oxera (2007), http://ec.europa.eu/internal_market/insurance/docs/guarantee_schemes_en.pdf.

The information presented in the Oxera report has recently been updated by CEIOPS (2009a),

http://www.ceiops.eu/media/files/publications/submissionstotheec/annex_2.pdf

⁹ CEIOPS is the Committee of European Insurance and Occupational Pensions Supervisors. It is composed of high level representatives from the insurance and occupational pensions supervisory authorities of EU Member States. The authorities of EEA countries also participate in CEIOPS. CEIOPS' website is:

<http://www.ceiops.org>

¹⁰ CEIOPS (2009b), [http://www.ceiops.eu/media/files/publications/submissionstotheec/CEIOPS-DOC-18-09%20Input to EC work on IGS-approved clean .pdf](http://www.ceiops.eu/media/files/publications/submissionstotheec/CEIOPS-DOC-18-09%20Input%20to%20EC%20work%20on%20IGS-approved%20clean.pdf)

¹¹ http://ec.europa.eu/internal_market/insurance/guarantee_en.htm#cons.

¹² http://ec.europa.eu/internal_market/insurance/docs/guarantee/summary_en.pdf.

¹³ http://ec.europa.eu/internal_market/insurance/guarantee_en.htm#whitepaper.

¹⁴ http://www.europarl.europa.eu/comparl/tempcom/equi/default_en.htm.

¹⁵ Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:335:0001:0155:EN:PDF>

¹⁶ In financial mathematics and risk management, the most common quantitative measure of the risk of loss on a specific portfolio of assets is the so-called Value at Risk (VaR).

¹⁷ About the absence of market discipline in the insurance market, see for example Eling M., Schmit J.T. (2008). Also, in Yasui T. (2001) one can read: "The financial and managerial situation of insurance companies is much more technical and complex than that of ordinary companies. Non-professional policyholders can hardly be expected to verify the credibility of an insurance company sufficiently" and "non-professional policyholders not only have limited ability to evaluate appropriately the financial soundness of insurance companies, but also they have little incentive to do so: because of the technical and complex nature of the financial situation of insurance companies, the cost of gathering sufficient information to make a wise decision is significantly high".

¹⁸ For a definition, see for example http://en.wikipedia.org/wiki/Risk_aversion.

¹⁹ For an in-depth complementary analysis of the risks faced by insurance undertakings, please see sub-section 4.1 of the Oxera report.

²⁰ Generally speaking, when life insurance contracts are non-unit linked, investment/market risk is normally borne by the insurance undertaking. On the contrary, when life insurance contracts are unit-linked, investment/market risk is normally borne by policyholders. Looking at the split in life insurance business between unit-linked and non unit-linked activity in Member States, it appears that non-unit linked life insurance reserves are much higher (60-90% of total) than those of unit-linked ones. However, distinctions are in reality very difficult as in both unit-linked and non-unit linked products investment risk is *de facto* shared between insurers and policyholders. In the unit-linked sector, in fact, there are many insurance undertakings that offer guarantees to policyholders. They take a wide variety of forms including minimum returns, fixed annuity rates as well as contractual terms such as early or regular withdrawal of funds on terms that give policyholders valuable options. Thus, in these cases the insurance undertaking bears some of the market/investment risk and clear-cut distinctions are difficult to draw.

²¹ The recent financial crisis has also shown the possibility of (loss) contagion from banks to insurers. Insurers tend to be, in fact, highly exposed to counterparty risk towards banks as they usually buy interest rate and equity derivatives from banks to hedge their market risk exposures.

Losses to life insurers can also derive from changes in policyholders' behaviour. The recent financial crisis has shown how households (especially American) have, at a certain moment, accelerated the redemption of their investments in mutual funds. The same can in theory happen also with life insurers, although high redemption costs generally tend to discourage policyholders from doing so.

Losses to life and non-life insurers can also derive from a contagion effect when they belong to a financial conglomerate. A spreading of the lack of confidence could in fact be a reasonable reaction in case of exposure of both banks and insurances belonging to the same financial conglomerate to common management failings such as those stemming from high risk investment strategies and/or fraud.

²² See sub-section 4.1.2 of the Oxera report for more details on these defaults and reference to various sources of information on failures of insurance undertakings. Besides, the Financial Services Compensation

Scheme established in 2001 in the UK reports to have to date dealt with 30 insolvent insurance undertakings (28 non-life and 2 life insurers).

²³ Once Solvency II will enter into force in 2012, it is expected to maintain the PD of EU insurance undertakings to 0.5% or less.

²⁴ On the methodology used to estimate the EAD, see in the Methodological report (MR - Annex D to this IA) section Annex A2.

²⁵ For further details, see section 4 of Annex E: Supplementary tables to the methodological report

²⁶ **Error! Reference source not found.** is not a complete inventory of past failures in the EU. For a more detailed analysis of the losses generated by these and other cases of default of European insurers, see sub-section 4.5 of the Oxera report.

²⁷ Both calculations are under the assumption of a 15% Loss Given Default (LGD) rate estimate. For an explanation of the reasons supporting the choice of LGD=15%, see in the MR sub-section A3.8.

²⁸ In a skewed distribution such as the one of losses incurred by insurers, the average (expected value) is not, generally speaking, a statistics that should be considered as a correct indicator of risk.

²⁹ The main reason supporting the choice of a Vasicek model has been the very limited amount of information available to feed in the model. A Vasicek model is also used, for example, in the derivation of FIRB capital requirements under Basel II. For more details on the Vasicek model, see Annex A1 in the MR. On considerations specifically related to the appropriateness of the Vasicek model for estimating policyholders losses, see Annex A3 in the MR.

³⁰ See sub-section 3.4 of the MR. The very exceptional consequences of the recent default of the Aspis Pronia group in Greece are also compatible with the estimated loss distributions for Greece. They correspond in fact to the loss estimated with a PD = 0.5% at a confidence level slightly above 99.5% (see **Error! Reference source not found.**).

³¹ If one also considers the diversification effect produced by the less granular nature of the entire EU market compared to national Member State markets, losses can be considered to be lower of some 20% compared to those indicated (see sub-section 4.5 of the MR). It should also be remembered that the Vasicek model is a single factor model and that it does not allow introducing differences across countries of the correlation between insurances.

³² A thorough analysis of the consequences for individual consumers requires detailed information on the distribution of individual policyholders' claims. The Oxera report only presents as an example the distribution of claims for limited parts of the German non-life insurance sector (Table 4.9, page 77). And a recent survey with national insurance associations has failed to provide the Commission with the necessary data on the distribution of individual policyholders' claims. As information on the distribution of individual policyholders' claims is therefore not available at the moment to the Commission, this analysis has not been possible in the IA.

³³ Finally, six countries have (only or also) special schemes that cover very specific classes of non-life insurance (BE, FI, DE, IT, PL and ES) For further details, see CEIOPS (2009a).

³⁴ The situation for the non-life motor insurance sector is, as shown in **Error! Reference source not found.**, completely different, with almost the entire EU-EEA area covered by an IGS. A guarantee scheme for motor insurance is required, in fact, in every Member State by Directive 84/5/EEC (now recast in Directive 2009/103), even though only for the case of uninsured vehicles. Member States have nonetheless voluntarily extended over time to the case of defaulted insurance undertakings their already compulsory guarantee schemes for motor insurance. In conclusion, as IGS are today already present almost in every EU-EEA country and do not create substantial loopholes in the protection of policyholders, there is no apparent necessity to intervene at the EU level. For this reason, this IA focuses only on life insurance and non-life insurance (excluding motor). For further information on guarantee schemes for motor insurance, see <http://www.4directive.org>.

³⁵ Endnote 31 applies. Furthermore, amounts for life and non-life are estimated proportionally to losses gross of IGS protection due to the difficulty to split IGS available resources when current IGS cover both life and non-life insurance.

³⁶ The statement does not take into consideration the possibility of an ex-post State intervention. It will be however shown in section 6 that this alternative is in general not preferable compared to setting-up an IGS. This is also proven by the fact that when Member States have experienced major defaults, they have, in general terms, preferred to introduce an IGS instead of keeping the existing situation (its is the case, for example, of DE and UK).

The statement does also not take into consideration the possibility that consumers are protected by means of a preferential treatment for consumers in liquidation procedures. It is however shown in section 6 that preferential treatment in liquidation is in general a less effective mean for protecting consumers than the setting-up of an IGS. It should also be noticed that some Member States that have experienced important insurance defaults have

preferred to react setting up an IGS instead of immediately reinforcing or introducing a preferential treatment for consumers in liquidation procedures (it is the case of DE and UK).

³⁷ “Under the home state principle, the IGS covers policies issued by domestic insurers as well as by the branches of domestic insurers established in other EU-EEA Member States. In contrast, under the host state principle, the policies issued by branches of incoming EU-EEA insurers are covered by the local IGS.” (Oxera report, footnote 8). In compliance with this definition, in this IA policies sold cross-border under free provision of services are considered to be, as a general principle, covered in both cases of a home state principle based IGS and of a host principle based IGS by the IGS of the Member States where the insurance undertaking is authorised/established.

³⁸ See also Table 3.13 of the MR, section 2 of the Oxera report and CEIOPS (2009a).

³⁹ For example, differences in the nominal amount covered by two IGS do not necessarily mean that policyholders are unevenly protected. A lower compensation limit in a less wealthy country might in fact provide higher relative protection than a higher compensation limit in a richer country.

⁴⁰ For a presentation of the precise set of IGS design features that it has been possible to consider in the analysis, please refer to Table 3.13 in the MR. Some of the IGS design features not taken into account in the IA have anyhow been partially analysed in the MR. See sub-section 3.4 of the MR.

⁴¹ Cross-border activity means insurance services sold via Free Provision of Services (FPS) and through branches. Selling through subsidiaries does not enter into the definition of cross-border activity of this IA as sufficiently complete data on insurance groups is not available to the Commission at this moment.

⁴² See Davies, J. Paul: 'Aviva to revamp European operations', FT.com, 21.10.2009,

www.ft.com/cms/s/0/419da410-be73-11de-b4ab-00144feab49a.html

⁴³ The estimates for each Member State indicate the losses that can be exported from insurers authorized in that Member State and that default. Estimated losses are to be considered as fully taking into account the effects of the existence of minimum solvency requirements for insurance undertakings in the EU (Solvency II in particular). See Tables 5, 7 and 9 of Annex 5 to MR and Table 4.19 of the MR for further details on losses as share of premiums and for estimates of losses for life and non-life insurers only.

⁴⁴ Amounts for life and non-life are estimated proportionally to losses gross of IGS protection due to the difficulty to split IGS available resources when current IGS cover both life and non-life.

⁴⁵ In this calculation, domestic policyholders are considered to be possibly protected both by home and host principle based IGS. Amounts for life and non-life are estimated proportionally to losses gross of IGS protection due to the difficulty to split IGS available resources when current IGS cover both life and non-life.

⁴⁶ For all other non-life insurance policyholders who represent the great majority, instead, the consequence of the failure of a non-life insurance undertaking is generally limited to the amount of prepaid but still not used premiums. Additional costs may however well arise from the need to arrange for replacement cover which may be difficult to obtain and may take time. The consequences of the failure may also affect third parties, as is the case for classes of liability insurance. The failure of an insurer may lead to the non-payment of claims for those policies, which will leave the injuring party exposed to the liability and the injured party without compensation. For further analysis, please refer to pages 74 to 77 of the Oxera report.

⁴⁷ However, Yasui T. (2001) also correctly remarks that: "it should be noted that the risk of bankruptcy contagion is likely to be smaller for the insurance sector". The reason behind this is that bank deposits can be withdrawn in basically full amounts. In contrast, policyholders normally incur (heavy) losses due to cancellation deductions, so that policyholders can be expected to think twice before terminating their insurance contract. On how the opacity of the insurance industry tends to cause firm-specific information to spill over to the entire industry and result in an industry wide effect, see also Akhigbe A., Madura J. (2001).

⁴⁸ For a general explanation of how insurance activity can foster economic growth, see CEA (2006). Furthermore, economic theory has also shown that negative shocks, and more in general uncertainty, can reduce growth in the absence of complete insurance markets. See for example Hansen G., Imrohoglu A. (1992).

⁴⁹ Lack of insurance cover may be particularly disruptive for those businesses that, in order to operate, have a legal obligation to be insured, as in the case of construction. See for example the case of HIH which failed in Australia and which had serious consequences on the construction activity in that country, presented in Impavido G., Tower I. (2009).

⁵⁰ There is, for example, evidence from the equity markets fall in 2001–03 that life insurers contributed to a downward spiral in markets when limited equity disposals by major insurers seeking to bolster balance sheets led to further declines in the market, requiring further disposals to prevent solvency margins from coming under pressure. In the current crisis, sales of equities and other instruments have been even more widespread.

The problem of insurers causing a downward spiral in financial markets is especially prone to show up when insurance undertakings undergo liquidity problems and therefore need to sell high volumes of assets on the financial markets. In general terms, insurers structurally have low exposure to liquidity risk because they are premium funded and not funded from wholesale money markets (as banks are). Furthermore, liquidity risk is also limited because claims are usually paid when a specified triggering event takes place rather than on demand, and because insurance undertakings' assets are predominantly marketable. There are, however, not negligible sources of liquidity risk that can come from:

- collateral calls in derivative business and securities lending (an issue at AIG in the recent financial crisis, for instance);
- market loss of liquidity on the trading of certain assets (which affected, for example, insurance undertakings with investments in Asset Backed Securities during the crisis);
- rising claims: it is possible - as experienced briefly by minor parts of the AIG group immediately after its rescue - that claims temporarily overwhelm available liquidity in what would be equivalent to a bank run.

In Yasui T. (2001) one can read: "A run could put ... insurers in a serious liquidity crisis and possibly force them to go bankrupt." However it also notices that "repayments of insurance products are usually made less quickly than bank deposits. Insurance companies should have more time to build liquidity for repayments so as to meet their obligations."

⁵¹ For further details, see Atkeson A. and Lucas R. E. Jr (1995).

⁵² For further details, see Sandmo A. (1998), and Varian H. (1980).

⁵³ It must be recalled that it is very difficult (and at the moment there has not been any possibility) to provide direct evidence of any significant distortion in the competition in Member States on the basis of these considerations. This also because there are other factors, such as - for example - taxation, that certainly also have a very important impact on the price and demand for insurance services.

⁵⁴ For more details on the life and health guarantee system in the USA, see also <http://www.nolhga.com/>; and for more details on the non-life guarantee system in the USA, see also <http://www.ncigf.org/>

⁵⁵ For more information see Yasui T. (2001).

⁵⁶ See OECD (1999).

⁵⁷ See sub-section 3.2.2 for the various combinations of geographic scope (home and host state) that can produce a lack of policyholder protection in Member States.

⁵⁸ This statement is true for society. It is however not necessarily true for single categories of stakeholders, such as policyholders, taxpayers, insurers, etc. Section 7 on expected economic and social impacts will take account of this and consider costs for individual categories of stakeholders.

⁵⁹ It follows that it is conceptually wrong to argue (at the level of the entire society) that if one creates a protection mechanism with a financial endowment able to absorb insurers' default losses they don't take place any more at the cost of establishing the protection mechanism. It is, in the same way, conceptually wrong to say that an implemented protection mechanism costs to society the amount of money given to its financial endowment.

⁶⁰ For further details on this theoretical framework, see for example Smith W.T. (1996).

⁶¹ Insurance undertakings' loss distributions tend to be skewed to the left, with very frequent small losses and very rare but also very high losses.

⁶² It should be noted that a transparency policy option can also be envisaged in combination with other policy options examined under this and/or the following sub-sections. In those cases the policy option analysis will, by and large, appear as a combination of the various elements analysed under its components.

⁶³ It is important to stress that not all losses suffered by insurers will hit the guarantee schemes, but only the part of the losses that exceeds the solvency requirements in place (plus excess capital, if any). The relevant concept of losses for IGS is therefore that of residual losses "downstream" of insurers' solvency requirements (plus excess capital, if any).

⁶⁴ See Yasui T. (2001).

⁶⁵ How to reach and maintain the target fund is instead an issue related to IGS contributions.

⁶⁶ On the concept of percentile, see also sub-section 2.2.3.

⁶⁷ When the financial endowments are, for example, sufficient to cover the IGS loss distribution up to the, for example, 90th percentile, this by and large means that the level of security chosen avoids that losses are passed on to consumers in 90% of the cases possible. In other terms, it can (by and large) also be said that if the financial endowments cover the IGS loss distribution up to the 75th, 90th, 99th percentile, the IGS is expected to

have not enough resources and therefore pass losses onto consumers only every 4, 10, 100 times that an insurer fails.

⁶⁸ For the details of the analysis performed to identify this range of security levels, see sub-section 3.4 in the MR.

⁶⁹ A more precise analysis of whether these IGS funding needs have to be considered as minimum values (minimum harmonisation) or exact values (maximum values) is not necessary at this stage where the Commission is keeping the various options open for discussion with stakeholders (see end of this sub-section).

⁷⁰ Also the Oxera report notes that "IGS can best deal with failures that do not involve potential losses that are large relative to the size of the market" and that "large failures may need to be dealt with through other mechanisms".

⁷¹ The list of IGS design features indicated under option 4.2 is not the only possible harmonization perimeter under a minimum scope of harmonization approach. It can, for example, also be envisaged that some of the design features listed under option 4.3 might be added under option 4.2 in the follow-up measures.

⁷² Annex C presents some (even more) preliminary analysis of each of the items from the maximum scope of harmonisation list of option 4.3. The analysis in Annex C is mainly focused on the need to harmonise or not harmonise at the EU level each of the design features. Its main purpose is to foster feedback from stakeholders as to whether the list of design features under option 4.2 should (or not) be enlarged and in which way. At the follow-up measures impact assessment stage, therefore, options related to these design features will be also analysed more in depth, and also thanks to comments and feedback received from stakeholders some of them might become as well the content of a EU legislative binding action on IGS. It might be the case, for example, for contributions to IGS and/or advertisement/information requirements.

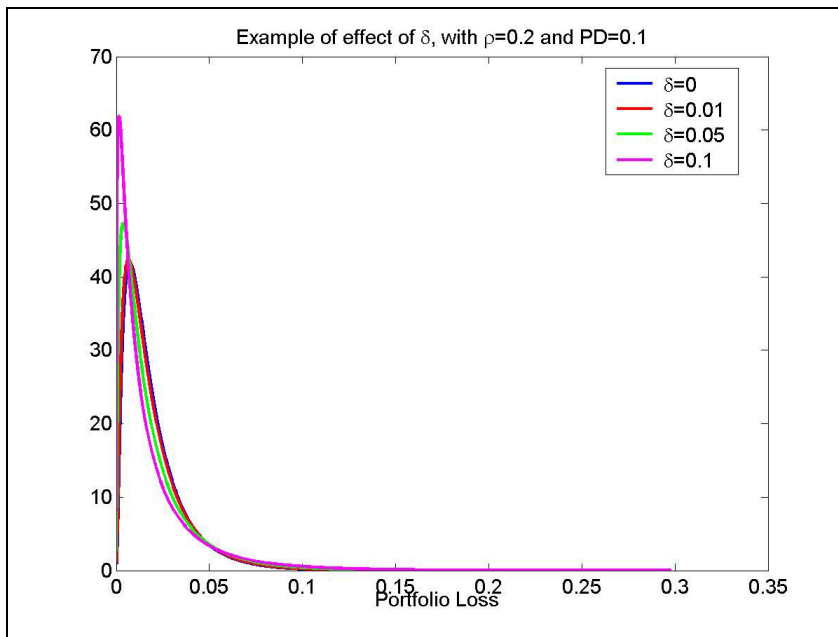
⁷³ This means that for a home insurance premium of 500 EUR a year, there would be – for example for 10 years - a price increase of some 60 EUR-cents per year. In case of a life insurance premium of 1000 EUR per year, the price would go up for 10 years by some 1.24 EUR.

⁷⁴ The explicit request of authorisation for third-country branches is for life-insurer in Article 51 of Directive 2002/83/EC and for non-life insurers in Article 29a of Directive 73/239/EEC. The only exception is for Swiss non-life insurers as a specific agreement regulates their possibility to freely provide services cross-border in EU Member States (see http://ec.europa.eu/internal_market/insurance/solvency/index_en.htm)

⁷⁵ It is important to draw the reader's attention to the following. The various IGS design features are analysed in Annex B one at a time (the analysis on the level of IGS centralisation is for example presented before the analysis on geographic scope) in order to highlight the consequences of moving from one to another option available for each IGS design feature. Nonetheless, funding needs are always necessarily computed for a collection (vector) of options covering all design features and applying at the same time.

The particular vector of options used as a benchmark to compute funding needs in the IA can be found in Table 4.1 of the MR. In particular, funding needs have been computed for the home state principle option of the geographic scope design feature (unless differently indicated). This implies that, in general, comparisons between options are always made in this IA on the basis of the home state principle option, which constitutes the benchmark for comparisons. Presented funding needs in Annex B are to be intended gross of existing financial endowments where national IGS already exist. Net funding needs can be computed simply subtracting available funds in Member States that have IGS in place. Estimated available funds are presented in **Error! Reference source not found.** See also sub-section 3.3 of the MR.

⁷⁶ The decreased/increased funding needs compared to the home state national IGS case depend on the decreased concentration (δ) of the insurance market considered for the calculations: in fact, as the market share of each market participant is smaller in the EU than in each national market, the concentration of the insurance market decreases. This lower concentration entails a reduction in the probability of extreme losses and a higher probability of medium-high losses (see in the figure below how the loss distribution changes progressively from $\delta=0.1$ to $\delta=0$). The final effect on estimated losses depends on which of the two effects prevails. Consider for example the case of $PD=0.1\%$ and a 90th percentile of the IGS loss distribution. With this low PD, the effect of a reduction in the probability of extreme losses (a thinner tail, meaning smaller funding needs) is less important than the effect of a higher probability of medium-high losses (a fatter shoulder, meaning higher funding needs) in the portion of the loss distribution around the 90% percentile. It follows that funding needs increase. If funding needs are instead considered for the same PD (0.1%) but at the 99th percentile or at the same 90th percentile but for a higher PD (0.5%), the thinner tail effect prevails, with a reduction in funding needs.



⁷⁷ For a full set of figures please refer to sub-section 4.3 and Annex A5.2 of the MR.

⁷⁸ For a full set of figures please refer to sub-section 4.4 and Annex A5.3 of the MR.

⁷⁹ This positive feature of ex-ante funded IGS can be reinforced by introducing ex-ante levies that are weighted by the risk of failure of the contributing insurance undertaking.



EUROPEAN COMMISSION

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COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

PART II

Accompanying document to the

WHITE PAPER

on Insurance Guarantee Schemes

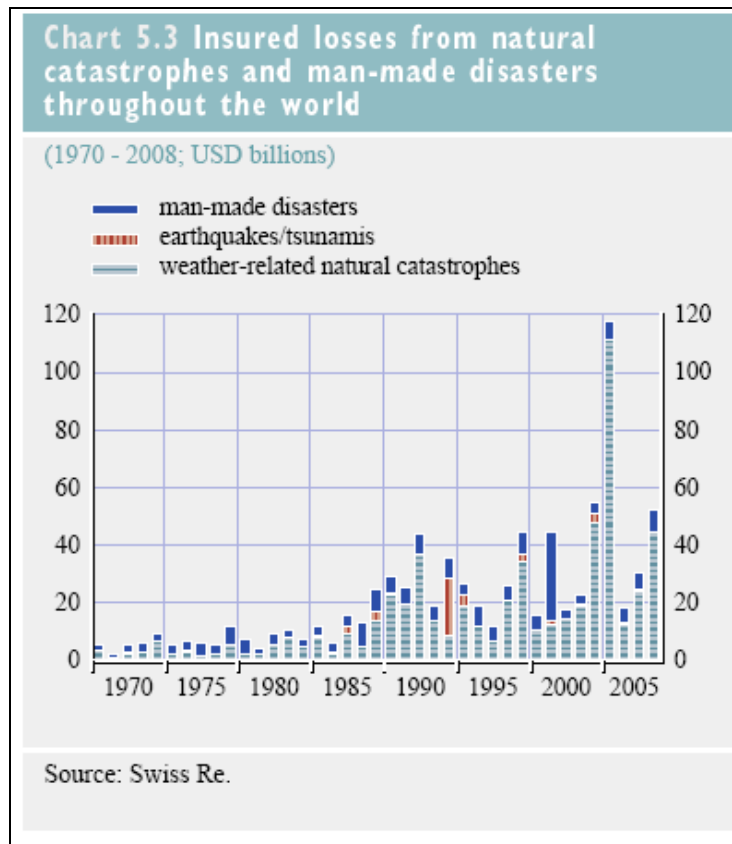
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ADDITIONAL FIGURES

Figure 1 - Insured losses from natural catastrophes and man-made disasters throughout the world



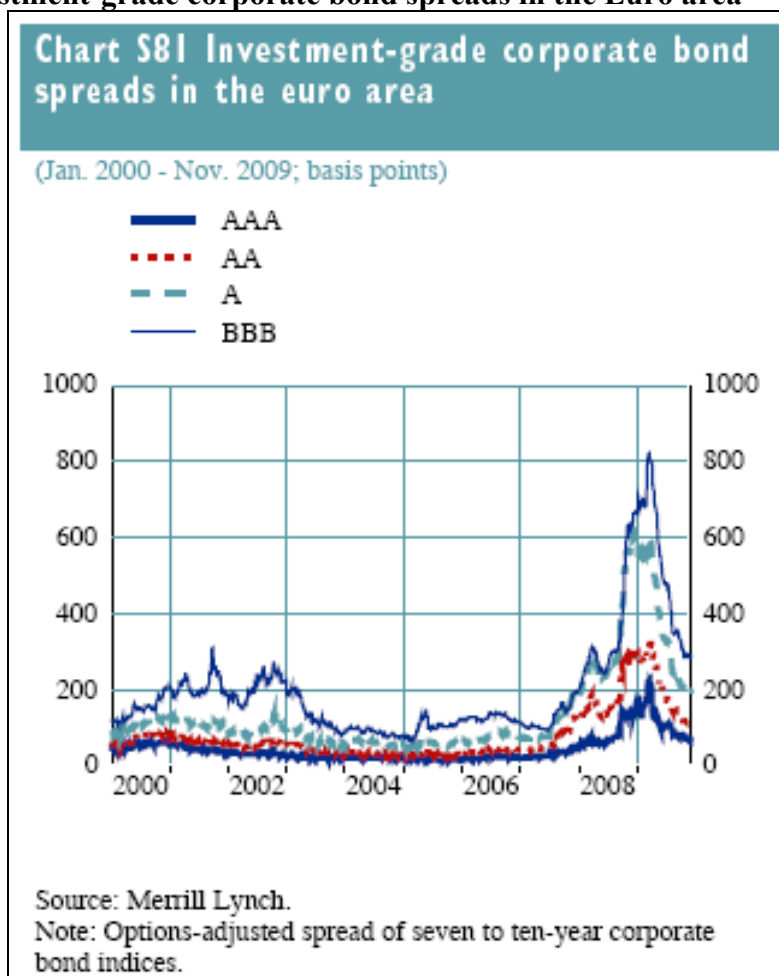
Source: Supplementary tables to the methodological report, Figure 1.1 - ECB, Financial Stability Review, June 2009

Figure 2 - Stock prices in the Euro area



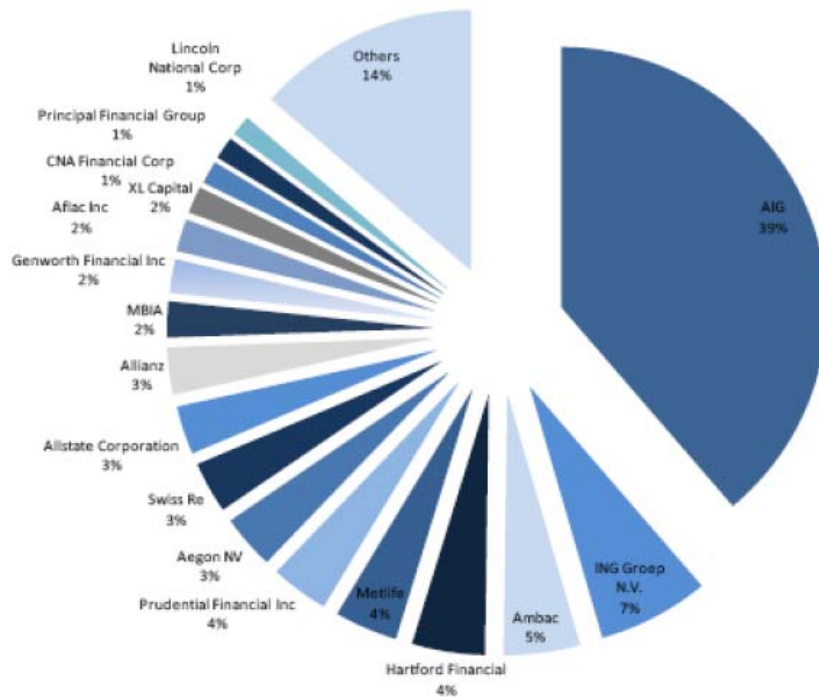
Source: Supplementary tables to the methodological report, Figure 1.2 - ECB, Financial Stability Review, December 2009

Figure 3 - Investment-grade corporate bond spreads in the Euro area



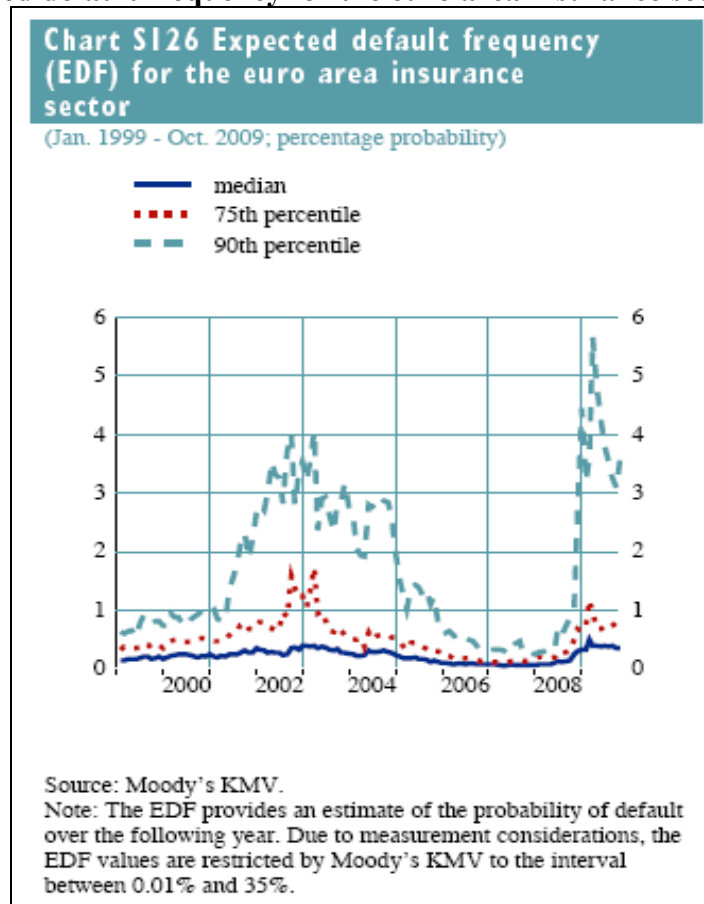
Source: Supplementary tables to the methodological report, Figure 1.3 - ECB, Financial Stability Review, December 2009

Figure 4 - Write-downs and losses at selected insurance companies (since beginning 2007, total of USD 261.2 billion)



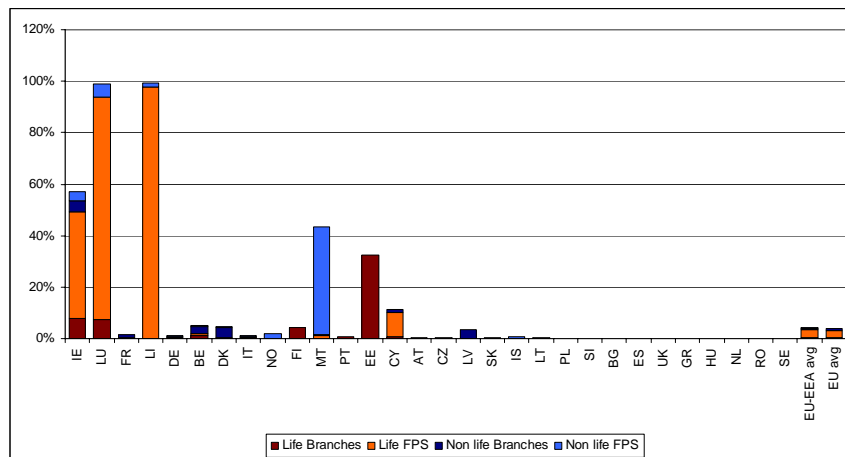
Source: Supplementary tables to the methodological report, Figure 1.4 - Schich S. (2009)

Figure 5 – Expected default frequency for the euro area insurance sector



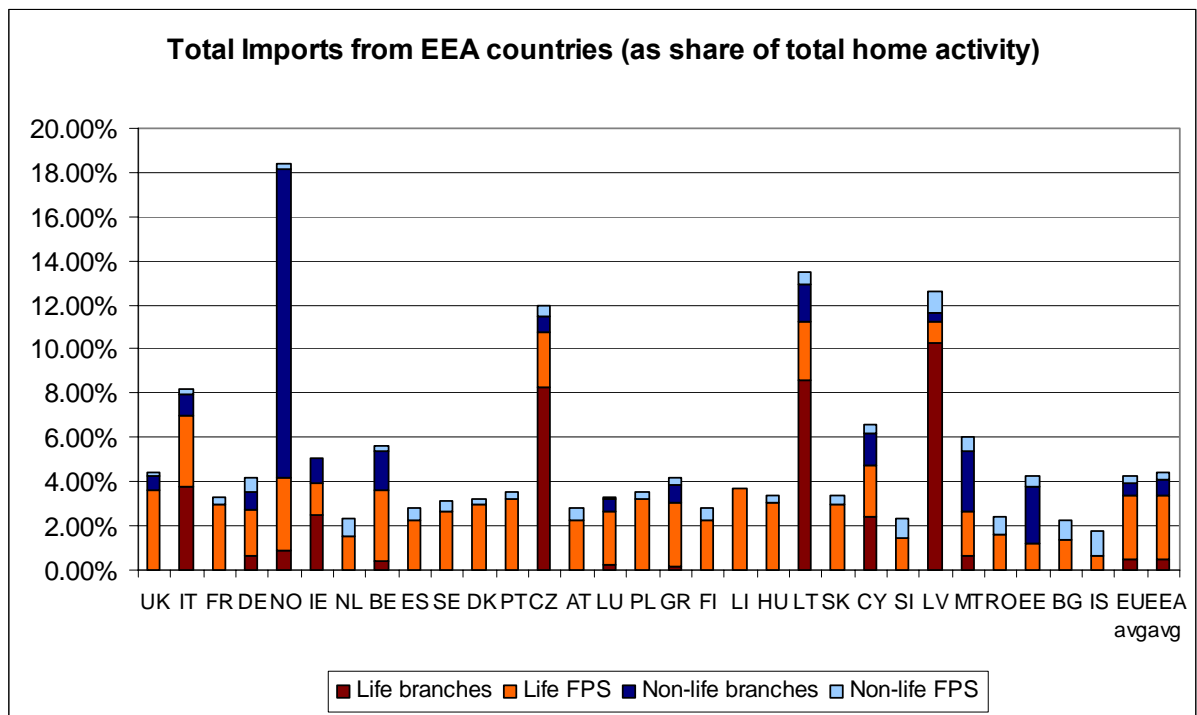
Source: Supplementary tables to the methodological report, Figure 1.5 - ECB, Financial Stability review, December 2009

Figure 6 – Share of total insurance cross-border (exported) activity by branches and via Free Provision of Services in EU-EEA countries



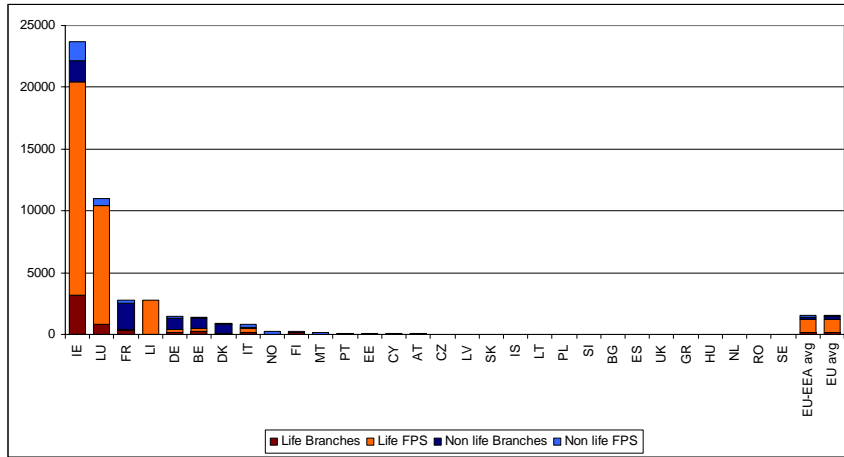
Source: Annex on cross-border insurance activity in the EU-EEA, Figure 2.2 - CEIOPS and CEA data, own elaboration

Figure 7 – Share of total insurance cross-border (imported) activity by branches and via Free Provision of Services in EU-EEA countries



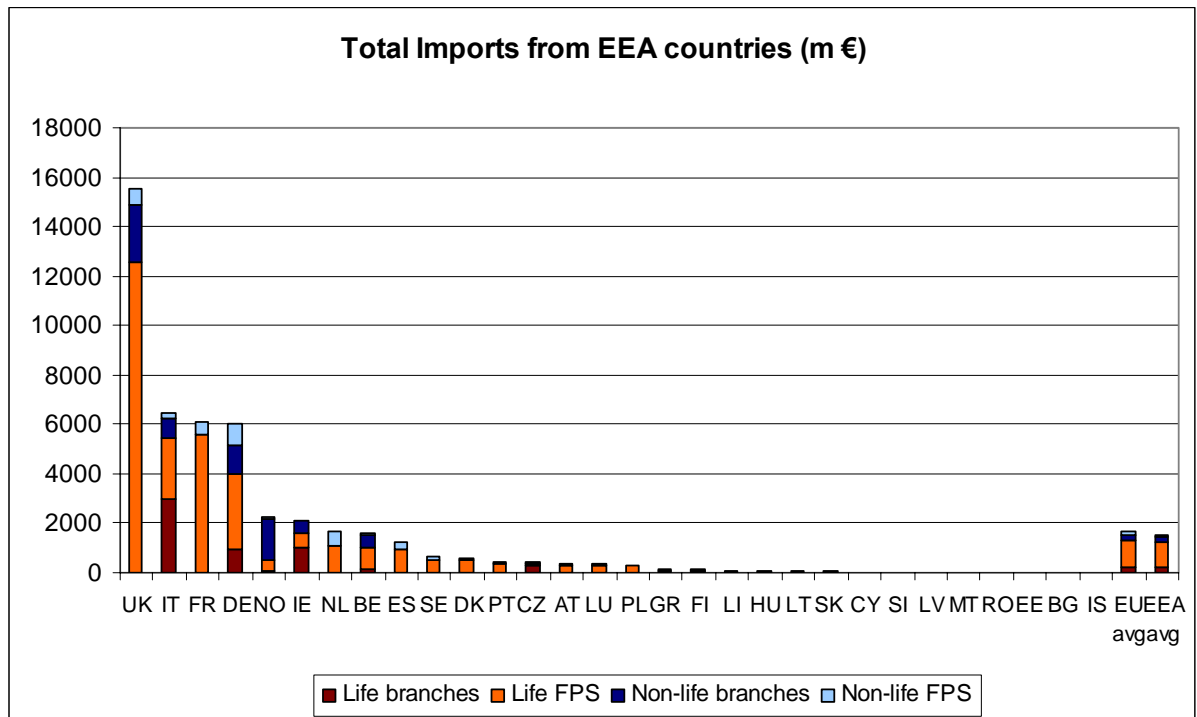
Source: Annex on cross-border insurance activity in the EU-EEA, Figure 2.6 - CEIOPS and CEA data, own elaboration

Figure 8 - Total insurance cross-border (exported) activity by branches and via Free Provision of Services in EU-EEA countries- (m€).



Source: Annex on cross-border insurance activity in the EU-EEA, Figure 2.1 - CEIOPS and CEA data, own elaboration

Figure 9 - Total insurance cross-border (imported) activity by branches and via Free Provision of Services in EU-EEA countries- (m€).



Source: Annex on cross-border insurance activity in the EU-EEA, Figure 2.5 - CEIOPS and CEA data, own elaboration

Figure 10 – Insurances' tail risk and the IGS loss distribution

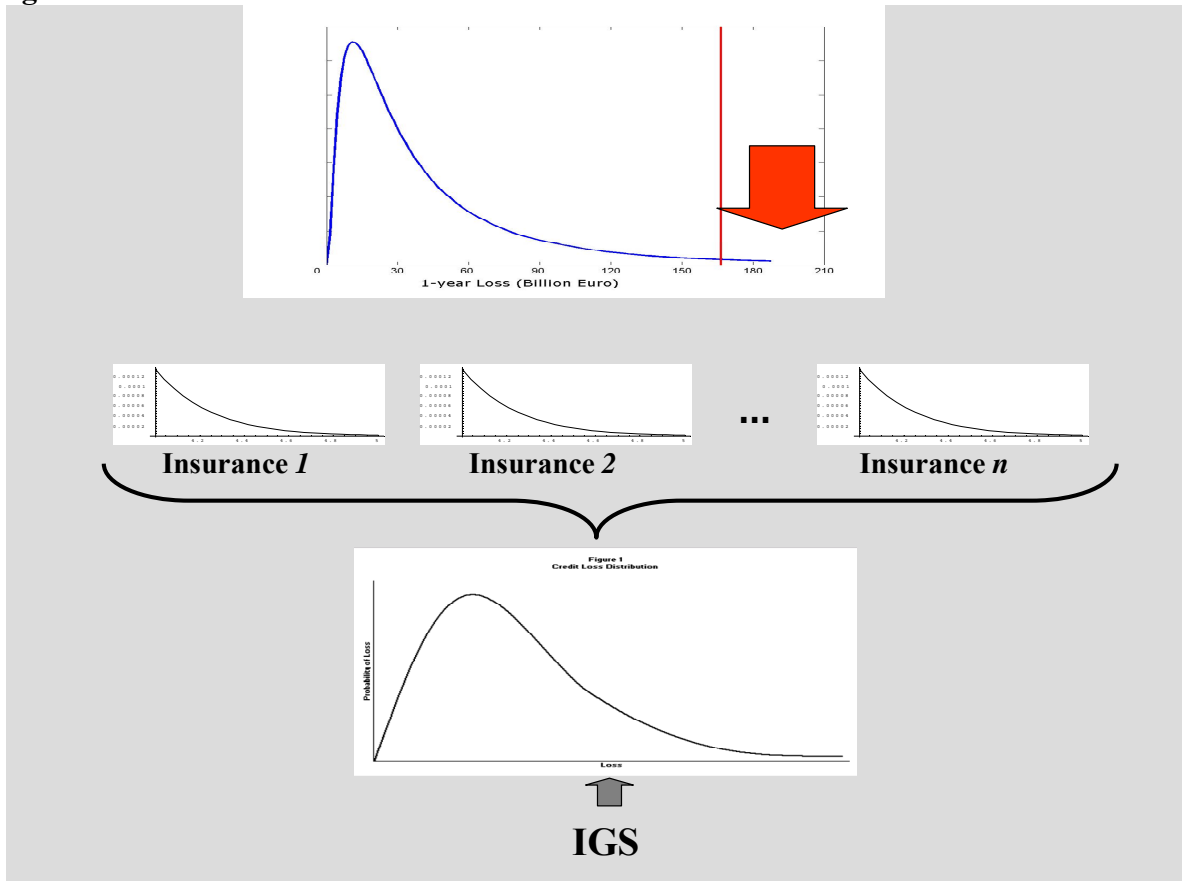


Figure 11 - IGS funding endowments and part of the loss distribution left to the possible intervention of Government

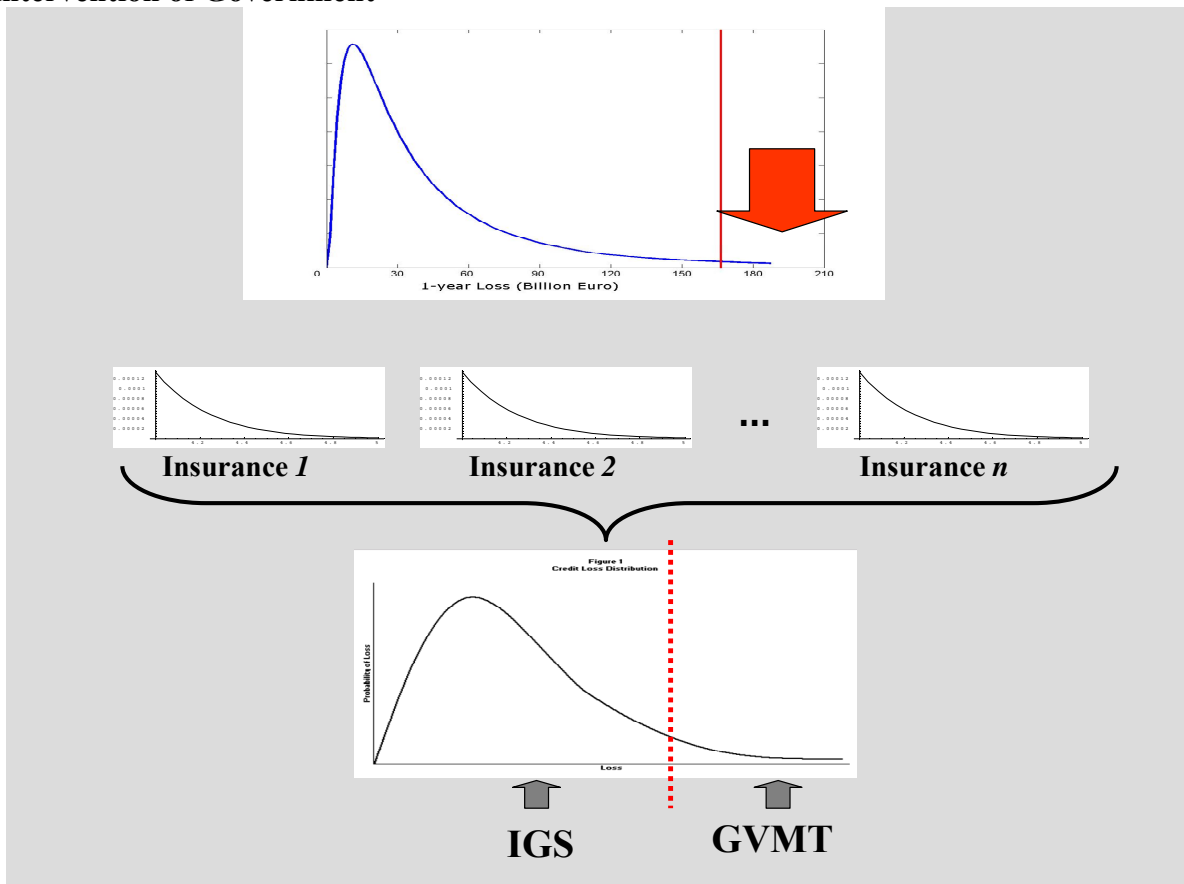
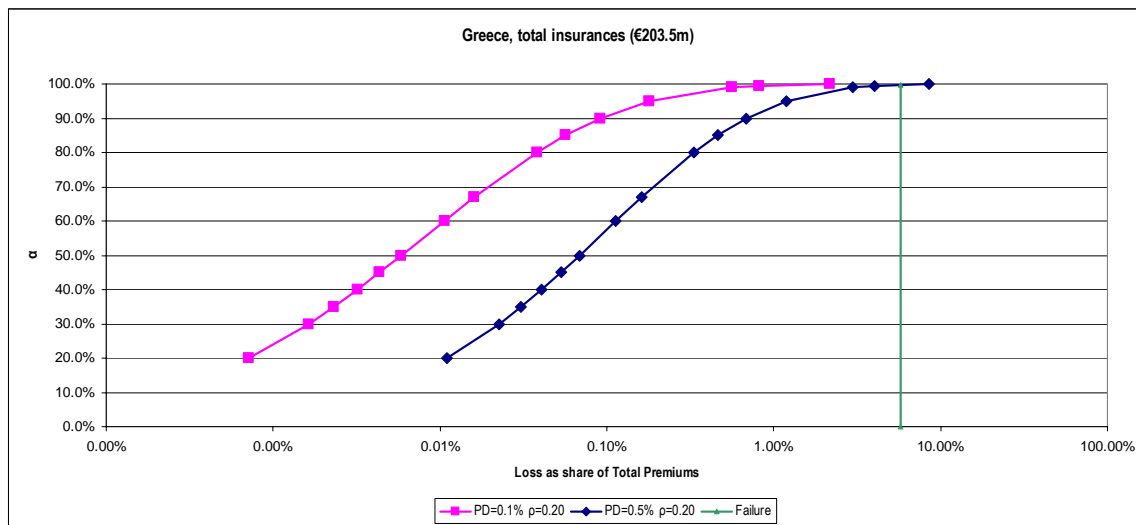


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Source: Supplementary tables to the methodological report, Figure 4.1 - CEIOPS data, news released from EPEIA, own calculations.

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ADDITIONAL TABLES

Table 1 - Updated calculation of average and stressed Probabilities of Default (PD)

Rating Grade (S&P)	Probability of default over one year (S&P)		Number of Leading European Insurance groups in each rating class, by year				
	In 2008 (during financial crisis)	Average (1981-2008)	2005	2006	2007	2008	2009
AAA	0	0	0	0	0	0	0
AA+	0	0	0	0	0	0	0
AA	0.43%	0.02%	2	2	3	3	1
AA-	0.40%	0.03%	5	7	7	6	5
A+	0.31%	0.05%	6	5	8	8	6
A	0.21%	0.06%	6	6	3	3	9
A-	0.58%	0.08%	6	6	5	5	5
BBB+	0.18%	0.16%	0	1	1	1	0
BBB	0.59%	0.28%	1	1	1	0	0
BBB-	0.71%	0.28%	0	0	0	2	2
BB+	1.14%	0.68%	0	0	0	0	0
BB	0.63%	0.89%	0	0	0	0	0
Average	0.404%	0.065%					
Adjusted average (to account for unrated companies)		0.100%					

Note: Average PD is calculated as weighted average of average historical PD over period 1981-2008) weighted by number of companies in each rating class over last 5 years. Average PD in 2008 is calculated as weighted average of observed default rates during 2008 weighted by number of companies in each rating class in 2008.

Source: Supplementary tables to the methodological report, Table 2.4 - CEIOPS, Standard and Poor's, Oxera report, own elaboration

Table 2 – Estimated average number of defaults of insurance undertakings and estimated expected time before one insurance default in EU-EEA countries

	Average number of defaults per year (PD=0.1%)	Average number of defaults per year (PD=0.5%)	Years between defaults (PD=0.1%)	Years between defaults (PD=0.5%)
AT	0.08	0.39	13.0	2.6
BE	0.16	0.78	6.4	1.3
BG	0.04	0.20	25.0	5.0
CY	0.04	0.18	27.8	5.6
CZ	0.05	0.26	19.2	3.8
DE	0.50	2.52	2.0	0.4
DK	0.19	0.97	5.2	1.0
EE	0.02	0.10	52.6	10.5
ES	0.29	1.46	3.4	0.7
FI	0.04	0.18	28.6	5.7
FR	0.39	1.94	2.6	0.5
GR	0.08	0.40	12.5	2.5
HU	0.05	0.24	20.8	4.2
IE	0.35	1.74	2.9	0.6
IS	0.01	0.06	83.3	16.7
IT	0.24	1.22	4.1	0.8
LI	0.06	0.32	15.9	3.2
LT	0.03	0.14	35.7	7.1
LU	0.36	1.78	2.8	0.6
LV	0.02	0.11	45.5	9.1
MT	0.04	0.22	23.3	4.7
NL	0.30	1.50	3.3	0.7
NO	0.13	0.67	7.5	1.5
PL	0.08	0.41	12.3	2.5
PT	0.08	0.41	12.2	2.4
RO	0.04	0.21	23.8	4.8
SE	0.21	1.03	4.9	1.0
SK	0.04	0.18	28.6	5.7
SL	0.02	0.10	52.6	10.5
UK	0.43	2.14	2.3	0.5
EU	4.15	20.74	0.24	0.05
EU-EEA	4.36	21.79	0.23	0.05
EU avg	0.29	1.46	3.4	0.7
EU-EEA avg	0.28	1.42	3.5	0.7

Note: based on average probabilities of default and ignoring correlation. EU and EEA averages are weighted by number of insurers in each country in 2007.

Source: Supplementary tables to the methodological report, Table 2.1 - CEIOPS data, own elaboration

Table 3 - Exposure at default (EAD) in EEA and EU countries, 2007 - (m€)

	Total EAD (m€)	Life EAD (m€)	Non-Life EAD (m€)		Total EAD (m€)	Life EAD (m€)	Non-Life EAD (m€)
AT	67 554	58 188	10 984	LI	N.A.	N.A.	N.A.
BE	190 151	168 163	19 236	LT	643	525	157
BG	392	203	212	LU	80 074	76 571	3 558
CY	3 078	2 717	344	LV	269	83	191
CZ	8 994	6 544	1 877	MT	1 980	1 293	589
DE	1 006 801	765 180	248 637	NL	313 024	266 317	82 629
DK	135 949	118 090	10 074	NO	86 755	79 468	7 803
EE	569	509	101	PL	20 855	17 059	3 490
ES	213 026	164 938	50 081	PT	45 402	40 297	4 992
FI	44 020	37 099	7 888	RO	1 468	781	646
FR	1 347 573	1 189 627	168 067	SE	238 147	191 510	53 695
GR	9 495	7 630	1 693	SI	3 897	2 041	1 455
HU	5 887	5 282	340	SK	2 860	2 299	496
IE	161 216	147 444	13 425	UK	2 092 219	2 034 005	103 562
IS	795	147	650	EU	6 418 794	5 696 522	821 040
IT	423 251	389 126	32 622	EU-EEA	6 506 344	5 773 137	829 493

Source: Methodological report, Table 2.2. - CEIOPS and CEA data, own elaboration.

Table 4: EAD/GDP ratios for Total insurance sector, exports via branches and via FPS (GDP in m €)

	GDP	Total EAD / GDP	Exported EAD / GDP
AT	270 782.4	25.55%	0.077%
BE	334 948.0	55.95%	2.046%
BG	28 898.6	1.43%	0.000%
CY	15 951.1	19.19%	2.613%
CZ	127 330.5	6.61%	0.016%
DE	2 428 200.0	41.75%	0.329%
DK	227 024.9	56.45%	1.046%
EE	15 626.6	3.91%	1.740%
ES	1 052 730.0	20.42%	0.000%
FI	179 536.0	25.06%	1.476%
FR	1 894 646.0	71.66%	0.631%
GR	226 437.0	4.12%	0.000%
HU	101 086.5	5.56%	0.000%
IE	189 751.2	84.78%	48.282%
IS	14 932.3	5.34%	0.040%
IT	1 546 177.4	27.28%	0.233%
LI	3 363.1	627.92%	623.317%
LT	28 576.6	2.39%	0.007%
LU	37 465.8	213.87%	216.228%
LV	21 111.0	1.30%	0.040%
MT	5 458.7	34.47%	9.201%
NL	568 664.0	61.36%	0.000%
NO	283 366.4	30.80%	0.259%
PL	311 001.7	6.61%	0.001%
PT	163 051.5	27.78%	0.271%
RO	124 728.5	1.14%	0.000%
SE	331 147.2	74.05%	0.000%
SI	34 568.2	10.12%	0.007%
SK	54 897.6	5.09%	0.010%
UK	2 044 133.0	104.57%	0.000%
EU	12 363 930.0	52.69%	1.70%
EU-EEA	12 665 591.8	52.30%	1.83%

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.5 - Methodological report, CEIOPS, Eurostat, own elaboration

Table 5 - Losses of historical selected defaults

Country	Failed insurer	Year of default	Sector	Total losses (m€)	Total losses (as % of total gross written premiums)	Number of policyholders / claims
RO	Metropol	2003	Composite	2.9	0.2%	8427 (3573 paid)
FR	Europavie	2000	Life	0.4	0.0%	N.A.
DE	Mannheimer	2003	Life	100.0	0.1%	344 000
IE	ICI	1985	Non life	315.0	8.1%	N.A.
ES	Reunión	1992	Non life	35.4	0.1%	N.A.
FR	International Claims Services SA	1999	Non life	10.2	0.0%	260
UK	Independent Insurance	2001	Non life	738.0	0.8%	190 000
UK	Chester Street	2001	Non life	146.5	0.2%	N.A.
DK	Plus Forsikning A/S	2002	Non life	12.4	0.2%	N.A.

Source: Supplementary tables to the methodological report, Table 2.2 - Oxera report and CEIOPS updates

Table 6 -Estimated average loss and loss from failure of largest insurer - (m€)

	Life			Non-Life		
	Average Loss PD=0,1%, (LGD=15%)	Average Loss PD=0,5%, (LGD=15%)	Largest loss (LGD=15%)	Average Loss PD=0,1%, (LGD=15%)	Average Loss PD=0,5%, (LGD=15%)	Largest loss (LGD=15%)
AT	8.73	43.64	2 117.93	1.65	8.24	379.80
BE	25.22	126.12	5 491.50	2.89	14.43	479.11
BG	0.03	0.15	7.44	0.03	0.16	4.28
CY	0.41	2.04	107.48	0.05	0.26	8.21
CZ	0.98	4.91	312.04	0.28	1.41	66.06
DE	114.78	573.89	10 662.79	37.30	186.48	3 335.71
DK	17.71	88.57	2 707.70	1.51	7.56	273.26
EE	0.08	0.38	36.98	0.02	0.08	5.49
ES	24.74	123.70	2 418.82	7.51	37.56	1 372.05
FI	5.56	27.82	1 705.75	1.18	5.92	326.19
FR	178.44	892.22	29 584.48	25.21	126.05	3 505.44
GR	1.14	5.72	207.78	0.25	1.27	37.12
HU	0.79	3.96	120.90	0.05	0.26	10.86
IE	22.12	110.58	4 099.66	2.01	10.07	436.71
IS	0.02	0.11	9.86	0.10	0.49	29.88
IT	58.37	291.84	15 157.57	4.89	24.47	1 086.66
LI	N A	N A	N A	N A	N A	N A
LT	0.08	0.39	18.94	0.02	0.12	4.88
LU	11.49	57.43	1 627.13	0.53	2.67	130.87
LV	0.01	0.06	5.05	0.03	0.14	5.69
MT	0.19	0.97	38.78	0.09	0.44	14.26
NL	39.95	199.74	8 880.76	12.39	61.97	2 499.79
NO	11.92	59.60	3 947.70	1.17	5.85	260.47
PL	2.56	12.79	981.34	0.52	2.62	243.93
PT	6.04	30.22	1 303.30	0.75	3.74	244.26
RO	0.12	0.59	32.87	0.10	0.48	26.30
SE	28.73	143.63	4 735.41	8.05	40.27	2 018.13
SI	0.31	1.53	115.49	0.22	1.09	84.02
SK	0.34	1.72	90.30	0.07	0.37	29.23
UK	305.10	1 525.50	27 864.42	15.53	77.67	2 533.59
EU	854.03	4 270.14	120 432.62	123.16	615.78	19 161.88
EU-EEA	865.97	4 329.85	124 390.18	124.42	622.12	19 452.23

Note: Numbers in Italic refer to estimates based on approximate market structure

Source: Supplementary tables to the methodological report, Table 2.3 - CEIOPS and CEA data, own elaboration.

Table 7 - Estimated policyholders' losses gross of IGS protection- (m€)

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	41.56	126.82	616.39	5.63	21.59	153.91
BE	118.45	357.71	1 717.44	16.17	61.22	429.37
BG	0.28	0.75	3.11	0.04	0.14	0.79
CY	1.82	5.74	28.98	0.24	0.96	7.21
CZ	6.06	17.09	75.76	0.87	3.03	19.08
DE	753.31	1 921.86	7 539.74	116.25	357.05	1 913.98
DK	102.02	259.49	1 014.21	15.78	48.27	257.50
EE	0.19	0.90	7.11	0.02	0.12	1.64
ES	157.54	406.72	1 619.01	24.11	75.16	410.70
FI	21.33	78.33	470.36	2.48	12.01	114.23
FR	941.76	2 568.60	10 928.65	138.69	462.69	2 761.11
GR	6.58	18.09	77.66	0.96	3.25	19.61
HU	4.51	11.23	42.79	0.71	2.11	10.88
IE	114.25	307.53	1 287.85	16.98	55.74	325.73
IS	0.40	1.43	8.27	0.05	0.22	2.02
IT	272.42	800.06	3 717.40	37.98	138.92	932.40
LI	N A	N A	N A	N A	N A	N A
LT	0.43	1.22	5.44	0.06	0.22	1.37
LU	63.97	152.01	546.08	10.34	29.11	139.03
LV	0.17	0.51	2.42	0.02	0.09	0.61
MT	1.10	3.65	19.43	0.14	0.59	4.80
NL	209.47	594.48	2 652.50	29.96	105.03	667.70
NO	39.01	151.16	963.68	4.34	22.45	231.80
PL	10.58	37.56	217.08	1.27	5.88	53.03
PT	27.09	84.78	424.36	3.60	14.24	105.62
RO	1.13	2.80	10.58	0.18	0.53	2.69
SE	149.65	448.61	2 135.34	20.54	77.07	534.33
SI	1.76	6.80	43.21	0.20	1.01	10.40
SK	1.60	5.27	27.97	0.20	0.86	6.91
UK	1 519.96	3 994.22	16 246.62	229.81	732.18	4 116.51
EU	4 528.98	12 212.81	51 477.48	673.24	2 209.05	13 001.11
EU-EEA	4 568.40	12 365.42	52 449.44	677.62	2 231.74	13 234.96

Note: estimates based on the home state principle, under different scenarios for the ‘over the cycle’ probability of default and levels of protection.

Source: Methodological report, Table 3.2 and Table 3.3 – Own elaboration based on CEIOPS and CEA data.

Table 8 - Policies covered and geographic scope of existing IGS

	Life		Non-Life non-motor		Non-Life motor	
	Geographic scope		Geographic scope		Geographic scope	
	Home	Host	Home	Host	Home	Domestic
AT					x	
BE					x	
BG	x					x
CY					x	
CZ					x	
DE	x				x	
DK			x		x	
EE					x	
ES	x		x		x	
FI					x	
FR	x		x	x (1)	x	
GR					x	
HU					x	
IS						
IE			x		x	
IT					x	
LI					x	
LT						x
LU						x
LV	x	x	x	x		x
MT		x		x		x
NL					x	
NO				x		
PL	x	x			x	
PT					x	
RO	x		x			
SE					x	
SI					x	
SK					x	
UK	x	x	x	x	x	

Note: (1) only for companies selling mandatory insurance

Source: Annex on cross-border activity in the EU-EEA, Table 1.1 - Methodological report, Oxera report, CEIOPS updates, Agreements and conventions related to the implementation of the 4th Motor Directive.

Table 9 - Share of insurance gross written premiums not protected (even not in part) by existing IGS

	Life			Non Life			Total Insurance		
	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import	Domestic activity+ estimated imported	Share of domestic activity	Estimated share of total import
AT	100%	100%	99%	99%	100%	45%	100%	100%	88%
BE	100%	100%	98%	92%	100%	22%	98%	100%	71%
BG	4%	0%	99%	99%	100%	45%	66%	66%	78%
CY	100%	100%	95%	96%	100%	33%	98%	100%	78%
CZ	99%	100%	93%	98%	100%	36%	99%	100%	87%
DE	5%	0%	98%	98%	100%	27%	49%	48%	74%
DK	100%	100%	99%	1%	0%	47%	76%	75%	94%
EE	100%	100%	99%	95%	100%	32%	97%	100%	50%
ES	4%	0%	99%	1%	0%	45%	2%	0%	88%
FI	100%	100%	99%	99%	100%	45%	100%	100%	89%
FR	4%	0%	99%	1%	0%	49%	3%	0%	95%
GR	100%	100%	98%	98%	100%	35%	99%	100%	81%
HU	100%	100%	99%	99%	100%	45%	100%	100%	93%
IE	99%	100%	85%	18%	0%	41%	94%	97%	75%
IS	100%	100%	99%	99%	100%	45%	99%	100%	65%
IT	100%	100%	94%	96%	100%	31%	99%	100%	85%
LI	99%	100%	99%	45%	100%	45%	99%	100%	98%
LT	99%	100%	93%	96%	100%	33%	98%	100%	83%
LU	100%	100%	97%	90%	100%	30%	88%	100%	84%
LV	0%	0%	0%	0%	0%	0%	0%	0%	0%
MT	0%	0%	0%	0%	0%	0%	0%	0%	0%
NL	100%	100%	99%	99%	100%	45%	100%	100%	80%
NO	100%	100%	97%	55%	100%	0%	88%	100%	22%
PL	4%	0%	99%	99%	100%	45%	24%	22%	94%
PT	100%	100%	99%	99%	100%	45%	100%	100%	95%
RO	4%	0%	99%	1%	0%	45%	2%	0%	81%
SE	100%	100%	99%	99%	100%	45%	100%	100%	91%
SI	100%	100%	99%	99%	100%	45%	100%	100%	79%
SK	100%	100%	99%	99%	100%	45%	100%	100%	93%
UK	0%	0%	0%	0%	0%	0%	0%	0%	0%
EU avg	26%	25%	62%	56%	57%	23%	35%	34%	54%
EU-EEA avg	27%	26%	63%	56%	58%	19%	35%	34%	53%

Note: Import flows based on approximate estimate of bilateral flows based on proportionality assumptions. All exports exiting a country with a home principle IGS are considered 'covered' (at least partially), all imports entering a country with a host state principle IGS are considered 'covered' (at least partially).

Source: Supplementary tables to the methodological report, Table 3.1 - Own elaboration from CEIOPS and CEA data

Table 10 - Estimates funds available in existing IGS - (m€)

	Estimated funds available	Sector
BG*	<i>0,70</i>	Life
DE	640,00	Life
DK	40,30	Non life
ES	1 331,00	Life +Non life
FR	569//250	Life//Non life
IE*	<i>26,48</i>	Non life
LV	0.8//2.8	Life//Non life
MT	2.33//2.33	Life//Non life
NO*	<i>16,04</i>	Non life
PL*	<i>39,03</i>	Life
RO	17.10//84.50	Life//Non life
UK*	<i>1 766//316</i>	Life//Non life

Note 1: * – ex-post funded scheme

Note 2: Funds available for schemes with ex-ante payment are based on figures reported by Oxera and CEIOPS. Funds available for schemes with ex-post payment are estimated (*numbers in italics*) based on average fund size of ex-ante schemes with respect to Gross Premium Written

Source: Supplementary tables to the Methodological Report, Table 2.7 – Oxera report, CEIOPS updates and own elaboration.

Table 11 - Estimates policyholders' losses net of coverage of existing IGS - (m€)

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	41.56	126.82	616.39	5.63	21.59	153.91
BE	118.45	357.71	1 717.44	16.17	61.22	429.37
BG	0.00	0.05	2.41	0.00	0.00	0.09
CY	1.82	5.74	28.98	0.24	0.96	7.21
CZ	6.06	17.09	75.76	0.87	3.03	19.08
DE	113.31	1 281.86	6 899.74	0.00	0.00	1 273.98
DK	61.72	219.19	973.91	0.00	7.97	217.20
EE	0.19	0.90	7.11	0.02	0.12	1.64
ES	0.00	0.00	288.01	0.00	0.00	0.00
FI	21.33	78.33	470.36	2.48	12.01	114.23
FR	122.76	1 749.60	10 109.65	0.00	0.00	1 942.11
GR	6.58	18.09	77.66	0.96	3.25	19.61
HU	4.51	11.23	42.79	0.71	2.11	10.88
IE	87.77	281.05	1 261.37	0.00	29.26	299.25
IS	0.40	1.43	8.27	0.05	0.22	2.02
IT	272.42	800.06	3 717.40	37.98	138.92	932.40
LI	N A	N A	N A	N A	N A	N A
LT	0.43	1.22	5.44	0.06	0.22	1.37
LU	63.97	152.01	546.08	10.34	29.11	139.03
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	14.77	0.00	0.00	0.14
NL	209.47	594.48	2 652.50	29.96	105.03	667.70
NO	22.97	135.12	947.64	0.00	6.41	215.76
PL	0.00	0.00	178.05	0.00	0.00	14.00
PT	27.09	84.78	424.36	3.60	14.24	105.62
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	149.65	448.61	2 135.34	20.54	77.07	534.33
SI	1.76	6.80	43.21	0.20	1.01	10.40
SK	1.60	5.27	27.97	0.20	0.86	6.91
UK	0.00	1 911.02	14 163.42	0.00	0.00	2 033.31
EU	1 312.45	8 151.91	46 480.12	129.96	507.98	8 933.77
EU-EEA	1 335.82	8 288.46	47 436.03	130.01	514.61	9 151.55

Note 1: Loss scenarios as per table 3.2 of methodological report. IGS fund sizes as per Table 2.7 of Supplementary tables to methodological report. Home principle loss distribution is used for all countries.

Note 2: Countries with an IGS in place are indicated in grey

Source: Supplementary tables to methodological report, Table 3.2 – own elaboration

Table 12 – Features of existing national IGS in EU-EEA countries

	Life								Non-Life								Total
	BG	DE	FR	LV	MT	PL	RO	UK	DK	FR	IE	LV	MT	NO	RO	UK	ES
A. Nature of intervention																	
Pure compensation to claimants	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Continuation of contracts		X	X					X (a.1)		X				X			X
B. Eligible claimants (Nature)																	
Natural persons only				X		X					X	X	X				
Natural persons + SME	X							X	X					X		X	
Natural and legal persons except financial institutions			X														
All natural and legal persons		X			X		X			X					X		X
C. Compensation limits and reductions																	
Capping payouts	X		X	X	X (c.1)	X					X	X		X			n/a
Capping payouts for non-compulsory insurance					X			X					X	X		X	
Level of coverage (in %)	70		100	100	75	50	100	90	100	90 (c.2)	65 (c.3)	50	75	90	100	90	n/a
Level of coverage for compulsory insurance (in %)					100			100					100	100 (c.4)		100	
Fixed deductible									X								
Other reduction in benefits		X															X
D. Funding																	
Ex-ante	X	X	X	X	X		X		X	X		X	X		X		X
Ex-post			X			X		X (d.1)			X			X		X (d.1)	
Capping the level of contributions in a time period	n.a.	X	X	X			X	X		X	X	X		X	X	X	n.a.
Risk weighting		X															
Target level	X	X			X				X	X			X				
E. Other sources of funding																	
Borrowing power		X	X		X				X				X				
Credit facility from members in place			X														
State guarantee on borrowing									X								

Additional guarantees as private initiative (large failures)		X																
F. Geographic scope																		
Home state principle	X	X	X	X		X	X	X	X	X	X	X (f.1)	X			X	X	X
Host state principle		(f.2)		X (f.3)	X (f.4)	X	(f.2)	X		X (f.5)	X (f.6)	X (f.3)	X (f.4)	X	(f.2)	X	(f.7)	
Restrictions based on residency of policyholder/claimant					X (f.8)			X		X				X		X		
G. Types of policies covered																		
Without exclusions	X	X	X			X	X	X			X				X			
With exclusion				X	X				X	X		X	X	X		X	X	
H. Establishment																		
Date	07	04	99	98	04	91	05	75	03	03	64	98	04	93	05	75	84	
I. Ownership																		
Public	X			X	X		X		n.a.		X	X	X	X	X		X (i.1)	
Private		X	X			X		X	n.a.	X						X		
J. Management																		
Public - Independent											X			X			X	
Public - Supervisor				X	X (j.1)		X	X (j.2)	X (j.2)		X	X (j.1)		X	X (j.2)			
Private	X (j.3)	X	X			X				X								

Notes: Belgium is not included as reported by Oxera as the Belgian IGS only has one participant; (a.1) only in case of a long term life insurance continuation; (c.1) maximum payout for any single insurer capped to MTL 1mil (around Eur 2'329'000); (c.2) policyholders 90%, third party claimants 100%; (c.3) individual claims are unlimited but there is a total payout limit of 700m euro; (c.4) 100% is for residential property and compulsory liability insurance; (d.1) levies are raised for losses expected during the next 12 months; (f.1) home state for protection and host state for contribution; (f.2) participation of foreign branches not required and not permitted; (f.3) all contracts not covered by a home scheme need to be covered by the scheme; (f.4) unless branches of EU insurer protected to an equivalent level; (f.5) mandatory for insurers providing insurance which is mandatory by law or regulation; (f.6) required to participate but protected only if wound up under Irish law; (f.7) branches not protected but required to contribute for non-life risks located in Spain; (f.8) the fund covers claims arising under a contract protecting a risk situated in Malta or originating a commitment in Malta; (i.1) Public ownership and management, but formally a private right corporation; (j.1) The fund responds to the National Supervisory Authority but it is not foreseen that it will receive staff in case of a default; (j.2) Privately managed, with a board appointed by regulator; (j.3) Managed by representatives chosen by industry and vetted by supervisor. Subject to supervision of insurance supervisor.

Source: Supplementary tables to the methodological report, Tables 2.5 and 2.6 – Own presentation of results of CEIOPS update to the Oxera report

Table 13 - Exported total insurance activity in 2007, gross written premiums

	(m €)		(% home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
Calculations	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	45.47	45.47	0.35%	0.35%
BE	1 052.62	1 409.73	3.77%	5.06%
BG	0.00	0.00	0.00%	0.00%
CY	12.09	60.09	2.28%	11.32%
CZ	7.22	8.44	0.22%	0.25%
DE	1 060.28	1 496.05	0.73%	1.03%
DK	769.61	887.45	4.20%	4.85%
EE	63.00	63.00	32.62%	32.62%
ES	0.00	0.00	0.00%	0.00%
FI	196.00	205.28	4.17%	4.36%
FR	2 424.69	2 809.34	1.30%	1.51%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	4 881.60	23 714.40	11.78%	57.24%
IS	0.00	1.74	0.00%	0.78%
IT	281.52	808.66	0.36%	1.03%
LI	1.55	2 777.48	0.06%	99.27%
LT	0.94	1.51	0.29%	0.46%
LU	851.35	10 984.09	7.67%	98.89%
LV	7.59	7.59	3.38%	3.38%
MT	1.72	196.64	0.38%	43.32%
NL	0.00	0.00	0.00%	0.00%
NO	6.24	220.56	0.05%	1.81%
PL	1.00	1.00	0.01%	0.01%
PT	106.96	108.90	0.93%	0.94%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.64	0.00%	0.05%
SK	2.67	3.47	0.23%	0.30%
UK	0.00	0.00	0.00%	0.00%
EU	11 766.33	42 811.76	1.13%	4.10%
EU-EEA	11 774.12	45 811.54	1.11%	4.32%

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.1 - CEIOPS and CEA

Table 14 - Exported life insurance activity in 2007, gross written premiums

Calculations	(m €)		(% of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	19.56	19.56	0.27%	0.27%
BE	283.60	498.88	1.28%	2.25%
BG	0.00	0.00	0.00%	0.00%
CY	5.00	53.00	1.40%	14.83%
CZ	4.48	4.93	0.22%	0.24%
DE	158.37	399.50	0.21%	0.53%
DK	73.25	89.70	0.56%	0.68%
EE	63.00	63.00	53.39%	53.39%
ES	0.00	0.00	0.00%	0.00%
FI	196.00	196.00	7.04%	7.04%
FR	314.58	446.67	0.23%	0.33%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	3 215.00	20 462.00	8.56%	54.47%
IS	0.00	0.00	0.00%	0.00%
IT	161.30	463.87	0.26%	0.76%
LI	0.00	2 735.17	0.00%	99.26%
LT	0.00	0.00	0.00%	0.00%
LU	841.16	10 415.00	8.33%	103.19%
LV	0.00	0.00	0.00%	0.00%
MT	0.24	5.47	0.11%	2.55%
NL	0.00	0.00	0.00%	0.00%
NO	0.00	0.00	0.00%	0.00%
PL	1.00	1.00	0.01%	0.01%
PT	92.07	93.13	1.00%	1.01%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.41	0.00%	0.09%
SK	0.00	0.00	0.00%	0.00%
UK	0.00	0.00	0.00%	0.00%
EU	5 428.61	33 212.11	0.71%	4.37%
EU-EEA	5 428.61	35 947.28	0.70%	4.66%

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.2 - CEIOPS and CEA

Table 15 - Exported non-life insurance activity in 2007, gross written premiums

Calculations	(m €)		(% of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
	3	2+3	3/(1+5)	(2+3)/(1+5)
AT	25.91	25.91	0.44%	0.44%
BE	769.02	910.85	13.48%	15.96%
BG	0.00	0.00	0.00%	0.00%
CY	7.09	7.09	4.09%	4.09%
CZ	2.75	3.52	0.21%	0.27%
DE	901.90	1 096.55	1.30%	1.58%
DK	696.36	797.75	13.62%	15.60%
EE	0.00	0.00	0.00%	0.00%
ES	0.00	0.00	0.00%	0.00%
FI	0.00	9.28	0.00%	0.48%
FR	2 110.11	2 362.67	4.28%	4.79%
GR	0.00	0.00	0.00%	0.00%
HU	0.00	0.00	0.00%	0.00%
IE	1 666.60	3 252.40	43.12%	84.15%
IS	0.00	1.74	0.00%	0.92%
IT	120.22	344.79	0.71%	2.03%
LI	1.55	42.31	3.66%	100.00%
LT	0.94	1.51	0.77%	1.24%
LU	10.19	569.09	1.00%	56.12%
LV	7.59	7.59	4.43%	4.43%
MT	1.48	191.18	0.62%	79.67%
NL	0.00	0.00	0.00%	0.00%
NO	6.24	220.56	0.27%	9.42%
PL	0.00	0.00	0.00%	0.00%
PT	14.88	15.77	0.63%	0.67%
RO	0.00	0.00	0.00%	0.00%
SE	0.00	0.00	0.00%	0.00%
SI	0.00	0.23	0.00%	0.03%
SK	2.67	3.47	0.85%	1.11%
UK	0.00	0.00	0.00%	0.00%
EU	6 337.72	9 599.65	2.22%	3.36%
EU-EEA	6 345.50	9 864.26	2.20%	3.42%

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.3 - CEIOPS and CEA

Table 16: Imported total insurance in 2007, gross written premiums

Calculations	(m €)		(% of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	<i>369.19</i>	0.00%	<i>2.84%</i>
BE	609.35	<i>1 566.23</i>	2.19%	<i>5.62%</i>
BG	0.00	<i>7.99</i>	0.00%	<i>2.26%</i>
CY	20.64	<i>35.10</i>	3.89%	<i>6.61%</i>
CZ	298.99	<i>399.55</i>	8.96%	<i>11.97%</i>
DE	2 108.86	<i>6 003.87</i>	1.46%	<i>4.15%</i>
DK	0.00	<i>593.69</i>	0.00%	<i>3.24%</i>
EE	5.05	<i>8.30</i>	2.61%	<i>4.30%</i>
ES	0.00	<i>1 216.18</i>	0.00%	<i>2.85%</i>
FI	0.00	<i>131.54</i>	0.00%	<i>2.80%</i>
FR	0.00	<i>6 115.76</i>	0.00%	<i>3.29%</i>
GR	32.44	<i>149.02</i>	0.92%	<i>4.21%</i>
HU	0.00	<i>92.35</i>	0.00%	<i>3.38%</i>
IE	1 493.23	<i>2 112.94</i>	3.60%	<i>5.10%</i>
IS	0.00	<i>3.86</i>	0.00%	<i>1.73%</i>
IT	3 732.10	<i>6 431.71</i>	4.76%	<i>8.20%</i>
LI	0.00	<i>104.12</i>	0.00%	<i>3.72%</i>
LT	33.85	<i>43.83</i>	10.39%	<i>13.45%</i>
LU	92.40	<i>367.16</i>	0.83%	<i>3.31%</i>
LV	23.95	<i>28.27</i>	10.67%	<i>12.60%</i>
MT	15.72	<i>27.47</i>	3.46%	<i>6.05%</i>
NL	0.00	<i>1 658.58</i>	0.00%	<i>2.36%</i>
NO	1 806.09	<i>2 239.92</i>	14.83%	<i>18.39%</i>
PL	0.00	<i>302.31</i>	0.00%	<i>3.50%</i>
PT	0.00	<i>405.78</i>	0.00%	<i>3.51%</i>
RO	0.00	<i>25.29</i>	0.00%	<i>2.42%</i>
SE	0.00	<i>630.33</i>	0.00%	<i>3.10%</i>
SI	0.00	<i>28.71</i>	0.00%	<i>2.30%</i>
SK	0.00	<i>38.97</i>	0.00%	<i>3.36%</i>
UK	2 340.12	<i>15 512.19</i>	0.67%	<i>4.41%</i>
EU	10 806.70	<i>44 302.31</i>	1.03%	<i>4.25%</i>
EU-EEA	12 612.79	<i>46 650.21</i>	1.19%	<i>4.40%</i>

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.6 - CEIOPS and CEA data, own elaboration

Table 17: Imported life insurance activity in 2007, gross written premiums

Calculations	(m €)		(% of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	293.29	0.00%	4.11%
BE	115.87	1 011.32	0.52%	4.56%
BG	0.00	4.94	0.00%	4.10%
CY	13.00	25.30	3.64%	7.08%
CZ	275.24	358.85	13.53%	17.64%
DE	925.08	3 988.40	1.23%	5.31%
DK	0.00	539.75	0.00%	4.09%
EE	0.00	2.27	0.00%	1.92%
ES	0.00	966.03	0.00%	4.12%
FI	0.00	106.59	0.00%	3.83%
FR	0.00	5 555.60	0.00%	4.07%
GR	4.98	108.11	0.20%	4.32%
HU	0.00	83.07	0.00%	4.12%
IE	1 025.00	1 629.84	2.73%	4.34%
IS	0.00	1.40	0.00%	4.09%
IT	2 967.00	5 461.43	4.83%	8.89%
LI	0.00	103.63	0.00%	3.76%
LT	28.12	36.52	13.79%	17.90%
LU	29.68	293.67	0.29%	2.91%
LV	23.00	25.18	43.40%	47.51%
MT	3.08	11.89	1.44%	5.56%
NL	0.00	1 088.85	0.00%	4.12%
NO	106.00	511.20	1.08%	5.20%
PL	0.00	277.68	0.00%	4.12%
PT	0.00	375.28	0.00%	4.08%
RO	0.00	17.09	0.00%	4.11%
SE	0.00	534.81	0.00%	4.12%
SI	0.00	18.25	0.00%	4.12%
SK	0.00	34.93	0.00%	4.12%
UK	9.78	12 579.31	0.00%	4.12%
EU	5 419.83	35 428.25	0.71%	4.67%
EU-EEA	5 525.83	36 044.48	0.72%	4.67%

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.7 - CEIOPS and CEA data, own elaboration

Table 18: Imported non-life insurance activity in 2007, gross written premiums

Calculations	(m €)		(% of home activity)	
	Branches only	Branches plus FPS	Branches only	Branches plus FPS
	6	6+7	6/(1+5)	(6+7)/(1+5)
AT	0.00	75.90	0.00%	1.30%
BE	493.48	554.91	8.65%	9.72%
BG	0.00	3.05	0.00%	1.31%
CY	7.64	9.80	4.41%	5.66%
CZ	23.75	40.70	1.82%	3.12%
DE	1 183.78	2 015.47	1.70%	2.90%
DK	0.00	53.94	0.00%	1.05%
EE	5.05	6.03	6.72%	8.02%
ES	0.00	250.15	0.00%	1.30%
FI	0.00	24.95	0.00%	1.30%
FR	0.00	560.16	0.00%	1.14%
GR	27.46	40.91	2.66%	3.96%
HU	0.00	9.28	0.00%	1.30%
IE	468.23	483.10	12.11%	12.50%
IS	0.00	2.46	0.00%	1.30%
IT	765.10	970.28	4.50%	5.70%
LI	0.00	0.49	0.00%	1.16%
LT	5.73	7.31	4.71%	6.00%
LU	62.72	73.49	6.19%	7.25%
LV	0.95	3.09	0.55%	1.80%
MT	12.64	15.58	5.27%	6.49%
NL	0.00	569.73	0.00%	1.30%
NO	1 700.09	1 728.72	72.63%	73.85%
PL	0.00	24.63	0.00%	1.30%
PT	0.00	30.50	0.00%	1.29%
RO	0.00	8.20	0.00%	1.30%
SE	0.00	95.52	0.00%	1.30%
SI	0.00	10.46	0.00%	1.30%
SK	0.00	4.04	0.00%	1.29%
UK	2 330.34	2 932.88	5.04%	6.34%
EU	5 386.87	8 874.06	1.88%	3.10%
EU-EEA	7 086.96	10 605.73	2.46%	3.68%

Note: FPS bilateral flows are estimated based on proportionality assumptions

Note: FPS bilateral flows are estimated based on proportionality assumptions, italics indicates numbers containing estimations

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.8 - CEIOPS and CEA data, own elaboration

Table 19: Coverage of life insurance by existing national IGS in EU-EEA countries

Life	Importing Countries		Exporting Countries																													
	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United Kingdom		
Austria	White	Small black dot	Small black dot			Small black dot			Small black dot	Small black dot																						
Belgium		White	Small black dot			Small black dot			Small black dot	Small black dot																						
Bulgaria	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot		
Cyprus			Small black dot	White					Small black dot	Small black dot															Small black dot	Small black dot						
Czech Rep.			Small black dot		White				Small black dot	Small black dot															Small black dot	Small black dot						
Germany	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Denmark			Small black dot			Small black dot	White		Small black dot	Small black dot															Small black dot	Small black dot						
Estonia			Small black dot			Small black dot		White	Small black dot	Small black dot																Small black dot	Small black dot					
Spain	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Finland			Small black dot			Small black dot			Small black dot	Small black dot															Small black dot	Small black dot						
France	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Greece			Small black dot			Small black dot			Small black dot	Small black dot		White													Small black dot	Small black dot						
Hungary			Small black dot			Small black dot			Small black dot	Small black dot		White	White												Small black dot	Small black dot						
Iceland			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White											Small black dot	Small black dot						
Ireland			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White	White										Small black dot	Small black dot						
Italy			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White	White	White									Small black dot	Small black dot						
Liechtenstein			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White	White	White	White								Small black dot	Small black dot						
Lithuania			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White	White	White	White	White							Small black dot	Small black dot						
Luxembourg			Small black dot			Small black dot			Small black dot	Small black dot		White	White	White	White	White	White	White	White						Small black dot	Small black dot						
Latvia	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Malta			Small black dot			Small black dot			Small black dot	Small black dot															Small black dot	Small black dot						
Netherlands			Small black dot			Small black dot			Small black dot	Small black dot													White	White	Small black dot	Small black dot						
Norway			Small black dot			Small black dot			Small black dot	Small black dot													White	White	Small black dot	Small black dot						
Poland	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Portugal			Small black dot			Small black dot			Small black dot	Small black dot														Small black dot	Small black dot	White	Small black dot					
Romania	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	
Sweden			Small black dot			Small black dot			Small black dot	Small black dot															Small black dot	Small black dot		White	Small black dot			
Slovenia			Small black dot			Small black dot			Small black dot	Small black dot															Small black dot	Small black dot		White	Small black dot			
Slovakia			Small black dot			Small black dot			Small black dot	Small black dot															Small black dot	Small black dot		White	Small black dot			
United Kingdom	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Small black dot	Big black dot	Small black dot	Big black dot	Small black dot	Small black dot	Small black dot	

Note and legend: The table shows the cases in which IGS covers life insurance activity, taking into consideration the existence of possible cross-border interactions between Member States. Countries listed on rows export insurance services to countries listed on columns.

White cell: no IGS coverage.

Small black dot: exports are covered by an IGS, but domestic insurance activity in the importing country is not covered.

Big black dot: exports are not covered by an IGS, but domestic insurance activity in the importing country is covered.

Black cell: both exports and domestic activity in the importing country are covered by an IGS.

Source: Annex on cross-border insurance activity in the EU-EEA, Table 1.2 - Oxera report, CEIOPS, own graphical presentation

Table 20: Coverage of non-life insurance by existing national IGS in EU-EEA countries

Non-Life Non- motor	Importing Countries		Exporting Countries																													
	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United Kingdom		
Austria	■						■		■		■				■																	
Belgium		■					■		■		■				■																	
Bulgaria			■				■		■		■				■																	
Cyprus				■			■		■		■				■																	
Czech Rep.					■		■		■		■				■																	
Germany						■			■		■				■																	
Denmark	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Estonia							■	■	■		■				■																	
Spain	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Finland							■		■	■	■				■																	
France	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Greece							■		■		■	■	■	■	■																	
Hungary							■		■		■	■	■	■	■																	
Iceland							■		■		■			■	■																	
Ireland	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Italy							■		■		■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Liechtenstein							■		■		■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Lithuania							■		■		■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Luxembourg							■		■		■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Latvia	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Malta							■		■		■				■																	
Netherlands							■		■		■				■								■	■	■	■	■	■	■	■	■	■
Norway							■		■		■				■								■	■	■	■	■	■	■	■	■	■
Poland							■		■		■				■								■	■	■	■	■	■	■	■	■	■
Portugal							■		■		■				■								■	■	■	■	■	■	■	■	■	■
Romania	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•
Sweden							■		■		■				■																	
Slovenia							■		■		■				■																	
Slovakia							■		■		■				■																	
United Kingdom	•	•	•	•	•	•	■	•	■	•	■	•	•	•	■	•	•	•	•	•	•	•	•	•	•	•	■	•	•	•	•	•

Note and legend: The table shows the cases in which an IGS covers non-life insurance activity, taking into consideration the existence of possible cross-border interactions between Member States.

Countries listed on rows export insurance services to countries listed on columns.

White cell: no IGS coverage.

Small black dot: exports are covered by an IGS, but domestic insurance activity in the importing country is not covered.

Big black dot: exports are not covered by an IGS, but domestic insurance activity in the importing country is covered.

Black cell: both exports and domestic activity in the importing country are covered by an IGS.

Source: Annex on cross-border insurance activity in the EU-EEA, Table 1.3 - Oxera report, CEIOPS updates, own graphical presentation

Table 21 - Estimated policyholders' losses exported in other EU-EEA countries - (m€)

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.15	0.44	2.16	0.02	0.08	0.54
BE	6.11	18.46	88.63	0.83	3.16	22.16
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.39	1.24	6.26	0.05	0.21	1.56
CZ	0.02	0.04	0.19	0.00	0.01	0.05
DE	7.92	20.21	79.27	1.22	3.75	20.12
DK	5.86	14.90	58.22	0.91	2.77	14.78
EE	0.06	0.30	2.32	0.01	0.04	0.54
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.93	3.42	20.53	0.11	0.52	4.98
FR	19.10	52.10	221.65	2.81	9.38	56.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	65.88	177.34	742.65	9.79	32.15	187.83
IS	0.00	0.01	0.06	0.00	0.00	0.02
IT	3.24	9.52	44.22	0.45	1.65	11.09
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.00	0.01	0.03	0.00	0.00	0.01
LU	61.57	146.30	525.56	9.95	28.01	133.80
LV	0.01	0.02	0.08	0.00	0.00	0.02
MT	0.48	1.58	8.42	0.06	0.26	2.08
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.71	2.74	17.45	0.08	0.41	4.20
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.26	0.81	4.03	0.03	0.14	1.00
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.02	0.00	0.00	0.01
SK	0.00	0.02	0.08	0.00	0.00	0.02
UK	0.00	0.00	0.00	0.00	0.00	0.00
EU	171.98	446.71	1.804.35	26.24	82.13	456.60
EU-EEA	172.69	449.46	1.821.86	26.32	82.54	460.82

Source: Methodological report, Table 5 of Annex 5 - CEIOPS and CEA data, own elaboration

Table 22 - Estimated policyholders' losses exported in other EU-EEA countries net of coverage of home state principle based IGS - (m€)

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.15	0.44	2.16	0.02	0.08	0.54
BE	6.11	18.46	88.63	0.83	3.16	22.16
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.39	1.24	6.26	0.05	0.21	1.56
CZ	0.02	0.04	0.19	0.00	0.01	0.05
DE	1.31	13.60	72.66	0.00	0.00	13.51
DK	3.91	12.95	56.27	0.00	0.82	12.83
EE	0.06	0.30	2.32	0.01	0.04	0.54
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.93	3.42	20.53	0.11	0.52	4.98
FR	6.72	39.72	209.27	0.00	0.00	43.62
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	50.72	162.18	727.49	0.00	16.99	172.67
IS	0.00	0.01	0.06	0.00	0.00	0.02
IT	3.24	9.52	44.22	0.45	1.65	11.09
LI	N A	N A	N A	N A	N A	N A
LT	0.00	0.01	0.03	0.00	0.00	0.01
LU	61.57	146.30	525.56	9.95	28.01	133.80
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.48	1.58	8.42	0.06	0.26	2.08
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.71	2.74	17.45	0.08	0.41	4.20
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.26	0.81	4.03	0.03	0.14	1.00
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.02	0.00	0.00	0.01
SK	0.00	0.02	0.08	0.00	0.00	0.02
UK	0.00	0.00	0.00	0.00	0.00	0.00
EU	135.86	410.58	1 768.16	11.51	51.89	420.47
EU-EEA	136.57	413.33	1 785.67	11.59	52.30	424.69

Note 1: Loss scenarios as per Table 3.2 of methodological report. Losses exported calculated proportionally to export flows illustrated in Tables 2.9 and 2.10 of Annex on cross-border insurance activity in the EU-EEA. A quota of IGS funds proportional to the share of exports is used to reduce losses i.e. it is assumed that losses are equally distributed between domestic and cross-border activities).

Note 2: Countries with a home IGS in place are indicated in gray

Source: Supplementary tables to the methodological report, Table 3.3 - Supplementary tables to the methodological report, Table 2.7, Annex on cross-border insurance activity in the EU-EEA, Tables 2.9 and 2.10; Methodological report, Table 5 of Annex 5.

Table 23 Estimated domestic policyholders' losses from cross-border (imported) total insurance activity not covered by existing home state and host state principle based IGS - (m€)

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	1.12	3.42	14.85	0.09	0.42	3.52
BE	4.54	13.89	59.99	0.37	1.69	14.19
BG #	0.02	0.07	0.32	0.00	0.01	0.08
CY	0.11	0.32	1.41	0.01	0.04	0.33
CZ	1.21	3.71	16.09	0.10	0.46	3.81
DE #	18.02	53.68	231.04	1.52	6.92	55.34
DK #	1.75	5.34	23.18	0.15	0.67	5.50
EE	0.03	0.08	0.33	0.00	0.01	0.08
ES #	3.69	11.28	48.97	0.31	1.40	11.61
FI	0.40	1.21	5.24	0.03	0.15	1.24
FR #	17.54	50.73	214.70	1.54	7.04	51.82
GR	0.45	1.38	6.00	0.04	0.17	1.42
HU	0.28	0.86	3.72	0.02	0.11	0.88
IE #	4.00	11.90	50.57	0.53	1.63	11.98
IS	0.01	0.04	0.16	0.00	0.00	0.04
IT	18.99	58.13	251.92	1.55	7.14	59.64
LI	0.32	0.97	4.19	0.03	0.12	0.99
LT	0.13	0.41	1.76	0.01	0.05	0.42
LU	0.63	2.24	10.62	0.01	0.20	2.44
LV #	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00
NL	5.03	15.38	66.79	0.42	1.91	15.84
NO	0.00	5.66	74.34	0.00	0.00	10.44
PL #	0.00	0.00	0.00	0.00	0.00	0.00
PT	1.23	3.76	16.30	0.10	0.47	3.87
RO	0.08	0.23	1.02	0.01	0.03	0.24
SE	1.91	5.85	25.38	0.16	0.73	6.02
SI	0.09	0.27	1.16	0.01	0.03	0.27
SK	0.12	0.36	1.57	0.01	0.04	0.37
UK #	0.00	0.00	0.00	0.00	0.00	0.00
EU	81.35	244.50	1 052.93	7.00	31.33	250.93
EU-EEA	81.68	251.16	1 131.62	7.02	31.46	262.40

Note 1: Countries with an host IGS in place are indicated in grey; currently their whole fund is reduced with the average domestic losses; # indicates countries with a home state principle IGS

Note 2: Net losses scenarios as per Table 3.3 of the Supplementary tables to the Methodological report (A quota of IGS funds proportional to the share of exports is used to reduce losses exported). Losses imported calculated proportionally to import flows illustrated in Tables 2.9 and 2.10 of Annex on cross-border insurance activity in the EU-EEA. Losses imported by each country are reduced by amount of any host state principle IGS present there. (The funds of the IGS are reduced by the average amount of expected losses generated by domestic companies).

Source: Supplementary tables to the methodological report, Table 3.4 - Supplementary tables to the methodological report, Table 2.7; Annex on cross-border insurance activity in the EU-EEA, Tables 2.9 and 2.10; Methodological report, Table 5 of Annex 5.

Table 24: Estimated policyholders' losses gross of IGS protection / GDP in 2007

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.0153%	0.0468%	0.2276%	0.0021%	0.0080%	0.0568%
BE	0.0354%	0.1068%	0.5127%	0.0048%	0.0183%	0.1282%
BG	0.0010%	0.0026%	0.0108%	0.0001%	0.0005%	0.0027%
CY	0.0114%	0.0360%	0.1817%	0.0015%	0.0060%	0.0452%
CZ	0.0048%	0.0134%	0.0595%	0.0007%	0.0024%	0.0150%
DE	0.0310%	0.0791%	0.3105%	0.0048%	0.0147%	0.0788%
DK	0.0449%	0.1143%	0.4467%	0.0070%	0.0213%	0.1134%
EE	0.0012%	0.0058%	0.0455%	0.0001%	0.0008%	0.0105%
ES	0.0150%	0.0386%	0.1538%	0.0023%	0.0071%	0.0390%
FI	0.0119%	0.0436%	0.2620%	0.0014%	0.0067%	0.0636%
FR	0.0497%	0.1356%	0.5768%	0.0073%	0.0244%	0.1457%
GR	0.0029%	0.0080%	0.0343%	0.0004%	0.0014%	0.0087%
HU	0.0045%	0.0111%	0.0423%	0.0007%	0.0021%	0.0108%
IE	0.0602%	0.1621%	0.6787%	0.0089%	0.0294%	0.1717%
IS	0.0027%	0.0096%	0.0554%	0.0003%	0.0015%	0.0135%
IT	0.0176%	0.0517%	0.2404%	0.0025%	0.0090%	0.0603%
LI	NA	NA	NA	NA	NA	NA
LT	0.0015%	0.0043%	0.0190%	0.0002%	0.0008%	0.0048%
LU	0.1707%	0.4057%	1.4575%	0.0276%	0.0777%	0.3711%
LV	0.0008%	0.0024%	0.0115%	0.0001%	0.0004%	0.0029%
MT	0.0202%	0.0669%	0.3559%	0.0026%	0.0108%	0.0879%
NL	0.0368%	0.1045%	0.4664%	0.0053%	0.0185%	0.1174%
NO	0.0138%	0.0533%	0.3401%	0.0015%	0.0079%	0.0818%
PL	0.0034%	0.0121%	0.0698%	0.0004%	0.0019%	0.0171%
PT	0.0166%	0.0520%	0.2603%	0.0022%	0.0087%	0.0648%
RO	0.0009%	0.0022%	0.0085%	0.0001%	0.0004%	0.0022%
SE	0.0452%	0.1355%	0.6448%	0.0062%	0.0233%	0.1614%
SI	0.0051%	0.0197%	0.1250%	0.0006%	0.0029%	0.0301%
SK	0.0029%	0.0096%	0.0509%	0.0004%	0.0016%	0.0126%
UK	0.0744%	0.1954%	0.7948%	0.0112%	0.0358%	0.2014%
EU	0.0366%	0.0988%	0.4164%	0.0054%	0.0179%	0.1052%
EU-EEA	0.0361%	0.0976%	0.4141%	0.0054%	0.0176%	0.1045%

Note: Funding needs estimated under home state principle and different scenarios for mean probability of default and coverage level

Source: Methodological report, Table 3.2 - Eurostat; own elaboration

Table 25: Estimates of EAD corresponding to export flows in the EU-EEA (m €)

	Life			Non-life insurance			Total
	Exports via branches	Exports via FPS	Total exports	Exports via branches	Exports via FPS	Total exports	Total exports
AT	159.4	0.0	159.4	48.6	0.0	48.6	208.0
BE	2 150.3	1 632.3	3 782.5	2 592.3	478.1	3 070.4	6 852.9
BG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CY	38.0	364.8	402.8	14.1	0.0	14.1	416.9
CZ	14.4	1.4	15.9	4.0	1.1	5.1	20.9
DE	1 612.1	2 454.5	4 066.6	3 222.9	695.5	3 918.5	7 985.1
DK	655.8	147.3	803.1	1 371.9	199.7	1 571.6	2 374.7
EE	271.9	0.0	271.9	0.0	0.0	0.0	271.9
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FI	2 611.9	0.0	2 611.9	0.0	38.1	38.1	2 650.0
FR	2 741.0	1 151.0	3 892.0	7 193.9	861.1	8 054.9	11 946.9
GR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HU	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IE	12 619.7	67 698.9	80 318.5	5 788.8	5 508.1	11 296.9	91 615.5
IS	0.0	0.0	0.0	0.0	6.0	6.0	6.0
IT	1 021.6	1 916.4	2 938.0	230.5	430.6	661.1	3 599.1
LI	0.0	20 841.1	20 841.1	4.5	117.2	121.7	20 962.8
LT	0.0	0.0	0.0	1.2	0.7	1.9	1.9
LU	6 381.6	72 633.3	79 014.9	35.8	1 960.9	1 996.7	81 011.5
LV	0.0	0.0	0.0	8.5	0.0	8.5	8.5
MT	1.5	31.6	33.0	3.6	465.6	469.2	502.2
NL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO	0.0	0.0	0.0	20.8	714.4	735.2	735.2
PL	2.5	0.0	2.5	0.0	0.0	0.0	2.5
PT	403.1	4.6	407.7	31.5	1.9	33.4	441.1
RO	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SI	0.0	1.9	1.9	0.0	0.4	0.4	2.3
SK	0.0	0.0	0.0	4.2	1.3	5.5	5.5
UK	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EU	30 684.8	148 037.8	178 722.6	20 503.1	10 643.2	31 146.3	209 868.9
EU-EEA	30 684.8	168 878.9	199 563.7	20 528.3	11 480.8	32 009.2	231 572.9

Source: Annex on cross-border insurance activity in the EU-EEA, Table 2.4 - Methodological report, CEIOPS

Table 26 - Uneven protection of policyholders in Member States

		Importing Member State			
		Home IGS	Host IGS	Home and Host IGS	No IGS
Exporting Member State	Home IGS				+
	Host IGS	-			
	Home and Host IGS				+
	No IGS	-			

Legend: + = The cross-border activity is more protected than the domestic one; - = The cross-border activity is less protected than the domestic one

Note: Uneven policyholders' protection due to IGS design features other than geographic scope are also possible (not considered in the Table).

Source: Annex on cross-border insurance activity in the EU-EEA, Table 1.4 - own elaboration

Table 27: Life insurance – Cases of uneven protection of policyholders within each Member State.

Life Exporting Countries	Importing Countries														United Kingdom																
	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland		Ireland	Italy	Liechtenstein	Lithuania	Luxembourg	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	
Austria			-			-																									
Belgium			-			-																									
Bulgaria	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		-	+	+	+	
Cyprus			-			-																									
Czech Rep.			-			-																									
Germany	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Denmark			-			-																									
Estonia			-			-																									
Spain	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Finland			-			-																									
France	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Greece			-			-																									
Hungary			-			-																									
Iceland			-			-																									
Ireland			-			-																									
Italy			-			-																									
Liechtenstein			-			-																									
Lithuania			-			-																									
Luxembourg			-			-																									
Latvia	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Malta			-			-																									
Netherlands			-			-																									
Norway			-			-																									
Poland	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Portugal			-			-																									
Romania	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	
Sweden			-			-																									
Slovenia			-			-																									
Slovakia			-			-																									
United Kingdom	+	+		+	+		+	+		+	+	+	+	+	+	+	+	+	+			+	+		+		+	+	+	+	

Legend: + / - = The cross-border activity is more/less protected than the domestic one

Source: Annex on cross-border insurance activity in the EU-EEA, Table 1.5 - Oxera report, CEIOPS updates, own graphical presentation

Table 28: Non-life insurance – Cases of uneven protection of policyholders within each Member State

Non-Life Non-motor Exporting Countries	Importing Countries	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Ireland	Italy	Liechtenste	Lithuania	Luxembou	Latvia	Malta	Netherland	Norway	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia	United King			
		Austria							-																									
Belgium								-																										
Bulgaria								-																										
Cyprus																																		
Czech Rep.																																		
Germany																																		
Denmark		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Estonia								-																										
Spain		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Finland																																		
France		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Greece																																		
Hungary																																		
Iceland																																		
Ireland		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Italy																																		
Liechtenstein																																		
Lithuania																																		
Luxembourg																																		
Latvia		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Malta																																		
Netherlands																																		
Norway																									+	+		+	+	+				
Poland																																		
Portugal																																		
Romania		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				
Sweden																																		
Slovenia																																		
Slovakia																																		
United Kingdom		+	+	+	+	+	+		+		+		+	+	+		+	+	+	+			+		+	+		+	+	+				

Legend: + / - = The cross-border activity is more/less protected than the domestic one

Source: Annex on cross-border insurance activity in the EU-EEA, Table 1.6 - Oxera report, CEIOPS updates, own graphical presentation

Table 29 – Life insurance: Raking of largest insurance failure IGS can deal with

	PD=0.1% $\alpha=75\%$	PD=0.1% $\alpha=90\%$	PD=0.1% $\alpha=99\%$	PD=0.5% $\alpha=75\%$	PD=0.5% $\alpha=90\%$	PD=0.5% $\alpha=99\%$
AT	..	..	2	..	2	1
BE	..	4	3	4	3	2
BG	..	..	..	..	..	1
CY	..	..	3	..	..	1
CZ	..	..	3	..	3	1
DE	..	..	4	4	4	2
DK	..	..	3	3	3	2
EE	..	..	2	..	..	1
ES	..	4	4	4	4	2
FI	3	3	3	3	3	2
FR	..	4	4	4	4	2
GR	..	4	4	4	4	2
HU	..	..	2	..	3	2
IE	..	..	2	..	2	2
IS	..	..	..	..	..	1
IT	..	4	3	4	4	2
LI	..	..	..	3	3	2
LT	..	..	..	..	..	2
LU	..	3	3	3	3	3
LV	2	2	2	2	2	1
MT	2	2	2	2	2	2
NL	..	..	2	..	2	2
NO	4	3	3	3	3	1
PL	..	..	4	4	4	1
PT	..	4	3	4	3	2
RO	3	3	2	2	2	2
SE	4	4	3	4	3	3
SI	..	..	3	..	3	1
SK	..	4	3	4	3	1
UK	4	4	4	4	4	3

Legend: **1** = company size rank is between 1 and 5; **2** = company size rank is between 6 and 10; **3** = company size rank is between 11 and 15; **4** = company size rank is below 15; **..** = not defined using current data

Note: funding needs estimated under home state principle and different scenarios for mean probability of default and coverage level

Source: Supplementary tables to the methodological report, Table 2.9 - Methodological report, CEIOPS and CEA data, own elaboration.

Table 30 – Non-Life insurance: Raking of largest insurance failure that IGS can deal with

	PD=0.1% $\alpha=75\%$	PD=0.1% $\alpha=90\%$	PD=0.1% $\alpha=99\%$	PD=0.5% $\alpha=75\%$	PD=0.5% $\alpha=90\%$	PD=0.5% $\alpha=99\%$
AT	..	..	2	..	2	1
BE	..	4	4	4	4	2
BG	..	..	3	..	3	3
CY	..	..	..	..	..	2
CZ	..	3	3	3	3	2
DE	4	4	4	4	4	2
DK	..	3	3	3	3	2
EE	..	..	2	..	2	1
ES	..	4	4	4	4	1
FI	4	3	2	3	3	2
FR	4	4	4	4	4	1
GR	..	..	4	..	4	2
HU	..	..	3	3	3	2
IE	3	3	3	3	3	2
IS	..	..	..	..	..	..
IT	4	4	3	4	3	1
LI	..	3	3	3	3	2
LT	..	..	3	..	3	2
LU	..	3	3	3	3	2
LV	3	3	3	3	3	2
MT	4	4	3	4	3	2
NL	..	2	2	2	2	2
NO	..	3	3	3	3	2
PL	..	..	3	4	4	1
PT	..	4	4	4	4	2
RO	..	3	3	3	3	2
SE	4	4	3	4	3	2
SI	..	3	2	3	3	1
SK	..	4	3	4	3	1
UK	..	4	4	4	4	2

Legend: 1 = company size rank is between 1 and 5; 2 = company size rank is between 6 and 10; 3 = company size rank is between 11 and 15; 4 = company size rank is below 15; .. = not defined using current data

Note: funding needs estimated under home state principle and different scenarios for mean probability of default and coverage level

Source: Supplementary tables to the methodological report, Table 2.10 - Methodological report, CEIOPS and CEA data, own elaboration.

Table 31 – Percentage of gross written premiums supporting IGS funding needs

	PD=0.5%			PD=0.1%		
	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$	$\alpha=75\%$	$\alpha=90\%$	$\alpha=99\%$
AT	0.32%	0.98%	4.74%	0.04%	0.17%	1.18%
BE	0.42%	1.28%	6.16%	0.06%	0.22%	1.54%
BG	0.08%	0.21%	0.88%	0.01%	0.04%	0.22%
CY	0.34%	1.08%	5.46%	0.05%	0.18%	1.36%
CZ	0.18%	0.51%	2.27%	0.03%	0.09%	0.57%
DE	0.52%	1.33%	5.21%	0.08%	0.25%	1.32%
DK	0.56%	1.42%	5.54%	0.09%	0.26%	1.41%
EE	0.10%	0.47%	3.68%	0.01%	0.06%	0.85%
ES	0.37%	0.95%	3.80%	0.06%	0.18%	0.96%
FI	0.45%	1.67%	10.00%	0.05%	0.26%	2.43%
FR	0.51%	1.38%	5.88%	0.07%	0.25%	1.49%
GR	0.19%	0.51%	2.20%	0.03%	0.09%	0.55%
HU	0.17%	0.41%	1.57%	0.03%	0.08%	0.40%
IE	0.28%	0.74%	3.11%	0.04%	0.13%	0.79%
IS	0.18%	0.64%	3.70%	0.02%	0.10%	0.90%
IT	0.35%	1.02%	4.74%	0.05%	0.18%	1.19%
LI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
LT	0.13%	0.38%	1.67%	0.02%	0.07%	0.42%
LU	0.58%	1.37%	4.92%	0.09%	0.26%	1.25%
LV	0.07%	0.23%	1.08%	0.01%	0.04%	0.27%
MT	0.24%	0.80%	4.28%	0.03%	0.13%	1.06%
NL	0.30%	0.85%	3.78%	0.04%	0.15%	0.95%
NO	0.32%	1.24%	7.91%	0.04%	0.18%	1.90%
PL	0.12%	0.44%	2.51%	0.01%	0.07%	0.61%
PT	0.23%	0.73%	3.67%	0.03%	0.12%	0.91%
RO	0.11%	0.27%	1.01%	0.02%	0.05%	0.26%
SE	0.74%	2.21%	10.51%	0.10%	0.38%	2.63%
SI	0.14%	0.55%	3.47%	0.02%	0.08%	0.83%
SK	0.14%	0.45%	2.41%	0.02%	0.07%	0.60%
UK	0.43%	1.14%	4.62%	0.07%	0.21%	1.17%
EU	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%
EU-EEA	0.43%	1.17%	4.95%	0.06%	0.21%	1.25%

Note: estimates based on the home state principle, under different scenarios for the ‘over the cycle’ probability of default and levels of protection.

Source: Supplementary tables to the methodological report, Table 2.8 -Methodological report, Table 3.2; CEIOPS, CEA, own elaboration

ACRONYMS

AMICE - Association of mutual insurers and insurance cooperatives in Europe

CEA – European insurance and reinsurance federation.

DGS – Deposit Guarantee Scheme

EFDI – European Forum of Deposit Insurers

EFRP - the European federation for pension funds and other institutions for occupational pension provision

FINUSE - Commission's Forum of user experts in the area of financial services

FPS – Free Provision of Services

IA – Impact Assessment

ICS – Investor Compensation Scheme

MS – Member State

MR – Methodological report

SME – Small Medium Enterprise

VaR – Value at Risk

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IMPACT ASSESSMENT

PART III

Accompanying document to the

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A5.1. Host state Principle

Table 1: IGS funding needs for Total insurance business under Host state principle

		PD = 0.5%			PD=0.1%		
$\alpha \rightarrow$		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	41.41	126.38	614.23	5.61	21.51	153.37
	Share of Premiums						
BE	Funding needs (m€)	116.44	351.65	1 688.33	15.89	60.18	422.10
	Share of Premiums						
BG	Funding needs (m€)	0.28	0.75	3.11	0.04	0.14	0.79
	Share of Premiums						
CY	Funding needs (m€)	1.66	5.24	26.47	0.22	0.88	6.58
	Share of Premiums						
CZ	Funding needs (m€)	6.58	18.58	82.38	0.95	3.29	20.75
	Share of Premiums						
DE	Funding needs (m€)	758.64	1 935.44	7 593.02	117.07	359.58	1 927.51
	Share of Premiums						
DK	Funding needs (m€)	96.82	246.26	962.52	14.97	45.81	244.38
	Share of Premiums						
EE	Funding needs (m€)	0.13	0.63	4.98	0.01	0.08	1.15
	Share of Premiums						
ES	Funding needs (m€)	157.54	406.72	1 619.01	24.11	75.16	410.70
	Share of Premiums						
FI	Funding needs (m€)	20.44	75.06	450.77	2.38	11.51	109.47
	Share of Premiums						
FR	Funding needs (m€)	924.61	2 521.83	10 729.62	136.16	454.26	2 710.83
	Share of Premiums						
GB	Funding needs (m€)	1 530.08	4 020.82	16 354.81	231.34	737.06	4 143.92
	Share of Premiums						
GR	Funding needs (m€)	6.64	18.25	78.37	0.97	3.28	19.79
	Share of Premiums						
HU	Funding needs (m€)	4.51	11.23	42.79	0.71	2.11	10.88
	Share of Premiums						
IE	Funding needs (m€)	104.42	281.07	1 177.07	15.52	50.95	297.71
	Share of Premiums						
IS	Funding needs (m€)	0.40	1.43	8.27	0.05	0.22	2.02
	Share of Premiums						
IT	Funding needs (m€)	283.97	833.98	3 875.00	39.59	144.81	971.93
	Share of Premiums						
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums						
LT	Funding needs (m€)	0.48	1.35	5.99	0.07	0.24	1.51
	Share of Premiums						
LU	Funding needs (m€)	59.44	141.24	507.41	9.61	27.05	129.18
	Share of Premiums						
LV	Funding needs (m€)	0.18	0.54	2.60	0.02	0.09	0.65
	Share of Premiums						
MT	Funding needs (m€)	1.14	3.76	20.03	0.14	0.61	4.95
	Share of Premiums						
NL	Funding needs (m€)	209.47	594.48	2 652.50	29.96	105.03	667.70
	Share of Premiums						
NO	Funding needs (m€)	44.78	173.50	1 106.09	4.98	25.76	266.05
	Share of Premiums						
PL	Funding needs (m€)	10.58	37.56	217.06	1.27	5.88	53.02
	Share of Premiums						
PT	Funding needs (m€)	26.83	83.99	420.39	3.56	14.10	104.63
	Share of Premiums						
RO	Funding needs (m€)	1.13	2.80	10.58	0.18	0.53	2.69
	Share of Premiums						
SE	Funding needs (m€)	149.65	448.61	2 135.34	20.54	77.07	534.33
	Share of Premiums						
SI	Funding needs (m€)	1.76	6.80	43.21	0.20	1.01	10.40
	Share of Premiums						
SK	Funding needs (m€)	1.60	5.26	27.91	0.20	0.86	6.90
	Share of Premiums						

Table 2: IGS funding needs for the Life business line under Host state principle

		PD = 0.5%				PD=0.1%		
		$\alpha \rightarrow$	75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	36.53	109.34	519.52	5.02	18.80	130.02	
	Share of Premiums							
BE	Funding needs (m€)	101.40	312.65	1 538.05	13.62	52.92	383.54	
	Share of Premiums							
BG	Funding needs (m€)	0.13	0.38	1.81	0.02	0.07	0.45	
	Share of Premiums							
CY	Funding needs (m€)	1.25	4.31	24.06	0.15	0.69	5.91	
	Share of Premiums							
CZ	Funding needs (m€)	4.38	13.82	69.80	0.58	2.31	17.36	
	Share of Premiums							
DE	Funding needs (m€)	577.70	1 475.57	5 797.29	89.07	274.00	1 471.56	
	Share of Premiums							
DK	Funding needs (m€)	85.10	224.10	913.88	12.85	41.04	231.52	
	Share of Premiums							
EE	Funding needs (m€)	0.07	0.36	3.12	0.01	0.04	0.71	
	Share of Premiums							
ES	Funding needs (m€)	122.95	314.87	1 241.05	18.92	58.40	314.98	
	Share of Premiums							
FI	Funding needs (m€)	16.34	60.99	372.99	1.88	9.26	90.32	
	Share of Premiums							
FR	Funding needs (m€)	820.17	2 250.78	9 647.41	120.25	404.24	2 436.13	
	Share of Premiums							
GB	Funding needs (m€)	1 479.60	3 883.29	15 771.29	223.91	712.26	3 996.42	
	Share of Premiums							
GR	Funding needs (m€)	5.10	14.51	64.98	0.73	2.56	16.35	
	Share of Premiums							
HU	Funding needs (m€)	4.00	10.08	38.92	0.62	1.88	9.89	
	Share of Premiums							
IE	Funding needs (m€)	96.76	264.61	1 129.46	14.22	47.60	285.29	
	Share of Premiums							
IS	Funding needs (m€)	0.04	0.21	2.00	0.00	0.03	0.45	
	Share of Premiums							
IT	Funding needs (m€)	264.69	769.44	3 532.22	37.19	134.30	886.94	
	Share of Premiums							
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
	Share of Premiums							
LT	Funding needs (m€)	0.37	1.13	5.37	0.05	0.19	1.34	
	Share of Premiums							
LU	Funding needs (m€)	56.32	133.64	479.24	9.12	25.61	122.02	
	Share of Premiums							
LV	Funding needs (m€)	0.04	0.19	1.45	0.00	0.03	0.34	
	Share of Premiums							
MT	Funding needs (m€)	0.65	2.35	13.77	0.08	0.36	3.36	
	Share of Premiums							
NL	Funding needs (m€)	171.55	503.46	2 337.43	23.93	87.45	586.32	
	Share of Premiums							
NO	Funding needs (m€)	35.44	139.17	900.57	3.89	20.50	216.08	
	Share of Premiums							
PL	Funding needs (m€)	9.06	31.07	172.76	1.12	4.96	42.43	
	Share of Premiums							
PT	Funding needs (m€)	23.82	74.50	372.60	3.16	12.51	92.74	
	Share of Premiums							
RO	Funding needs (m€)	0.59	1.49	5.79	0.09	0.28	1.47	
	Share of Premiums							
SE	Funding needs (m€)	127.14	363.39	1 635.17	18.09	63.97	411.32	
	Share of Premiums							
SI	Funding needs (m€)	0.97	3.61	22.09	0.11	0.55	5.35	
	Share of Premiums							
SK	Funding needs (m€)	1.39	4.30	21.27	0.19	0.73	5.30	
	Share of Premiums							

Table 3: IGS funding needs for the Non-Life business line under Host state principle

		PD = 0.5%				PD=0.1%			
		α^*	75%	90%	99%	75%	90%	99%	
AT	Funding needs (m€)	6.54	20.43	102.07	0.87	3.43	25.41		
	Share of Premiums								
BE	Funding needs (m€)	12.42	34.64	151.47	1.80	6.17	38.19		
	Share of Premiums								
BG	Funding needs (m€)	0.16	0.40	1.57	0.02	0.08	0.40		
	Share of Premiums								
CY	Funding needs (m€)	0.25	0.66	2.71	0.04	0.12	0.69		
	Share of Premiums								
CZ	Funding needs (m€)	1.51	3.62	13.14	0.24	0.69	3.34		
	Share of Premiums								
DE	Funding needs (m€)	186.95	476.35	1 865.86	28.87	88.55	473.69		
	Share of Premiums								
DK	Funding needs (m€)	6.82	15.88	55.58	1.12	3.07	14.16		
	Share of Premiums								
EE	Funding needs (m€)	0.05	0.18	1.25	0.00	0.03	0.30		
	Share of Premiums								
ES	Funding needs (m€)	36.67	95.62	385.25	5.57	17.59	97.66		
	Share of Premiums								
FI	Funding needs (m€)	3.95	14.16	82.81	0.47	2.20	20.19		
	Share of Premiums								
FR	Funding needs (m€)	113.67	304.82	1 270.69	16.94	55.35	321.48		
	Share of Premiums								
GB	Funding needs (m€)	78.36	207.63	853.10	11.78	37.92	216.03		
	Share of Premiums								
GR	Funding needs (m€)	1.31	3.32	12.87	0.20	0.62	3.27		
	Share of Premiums								
HU	Funding needs (m€)	0.27	0.65	2.37	0.04	0.12	0.60		
	Share of Premiums								
IE	Funding needs (m€)	7.07	16.36	56.88	1.16	3.17	14.49		
	Share of Premiums								
IS	Funding needs (m€)	0.36	1.20	6.39	0.05	0.19	1.58		
	Share of Premiums								
IT	Funding needs (m€)	20.80	63.40	307.77	2.82	10.80	76.86		
	Share of Premiums								
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums								
LT	Funding needs (m€)	0.12	0.31	1.24	0.02	0.06	0.31		
	Share of Premiums								
LU	Funding needs (m€)	2.88	6.93	25.36	0.46	1.32	6.45		
	Share of Premiums								
LV	Funding needs (m€)	0.13	0.35	1.47	0.02	0.06	0.37		
	Share of Premiums								
MT	Funding needs (m€)	0.38	1.16	5.66	0.05	0.20	1.41		
	Share of Premiums								
NL	Funding needs (m€)	56.53	157.25	685.05	8.21	28.06	172.78		
	Share of Premiums								
NO	Funding needs (m€)	6.53	23.95	143.54	0.76	3.68	34.87		
	Share of Premiums								
PL	Funding needs (m€)	1.48	5.98	39.83	0.16	0.87	9.51		
	Share of Premiums								
PT	Funding needs (m€)	2.95	9.26	46.47	0.39	1.55	11.56		
	Share of Premiums								
RO	Funding needs (m€)	0.50	1.23	4.56	0.08	0.23	1.16		
	Share of Premiums								
SE	Funding needs (m€)	30.32	99.17	522.29	3.89	16.26	129.20		
	Share of Premiums								
SI	Funding needs (m€)	0.64	2.52	16.35	0.07	0.37	3.92		
	Share of Premiums								
SK	Funding needs (m€)	0.22	0.85	5.52	0.02	0.13	1.32		
	Share of Premiums								

Table 4: Relative variations in funding needs for Total insurance, the Life and the Non-Life business line when moving from the home to host state principle

Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line	Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line
AT	-0.35%	-0.27%	-0.44%	IS	0.00%	0.00%	0.00%
BE	-1.69%	-0.76%	-5.34%	IT	4.24%	4.45%	3.50%
BG	0.00%	0.00%	0.00%	LI	N.A.	N.A.	N.A.
CY	-8.67%	-12.87%	0.00%	LT	10.10%	13.78%	3.94%
CZ	8.74%	13.31%	1.61%	LU	-7.08%	-8.04%	2.46%
DE	0.71%	1.02%	0.37%	LV	7.29%	43.40%	-3.87%
DK	-5.10%	-0.59%	-16.71%	MT	3.09%	1.33%	4.65%
EE	-30.00%	-53.39%	6.72%	NL	0.00%	0.00%	0.00%
ES	0.00%	0.00%	0.00%	NO	14.78%	1.08%	72.36%
FI	-4.17%	-7.04%	0.00%	PL	-0.01%	-0.01%	0.00%
FR	-1.82%	-0.70%	-4.94%	PT	-0.93%	-1.01%	-0.64%
GB	0.67%	0.00%	5.04%	RO	0.00%	0.00%	0.00%
GR	0.92%	0.20%	2.66%	SE	0.00%	0.00%	0.00%
HU	0.00%	0.00%	0.00%	SI	0.00%	0.00%	0.00%
IE	-8.60%	-5.83%	-35.54%	SK	-0.23%	0.00%	-0.85%

A5.2. Setting up a EU IGS covering cross-border activity (branches and FPS)

Table 5: IGS funding needs for Total insurance sector under a domestic activity regime supplemented by an additional

IGS covering all cross border activities, including those conducted under FPS

		α→ PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	41.41	126.38	614.23	5.61	21.51	153.37
	Share of Premiums						
BE	Funding needs (m€)	112.34	339.25	1 628.81	15.33	58.06	407.22
	Share of Premiums						
BG	Funding needs (m€)	0.28	0.75	3.11	0.04	0.14	0.79
	Share of Premiums						
CY	Funding needs (m€)	1.43	4.50	22.72	0.19	0.75	5.65
	Share of Premiums						
CZ	Funding needs (m€)	6.04	17.05	75.57	0.87	3.02	19.03
	Share of Premiums						
DE	Funding needs (m€)	745.39	1 901.65	7 460.47	115.02	353.30	1 893.86
	Share of Premiums						
DK	Funding needs (m€)	96.17	244.59	955.99	14.87	45.50	242.72
	Share of Premiums						
EE	Funding needs (m€)	0.13	0.61	4.79	0.01	0.08	1.11
	Share of Premiums						
ES	Funding needs (m€)	157.54	406.72	1 619.01	24.11	75.16	410.70
	Share of Premiums						
FI	Funding needs (m€)	20.40	74.91	449.84	2.38	11.49	109.25
	Share of Premiums						
FR	Funding needs (m€)	922.66	2 516.51	10 707.00	135.87	453.31	2 705.11
	Share of Premiums						
GB	Funding needs (m€)	1 519.96	3 994.22	16 246.62	229.81	732.18	4 116.51
	Share of Premiums						
GR	Funding needs (m€)	6.58	18.09	77.66	0.96	3.25	19.61
	Share of Premiums						
HU	Funding needs (m€)	4.51	11.23	42.79	0.71	2.11	10.88
	Share of Premiums						
IE	Funding needs (m€)	48.37	130.19	545.20	7.19	23.60	137.89
	Share of Premiums						
IS	Funding needs (m€)	0.40	1.42	8.20	0.05	0.22	2.00
	Share of Premiums						
IT	Funding needs (m€)	269.18	790.54	3 673.18	37.53	137.27	921.30
	Share of Premiums						
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums						
LT	Funding needs (m€)	0.43	1.22	5.41	0.06	0.22	1.36
	Share of Premiums						
LU	Funding needs (m€)	2.40	5.71	20.52	0.39	1.09	5.22
	Share of Premiums						
LV	Funding needs (m€)	0.16	0.49	2.34	0.02	0.08	0.58
	Share of Premiums						
MT	Funding needs (m€)	0.63	2.07	11.01	0.08	0.34	2.72
	Share of Premiums						
NL	Funding needs (m€)	209.47	594.48	2 652.50	29.96	105.03	667.70
	Share of Premiums						
NO	Funding needs (m€)	38.31	148.42	946.22	4.26	22.04	227.60
	Share of Premiums						
PL	Funding needs (m€)	10.58	37.56	217.06	1.27	5.88	53.02
	Share of Premiums						
PT	Funding needs (m€)	26.83	83.97	420.32	3.56	14.10	104.61
	Share of Premiums						
RO	Funding needs (m€)	1.13	2.80	10.58	0.18	0.53	2.69
	Share of Premiums						
SE	Funding needs (m€)	149.65	448.61	2 135.34	20.54	77.07	534.33
	Share of Premiums						
SI	Funding needs (m€)	1.76	6.79	43.19	0.20	1.01	10.39
	Share of Premiums						
SK	Funding needs (m€)	1.60	5.26	27.89	0.20	0.86	6.89
	Share of Premiums						
Additional	Funding needs (m€)	172.68	449.43	1821.86	26.34	82.54	460.81
	Share of Premiums						

Table 6: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for Total insurance sector when moving from home state principle to a domestic activity regime supplemented by an additional IGS covering

all cross border activities, including those conducted under FPS (in m€)						
α→	PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.15	0.44	2.16	0.02	0.08	0.54
BE	6.11	18.46	88.63	0.83	3.16	22.16
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.39	1.24	6.26	0.05	0.21	1.56
CZ	0.02	0.04	0.19	0.00	0.01	0.05
DE	7.92	20.21	79.27	1.22	3.75	20.12
DK	5.86	14.90	58.22	0.91	2.77	14.78
EE	0.06	0.30	2.32	0.01	0.04	0.54
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.93	3.42	20.53	0.11	0.52	4.98
FR	19.10	52.10	221.65	2.81	9.38	56.00
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	65.88	177.34	742.65	9.79	32.15	187.83
IS	0.00	0.01	0.06	0.00	0.00	0.02
IT	3.24	9.52	44.22	0.45	1.65	11.09
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.01	0.03	0.00	0.00	0.01
LU	61.57	146.30	525.56	9.95	28.01	133.80
LV	0.01	0.02	0.08	0.00	0.00	0.02
MT	0.48	1.58	8.42	0.06	0.26	2.08
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.71	2.74	17.45	0.08	0.41	4.20
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.26	0.81	4.03	0.03	0.14	1.00
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.02	0.00	0.00	0.01
SK	0.00	0.02	0.08	0.00	0.00	0.02

Table 7: IGS funding needs for the Life business line under a domestic activity regime supplemented by an additional IGS covering all cross border activities including those conducted under FPS

		$\alpha \rightarrow$ PD = 0.5%				PD=0.1%			
		75%	90%	99%	75%	90%	99%		
AT	Funding needs (m€)	36.53	109.34	519.52	5.02	18.80	130.02		
	Share of Premiums								
BE	Funding needs (m€)	99.87	307.95	1 514.91	13.41	52.13	377.77		
	Share of Premiums								
BG	Funding needs (m€)	0.13	0.38	1.81	0.02	0.07	0.45		
	Share of Premiums								
CY	Funding needs (m€)	1.01	3.46	19.35	0.12	0.55	4.75		
	Share of Premiums								
CZ	Funding needs (m€)	3.86	12.17	61.45	0.51	2.03	15.28		
	Share of Premiums								
DE	Funding needs (m€)	568.83	1 452.91	5 708.26	87.71	269.79	1 448.96		
	Share of Premiums								
DK	Funding needs (m€)	84.99	223.82	912.73	12.83	40.99	231.23		
	Share of Premiums								
EE	Funding needs (m€)	0.07	0.36	3.12	0.01	0.04	0.71		
	Share of Premiums								
ES	Funding needs (m€)	122.95	314.87	1 241.05	18.92	58.40	314.98		
	Share of Premiums								
FI	Funding needs (m€)	16.34	60.99	372.99	1.88	9.26	90.32		
	Share of Premiums								
FR	Funding needs (m€)	819.37	2 248.59	9 638.01	120.13	403.85	2 433.75		
	Share of Premiums								
GB	Funding needs (m€)	1 479.55	3 883.16	15 770.79	223.90	712.24	3 996.29		
	Share of Premiums								
GR	Funding needs (m€)	5.09	14.49	64.85	0.73	2.56	16.32		
	Share of Premiums								
HU	Funding needs (m€)	4.00	10.08	38.92	0.62	1.88	9.89		
	Share of Premiums								
IE	Funding needs (m€)	46.78	127.92	546.04	6.88	23.01	137.92		
	Share of Premiums								
IS	Funding needs (m€)	0.04	0.21	2.00	0.00	0.03	0.45		
	Share of Premiums								
IT	Funding needs (m€)	251.20	730.23	3 352.25	35.30	127.46	841.75		
	Share of Premiums								
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums								
LT	Funding needs (m€)	0.33	0.99	4.72	0.05	0.17	1.18		
	Share of Premiums								
LU	Funding needs (m€)	0.00	0.00	0.00	0.00	0.00	0.00		
	Share of Premiums								
LV	Funding needs (m€)	0.03	0.13	1.01	0.00	0.02	0.24		
	Share of Premiums								
MT	Funding needs (m€)	0.63	2.26	13.25	0.07	0.35	3.23		
	Share of Premiums								
NL	Funding needs (m€)	171.55	503.46	2 337.43	23.93	87.45	586.32		
	Share of Premiums								
NO	Funding needs (m€)	35.06	137.69	890.97	3.85	20.28	213.77		
	Share of Premiums								
PL	Funding needs (m€)	9.06	31.07	172.76	1.12	4.96	42.43		
	Share of Premiums								
PT	Funding needs (m€)	23.82	74.49	372.56	3.16	12.51	92.73		
	Share of Premiums								
RO	Funding needs (m€)	0.59	1.49	5.79	0.09	0.28	1.47		
	Share of Premiums								
SE	Funding needs (m€)	127.14	363.39	1 635.17	18.09	63.97	411.32		
	Share of Premiums								
SI	Funding needs (m€)	0.97	3.61	22.07	0.11	0.55	5.34		
	Share of Premiums								
SK	Funding needs (m€)	1.39	4.30	21.27	0.19	0.73	5.30		
	Share of Premiums								
Additional	Funding needs (m€)	134	347	1 399	21	64	354		
	Share of Premiums								

Table 8: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for the Life business line when moving from home state principle to a domestic activity regime supplemented by an additional IGS covering all cross border activities, including those conducted under FPS (in m€)

α→	PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.10	0.30	1.43	0.01	0.05	0.36
BE	2.30	7.09	34.86	0.31	1.20	8.69
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.43	1.48	8.27	0.05	0.24	2.03
CZ	0.01	0.03	0.15	0.00	0.00	0.04
DE	3.04	7.76	30.50	0.47	1.44	7.74
DK	0.61	1.62	6.60	0.09	0.30	1.67
EE	0.08	0.41	3.57	0.01	0.05	0.81
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	1.24	4.62	28.25	0.14	0.70	6.84
FR	6.55	17.97	77.03	0.96	3.23	19.45
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	55.97	153.07	653.35	8.23	27.54	165.03
IS	0.00	0.00	0.00	0.00	0.00	0.00
IT	2.22	6.46	29.65	0.31	1.13	7.44
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.00	0.00	0.00	0.00	0.00
LU	61.25	145.33	521.14	9.91	27.84	132.68
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.02	0.06	0.35	0.00	0.01	0.08
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.00	0.00	0.00	0.00	0.00	0.00
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.25	0.77	3.84	0.03	0.13	0.96
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.02	0.00	0.00	0.00
SK	0.00	0.00	0.00	0.00	0.00	0.00

Table 9: IGS funding needs for the Non-Life business line under a domestic activity regime supplemented by an additional IGS covering all cross border activities, including those conducted under FPS

		$\alpha \rightarrow$ PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	6.54	20.43	102.07	0.87	3.43	25.41
	Share of Premiums						
BE	Funding needs (m€)	10.96	30.57	133.66	1.59	5.45	33.70
	Share of Premiums						
BG	Funding needs (m€)	0.16	0.40	1.57	0.02	0.08	0.40
	Share of Premiums						
CY	Funding needs (m€)	0.24	0.63	2.59	0.04	0.11	0.66
	Share of Premiums						
CZ	Funding needs (m€)	1.49	3.56	12.90	0.24	0.68	3.28
	Share of Premiums						
DE	Funding needs (m€)	183.26	466.94	1 829.03	28.30	86.80	464.34
	Share of Premiums						
DK	Funding needs (m€)	6.66	15.50	54.26	1.09	2.99	13.82
	Share of Premiums						
EE	Funding needs (m€)	0.04	0.17	1.17	0.00	0.02	0.28
	Share of Premiums						
ES	Funding needs (m€)	36.67	95.62	385.25	5.57	17.59	97.66
	Share of Premiums						
FI	Funding needs (m€)	3.93	14.09	82.41	0.47	2.19	20.09
	Share of Premiums						
FR	Funding needs (m€)	113.06	303.18	1 263.84	16.85	55.05	319.75
	Share of Premiums						
GB	Funding needs (m€)	74.60	197.67	812.18	11.21	36.10	205.66
	Share of Premiums						
GR	Funding needs (m€)	1.28	3.23	12.54	0.20	0.60	3.18
	Share of Premiums						
HU	Funding needs (m€)	0.27	0.65	2.37	0.04	0.12	0.60
	Share of Premiums						
IE	Funding needs (m€)	1.24	2.87	9.98	0.20	0.56	2.54
	Share of Premiums						
IS	Funding needs (m€)	0.36	1.18	6.33	0.05	0.19	1.56
	Share of Premiums						
IT	Funding needs (m€)	19.63	59.84	290.47	2.66	10.19	72.54
	Share of Premiums						
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums						
LT	Funding needs (m€)	0.12	0.30	1.18	0.02	0.05	0.30
	Share of Premiums						
LU	Funding needs (m€)	1.16	2.78	10.19	0.19	0.53	2.59
	Share of Premiums						
LV	Funding needs (m€)	0.13	0.35	1.46	0.02	0.06	0.37
	Share of Premiums						
MT	Funding needs (m€)	0.07	0.22	1.10	0.01	0.04	0.27
	Share of Premiums						
NL	Funding needs (m€)	56.53	157.25	685.05	8.21	28.06	172.78
	Share of Premiums						
NO	Funding needs (m€)	3.43	12.58	75.43	0.40	1.93	18.32
	Share of Premiums						
PL	Funding needs (m€)	1.48	5.98	39.83	0.16	0.87	9.51
	Share of Premiums						
PT	Funding needs (m€)	2.95	9.25	46.46	0.39	1.55	11.56
	Share of Premiums						
RO	Funding needs (m€)	0.50	1.23	4.56	0.08	0.23	1.16
	Share of Premiums						
SE	Funding needs (m€)	30.32	99.17	522.29	3.89	16.26	129.20
	Share of Premiums						
SI	Funding needs (m€)	0.64	2.52	16.35	0.07	0.37	3.92
	Share of Premiums						
SK	Funding needs (m€)	0.22	0.85	5.51	0.02	0.12	1.32
	Share of Premiums						
Additional	Funding needs (m€)	25.79	65.13	255.07	4.02	12.11	64.59
	Share of Premiums						

Table 10: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for the Non-Life business line when moving from home state principle to a domestic activity regime supplemented by an additional IGS covering all cross border activities, including those conducted under FPS (in m€)

	α^{\wedge} PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.03	0.09	0.45	0.00	0.02	0.11
BE	2.16	6.03	26.36	0.31	1.07	6.65
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.01	0.03	0.12	0.00	0.01	0.03
CZ	0.00	0.01	0.03	0.00	0.00	0.01
DE	3.00	7.66	29.99	0.46	1.42	7.61
DK	1.53	3.56	12.48	0.25	0.69	3.18
EE	0.00	0.00	0.00	0.00	0.00	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.02	0.07	0.40	0.00	0.01	0.10
FR	6.52	17.47	72.84	0.97	3.17	18.43
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	9.72	22.51	78.26	1.60	4.36	19.93
IS	0.00	0.01	0.06	0.00	0.00	0.01
IT	0.47	1.42	6.90	0.06	0.24	1.72
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.00	0.01	0.00	0.00	0.00
LU	1.65	3.98	14.56	0.26	0.76	3.71
LV	0.01	0.02	0.07	0.00	0.00	0.02
MT	0.29	0.88	4.31	0.04	0.15	1.07
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.36	1.31	7.85	0.04	0.20	1.91
PL	0.00	0.00	0.00	0.00	0.00	0.00
PT	0.02	0.06	0.32	0.00	0.01	0.08
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.00	0.00	0.00	0.00
SK	0.00	0.01	0.06	0.00	0.00	0.01

Table 11: Relative variations in funding needs for Total insurance, Life and Non- Life insurance business when moving from the home to a domestic activity regime supplemented by an additional IGS covering all cross border activities, including those conducted under FPS

Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line	Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line
AT	-0.35%	-0.27%	-0.44%	IS	-0.78%	0.00%	-0.92%
BE	-5.16%	-2.25%	-16.48%	IT	-1.19%	-0.88%	-2.32%
BG	0.00%	0.00%	0.00%	LI	N.A.	NA	NA
CY	-21.60%	-29.93%	-4.41%	LT	-0.46%	0.00%	-1.24%
CZ	-0.25%	-0.24%	-0.27%	LU	-96.24%	-100.00%	-58.84%
DE	-1.05%	-0.53%	-1.61%	LV	-3.38%	0.00%	-4.43%
DK	-5.74%	-0.72%	-18.70%	MT	-43.32%	-2.55%	-79.67%
EE	-32.62%	-53.39%	0.00%	NL	0.00%	0.00%	0.00%
ES	0.00%	0.00%	0.00%	NO	-1.81%	0.00%	-9.42%
FI	-4.36%	-7.04%	-0.48%	PL	-0.01%	-0.01%	0.00%
FR	-2.03%	-0.79%	-5.45%	PT	-0.95%	-1.02%	-0.68%
GB	0.00%	0.00%	0.00%	RO	0.00%	0.00%	0.00%
GR	0.00%	0.00%	0.00%	SE	0.00%	0.00%	0.00%
HU	0.00%	0.00%	0.00%	SI	-0.05%	-0.09%	-0.03%
IE	-57.67%	-54.47%	-88.69%	SK	-0.30%	0.00%	-1.11%

Note that for LU Life the data provided for this policy option might not be reliable.

A5.3. Setting up a EU IGS covering cross-border activity (branches only)

Table 12: IGS funding needs for Total insurance sector under a domestic+FPS activity regime supplemented by an additional IGS covering cross border activities conducted via branches

		$\alpha \rightarrow$ PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	41.41	126.38	614.23	5.61	21.51	153.37
	Share of Premiums						
BE	Funding needs (m€)	113.85	343.83	1 650.80	15.54	58.84	412.72
	Share of Premiums						
BG	Funding needs (m€)	0.28	0.75	3.11	0.04	0.14	0.79
	Share of Premiums						
CY	Funding needs (m€)	1.59	5.02	25.34	0.21	0.84	6.30
	Share of Premiums						
CZ	Funding needs (m€)	6.04	17.05	75.60	0.87	3.02	19.04
	Share of Premiums						
DE	Funding needs (m€)	747.66	1 907.44	7 483.17	115.37	354.37	1 899.62
	Share of Premiums						
DK	Funding needs (m€)	96.82	246.26	962.52	14.97	45.81	244.38
	Share of Premiums						
EE	Funding needs (m€)	0.13	0.61	4.79	0.01	0.08	1.11
	Share of Premiums						
ES	Funding needs (m€)	157.54	406.72	1 619.01	24.11	75.16	410.70
	Share of Premiums						
FI	Funding needs (m€)	20.44	75.06	450.77	2.38	11.51	109.47
	Share of Premiums						
FR	Funding needs (m€)	924.61	2 521.83	10 729.62	136.16	454.26	2 710.83
	Share of Premiums						
GB	Funding needs (m€)	1 519.96	3 994.22	16 246.62	229.81	732.18	4 116.51
	Share of Premiums						
GR	Funding needs (m€)	6.58	18.09	77.66	0.96	3.25	19.61
	Share of Premiums						
HU	Funding needs (m€)	4.51	11.23	42.79	0.71	2.11	10.88
	Share of Premiums						
IE	Funding needs (m€)	100.30	269.99	1 130.65	14.91	48.94	285.97
	Share of Premiums						
IS	Funding needs (m€)	0.40	1.43	8.27	0.05	0.22	2.02
	Share of Premiums						
IT	Funding needs (m€)	271.01	795.92	3 698.16	37.79	138.20	927.57
	Share of Premiums						
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums						
LT	Funding needs (m€)	0.43	1.22	5.42	0.06	0.22	1.37
	Share of Premiums						
LU	Funding needs (m€)	58.91	139.98	502.87	9.53	26.80	128.03
	Share of Premiums						
LV	Funding needs (m€)	0.16	0.49	2.34	0.02	0.08	0.58
	Share of Premiums						
MT	Funding needs (m€)	1.10	3.63	19.35	0.14	0.59	4.78
	Share of Premiums						
NL	Funding needs (m€)	209.47	594.48	2 652.50	29.96	105.03	667.70
	Share of Premiums						
NO	Funding needs (m€)	38.99	151.08	963.18	4.34	22.43	231.68
	Share of Premiums						
PL	Funding needs (m€)	10.58	37.56	217.06	1.27	5.88	53.02
	Share of Premiums						
PT	Funding needs (m€)	26.83	83.99	420.39	3.56	14.10	104.63
	Share of Premiums						
RO	Funding needs (m€)	1.13	2.80	10.58	0.18	0.53	2.69
	Share of Premiums						
SE	Funding needs (m€)	149.65	448.61	2 135.34	20.54	77.07	534.33
	Share of Premiums						
SI	Funding needs (m€)	1.76	6.80	43.21	0.20	1.01	10.40
	Share of Premiums						
SK	Funding needs (m€)	1.60	5.26	27.91	0.20	0.86	6.90
	Share of Premiums						
Additional	Funding needs (m€)	54.64	147.69	626.17	8.12	26.66	157.97
	Share of Premiums						

Table 13: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for the Total insurance sector when moving from home state principle to a domestic+FPS activity regime supplemented by an additional IGS covering all cross border activities conducted via branches (in m€)

	$\alpha \rightarrow$ PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.15	0.44	2.16	0.02	0.08	0.54
BE	4.60	13.88	66.64	0.63	2.38	16.66
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.23	0.72	3.64	0.03	0.12	0.90
CZ	0.01	0.04	0.16	0.00	0.01	0.04
DE	5.65	14.42	56.57	0.87	2.68	14.36
DK	5.20	13.23	51.69	0.80	2.46	13.12
EE	0.06	0.30	2.32	0.01	0.04	0.54
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.89	3.26	19.60	0.10	0.50	4.76
FR	17.15	46.78	199.03	2.53	8.43	50.28
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	13.95	37.54	157.20	2.07	6.80	39.76
IS	0.00	0.00	0.00	0.00	0.00	0.00
IT	1.41	4.14	19.24	0.20	0.72	4.83
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.00	0.02	0.00	0.00	0.00
LU	5.06	12.03	43.21	0.82	2.30	11.00
LV	0.01	0.02	0.08	0.00	0.00	0.02
MT	0.00	0.01	0.07	0.00	0.00	0.02
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.02	0.08	0.49	0.00	0.01	0.12
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.25	0.79	3.96	0.03	0.13	0.99
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.00	0.00	0.00	0.00
SK	0.00	0.01	0.06	0.00	0.00	0.02

Table 14: IGS funding needs for the Life business line under a domestic+FPS activity regime supplemented by an additional IGS covering cross border activities conducted via branches

		$\alpha \rightarrow$ PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	36.53	109.34	519.52	5.02	18.80	130.02
	Share of Premiums						
BE	Funding needs (m€)	100.86	311.00	1 529.95	13.55	52.64	381.52
	Share of Premiums						
BG	Funding needs (m€)	0.13	0.38	1.81	0.02	0.07	0.45
	Share of Premiums						
CY	Funding needs (m€)	1.20	4.13	23.06	0.15	0.66	5.66
	Share of Premiums						
CZ	Funding needs (m€)	3.86	12.17	61.47	0.51	2.04	15.28
	Share of Premiums						
DE	Funding needs (m€)	570.66	1 457.60	5 726.67	87.99	270.66	1 453.63
	Share of Premiums						
DK	Funding needs (m€)	85.10	224.10	913.88	12.85	41.04	231.52
	Share of Premiums						
EE	Funding needs (m€)	0.07	0.36	3.12	0.01	0.04	0.71
	Share of Premiums						
ES	Funding needs (m€)	122.95	314.87	1 241.05	18.92	58.40	314.98
	Share of Premiums						
FI	Funding needs (m€)	16.34	60.99	372.99	1.88	9.26	90.32
	Share of Premiums						
FR	Funding needs (m€)	820.17	2 250.78	9 647.41	120.25	404.24	2 436.13
	Share of Premiums						
GB	Funding needs (m€)	1 479.55	3 883.16	15 770.79	223.90	712.24	3 996.29
	Share of Premiums						
GR	Funding needs (m€)	5.09	14.49	64.85	0.73	2.56	16.32
	Share of Premiums						
HU	Funding needs (m€)	4.00	10.08	38.92	0.62	1.88	9.89
	Share of Premiums						
IE	Funding needs (m€)	93.95	256.94	1 096.73	13.81	46.22	277.03
	Share of Premiums						
IS	Funding needs (m€)	0.04	0.21	2.00	0.00	0.03	0.45
	Share of Premiums						
IT	Funding needs (m€)	252.45	733.86	3 368.90	35.47	128.09	845.93
	Share of Premiums						
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums						
LT	Funding needs (m€)	0.33	0.99	4.72	0.05	0.17	1.18
	Share of Premiums						
LU	Funding needs (m€)	56.14	133.22	477.71	9.09	25.52	121.63
	Share of Premiums						
LV	Funding needs (m€)	0.03	0.13	1.01	0.00	0.02	0.24
	Share of Premiums						
MT	Funding needs (m€)	0.64	2.32	13.58	0.08	0.36	3.31
	Share of Premiums						
NL	Funding needs (m€)	171.55	503.46	2 337.43	23.93	87.45	586.32
	Share of Premiums						
NO	Funding needs (m€)	35.06	137.69	890.97	3.85	20.28	213.77
	Share of Premiums						
PL	Funding needs (m€)	9.06	31.07	172.76	1.12	4.96	42.43
	Share of Premiums						
PT	Funding needs (m€)	23.82	74.50	372.60	3.16	12.51	92.74
	Share of Premiums						
RO	Funding needs (m€)	0.59	1.49	5.79	0.09	0.28	1.47
	Share of Premiums						
SE	Funding needs (m€)	127.14	363.39	1 635.17	18.09	63.97	411.32
	Share of Premiums						
SI	Funding needs (m€)	0.97	3.61	22.09	0.11	0.55	5.35
	Share of Premiums						
SK	Funding needs (m€)	1.39	4.30	21.27	0.19	0.73	5.30
	Share of Premiums						
Additional	Funding needs (m€)	25.55	70.15	305.84	3.76	12.54	76.83
	Share of Premiums						

Table 15: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for the Life business line when moving from home state principle to a domestic+FPS activity regime supplemented by an additional IGS covering all cross border activities conducted via branches (in m€)

	$\alpha \rightarrow$ PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.10	0.30	1.43	0.01	0.05	0.36
BE	1.31	4.03	19.82	0.18	0.68	4.94
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.24	0.82	4.56	0.03	0.13	1.12
CZ	0.01	0.03	0.14	0.00	0.00	0.03
DE	1.20	3.08	12.09	0.19	0.57	3.07
DK	0.51	1.34	5.45	0.08	0.24	1.38
EE	0.08	0.41	3.57	0.01	0.05	0.81
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	1.24	4.62	28.25	0.14	0.70	6.84
FR	5.75	15.78	67.63	0.84	2.83	17.08
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	8.79	24.05	102.66	1.29	4.33	25.93
IS	0.00	0.00	0.00	0.00	0.00	0.00
IT	0.97	2.83	12.99	0.14	0.49	3.26
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.00	0.00	0.00	0.00	0.00
LU	5.10	12.11	43.43	0.83	2.32	11.06
LV	0.00	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	0.02	0.00	0.00	0.00
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.00	0.00	0.00	0.00	0.00	0.00
PL	0.00	0.00	0.03	0.00	0.00	0.01
PT	0.24	0.76	3.80	0.03	0.13	0.94
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.00	0.00	0.00	0.00
SK	0.00	0.00	0.00	0.00	0.00	0.00

Table 16: IGS funding needs for the Non-Life business line under a domestic+FPS activity regime supplemented by an additional IGS covering cross border activities conducted via branches

		$\alpha \rightarrow$ PD = 0.5%				PD=0.1%			
		75%	90%	99%		75%	90%	99%	
AT	Funding needs (m€)	6.54	20.43	102.07	0.87	3.43	25.41		
	Share of Premiums								
BE	Funding needs (m€)	11.28	31.48	137.63	1.63	5.61	34.70		
	Share of Premiums								
BG	Funding needs (m€)	0.16	0.40	1.57	0.02	0.08	0.40		
	Share of Premiums								
CY	Funding needs (m€)	0.24	0.63	2.59	0.04	0.11	0.66		
	Share of Premiums								
CZ	Funding needs (m€)	1.49	3.56	12.90	0.24	0.68	3.28		
	Share of Premiums								
DE	Funding needs (m€)	183.78	468.27	1 834.23	28.38	87.05	465.66		
	Share of Premiums								
DK	Funding needs (m€)	6.82	15.88	55.58	1.12	3.07	14.16		
	Share of Premiums								
EE	Funding needs (m€)	0.04	0.17	1.17	0.00	0.02	0.28		
	Share of Premiums								
ES	Funding needs (m€)	36.67	95.62	385.25	5.57	17.59	97.66		
	Share of Premiums								
FI	Funding needs (m€)	3.95	14.16	82.81	0.47	2.20	20.19		
	Share of Premiums								
FR	Funding needs (m€)	113.67	304.82	1 270.69	16.94	55.35	321.48		
	Share of Premiums								
GB	Funding needs (m€)	74.60	197.67	812.18	11.21	36.10	205.66		
	Share of Premiums								
GR	Funding needs (m€)	1.28	3.23	12.54	0.20	0.60	3.18		
	Share of Premiums								
HU	Funding needs (m€)	0.27	0.65	2.37	0.04	0.12	0.60		
	Share of Premiums								
IE	Funding needs (m€)	5.74	13.29	46.19	0.94	2.57	11.77		
	Share of Premiums								
IS	Funding needs (m€)	0.36	1.20	6.39	0.05	0.19	1.58		
	Share of Premiums								
IT	Funding needs (m€)	19.89	60.64	294.39	2.70	10.33	73.52		
	Share of Premiums								
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums								
LT	Funding needs (m€)	0.12	0.30	1.18	0.02	0.06	0.30		
	Share of Premiums								
LU	Funding needs (m€)	2.70	6.51	23.83	0.43	1.24	6.06		
	Share of Premiums								
LV	Funding needs (m€)	0.13	0.35	1.46	0.02	0.06	0.37		
	Share of Premiums								
MT	Funding needs (m€)	0.36	1.10	5.37	0.05	0.19	1.34		
	Share of Premiums								
NL	Funding needs (m€)	56.53	157.25	685.05	8.21	28.06	172.78		
	Share of Premiums								
NO	Funding needs (m€)	3.78	13.86	83.06	0.44	2.13	20.18		
	Share of Premiums								
PL	Funding needs (m€)	1.48	5.98	39.83	0.16	0.87	9.51		
	Share of Premiums								
PT	Funding needs (m€)	2.95	9.26	46.47	0.39	1.55	11.56		
	Share of Premiums								
RO	Funding needs (m€)	0.50	1.23	4.56	0.08	0.23	1.16		
	Share of Premiums								
SE	Funding needs (m€)	30.32	99.17	522.29	3.89	16.26	129.20		
	Share of Premiums								
SI	Funding needs (m€)	0.64	2.52	16.35	0.07	0.37	3.92		
	Share of Premiums								
SK	Funding needs (m€)	0.22	0.85	5.52	0.02	0.13	1.32		
	Share of Premiums								
Additional	Funding needs (m€)	17.20	43.68	171.55	2.67	8.11	43.48		
	Share of Premiums								

Table 17: Absolute reduction (positive amounts represent decreases in funding needs) in IGS funding needs for the Non-Life business line when moving from home state principle to a domestic+FPS activity regime supplemented by an additional IGS covering all cross border activities conducted via branches (in m€)

	α-» PD=0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
AT	0.03	0.09	0.45	0.00	0.02	0.11
BE	1.84	5.12	22.39	0.27	0.91	5.64
BG	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.01	0.03	0.12	0.00	0.01	0.03
CZ	0.00	0.01	0.03	0.00	0.00	0.01
DE	2.48	6.33	24.79	0.38	1.18	6.29
DK	1.37	3.19	11.15	0.22	0.62	2.84
EE	0.00	0.00	0.00	0.00	0.00	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.00	0.00	0.00	0.00	0.00	0.00
FR	5.90	15.83	65.99	0.88	2.87	16.70
GB	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00
IE	5.23	12.10	42.06	0.86	2.34	10.71
IS	0.00	0.00	0.00	0.00	0.00	0.00
IT	0.20	0.61	2.97	0.03	0.10	0.74
LI	NA	NA	NA	NA	NA	NA
LT	0.00	0.00	0.01	0.00	0.00	0.00
LU	0.10	0.25	0.92	0.02	0.05	0.23
LV	0.01	0.02	0.07	0.00	0.00	0.02
MT	0.00	0.01	0.03	0.00	0.00	0.01
NL	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.01	0.04	0.22	0.00	0.01	0.05
PL	0.00	0.00	0.00	0.00	0.00	0.00
PT	0.02	0.06	0.30	0.00	0.01	0.07
RO	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00
SI	0.00	0.00	0.00	0.00	0.00	0.00
SK	0.00	0.01	0.05	0.00	0.00	0.01

Table 18: Relative variations in funding needs for Total insurance, Life and Non- Life insurance business when from the home to a domestic+FPS activity regime supplemented by an additional IGS covering all moving activities conducted via branches

Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line	Country	Total Insurance	Life Insurance business line	Non-Life Insurance business line
AT	-0.35%	-0.27%	-0.44%	IS	0.00%	0.00%	0.00%
BE	-3.88%	-1.28%	-13.99%	IT	-0.52%	-0.38%	-1.00%
BG	0.00%	0.00%	0.00%	LI	NA	N.A.	N.A.
CY	-12.56%	-16.50%	-4.41%	LT	-0.29%	0.00%	-0.77%
CZ	-0.22%	-0.22%	-0.21%	LU	-7.91%	-8.33%	-3.72%
DE	-0.75%	-0.21%	-1.33%	LV	-3.38%	0.00%	-4.43%
DK	-5.10%	-0.59%	-16.71%	MT	-0.38%	-0.11%	-0.62%
EE	-32.62%	-53.39%	0.00%	NL	0.00%	0.00%	0.00%
ES	0.00%	0.00%	0.00%	NO	-0.05%	0.00%	-0.27%
FI	-4.17%	-7.04%	0.00%	PL	-0.01%	-0.01%	0.00%
FR	-1.82%	-0.70%	-4.94%	PT	-0.93%	-1.01%	-0.64%
GB	0.00%	0.00%	0.00%	RO	0.00%	0.00%	0.00%
GR	0.00%	0.00%	0.00%	SE	0.00%	0.00%	0.00%
HU	0.00%	0.00%	0.00%	SI	0.00%	0.00%	0.00%
IE	-12.21%	-8.56%	-47.66%	SK	-0.23%	0.00%	-0.85%

A5.4. A single pan-european IGS

Table 19: IGS funding needs at Member State level for Total insurance sector under a single pan-European scheme (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	55.74	127.42	435.90	9.23	24.77	111.04
BE	156.91	358.67	1 226.98	25.99	69.73	312.56
BG	0.32	0.74	2.53	0.05	0.14	0.64
CY	2.54	5.81	19.86	0.42	1.13	5.06
CZ	7.42	16.96	58.03	1.23	3.30	14.78
DE	830.80	1 899.09	6 496.56	137.61	369.23	1 654.92
DK	112.18	256.43	877.23	18.58	49.86	223.46
EE	0.47	1.07	3.67	0.08	0.21	0.93
ES	175.79	401.82	1 374.59	29.12	78.12	350.16
FI	36.32	83.03	284.04	6.02	16.14	72.36
FR	1 112.00	2 541.87	8 695.45	184.19	494.20	2 215.06
GB	1 726.47	3 946.47	13 500.41	285.97	767.28	3 439.07
GR	7.84	17.91	61.27	1.30	3.48	15.61
HU	4.86	11.10	37.99	0.80	2.16	9.68
IE	133.03	304.10	1 040.28	22.04	59.12	265.00
IS	0.66	1.50	5.13	0.11	0.29	1.31
IT	349.26	798.36	2 731.10	57.85	155.22	695.71
LI	N.A.	N.A.	NA	N.A.	N.A.	N.A.
LT	0.53	1.21	4.15	0.09	0.24	1.06
LU	66.08	151.04	516.69	10.94	29.37	131.62
LV	0.22	0.51	1.73	0.04	0.10	0.44
MT	1.63	3.74	12.78	0.27	0.73	3.26
NL	258.30	590.44	2 019.84	42.78	114.80	514.53
NO	71.59	163.64	559.80	11.86	31.82	142.60
PL	17.21	39.34	134.57	2.85	7.65	34.28
PT	37.47	85.64	292.96	6.21	16.65	74.63
RO	1.21	2.77	9.48	0.20	0.54	2.41
SE	196.52	449.21	1 536.69	32.55	87.34	391.45
SI	3.22	7.35	25.15	0.53	1.43	6.41
SK	2.36	5.39	18.45	0.39	1.05	4.70

Table 20: Relative variations between funding needs for Total Insurance sector at Member State level when moving state principle to a single pan-European scheme

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	34.13%	0.47%	-29.28%	64.10%	14.77%	-27.85%
BE	32.47%	0.27%	-28.56%	60.76%	13.91%	-27.21%
BG	15.70%	-1.14%	-18.65%	28.36%	5.73%	-18.10%
CY	39.71%	1.21%	-31.48%	75.46%	17.70%	-29.80%
CZ	22.57%	-0.74%	-23.40%	41.34%	8.94%	-22.53%
DE	10.29%	-1.18%	-13.84%	18.38%	3.41%	-13.54%
DK	9.96%	-1.18%	-13.51%	17.79%	3.28%	-13.22%
EE	143.40%	18.54%	-48.38%	330.59%	75.22%	-43.18%
ES	11.58%	-1.20%	-15.10%	20.75%	3.94%	-14.74%
FI	70.29%	6.01%	-39.61%	142.26%	34.39%	-36.66%
FR	18.08%	-1.04%	-20.43%	32.81%	6.81%	-19.78%
GB	13.59%	-1.20%	-16.90%	24.44%	4.79%	-16.46%
GR	19.03%	-0.99%	-21.11%	34.61%	7.25%	-20.40%
HU	7.83%	-1.09%	-11.22%	13.93%	2.45%	-11.02%
IE	16.44%	-1.12%	-19.22%	29.75%	6.06%	-18.64%
IS	62.41%	4.70%	-37.97%	124.34%	30.03%	-35.32%
IT	28.21%	-0.21%	-26.53%	52.30%	11.73%	-25.38%
||	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	23.01%	-0.70%	-23.67%	42.19%	9.15%	-22.77%
LU	3.29%	-0.64%	-5.38%	5.81%	0.89%	-5.33%
LV	31.88%	0.20%	-28.29%	59.59%	13.61%	-26.97%
MT	47.94%	2.40%	-34.22%	92.70%	22.11%	-32.17%
NL	23.31%	-0.68%	-23.85%	42.78%	9.30%	-22.94%
NO	83.50%	8.26%	-41.91%	173.37%	41.74%	-38.48%
PL	62.59%	4.72%	-38.01%	124.73%	30.12%	-35.35%
PT	38.31%	1.02%	-30.96%	72.59%	16.96%	-29.34%
RO	7.13%	-1.04%	-10.41%	12.66%	2.19%	-10.23%
SE	31.32%	0.13%	-28.04%	58.46%	13.32%	-26.74%
SI	82.84%	8.14%	-41.81%	171.78%	41.38%	-38.40%
SK	47.33%	2.31%	-34.04%	91.41%	21.78%	-32.01%

Table 21: IGS funding needs at Member State level for the Life business line under a single pan-European scheme (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	48.02	109.76	375.47	7.95	21.34	95.65
BE	138.77	317.20	1085.10	22.98	61.67	276.42
BG	0.17	0.38	1.31	0.03	0.07	0.33
CY	2.24	5.12	17.53	0.37	1.00	4.47
CZ	5.40	12.34	42.23	0.89	2.40	10.76
DE	631.42	1443.33	4937.46	104.59	280.62	1257.76
DK	97.45	222.75	762.00	16.14	43.31	194.11
EE	0.42	0.96	3.29	0.07	0.19	0.84
ES	136.10	311.12	1064.29	22.54	60.49	271.12
FI	30.61	69.98	239.39	5.07	13.61	60.98
FR	981.66	2243.95	7676.28	162.60	436.27	1955.44
GB	1678.43	3836.66	13124.77	278.01	745.93	3343.38
GR	6.30	14.39	49.23	1.04	2.80	12.54
HU	4.36	9.96	34.08	0.72	1.94	8.68
IE	121.67	278.12	951.41	20.15	54.07	242.36
IS	0.12	0.28	0.95	0.02	0.05	0.24
IT	321.10	733.99	2510.91	53.19	142.70	639.62
II	N.A.	N.A.	NA	N.A.	N.A.	N.A.
LT	0.43	0.99	3.39	0.07	0.19	0.86
LU	63.19	144.43	494.09	10.47	28.08	125.86
LV	0.07	0.16	0.53	0.01	0.03	0.14
MT	1.07	2.44	8.34	0.18	0.47	2.12
NL	219.76	502.34	1718.45	36.40	97.67	437.76
NO	65.58	149.90	512.78	10.86	29.14	130.62
PL	14.08	32.18	110.08	2.33	6.26	28.04
PT	33.25	76.01	260.02	5.51	14.78	66.24
RO	0.64	1.47	5.04	0.11	0.29	1.28
SE	158.03	361.24	1235.75	26.18	70.23	314.79
SI	1.68	3.85	13.17	0.28	0.75	3.36
SK	1.90	4.34	14.83	0.31	0.84	3.78

Table 22: Relative variations between funding needs for the Life business line at Member State level when moving state principle to a single pan-European scheme

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	31.08%	0.11%	-27.93%	57.99%	13.20%	-26.64%
BE	35.82%	0.69%	-29.98%	67.51%	15.65%	-28.47%
BG	30.90%	0.09%	-27.84%	57.63%	13.10%	-26.57%
CY	56.30%	3.70%	-36.52%	110.78%	26.67%	-34.12%
CZ	39.62%	1.19%	-31.45%	75.28%	17.65%	-29.77%
DE	10.41%	-1.19%	-13.96%	18.61%	3.46%	-13.66%
DK	13.83%	-1.19%	-17.11%	24.89%	4.90%	-16.66%
EE	182.18%	24.95%	-50.84%	445.55%	96.73%	-44.72%
ES	10.70%	-1.19%	-14.24%	19.13%	3.58%	-13.92%
FI	74.16%	6.66%	-40.34%	151.23%	36.54%	-37.24%
FR	18.86%	-1.00%	-20.99%	34.28%	7.17%	-20.29%
GB	13.44%	-1.20%	-16.78%	24.17%	4.73%	-16.34%
GR	23.70%	-0.65%	-24.08%	43.53%	9.49%	-23.15%
HU	8.93%	-1.14%	-12.44%	15.93%	2.87%	-12.19%
IE	18.42%	-1.02%	-20.68%	33.45%	6.97%	-20.00%
IS	215.43%	30.23%	-52.41%	551.82%	115.00%	-45.60%
IT	26.71%	-0.37%	-25.75%	49.36%	10.98%	-24.68%
||	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	31.57%	0.16%	-28.15%	58.96%	13.45%	-26.84%
LU	3.16%	-0.62%	-5.19%	5.58%	0.85%	-5.14%
LV	129.68%	16.22%	-47.28%	292.36%	67.58%	-42.43%
MT	65.47%	5.20%	-38.64%	131.23%	31.72%	-35.87%
NL	28.11%	-0.22%	-26.48%	52.10%	11.68%	-25.34%
NO	87.02%	8.87%	-42.45%	181.90%	43.72%	-38.90%
PL	55.40%	3.56%	-36.29%	108.79%	26.17%	-33.92%
PT	38.19%	1.00%	-30.92%	72.35%	16.90%	-29.30%
RO	9.42%	-1.16%	-12.95%	16.81%	3.06%	-12.69%
SE	24.30%	-0.59%	-24.43%	44.69%	9.79%	-23.47%
SI	74.29%	6.68%	-40.36%	151.54%	36.61%	-37.26%
SK	36.48%	0.77%	-30.25%	68.84%	16.00%	-28.71%

Table 23: IGS funding needs at Member State level for the Non-Life business line under a single pan-European scheme (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	9.06	20.72	70.88	1.50	4.03	18.06
BE	15.87	36.28	124.13	2.63	7.05	31.62
BG	0.17	0.40	1.37	0.03	0.08	0.35
CY	0.28	0.65	2.22	0.05	0.13	0.57
CZ	1.55	3.54	12.11	0.26	0.69	3.08
DE	205.17	468.99	1604.37	33.98	91.18	408.69
DK	8.31	19.00	65.00	1.38	3.69	16.56
EE	0.08	0.19	0.65	0.01	0.04	0.17
ES	41.33	94.47	323.16	6.85	18.37	82.32
FI	6.51	14.88	50.90	1.08	2.89	12.97
FR	138.69	317.02	1084.48	22.97	61.64	276.26
GB	85.46	195.34	668.25	14.16	37.98	170.23
GR	1.40	3.19	10.92	0.23	0.62	2.78
HU	0.28	0.64	2.19	0.05	0.12	0.56
IE	11.08	25.32	86.63	1.83	4.92	22.07
IS	0.54	1.23	4.19	0.09	0.24	1.07
IT	26.92	61.53	210.50	4.46	11.96	53.62
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.13	0.30	1.02	0.02	0.06	0.26
LU	2.94	6.71	22.96	0.49	1.30	5.85
LV	0.16	0.36	1.23	0.03	0.07	0.31
MT	0.49	1.11	3.80	0.08	0.22	0.97
NL	68.18	155.86	533.17	11.29	30.30	135.82
NO	6.44	14.72	50.35	1.07	2.86	12.83
PL	2.88	6.58	22.52	0.48	1.28	5.74
PT	4.12	9.42	32.21	0.68	1.83	8.21
RO	0.53	1.22	4.17	0.09	0.24	1.06
SE	44.31	101.28	346.47	7.34	19.69	88.26
SI	1.20	2.75	9.39	0.20	0.53	2.39
SK	0.41	0.94	3.20	0.07	0.18	0.82

Table 24: Relative variations between funding needs for the Non-Life business line at Member State level when moving from a home state principle to a single pan-European scheme

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	38.07%	0.98%	-30.87%	72.09%	16.83%	-29.26%
BE	21.02%	-0.86%	-22.43%	38.38%	8.19%	-21.63%
BG	9.42%	-1.16%	-12.95%	16.81%	3.06%	-12.69%
CY	15.08%	-1.16%	-18.15%	27.20%	5.45%	-17.63%
CZ	3.97%	-0.73%	-6.35%	7.02%	1.10%	-6.28%
DE	10.15%	-1.18%	-13.70%	18.13%	3.35%	-13.40%
DK	1.50%	-0.33%	-2.60%	2.64%	0.37%	-2.58%
EE	98.23%	10.80%	-43.98%	209.64%	49.98%	-40.06%
ES	12.69%	-1.20%	-16.12%	22.79%	4.41%	-15.71%
FI	64.96%	5.12%	-38.53%	130.08%	31.44%	-35.78%
FR	15.98%	-1.13%	-18.87%	28.88%	5.85%	-18.31%
GB	14.56%	-1.18%	-17.72%	26.23%	5.22%	-17.23%
GR	9.34%	-1.16%	-12.86%	16.65%	3.03%	-12.60%
HU	4.88%	-0.84%	-7.59%	8.63%	1.40%	-7.49%
IE	1.04%	-0.24%	-1.83%	1.83%	0.25%	-1.82%
IS	48.47%	2.48%	-34.38%	93.82%	22.40%	-32.30%
IT	33.97%	0.45%	-29.21%	63.77%	14.69%	-27.79%
||	NA	NA	NA.	NA.	NA.	NA.
LT	11.27%	-1.20%	-14.80%	20.17%	3.81%	-14.45%
LU	4.61%	-0.81%	-7.24%	8.16%	1.31%	-7.15%
1LV	16.67%	-1.11%	-19.40%	30.18%	6.17%	-18.81%
MT	35.18%	0.61%	-29.72%	66.22%	15.32%	-28.24%
NL	20.61%	-0.89%	-22.17%	37.61%	8.00%	-21.39%
NO	69.92%	5.94%	-39.54%	141.39%	34.18%	-36.60%
PL	94.25%	10.11%	-43.46%	199.68%	47.76%	-39.67%
PT	38.77%	1.08%	-31.14%	73.53%	17.20%	-29.49%
RO	5.68%	-0.92%	-8.64%	10.07%	1.67%	-8.52%
SE	46.13%	2.13%	-33.66%	88.86%	21.13%	-31.69%
SI	87.89%	9.01%	-42.57%	184.01%	44.20%	-38.99%
SK	87.51%	8.95%	-42.52%	183.08%	43.99%	-38.95%

A5.5. Compensation

a) Total Insurance

Table 25: IGS funding needs for Total insurance sector under home state principle and a pure compensation mechanism covering only claims

		α-> PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	36.86	112.48	546.66	4.99	19.14	136.49
	Share of Premiums	0.28%	0.87%	4.21%	0.04%	0.15%	1.05%
BE	Funding needs (m€)	104.61	315.90	1 516.70	14.28	54.06	379.19
	Share of Premiums	0.38%	1.13%	5.44%	0.05%	0.19%	1.36%
BG	Funding needs (m€)	0.24	0.64	2.68	0.04	0.12	0.68
	Share of Premiums	0.07%	0.18%	0.76%	0.01%	0.03%	0.19%
CY	Funding needs (m€)	1.66	5.25	26.51	0.22	0.88	6.59
	Share of Premiums	0.31%	0.99%	4.99%	0.04%	0.17%	1.24%
CZ	Funding needs (m€)	4.46	12.60	55.86	0.64	2.23	14.07
	Share of Premiums	0.13%	0.38%	1.67%	0.02%	0.07%	0.42%
DE	Funding needs (m€)	707.69	1 805.47	7 083.15	109.21	335.43	1 798.08
	Share of Premiums	0.49%	1.25%	4.89%	0.08%	0.23%	1.24%
DK	Funding needs (m€)	89.25	227.00	887.21	13.80	42.23	225.26
	Share of Premiums	0.49%	1.24%	4.85%	0.08%	0.23%	1.23%
EE	Funding needs (m€)	0.18	0.83	6.53	0.02	0.11	1.51
	Share of Premiums	0.09%	0.43%	3.38%	0.01%	0.06%	0.78%
ES	Funding needs (m€)	141.12	364.33	1 450.28	21.60	67.33	367.90
	Share of Premiums	0.33%	0.85%	3.40%	0.05%	0.16%	0.86%
FI	Funding needs (m€)	19.56	71.81	431.24	2.28	11.01	104.73
	Share of Premiums	0.42%	1.53%	9.17%	0.05%	0.23%	2.23%
FR	Funding needs (m€)	862.16	2 351.50	10 004.92	126.96	423.58	2 527.74
	Share of Premiums	0.46%	1.27%	5.38%	0.07%	0.23%	1.36%
GB	Funding needs (m€)	1 435.82	3 773.13	15 347.32	217.09	691.66	3 888.64
	Share of Premiums	0.41%	1.07%	4.37%	0.06%	0.20%	1.11%
GR	Funding needs (m€)	5.72	15.71	67.47	0.84	2.82	17.03
	Share of Premiums	0.16%	0.44%	1.91%	0.02%	0.08%	0.48%
HU	Funding needs (m€)	3.63	9.03	34.43	0.57	1.70	8.75
	Share of Premiums	0.13%	0.33%	1.26%	0.02%	0.06%	0.32%
IE	Funding needs (m€)	105.52	284.03	1 189.43	15.69	51.48	300.83
	Share of Premiums	0.25%	0.69%	2.87%	0.04%	0.12%	0.73%
IS	Funding needs (m€)	0.22	0.79	4.57	0.03	0.12	1.12
	Share of Premiums	0.10%	0.35%	2.05%	0.01%	0.06%	0.50%
IT	Funding needs (m€)	249.16	731.74	3 399.99	34.74	127.06	852.78
	Share of Premiums	0.32%	0.93%	4.33%	0.04%	0.16%	1.09%
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	Funding needs (m€)	0.36	1.03	4.58	0.05	0.18	1.15
	Share of Premiums	0.11%	0.32%	1.41%	0.02%	0.06%	0.35%
LU	Funding needs (m€)	57.37	136.33	489.75	9.28	26.10	124.69
	Share of Premiums	0.52%	1.23%	4.41%	0.08%	0.24%	1.12%
LV	Funding needs (m€)	0.14	0.41	1.96	0.02	0.07	0.49
	Share of Premiums	0.06%	0.18%	0.87%	0.01%	0.03%	0.22%
MT	Funding needs (m€)	0.83	2.74	14.60	0.11	0.45	3.61
	Share of Premiums	0.18%	0.60%	3.22%	0.02%	0.10%	0.79%
NL	Funding needs (m€)	201.35	571.45	2 549.77	28.80	100.96	641.84
	Share of Premiums	0.29%	0.81%	3.63%	0.04%	0.14%	0.91%
NO	Funding needs (m€)	35.51	137.59	877.14	3.95	20.43	210.98
	Share of Premiums	0.29%	1.13%	7.20%	0.03%	0.17%	1.73%
PL	Funding needs (m€)	8.69	30.85	178.30	1.04	4.83	43.55
	Share of Premiums	0.10%	0.36%	2.07%	0.01%	0.06%	0.50%
PT	Funding needs (m€)	24.71	77.32	387.04	3.28	12.98	96.33
	Share of Premiums	0.21%	0.67%	3.35%	0.03%	0.11%	0.83%
RO	Funding needs (m€)	0.81	2.01	7.59	0.13	0.38	1.93
	Share of Premiums	0.08%	0.19%	0.73%	0.01%	0.04%	0.18%
SE	Funding needs (m€)	118.26	354.50	1 687.39	16.23	60.90	422.24
	Share of Premiums	0.58%	1.74%	8.31%	0.08%	0.30%	2.08%
SI	Funding needs (m€)	0.98	3.79	24.08	0.11	0.56	5.79
	Share of Premiums	0.08%	0.30%	1.93%	0.01%	0.05%	0.46%
SK	Funding needs (m€)	1.33	4.36	23.16	0.17	0.71	5.72
	Share of Premiums	0.11%	0.38%	2.00%	0.01%	0.06%	0.49%

Table 26: Absolute reduction (positive amounts represent decreases in funding needs) between funding needs for Total Insurance sector when moving from a home state principle and a portfolio transfer mechanism to a home state a pure compensation mechanism covering claims only (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	4.70	14.35	69.73	0.64	2.44	17.41
BE	13.84	41.81	200.73	1.89	7.16	50.19
BG	0.04	0.10	0.43	0.01	0.02	0.11
CY	0.16	0.49	2.48	0.02	0.08	0.62
CZ	1.59	4.49	19.90	0.23	0.80	5.01
DE	45.62	116.38	456.59	7.04	21.62	115.91
DK	12.78	32.49	127.00	1.98	6.04	32.24
EE	0.02	0.07	0.58	0.00	0.01	0.13
ES	16.42	42.39	168.72	2.51	7.83	42.80
FI	1.77	6.52	39.13	0.21	1.00	9.50
FR	79.60	217.11	923.72	11.72	39.11	233.38
GB	84.13	221.09	899.31	12.72	40.53	227.86
GR	0.86	2.37	10.19	0.13	0.43	2.57
HU	0.88	2.19	8.36	0.14	0.41	2.12
IE	8.73	23.50	98.42	1.30	4.26	24.89
IS	0.18	0.64	3.69	0.02	0.10	0.90
IT	23.26	68.31	317.41	3.24	11.86	79.61
|||	NA	NA	NA.	NA.	NA.	NA.
LT	0.07	0.19	0.85	0.01	0.03	0.21
LU	6.60	15.68	56.33	1.07	3.00	14.34
LV	0.03	0.10	0.46	0.00	0.02	0.12
MT	0.27	0.91	4.82	0.03	0.15	1.19
NL	8.11	23.02	102.73	1.16	4.07	25.86
NO	3.50	13.57	86.54	0.39	2.02	20.81
PL	1.89	6.71	38.78	0.23	1.05	9.47
PT	2.38	7.46	37.32	0.32	1.25	9.29
RO	0.32	0.79	2.99	0.05	0.15	0.76
SE	31.39	94.11	447.95	4.31	16.17	112.09
SI	0.78	3.01	19.14	0.09	0.45	4.60
SK	0.28	0.91	4.81	0.04	0.15	1.19

Table 27: Relative variations between funding needs at Member State level for Total Insurance sector when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering claims only

Country	Effect in Total business	Country	Effect in Total business
AT	-11.31%	IS	-44.65%
BE	-11.69%	IT	-8.54%
BG	-13.81%	LI	N.A.
CY	-8.55%	LT	-15.70%
CZ	-26.26%	LU	-10.32%
DE	-6.06%	LV	-19.09%
DK	-12.52%	MT	-24.83%
EE	-8.16%	NL	-3.87%
ES	-10.42%	NO	-8.98%
FI	-8.32%	PL	-17.87%
FR	-8.45%	PT	-8.79%
GB	-5.54%	RO	-28.28%
GR	-13.13%	SE	-20.98%
HU	-19.53%	SI	-44.28%
IE	-7.64%	SK	-17.21%

Table 28: IGS funding needs at Member State level for Total insurance sector under home state principle and a pure compensation mechanism covering only claims in the Life business and covering claims and unearned premiums in the Non-Life business

		PD = 0.5%				PD=0.1%				
α->		75%	90%	99%	75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	37.27	113.74	552.79	5.05	19.36	138.03	0.04%	0.15%	1.06%
	Share of Premiums	0.29%	0.88%	4.25%	0.04%	0.15%	1.06%			
BE	Funding needs (m€)	104.61	315.90	1 516.70	14.28	54.06	379.19	0.05%	0.19%	1.36%
	Share of Premiums	0.38%	1.13%	5.44%	0.05%	0.19%	1.36%			
BG	Funding needs (m€)	0.26	0.68	2.84	0.04	0.12	0.72	0.01%	0.04%	0.20%
	Share of Premiums	0.07%	0.19%	0.80%	0.01%	0.04%	0.20%			
CY	Funding needs (m€)	1.66	5.25	26.51	0.22	0.88	6.59	0.04%	0.17%	1.24%
	Share of Premiums	0.31%	0.99%	4.99%	0.04%	0.17%	1.24%			
CZ	Funding needs (m€)	4.46	12.60	55.86	0.64	2.23	14.07	0.02%	0.07%	0.42%
	Share of Premiums	0.13%	0.38%	1.67%	0.02%	0.07%	0.42%			
DE	Funding needs (m€)	710.04	1 811.45	7 106.59	109.57	336.54	1 804.03	0.08%	0.23%	1.25%
	Share of Premiums	0.49%	1.25%	4.91%	0.08%	0.23%	1.25%			
DK	Funding needs (m€)	89.28	227.09	887.58	13.81	42.25	225.35	0.08%	0.23%	1.23%
	Share of Premiums	0.49%	1.24%	4.85%	0.08%	0.23%	1.23%			
EE	Funding needs (m€)	0.18	0.84	6.57	0.02	0.11	1.52	0.01%	0.06%	0.79%
	Share of Premiums	0.09%	0.43%	3.40%	0.01%	0.06%	0.79%			
ES	Funding needs (m€)	141.99	366.58	1 459.23	21.73	67.74	370.17	0.05%	0.16%	0.87%
	Share of Premiums	0.33%	0.86%	3.42%	0.05%	0.16%	0.87%			
FI	Funding needs (m€)	19.62	72.03	432.55	2.28	11.05	105.05	0.05%	0.23%	2.23%
	Share of Premiums	0.42%	1.53%	9.20%	0.05%	0.23%	2.23%			
FR	Funding needs (m€)	867.86	2 367.06	10 071.13	127.80	426.39	2 544.46	0.07%	0.23%	1.37%
	Share of Premiums	0.47%	1.27%	5.42%	0.07%	0.23%	1.37%			
GB	Funding needs (m€)	1 437.35	3 777.14	15 363.66	217.32	692.39	3 892.78	0.06%	0.20%	1.11%
	Share of Premiums	0.41%	1.07%	4.37%	0.06%	0.20%	1.11%			
GR	Funding needs (m€)	5.72	15.73	67.53	0.84	2.82	17.05	0.02%	0.08%	0.48%
	Share of Premiums	0.16%	0.44%	1.91%	0.02%	0.08%	0.48%			
HU	Funding needs (m€)	3.63	9.03	34.43	0.57	1.70	8.75	0.02%	0.06%	0.32%
	Share of Premiums	0.13%	0.33%	1.26%	0.02%	0.06%	0.32%			
IE	Funding needs (m€)	105.52	284.03	1 189.43	15.69	51.48	300.83	0.04%	0.12%	0.73%
	Share of Premiums	0.25%	0.69%	2.87%	0.04%	0.12%	0.73%			
IS	Funding needs (m€)	0.24	0.86	4.98	0.03	0.13	1.22	0.01%	0.06%	0.54%
	Share of Premiums	0.11%	0.39%	2.23%	0.01%	0.06%	0.54%			
IT	Funding needs (m€)	250.14	734.61	3 413.32	34.88	127.56	856.13	0.04%	0.16%	1.09%
	Share of Premiums	0.32%	0.94%	4.35%	0.04%	0.16%	1.09%			
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of Premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	Funding needs (m€)	0.37	1.05	4.68	0.05	0.19	1.18	0.02%	0.06%	0.36%
	Share of Premiums	0.11%	0.32%	1.44%	0.02%	0.06%	0.36%			
LU	Funding needs (m€)	57.45	136.51	490.41	9.29	26.14	124.86	0.08%	0.24%	1.12%
	Share of Premiums	0.52%	1.23%	4.42%	0.08%	0.24%	1.12%			
LV	Funding needs (m€)	0.14	0.41	1.96	0.02	0.07	0.49	0.01%	0.03%	0.22%
	Share of Premiums	0.06%	0.18%	0.87%	0.01%	0.03%	0.22%			
MT	Funding needs (m€)	0.84	2.77	14.74	0.11	0.45	3.64	0.02%	0.10%	0.80%
	Share of Premiums	0.18%	0.61%	3.25%	0.02%	0.10%	0.80%			
NL	Funding needs (m€)	201.35	571.45	2 549.77	28.80	100.96	641.84	0.04%	0.14%	0.91%
	Share of Premiums	0.29%	0.81%	3.63%	0.04%	0.14%	0.91%			
NO	Funding needs (m€)	35.53	137.66	877.61	3.95	20.44	211.09	0.03%	0.17%	1.73%
	Share of Premiums	0.29%	1.13%	7.21%	0.03%	0.17%	1.73%			
PL	Funding needs (m€)	8.79	31.20	180.30	1.05	4.88	44.04	0.01%	0.06%	0.51%
	Share of Premiums	0.10%	0.36%	2.09%	0.01%	0.06%	0.51%			
PT	Funding needs (m€)	24.78	77.55	388.18	3.29	13.02	96.61	0.03%	0.11%	0.84%
	Share of Premiums	0.21%	0.67%	3.36%	0.03%	0.11%	0.84%			
RO	Funding needs (m€)	0.90	2.24	8.45	0.14	0.42	2.15	0.01%	0.04%	0.21%
	Share of Premiums	0.09%	0.21%	0.81%	0.01%	0.04%	0.21%			
SE	Funding needs (m€)	118.92	356.48	1 696.81	16.32	61.24	424.59	0.08%	0.30%	2.09%
	Share of Premiums	0.59%	1.75%	8.35%	0.08%	0.30%	2.09%			
SI	Funding needs (m€)	1.12	4.31	27.42	0.12	0.64	6.60	0.01%	0.05%	0.53%
	Share of Premiums	0.09%	0.35%	2.20%	0.01%	0.05%	0.53%			
SK	Funding needs (m€)	1.33	4.37	23.21	0.17	0.71	5.74	0.01%	0.06%	0.49%
	Share of Premiums	0.11%	0.38%	2.00%	0.01%	0.06%	0.49%			

Table 29: Absolute reduction (positive amounts represent decreases in funding needs) between funding needs for Total Insurance sector when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering only claims in the Life business and covering claims and unearned premiums in the Non-Life business (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	4.29	13.09	63.60	0.58	2.23	15.88
BE	13.84	41.81	200.73	1.89	7.16	50.19
BG	0.02	0.07	0.27	0.00	0.01	0.07
CY	0.16	0.49	2.48	0.02	0.08	0.62
CZ	1.59	4.49	19.90	0.23	0.80	5.01
DE	43.28	110.41	433.15	6.68	20.51	109.96
DK	12.74	32.40	126.63	1.97	6.03	32.15
EE	0.01	0.07	0.54	0.00	0.01	0.12
ES	15.55	40.14	159.78	2.38	7.42	40.53
FI	1.71	6.30	37.81	0.20	0.97	9.18
FR	73.90	201.55	857.52	10.88	36.31	216.65
GB	82.61	217.08	882.96	12.49	39.79	223.72
GR	0.86	2.36	10.13	0.13	0.42	2.56
HU	0.88	2.19	8.36	0.14	0.41	2.12
IE	8.73	23.50	98.42	1.30	4.26	24.89
IS	0.16	0.57	3.29	0.02	0.09	0.80
IT	22.28	65.44	304.08	3.11	11.36	76.27
|| |	NA	NA	NA.	NA.	NA.	NA.
LT	0.06	0.17	0.75	0.01	0.03	0.19
LU	6.52	15.50	55.67	1.05	2.97	14.17
LV	0.03	0.10	0.46	0.00	0.02	0.12
MT	0.27	0.88	4.69	0.03	0.14	1.16
NL	8.11	23.02	102.73	1.16	4.07	25.86
NO	3.48	13.50	86.07	0.39	2.00	20.70
PL	1.79	6.37	36.79	0.21	1.00	8.99
PT	2.31	7.23	36.18	0.31	1.21	9.00
RO	0.23	0.56	2.13	0.04	0.11	0.54
SE	30.73	92.13	438.53	4.22	15.83	109.73
SI	0.64	2.48	15.79	0.07	0.37	3.80
SK	0.27	0.90	4.77	0.03	0.15	1.18

Table 30: Relative variations between funding needs for Total Insurance sector when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering only claims in the Life business and covering claims and unearned premiums in the Non-Life business

Country	Effect in Total business	Country	Effect in Total business
AT	-10.32%	IS	-39.77%
BE	-11.69%	IT	-8.18%
BG	-8.69%	LI	N.A.
CY	-8.55%	LT	-13.88%
CZ	-26.26%	LU	-10.20%
DE	-5.74%	LV	-19.09%
DK	-12.49%	MT	-24.14%
EE	-7.58%	NL	-3.87%
ES	-9.87%	NO	-8.93%
FI	-8.04%	PL	-16.95%
FR	-7.85%	PT	-8.53%
GB	-5.43%	RO	-20.11%
GR	-13.05%	SE	-20.54%
HU	-19.53%	SI	-36.54%
IE	-7.64%	SK	-17.04%

b) Life insurance the Life business line under home state principle and a pure compensation

Table 31: IGS funding needs for mechanism covering only claims

		$\alpha \rightarrow$ PD = 0.5%				PD=0.1%			
		75%	90%	99%	75%	90%	99%		
AT	Funding needs (m€)	33.65	100.72	478.55	4.62	17.32	119.77		
	Share of Premiums	0.47%	1.41%	6.70%	0.06%	0.24%	1.68%		
BE	Funding needs (m€)	92.71	285.86	1 406.27	12.45	48.39	350.68		
	Share of Premiums	0.42%	1.29%	6.34%	0.06%	0.22%	1.58%		
BG	Funding needs (m€)	0.12	0.35	1.64	0.02	0.06	0.41		
	Share of Premiums	0.10%	0.29%	1.36%	0.01%	0.05%	0.34%		
CY	Funding needs (m€)	1.35	4.66	26.07	0.17	0.74	6.40		
	Share of Premiums	0.38%	1.30%	7.29%	0.05%	0.21%	1.79%		
CZ	Funding needs (m€)	3.22	10.15	51.28	0.42	1.70	12.75		
	Share of Premiums	0.16%	0.50%	2.52%	0.02%	0.08%	0.63%		
DE	Funding needs (m€)	550.26	1 405.48	5 521.92	84.84	260.98	1 401.66		
	Share of Premiums	0.73%	1.87%	7.35%	0.11%	0.35%	1.86%		
DK	Funding needs (m€)	81.23	213.92	872.39	12.26	39.18	221.01		
	Share of Premiums	0.62%	1.62%	6.61%	0.09%	0.30%	1.68%		
EE	Funding needs (m€)	0.14	0.70	6.09	0.01	0.09	1.38		
	Share of Premiums	0.12%	0.59%	5.16%	0.01%	0.07%	1.17%		
ES	Funding needs (m€)	114.66	293.63	1 157.31	17.65	54.46	293.72		
	Share of Premiums	0.49%	1.25%	4.93%	0.08%	0.23%	1.25%		
FI	Funding needs (m€)	16.47	61.49	376.04	1.89	9.34	91.06		
	Share of Premiums	0.59%	2.21%	13.51%	0.07%	0.34%	3.27%		
FR	Funding needs (m€)	773.50	2 122.69	9 098.36	113.40	381.24	2 297.48		
	Share of Premiums	0.57%	1.55%	6.66%	0.08%	0.28%	1.68%		
GB	Funding needs (m€)	1 381.27	3 625.22	14 723.21	209.03	664.93	3 730.84		
	Share of Premiums	0.45%	1.19%	4.82%	0.07%	0.22%	1.22%		
GR	Funding needs (m€)	4.60	13.09	58.61	0.66	2.31	14.75		
	Share of Premiums	0.18%	0.52%	2.34%	0.03%	0.09%	0.59%		
HU	Funding needs (m€)	3.52	8.87	34.27	0.55	1.66	8.71		
	Share of Premiums	0.17%	0.44%	1.70%	0.03%	0.08%	0.43%		
IE	Funding needs (m€)	95.20	260.34	1 111.24	13.99	46.84	280.69		
	Share of Premiums	0.25%	0.69%	2.96%	0.04%	0.12%	0.75%		
IS	Funding needs (m€)	0.03	0.16	1.50	0.00	0.02	0.33		
	Share of Premiums	0.08%	0.47%	4.39%	0.01%	0.06%	0.98%		
IT	Funding needs (m€)	237.50	690.39	3 169.34	33.37	120.51	795.83		
	Share of Premiums	0.39%	1.12%	5.16%	0.05%	0.20%	1.30%		
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
LT	Funding needs (m€)	0.28	0.85	4.03	0.04	0.15	1.01		
	Share of Premiums	0.14%	0.41%	1.98%	0.02%	0.07%	0.49%		
LU	Funding needs (m€)	55.48	131.65	472.10	8.98	25.22	120.20		
	Share of Premiums	0.55%	1.30%	4.68%	0.09%	0.25%	1.19%		
LV	Funding needs (m€)	0.03	0.11	0.86	0.00	0.02	0.20		
	Share of Premiums	0.05%	0.22%	1.63%	0.00%	0.03%	0.38%		
MT	Funding needs (m€)	0.57	2.06	12.07	0.07	0.32	2.94		
	Share of Premiums	0.27%	0.96%	5.64%	0.03%	0.15%	1.38%		
NL	Funding needs (m€)	162.80	477.79	2 218.23	22.71	82.99	556.42		
	Share of Premiums	0.62%	1.81%	8.39%	0.09%	0.31%	2.10%		
NO	Funding needs (m€)	32.24	126.61	819.29	3.54	18.65	196.57		
	Share of Premiums	0.33%	1.29%	8.33%	0.04%	0.19%	2.00%		
PL	Funding needs (m€)	7.79	26.71	148.52	0.96	4.26	36.48		
	Share of Premiums	0.12%	0.40%	2.20%	0.01%	0.06%	0.54%		
PT	Funding needs (m€)	22.35	69.89	349.55	2.97	11.74	87.01		
	Share of Premiums	0.24%	0.76%	3.80%	0.03%	0.13%	0.95%		
RO	Funding needs (m€)	0.51	1.29	5.02	0.08	0.24	1.28		
	Share of Premiums	0.12%	0.31%	1.21%	0.02%	0.06%	0.31%		
SE	Funding needs (m€)	107.54	307.37	1 383.07	15.30	54.11	347.91		
	Share of Premiums	0.83%	2.37%	10.65%	0.12%	0.42%	2.68%		
SI	Funding needs (m€)	0.79	2.96	18.14	0.09	0.45	4.39		
	Share of Premiums	0.18%	0.67%	4.09%	0.02%	0.10%	0.99%		
SK	Funding needs (m€)	1.21	3.76	18.56	0.16	0.63	4.63		
	Share of Premiums	0.14%	0.44%	2.19%	0.02%	0.07%	0.55%		

Table 32: Absolute reduction (positive amounts represent decreases in funding needs) between funding needs for the Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state

Country	A pure compensation mechanism covering claims only (in m€)			A pure compensation mechanism covering claims only (in m€)		
	PD = 0.5	PD = 0.5	PD = 0.5	PD = 0.1	PD = 0.1	PD = 0.1
	75%	90%	99%	75%	90%	99%
AT	2.98	8.92	42.40	0.41	1.53	10.61
BE	9.46	29.17	143.50	1.27	4.94	35.78
BG	0.01	0.04	0.18	0.00	0.01	0.04
CY	0.08	0.28	1.55	0.01	0.04	0.38
CZ	0.65	2.04	10.32	0.09	0.34	2.57
DE	21.61	55.19	216.83	3.33	10.25	55.04
DK	4.37	11.51	46.94	0.66	2.11	11.89
EE	0.01	0.07	0.59	0.00	0.01	0.13
ES	8.30	21.25	83.74	1.28	3.94	21.25
FI	1.10	4.12	25.19	0.13	0.63	6.10
FR	52.43	143.87	616.68	7.69	25.84	155.72
GB	98.28	257.94	1 047.57	14.87	47.31	265.45
GR	0.49	1.39	6.23	0.07	0.25	1.57
HU	0.48	1.20	4.65	0.07	0.22	1.18
IE	7.55	20.65	88.15	1.11	3.72	22.27
IS	0.01	0.05	0.50	0.00	0.01	0.11
IT	15.93	46.30	212.55	2.24	8.08	53.37
LI	NA	NA	NA.	NA.	NA.	NA.
LT	0.05	0.14	0.69	0.01	0.02	0.17
LU	5.76	13.67	49.04	0.93	2.62	12.48
LV	0.00	0.02	0.15	0.00	0.00	0.04
MT	0.07	0.26	1.52	0.01	0.04	0.37
NL	8.75	25.67	119.20	1.22	4.46	29.90
NO	2.82	11.08	71.68	0.31	1.63	17.20
PL	1.27	4.36	24.26	0.16	0.70	5.96
PT	1.72	5.37	26.85	0.23	0.90	6.68
RO	0.08	0.20	0.77	0.01	0.04	0.19
SE	19.60	56.03	252.10	2.79	9.86	63.42
SI	0.17	0.64	3.95	0.02	0.10	0.96
SK	0.18	0.55	2.70	0.02	0.09	0.67

Table 33: Relative variations between funding needs for the Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering claims only

Country	Effect in Total business	Country	Effect in Total business
AT	-8.14%	IS	-24.78%
BE	-9.26%	IT	-6.28%
BG	-9.69%	LI	N.A.
CY	-5.61%	LT	-14.52%
CZ	-16.76%	LU	-9.41%
DE	-3.78%	LV	-14.84%
DK	-5.11%	MT	-11.18%
EE	-8.87%	NL	-5.10%
ES	-6.75%	NO	-8.05%
FI	-6.28%	PL	-14.04%
FR	-6.35%	PT	-7.13%
GB	-6.64%	RO	-13.25%
GR	-9.61%	SE	-15.42%
HU	-11.94%	SI	-17.86%
IE	-7.35%	SK	-12.72%

c) Non-Life Insurance: Pure Compensation

Table 34: IGS funding needs for the Non-Life business line under home state principle and a pure compensation mechanism covering only claims

		PD = 0.5%				PD=0.1%			
		[^]	75%	90%	99%	75%	90%	99%	
AT	Funding needs (m€)	3.86	12.07	60.29	0.51	2.03	15.01		
	Share of Premiums		0.07%	0.21%	1.03%	0.01%	0.03%	0.26%	
BE	Funding needs (m€)	10.46	29.17	127.56	1.51	5.20	32.16		
	Share of Premiums		0.18%	0.51%	2.24%	0.03%	0.09%	0.56%	
BG	Funding needs (m€)	0.12	0.30	1.15	0.02	0.06	0.29		
	Share of Premiums		0.05%	0.13%	0.49%	0.01%	0.02%	0.12%	
CY	Funding needs (m€)	0.18	0.48	1.97	0.03	0.09	0.50		
	Share of Premiums		0.10%	0.28%	1.14%	0.02%	0.05%	0.29%	
CZ	Funding needs (m€)	0.94	2.25	8.16	0.15	0.43	2.08		
	Share of Premiums		0.07%	0.17%	0.63%	0.01%	0.03%	0.16%	
DE	Funding needs (m€)	157.00	400.02	1 566.87	24.25	74.36	397.78		
	Share of Premiums		0.23%	0.57%	2.25%	0.03%	0.11%	0.57%	
DK	Funding needs (m€)	5.58	12.99	45.48	0.91	2.51	11.58		
	Share of Premiums		0.11%	0.25%	0.89%	0.02%	0.05%	0.23%	
EE	Funding needs (m€)	0.02	0.10	0.67	0.00	0.01	0.16		
	Share of Premiums		0.03%	0.13%	0.89%	0.00%	0.02%	0.21%	
ES	Funding needs (m€)	27.11	70.68	284.76	4.12	13.00	72.19		
	Share of Premiums		0.14%	0.37%	1.48%	0.02%	0.07%	0.38%	
FI	Funding needs (m€)	2.80	10.03	58.66	0.33	1.56	14.30		
	Share of Premiums		0.15%	0.52%	3.05%	0.02%	0.08%	0.74%	
FR	Funding needs (m€)	85.06	228.10	950.87	12.68	41.42	240.57		
	Share of Premiums		0.17%	0.46%	1.93%	0.03%	0.08%	0.49%	
GB	Funding needs (m€)	55.83	147.95	607.88	8.39	27.02	153.93		
	Share of Premiums		0.12%	0.32%	1.31%	0.02%	0.06%	0.33%	
GR	Funding needs (m€)	1.02	2.58	10.01	0.16	0.48	2.54		
	Share of Premiums		0.10%	0.25%	0.97%	0.02%	0.05%	0.25%	
HU	Funding needs (m€)	0.07	0.16	0.60	0.01	0.03	0.15		
	Share of Premiums		0.01%	0.02%	0.08%	0.00%	0.00%	0.02%	
IE	Funding needs (m€)	10.04	23.23	80.77	1.65	4.49	20.57		
	Share of Premiums		0.26%	0.60%	2.09%	0.04%	0.12%	0.53%	
IS	Funding needs (m€)	0.18	0.61	3.23	0.02	0.10	0.80		
	Share of Premiums		0.10%	0.32%	1.71%	0.01%	0.05%	0.42%	
IT	Funding needs (m€)	13.82	42.14	204.56	1.87	7.18	51.08		
	Share of Premiums		0.08%	0.25%	1.20%	0.01%	0.04%	0.30%	
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
LT	Funding needs (m€)	0.07	0.18	0.71	0.01	0.03	0.18		
	Share of Premiums		0.06%	0.15%	0.58%	0.01%	0.03%	0.15%	
LU	Funding needs (m€)	1.93	4.66	17.03	0.31	0.89	4.33		
	Share of Premiums		0.19%	0.46%	1.68%	0.03%	0.09%	0.43%	
LV	Funding needs (m€)	0.10	0.28	1.18	0.02	0.05	0.30		
	Share of Premiums		0.06%	0.16%	0.69%	0.01%	0.03%	0.17%	
MT	Funding needs (m€)	0.21	0.64	3.13	0.03	0.11	0.78		
	Share of Premiums		0.09%	0.27%	1.30%	0.01%	0.05%	0.33%	
NL	Funding needs (m€)	32.95	91.66	399.32	4.78	16.35	100.71		
	Share of Premiums		0.08%	0.21%	0.91%	0.01%	0.04%	0.23%	
NO	Funding needs (m€)	2.86	10.49	62.86	0.33	1.61	15.27		
	Share of Premiums		0.12%	0.45%	2.69%	0.01%	0.07%	0.65%	
PL	Funding needs (m€)	1.05	4.22	28.14	0.11	0.61	6.72		
	Share of Premiums		0.06%	0.22%	1.49%	0.01%	0.03%	0.36%	
PT	Funding needs (m€)	2.37	7.44	37.35	0.31	1.25	9.29		
	Share of Premiums		0.10%	0.32%	1.59%	0.01%	0.05%	0.39%	
RO	Funding needs (m€)	0.29	0.71	2.65	0.05	0.14	0.67		
	Share of Premiums		0.05%	0.11%	0.42%	0.01%	0.02%	0.11%	
SE	Funding needs (m€)	14.80	48.40	254.90	1.90	7.93	63.06		
	Share of Premiums		0.20%	0.66%	3.48%	0.03%	0.11%	0.86%	
SI	Funding needs (m€)	0.22	0.86	5.56	0.02	0.13	1.33		
	Share of Premiums		0.03%	0.11%	0.69%	0.00%	0.02%	0.17%	
SK	Funding needs (m€)	0.16	0.62	4.05	0.02	0.09	0.97		
	Share of Premiums		0.05%	0.20%	1.29%	0.01%	0.03%	0.31%	

Table 35: Absolute reduction (positive amounts represent decreases in funding needs) between funding needs for the Non-Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	2.70	8.45	42.24	0.36	1.42	10.51
BE	2.66	7.42	32.46	0.39	1.32	8.18
BG	0.04	0.11	0.42	0.01	0.02	0.11
CY	0.07	0.18	0.74	0.01	0.03	0.19
CZ	0.55	1.32	4.77	0.09	0.25	1.22
DE	29.27	74.58	292.15	4.52	13.86	74.17
DK	2.61	6.07	21.26	0.43	1.17	5.41
EE	0.02	0.07	0.50	0.00	0.01	0.12
ES	9.57	24.94	100.49	1.45	4.59	25.48
FI	1.15	4.13	24.15	0.14	0.64	5.89
FR	34.51	92.55	385.81	5.14	16.81	97.61
GB	18.76	49.72	204.29	2.82	9.08	51.73
GR	0.26	0.65	2.52	0.04	0.12	0.64
HU	0.20	0.48	1.77	0.03	0.09	0.45
IE	0.93	2.15	7.47	0.15	0.42	1.90
IS	0.18	0.59	3.15	0.02	0.10	0.78
IT	6.27	19.12	92.81	0.85	3.26	23.18
LI	NA	NA	NA.	NA.	NA.	NA.
LT	0.05	0.12	0.49	0.01	0.02	0.12
LU	0.87	2.11	7.72	0.14	0.40	1.96
LV	0.03	0.08	0.35	0.00	0.02	0.09
MT	0.15	0.47	2.28	0.02	0.08	0.57
NL	23.58	65.59	285.73	3.42	11.70	72.06
NO	0.93	3.41	20.41	0.11	0.52	4.96
PL	0.44	1.75	11.69	0.05	0.25	2.79
PT	0.60	1.88	9.42	0.08	0.31	2.34
RO	0.21	0.52	1.91	0.03	0.10	0.49
SE	15.52	50.77	267.39	1.99	8.32	66.15
SI	0.42	1.66	10.79	0.05	0.24	2.59
SK	0.06	0.23	1.52	0.01	0.03	0.36

Table 36: Relative variations between funding needs for the Non-Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering claims only

Country	Effect in Total business	Country	Effect in Total business
AT	-41.20%	IS	-49.36%
BE	-20.29%	IT	-31.21%
BG	-26.93%	LI	N.A.
CY	-27.29%	LT	-40.75%
CZ	-36.92%	LU	-31.18%
DE	-15.72%	LV	-23.15%
DK	-31.85%	MT	-42.19%
EE	-42.68%	NL	-41.71%
ES	-26.08%	NO	-24.51%
FI	-29.16%	PL	-29.35%
FR	-28.86%	PT	-20.14%
GB	-25.15%	RO	-41.90%
GR	-20.11%	SE	-51.20%
HU	-74.62%	SI	-66.00%
IE	-8.47%	SK	-27.24%

Table 37: IGS funding needs for the Non-Life business line under home state principle and a pure compensation mechanism covering claims and unearned premiums

		PD = 0.5%				PD=0.1%			
		[^]	75%	90%	99%	75%	90%	99%	
AT	Funding needs (m€)	4.26	13.32	66.56	0.57	2.24	16.57		
	Share of Premiums		0.07%	0.23%	1.14%	0.01%	0.04%	0.28%	
BE	Funding needs (m€)	10.46	29.17	127.56	1.51	5.20	32.16		
	Share of Premiums		0.18%	0.51%	2.24%	0.03%	0.09%	0.56%	
BG	Funding needs (m€)	0.13	0.33	1.30	0.02	0.06	0.33		
	Share of Premiums		0.06%	0.14%	0.55%	0.01%	0.03%	0.14%	
CY	Funding needs (m€)	0.18	0.48	1.97	0.03	0.09	0.50		
	Share of Premiums		0.10%	0.28%	1.14%	0.02%	0.05%	0.29%	
CZ	Funding needs (m€)	0.94	2.25	8.16	0.15	0.43	2.08		
	Share of Premiums		0.07%	0.17%	0.63%	0.01%	0.03%	0.16%	
DE	Funding needs (m€)	159.34	405.99	1 590.28	24.61	75.47	403.73		
	Share of Premiums		0.23%	0.58%	2.29%	0.04%	0.11%	0.58%	
DK	Funding needs (m€)	5.62	13.09	45.81	0.92	2.53	11.67		
	Share of Premiums		0.11%	0.26%	0.90%	0.02%	0.05%	0.23%	
EE	Funding needs (m€)	0.03	0.10	0.71	0.00	0.02	0.17		
	Share of Premiums		0.03%	0.14%	0.94%	0.00%	0.02%	0.22%	
ES	Funding needs (m€)	27.97	72.92	293.81	4.25	13.42	74.48		
	Share of Premiums		0.15%	0.38%	1.53%	0.02%	0.07%	0.39%	
FI	Funding needs (m€)	2.86	10.25	59.95	0.34	1.59	14.62		
	Share of Premiums		0.15%	0.53%	3.12%	0.02%	0.08%	0.76%	
FR	Funding needs (m€)	90.87	243.68	1 015.80	13.54	44.25	256.99		
	Share of Premiums		0.18%	0.49%	2.06%	0.03%	0.09%	0.52%	
GB	Funding needs (m€)	57.35	151.97	624.39	8.62	27.75	158.11		
	Share of Premiums		0.12%	0.33%	1.35%	0.02%	0.06%	0.34%	
GR	Funding needs (m€)	1.03	2.59	10.07	0.16	0.48	2.56		
	Share of Premiums		0.10%	0.25%	0.98%	0.02%	0.05%	0.25%	
HU	Funding needs (m€)	0.07	0.16	0.60	0.01	0.03	0.15		
	Share of Premiums		0.01%	0.02%	0.08%	0.00%	0.00%	0.02%	
IE	Funding needs (m€)	10.04	23.23	80.77	1.65	4.49	20.57		
	Share of Premiums		0.26%	0.60%	2.09%	0.04%	0.12%	0.53%	
IS	Funding needs (m€)	0.20	0.68	3.62	0.03	0.11	0.89		
	Share of Premiums		0.11%	0.36%	1.91%	0.01%	0.06%	0.47%	
IT	Funding needs (m€)	14.76	44.99	218.40	2.00	7.66	54.54		
	Share of Premiums		0.09%	0.26%	1.28%	0.01%	0.05%	0.32%	
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
	Share of Premiums		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
LT	Funding needs (m€)	0.08	0.20	0.79	0.01	0.04	0.20		
	Share of Premiums		0.06%	0.16%	0.65%	0.01%	0.03%	0.17%	
LU	Funding needs (m€)	2.01	4.84	17.70	0.32	0.92	4.51		
	Share of Premiums		0.20%	0.48%	1.75%	0.03%	0.09%	0.44%	
LV	Funding needs (m€)	0.10	0.28	1.18	0.02	0.05	0.30		
	Share of Premiums		0.06%	0.16%	0.69%	0.01%	0.03%	0.17%	
MT	Funding needs (m€)	0.22	0.66	3.25	0.03	0.11	0.81		
	Share of Premiums		0.09%	0.28%	1.36%	0.01%	0.05%	0.34%	
NL	Funding needs (m€)	32.95	91.66	399.32	4.78	16.35	100.71		
	Share of Premiums		0.08%	0.21%	0.91%	0.01%	0.04%	0.23%	
NO	Funding needs (m€)	2.88	10.56	63.32	0.34	1.62	15.38		
	Share of Premiums		0.12%	0.45%	2.70%	0.01%	0.07%	0.66%	
PL	Funding needs (m€)	1.13	4.55	30.32	0.12	0.66	7.24		
	Share of Premiums		0.06%	0.24%	1.60%	0.01%	0.03%	0.38%	
PT	Funding needs (m€)	2.44	7.67	38.50	0.32	1.29	9.58		
	Share of Premiums		0.10%	0.33%	1.63%	0.01%	0.05%	0.41%	
RO	Funding needs (m€)	0.39	0.94	3.50	0.06	0.18	0.89		
	Share of Premiums		0.06%	0.15%	0.56%	0.01%	0.03%	0.14%	
SE	Funding needs (m€)	15.39	50.34	265.12	1.97	8.25	65.58		
	Share of Premiums		0.21%	0.69%	3.62%	0.03%	0.11%	0.89%	
SI	Funding needs (m€)	0.35	1.38	8.95	0.04	0.20	2.15		
	Share of Premiums		0.04%	0.17%	1.11%	0.00%	0.03%	0.27%	
SK	Funding needs (m€)	0.16	0.63	4.10	0.02	0.09	0.98		
	Share of Premiums		0.05%	0.20%	1.31%	0.01%	0.03%	0.31%	

Table 38: Absolute reduction (positive amounts represent decreases in funding needs) between funding needs for the Non-Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state a pure compensation mechanism covering claims and unearned premiums (in m€)

Country	PD = 0.5			PD=0.1		
	75%	90%	99%	75%	90%	99%
AT	2.30	7.20	35.96	0.31	1.21	8.95
BE	2.66	7.42	32.46	0.39	1.32	8.18
BG	0.03	0.07	0.27	0.00	0.01	0.07
CY	0.07	0.18	0.74	0.01	0.03	0.19
CZ	0.55	1.32	4.77	0.09	0.25	1.22
DE	26.93	68.61	268.74	4.16	12.75	68.23
DK	2.57	5.98	20.93	0.42	1.15	5.33
EE	0.02	0.07	0.46	0.00	0.01	0.11
ES	8.70	22.69	91.44	1.32	4.17	23.18
FI	1.09	3.91	22.86	0.13	0.61	5.57
FR	28.71	76.98	320.88	4.28	13.98	81.18
GB	17.25	45.70	187.79	2.59	8.35	47.55
GR	0.25	0.64	2.47	0.04	0.12	0.63
HU	0.20	0.48	1.77	0.03	0.09	0.45
IE	0.93	2.15	7.47	0.15	0.42	1.90
IS	0.16	0.52	2.77	0.02	0.08	0.68
IT	5.34	16.27	78.97	0.72	2.77	19.72
|||	NA	NA	NA.	NA.	NA.	NA.
LT	0.04	0.10	0.40	0.01	0.02	0.10
LU	0.80	1.93	7.05	0.13	0.37	1.79
LV	0.03	0.08	0.35	0.00	0.02	0.09
MT	0.14	0.44	2.15	0.02	0.07	0.54
NL	23.58	65.59	285.73	3.42	11.70	72.06
NO	0.91	3.33	19.96	0.11	0.51	4.85
PL	0.35	1.43	9.50	0.04	0.21	2.27
PT	0.53	1.65	8.27	0.07	0.28	2.06
RO	0.12	0.29	1.06	0.02	0.05	0.27
SE	14.93	48.83	257.17	1.91	8.00	63.62
SI	0.29	1.14	7.40	0.03	0.17	1.78
SK	0.06	0.23	1.46	0.01	0.03	0.35

Table 39: Absolute variations between funding needs for the Non-Life business line when moving from a home state principle and a portfolio transfer mechanism to a home state principle and a pure compensation mechanism covering claims and unearned premiums

Country	Effect in Total business	Country	Effect in Total business
AT	-35.08%	IS	-43.39%
BE	-20.29%	IT	-26.56%
BG	-17.44%	LI	N.A.
CY	-27.29%	LT	-33.32%
CZ	-36.92%	LU	-28.47%
DE	-14.46%	LV	-23.15%
DK	-31.36%	MT	-39.84%
EE	-39.43%	NL	-41.71%
ES	-23.73%	NO	-23.97%
FI	-27.60%	PL	-23.86%
FR	-24.01%	PT	-17.69%
GB	-23.12%	RO	-23.33%
GR	-19.68%	SE	-49.24%
HU	-74.62%	SI	-45.27%
IE	-8.47%	SK	-26.28%

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IMPACT ASSESSMENT

PART IV

Accompanying document to the

WHITE PAPER

on Insurance Guarantee Schemes

{COM(2010) 370}

{SEC(2010) 841}

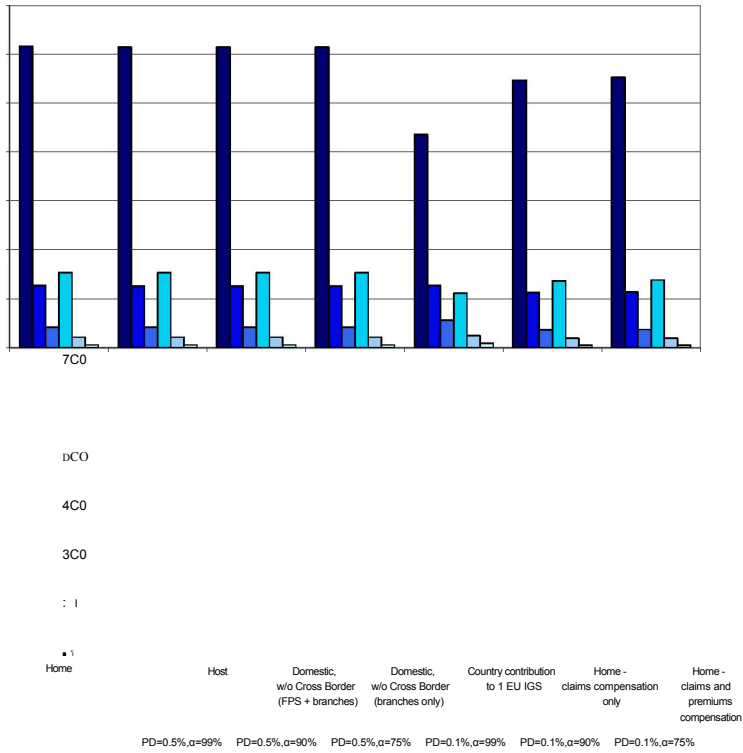
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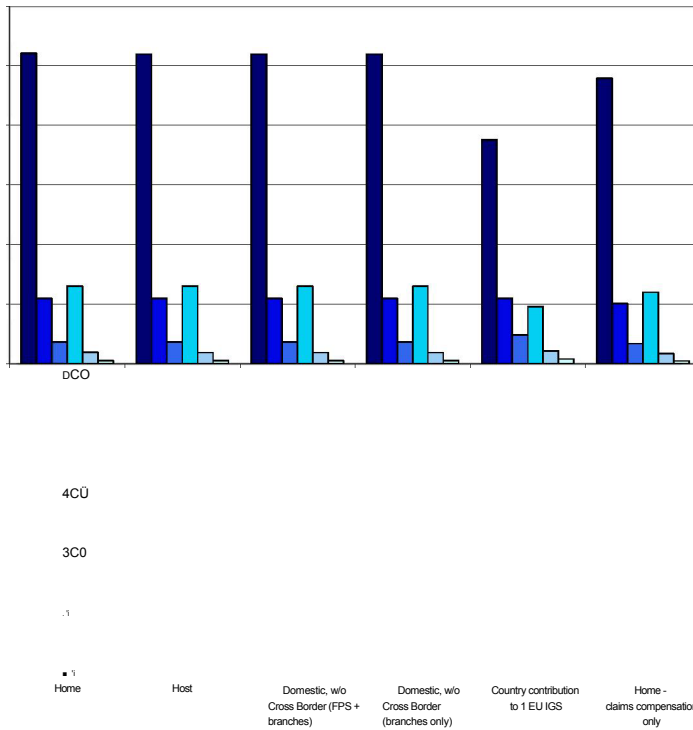
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A6.1 Austria

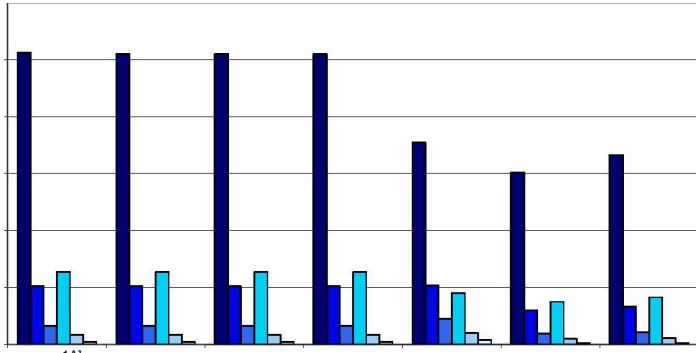
Austria - Total Insurance



Austria - Life Insurance



Austria - Non-Life Insurance



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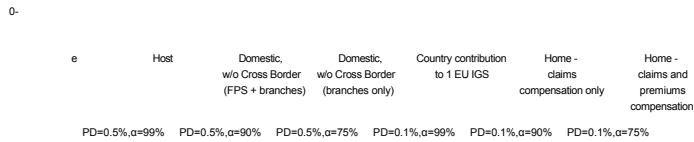
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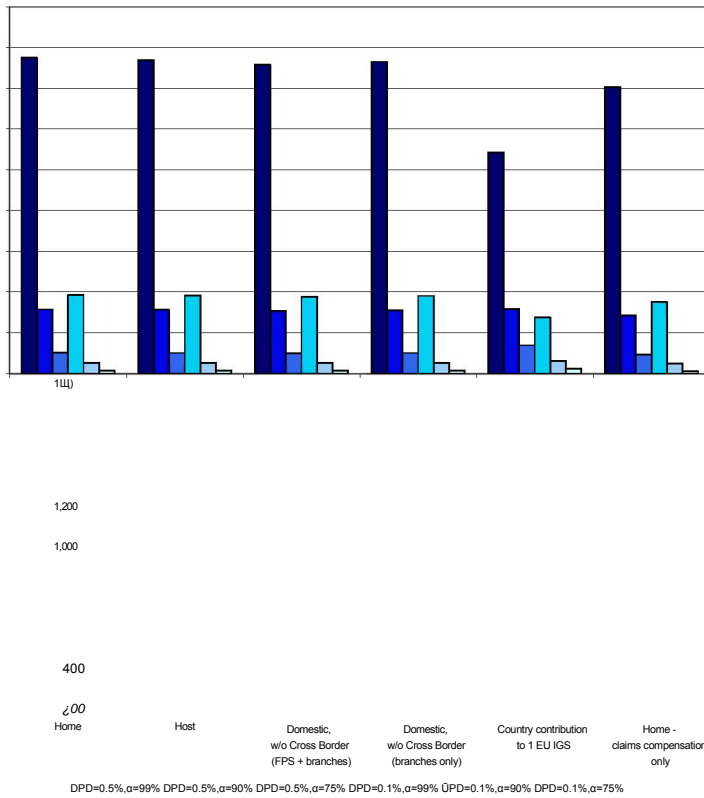
Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
	PD=0.5%, α=99%	PD=0.5%, α=90%	PD=0.5%, α=75%	PD=0.1%, α=99%	PD=0.1%, α=90%	PD=0.1%, α=75%

A6.2 Belgium

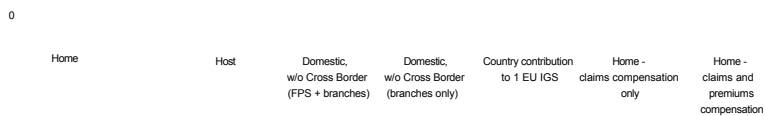
Belgium - Total Insurance



Belgium - Life Insurance



Belgium - Non-Life Insurance



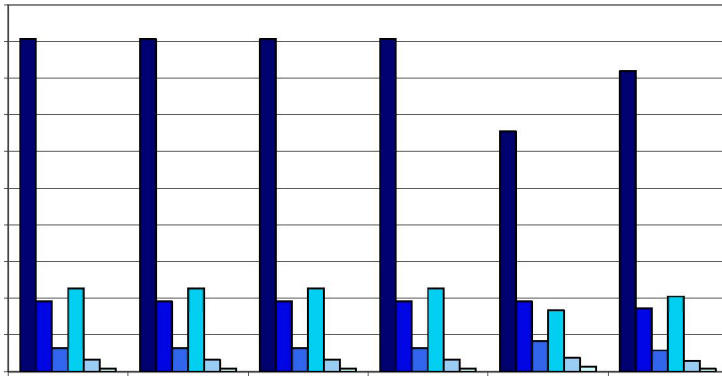
PD=0.5%, α =99% PD=0.5%, α =90% PD=0.5%, α =75% PD=0.1%, α =99% PD=0.1%, α =90% PD=0.1%, α =75%

A6.3 Bulgaria

Bulgaria - Total Insurance

Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%	

Bulgaria - Life Insurance



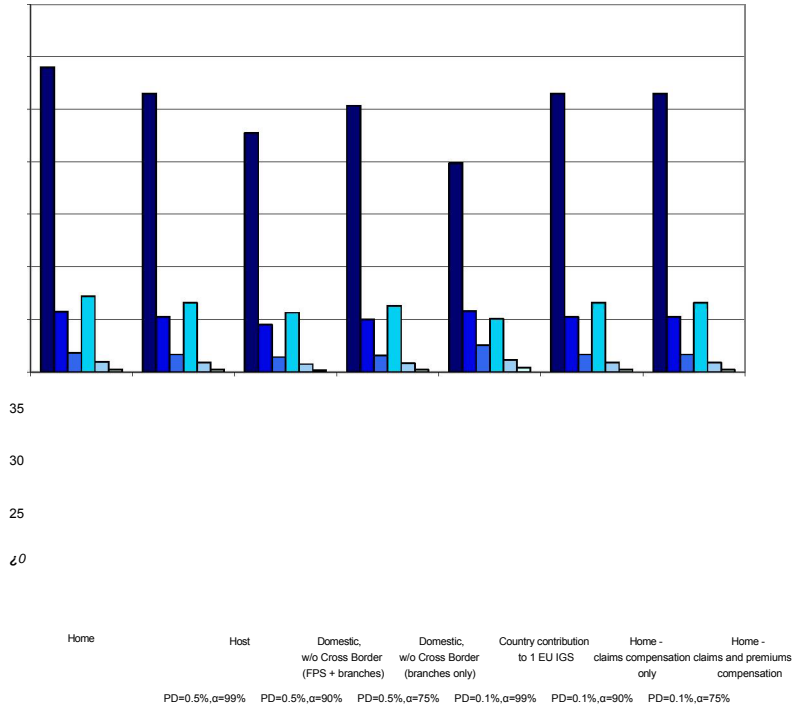
1 Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only
DPD=0.5%, α =99%	DPD=0.5%, α =90%	DPD=0.5%, α =75%	DPD=0.1%, α =99%	DPD=0.1%, α =90%	DPD=0.1%, α =75%

Bulgaria - Non-Life Insurance

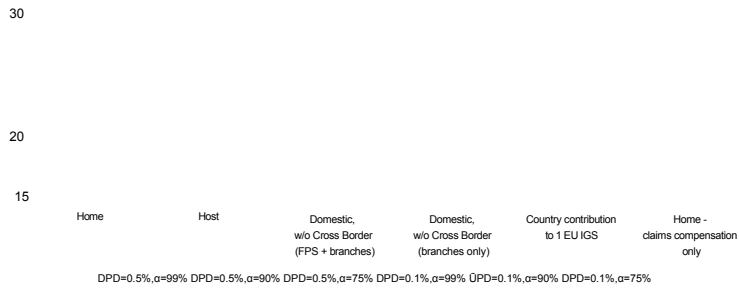
Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
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A6.4 Cyprus

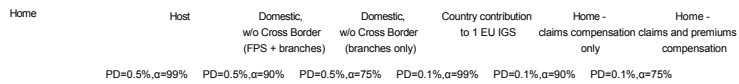
Cyprus - Total Insurance



Cyprus - Life Insurance

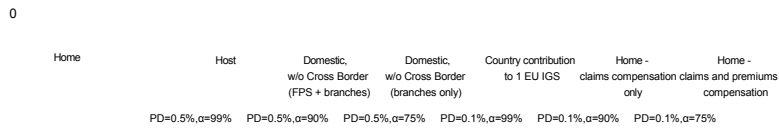


Cyprus - Non-Life Insurance

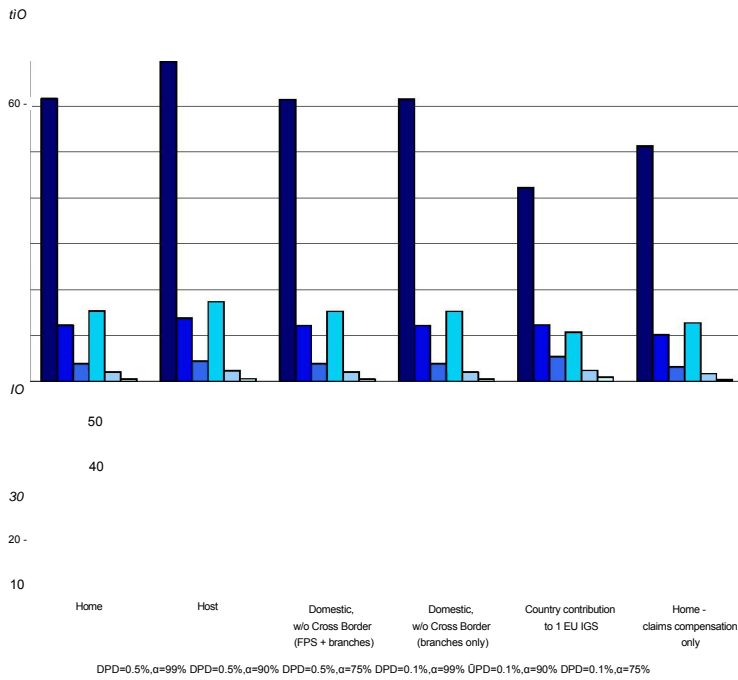


A6.5 Czech Republic

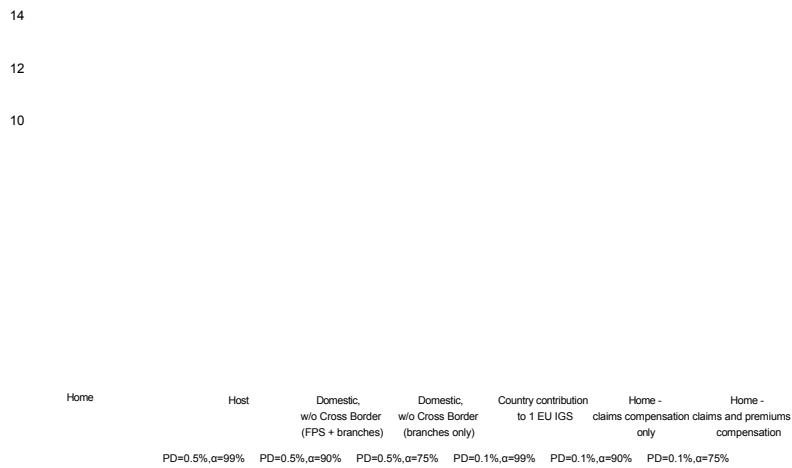
Czech Republic - Total Insurance



Czech Republic - Life Insurance

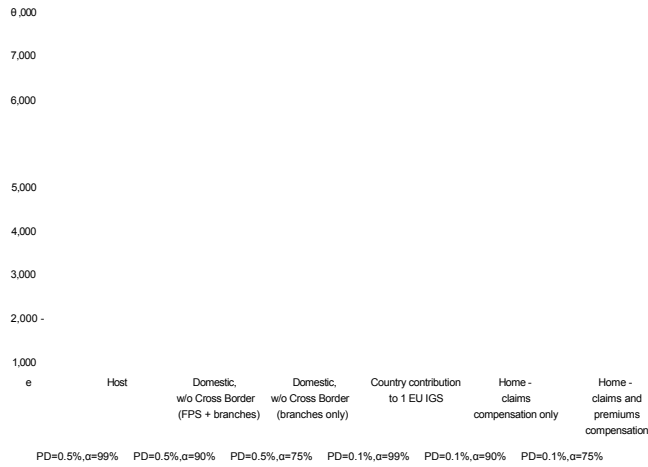


Czech Republic - Non-Life Insurance

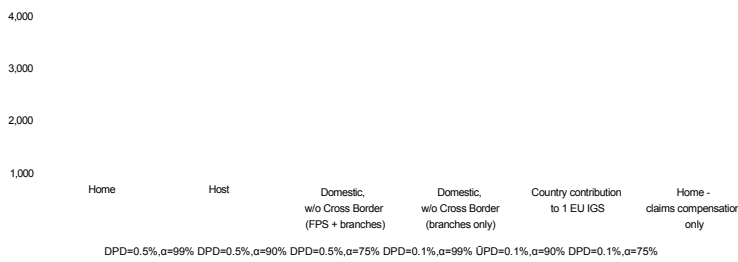
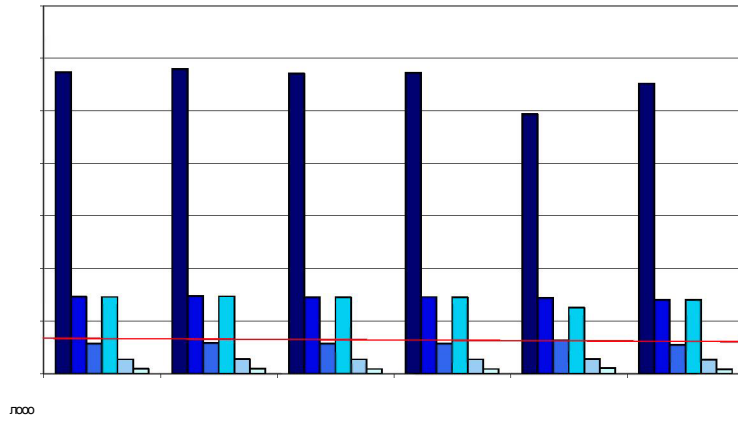


A6.6 Germany

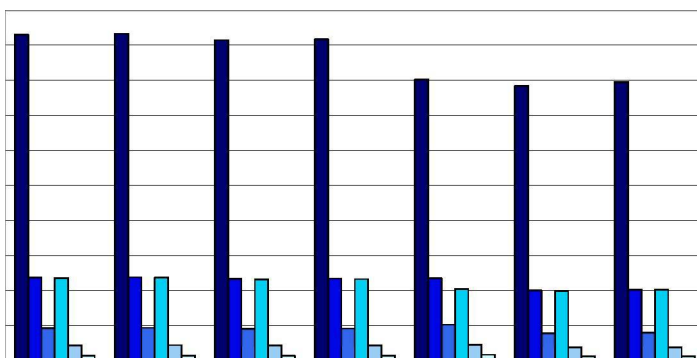
Germany - Total Insurance

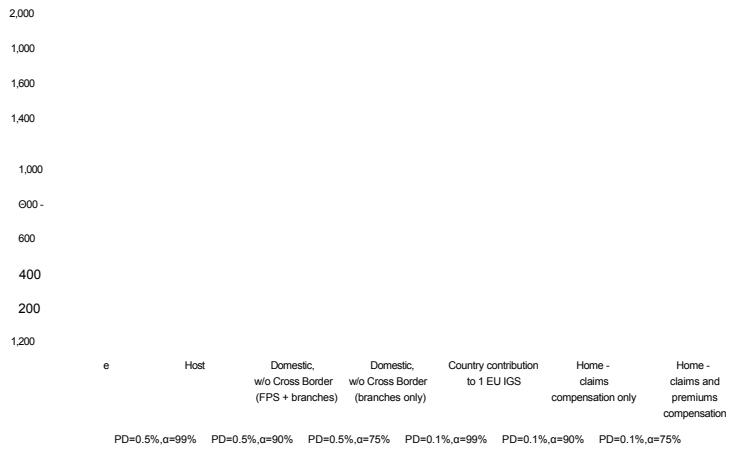


Germany - Life Insurance

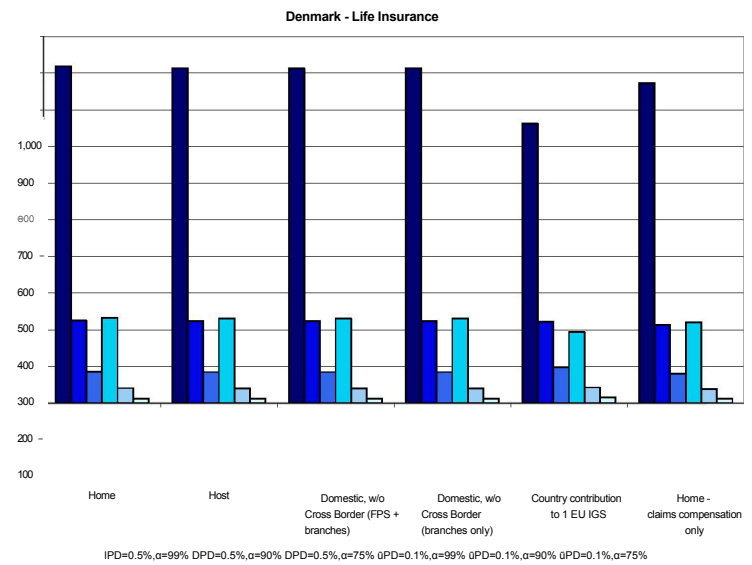
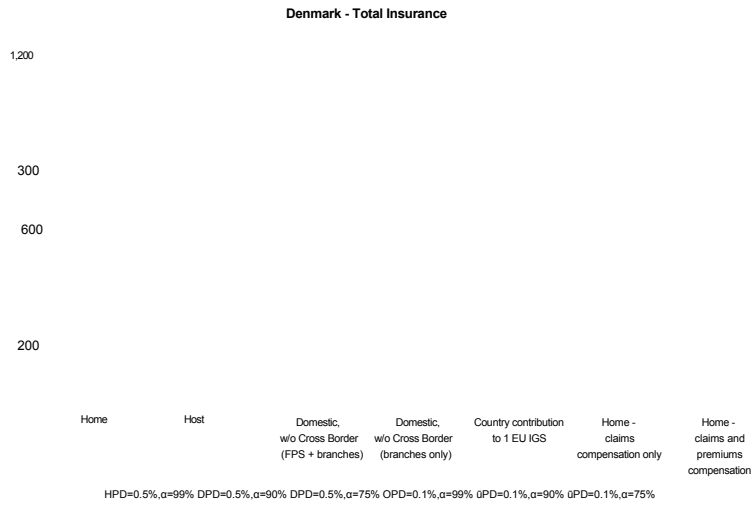


Germany - Non-Life Insurance





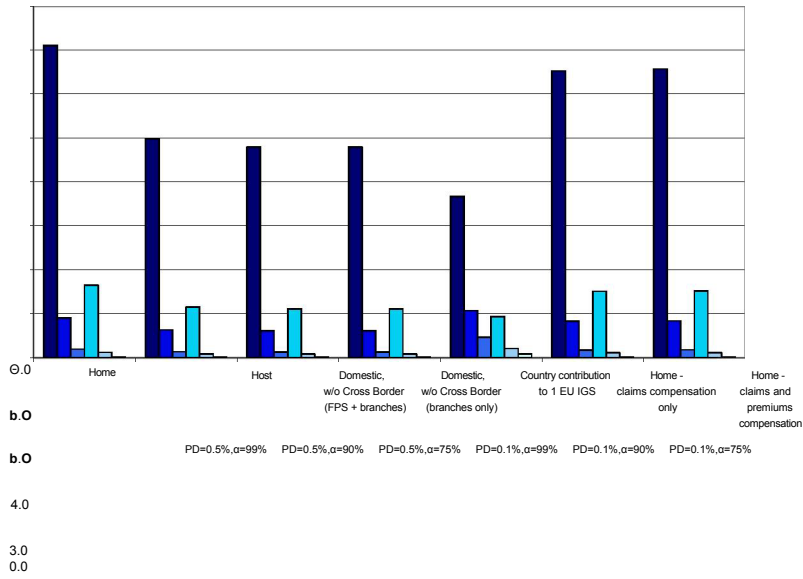
A6.7 Denmark



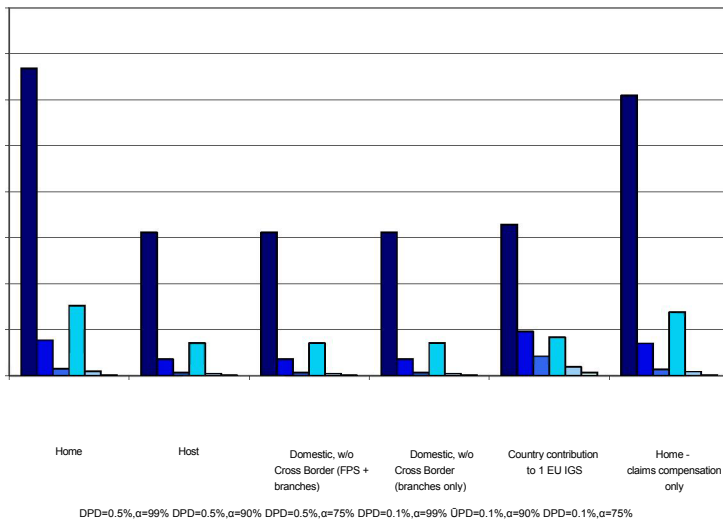
Note: red line refers to the target fund size

A6.8 Estonia

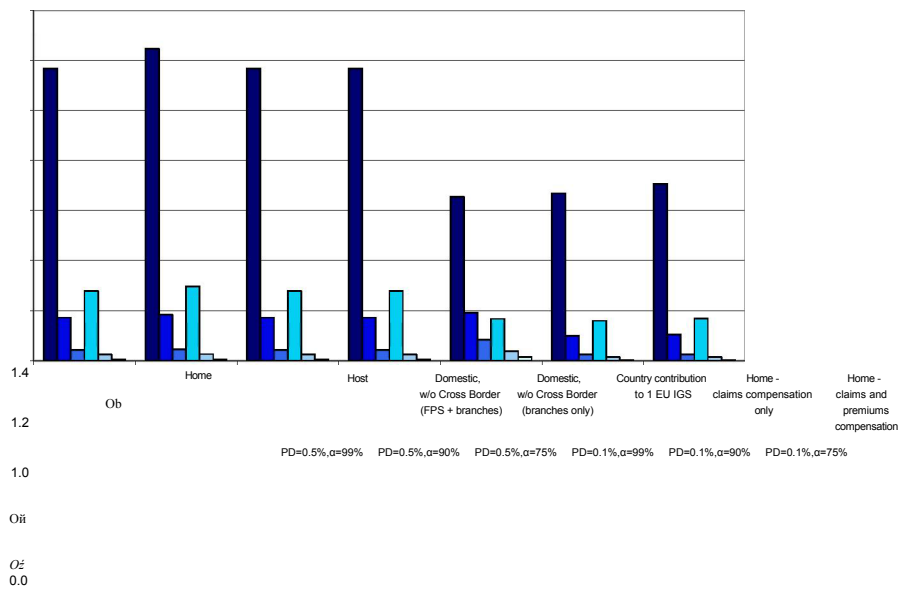
Estonia - Total Insurance



Estonia - Life Insurance



Estonia - Non-Life Insurance

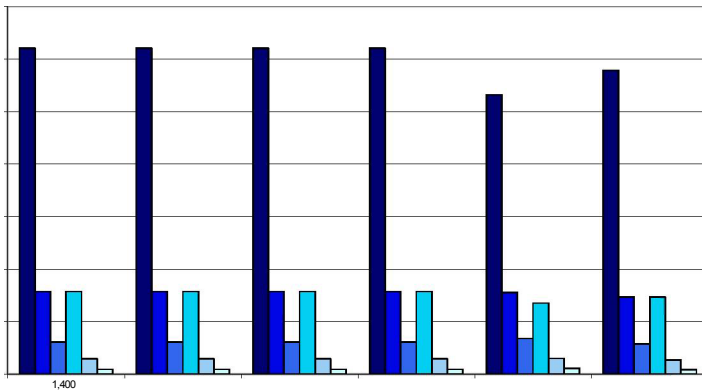


A6.9 Spain

Spain - Total Insurance



Spain - Life Insurance



800

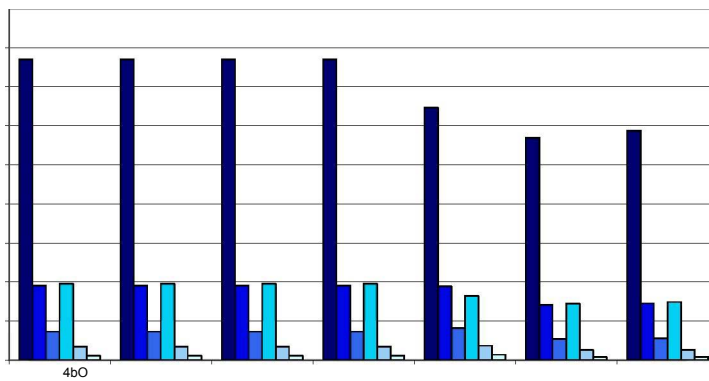
600

400

Home Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home - claims compensation only

IPD=0.5%, α =99% DPD=0.5%, α =90% DPD=0.5%, α =75% 0PD=0.1%, α =99% 0PD=0.1%, α =90% 0PD=0.1%, α =75%

Spain - Non-Life Insurance



300

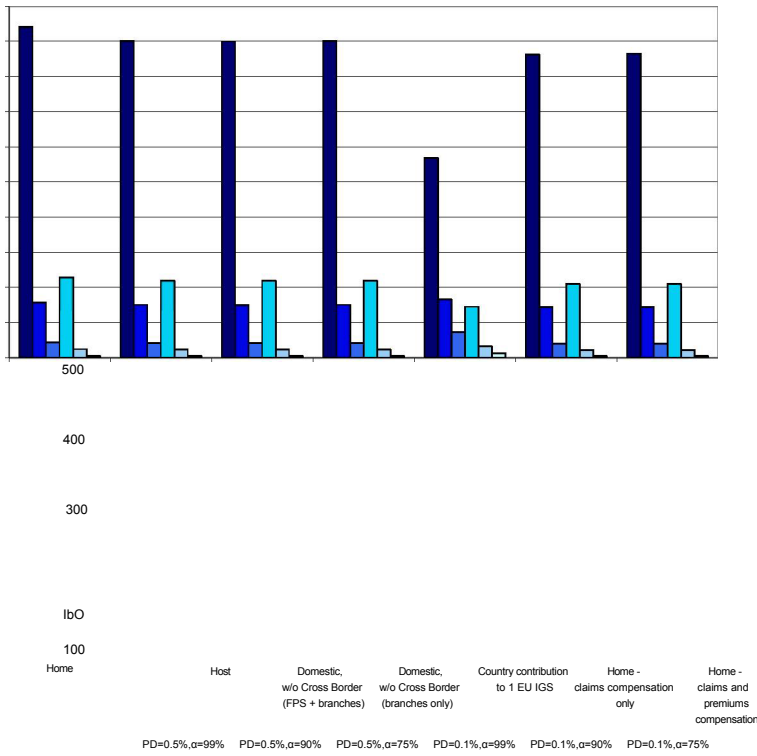
tO

200

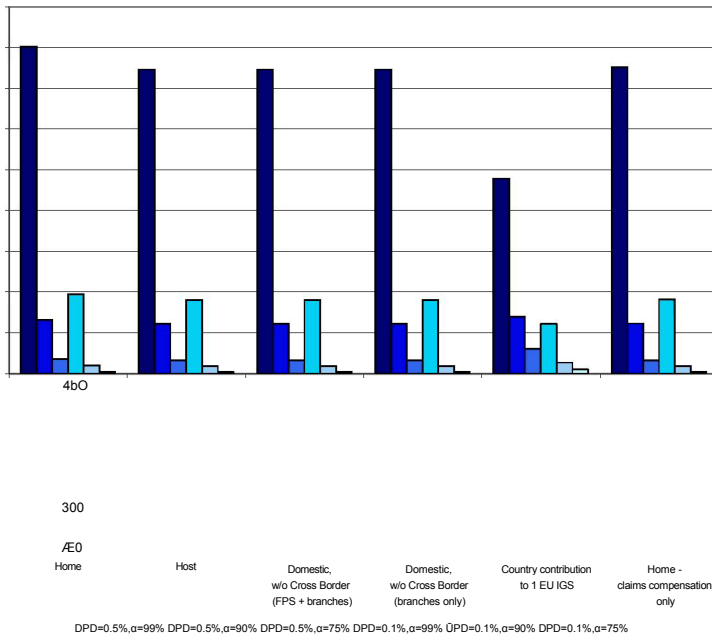
Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%	

A6.10 Finland

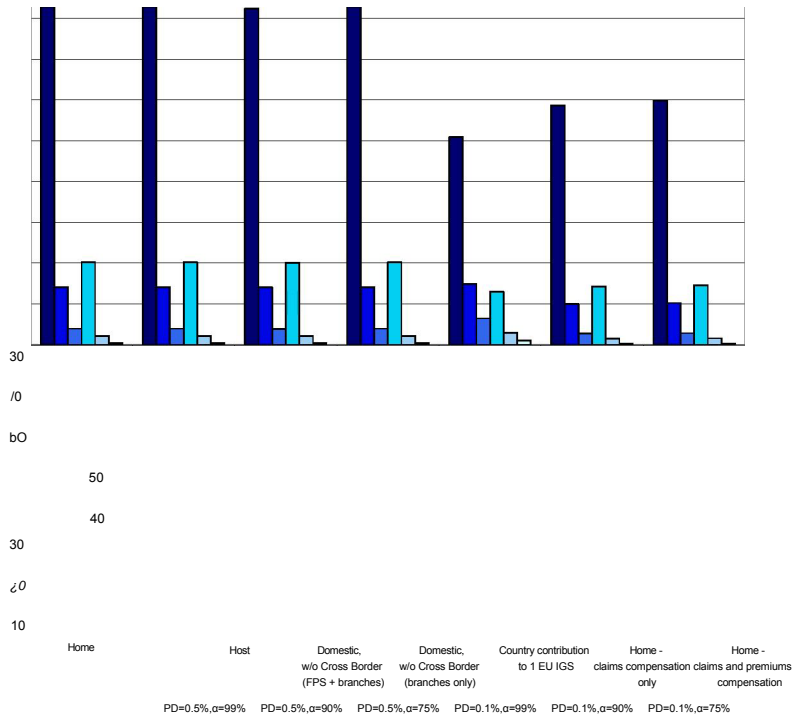
Finland - Total Insurance



Finland - Life Insurance

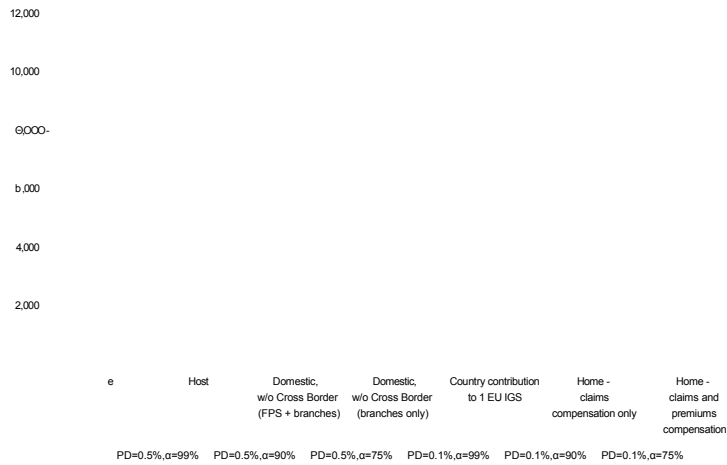


Finland - Non-Life Insurance

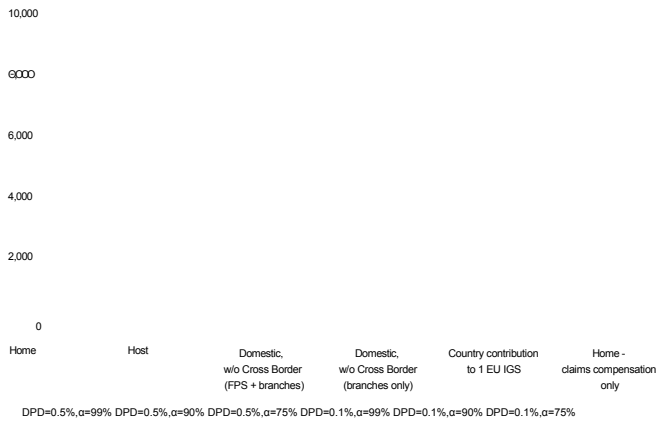


A6.11 France

France - Total Insurance

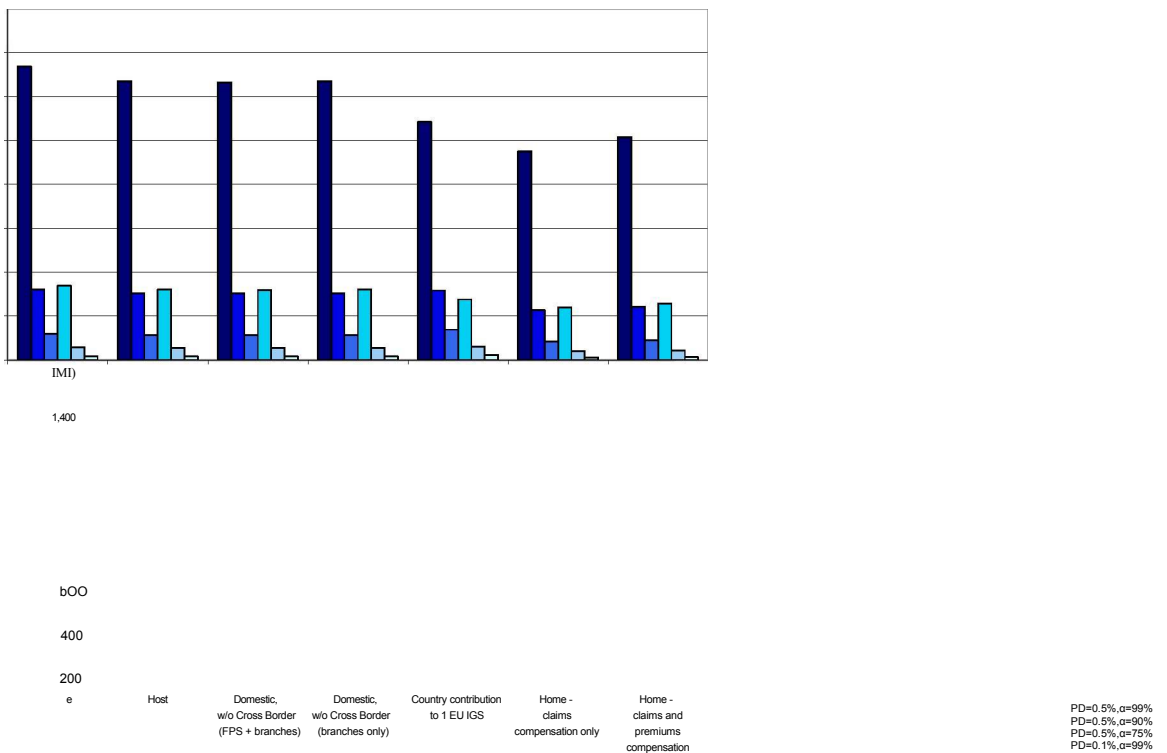


France - Life Insurance



Note: red line refers to the 2007 fund size

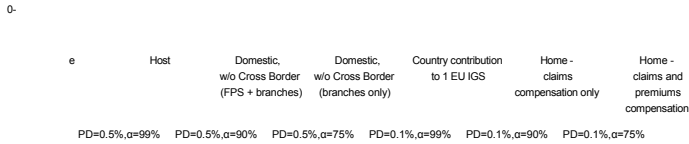
France - Non-Life Insurance



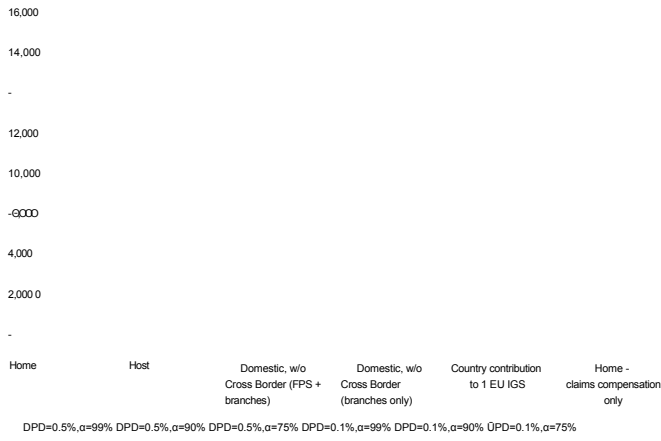
PD=0.1%, α =90% PD=0.1%, α =75%

A6.12 United Kingdom

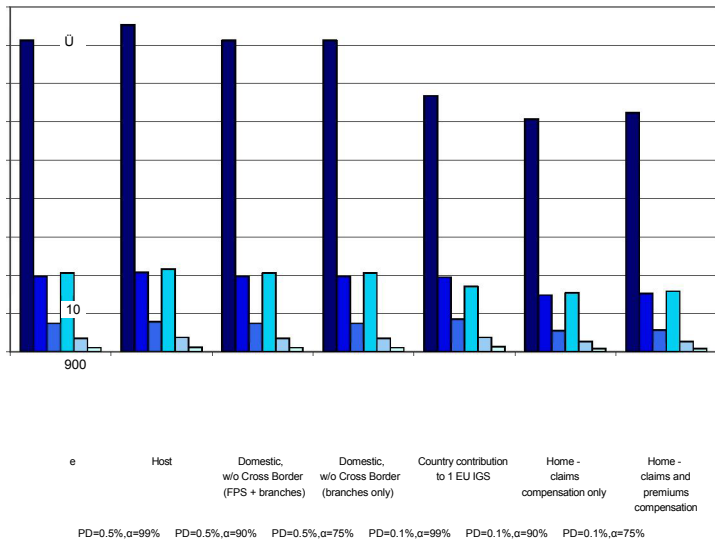
United Kingdom - Total Insurance



United Kingdom - Life Insurance

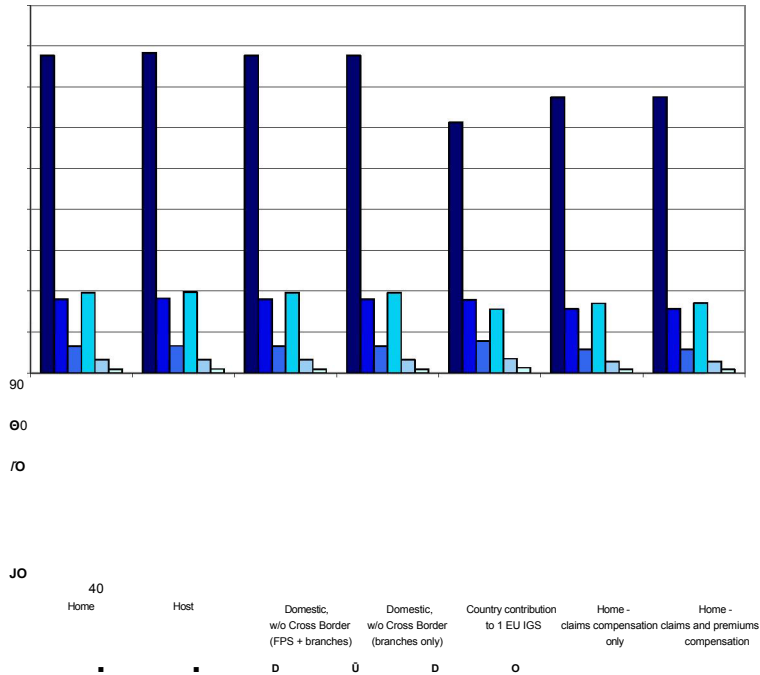


United Kingdom - Non-Life Insurance

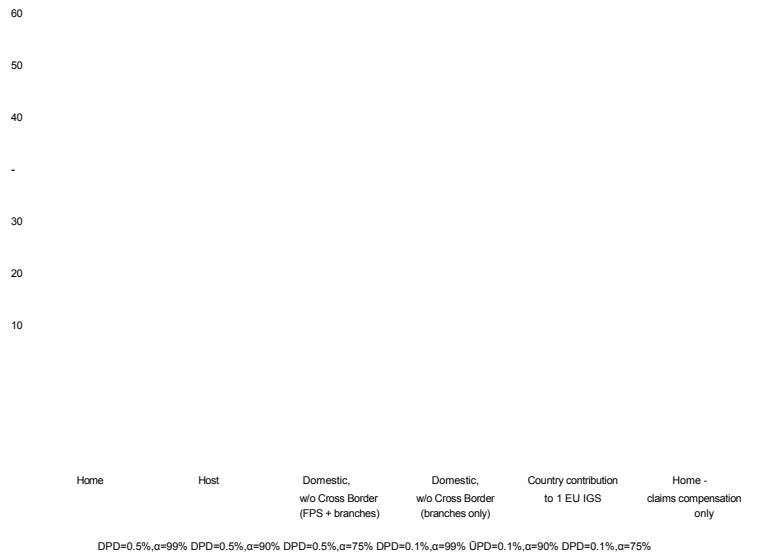


A6.13 Greece

Greece - Total Insurance



Greece - Life Insurance



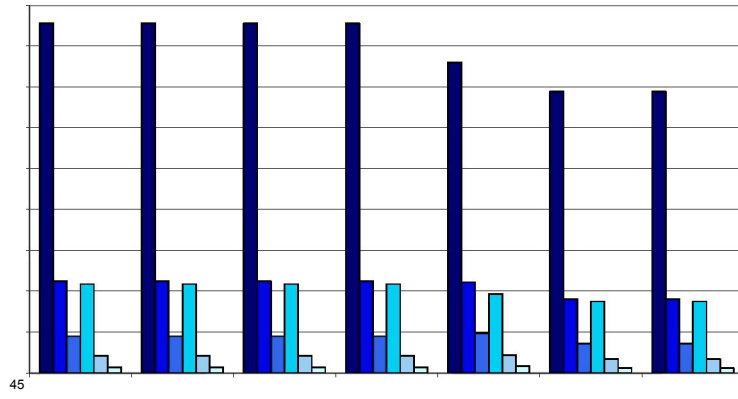
Greece - Non-Life Insurance



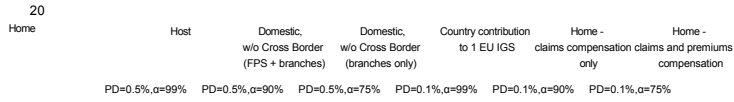
▪ ▪ D Û D O

A6.14 Hungary

Hungary - Total Insurance

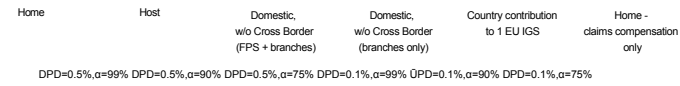


1b

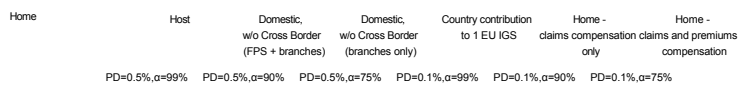


Hungary - Life Insurance

0

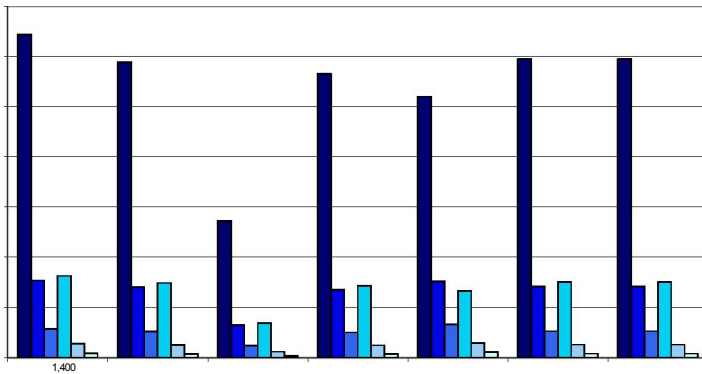


Hungary - Non-Life Insurance



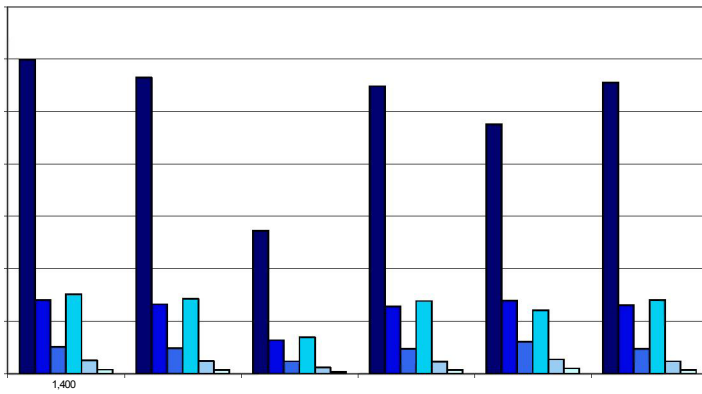
A6.15 Ireland

Ireland - Total Insurance



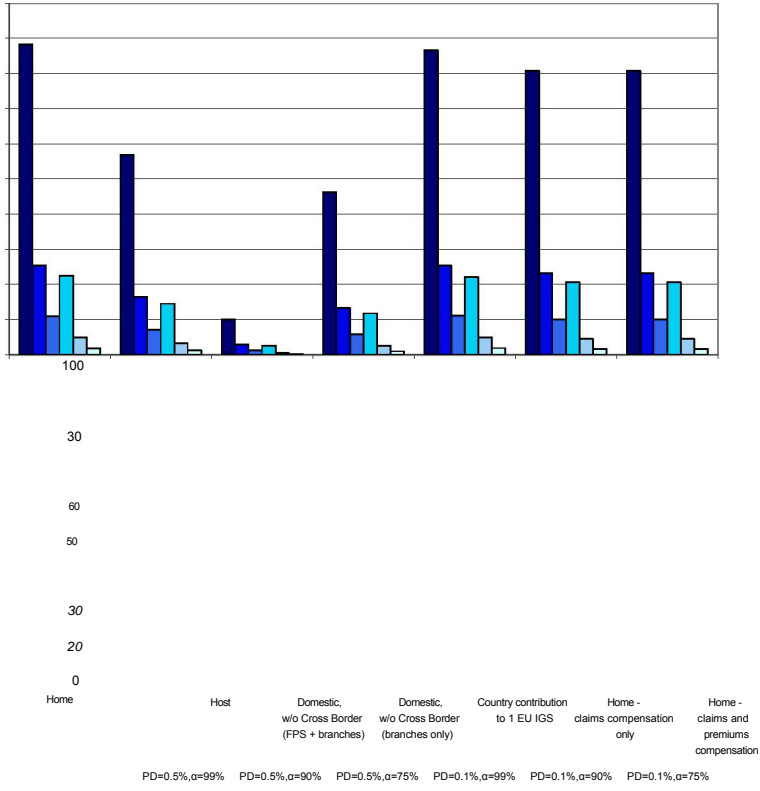
200
 e
 Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home-claims compensation only Home-claims and premiums compensation
 PD=0.5%, α =99% PD=0.5%, α =90% PD=0.5%, α =75% PD=0.1%, α =99% PD=0.1%, α =90% PD=0.1%, α =75%

Ireland - Life Insurance



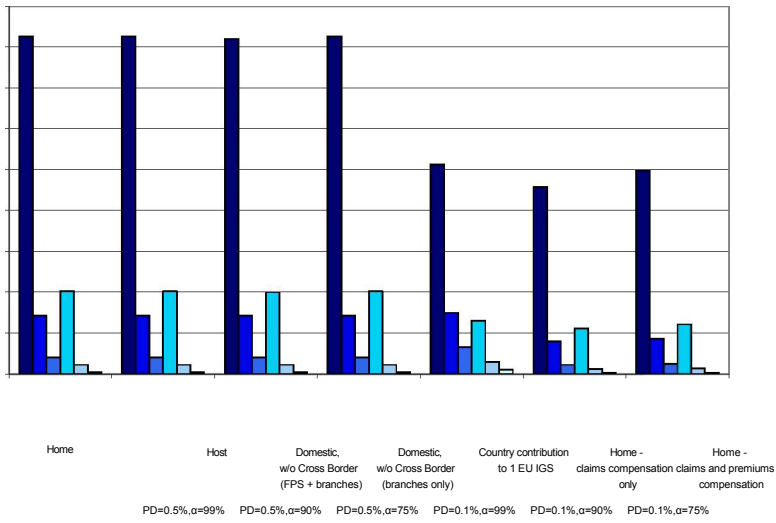
600
 400
 200
 Home
 Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home-claims compensation only
 DPD=0.5%, α =99% DPD=0.5%, α =90% DPD=0.5%, α =75% DPD=0.1%, α =99% DPD=0.1%, α =90% DPD=0.1%, α =75%

Ireland - Non-Life Insurance



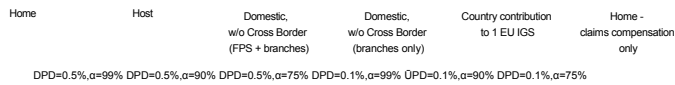
A6.16 Iceland

Iceland - Total Insurance

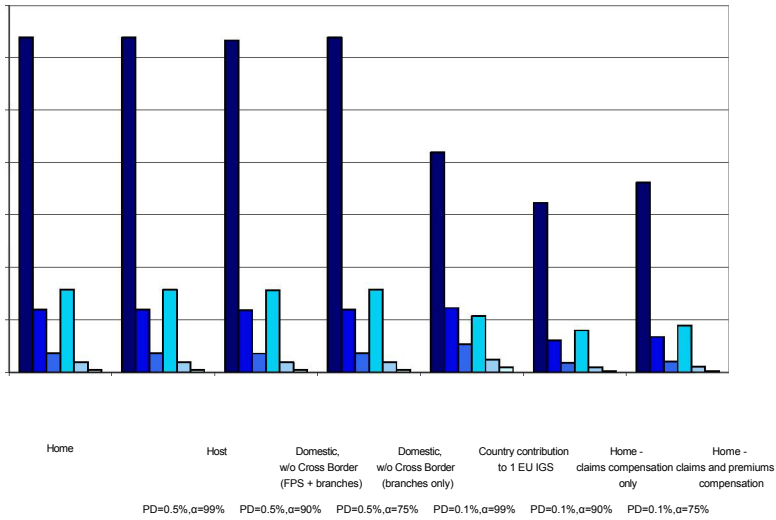


Iceland - Life Insurance

2

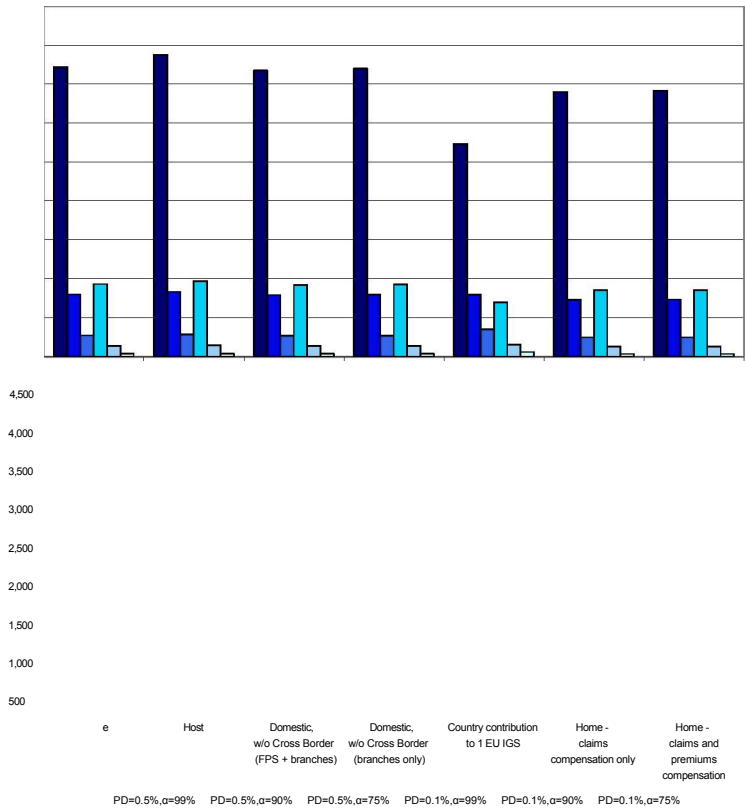


Iceland - Non-Life Insurance

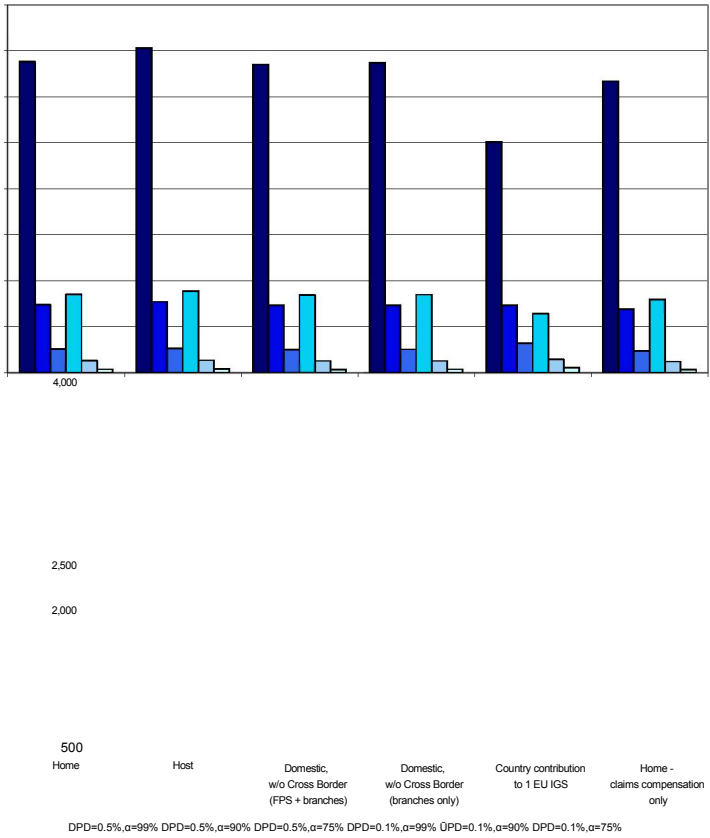


A6.17 Italy

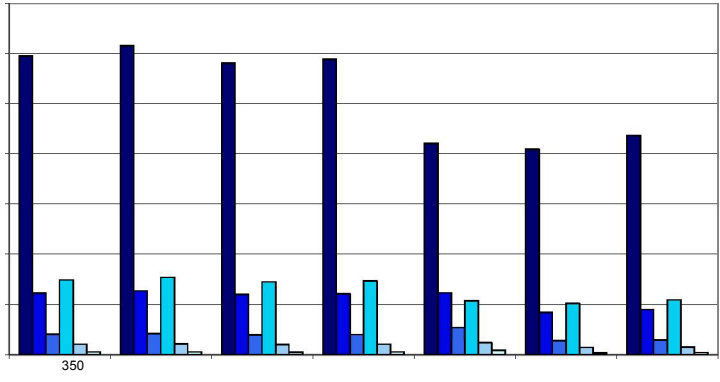
Italy - Total Insurance



Italy - Life Insurance



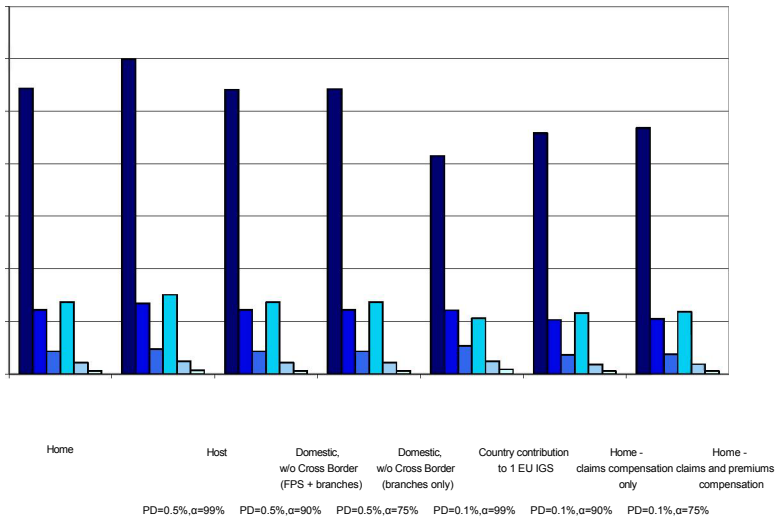
Italy - Non-Life Insurance



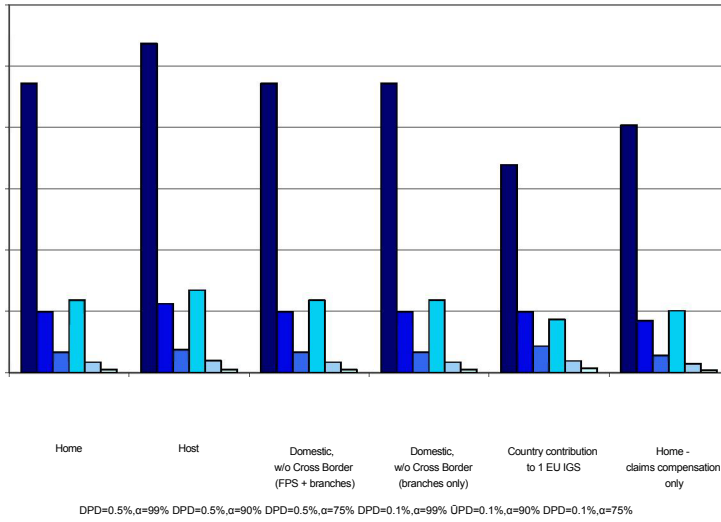
DO						
Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%	

A6.18 Lithuania

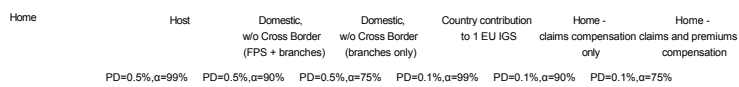
Lithuania - Total Insurance



Lithuania - Life Insurance

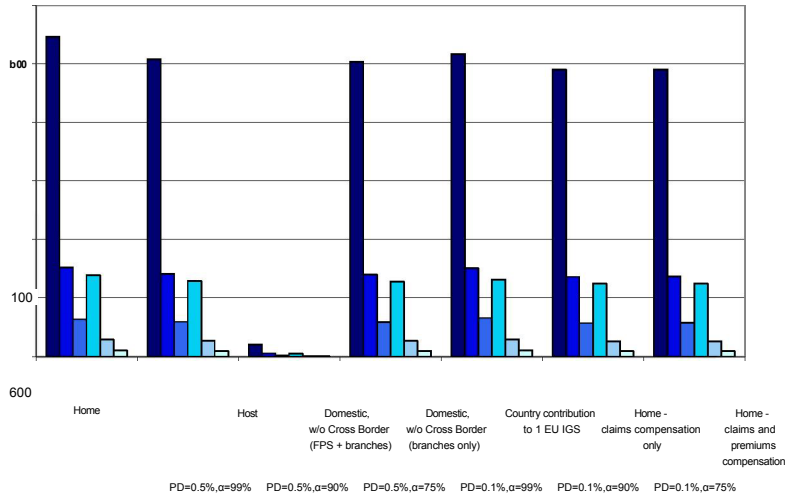


Lithuania - Non-Life Insurance

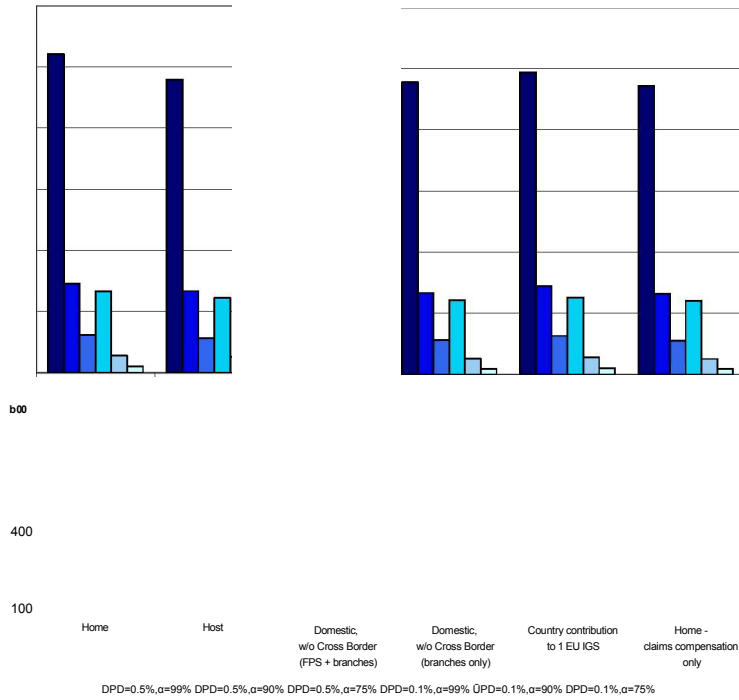


A6.19 Luxembourg

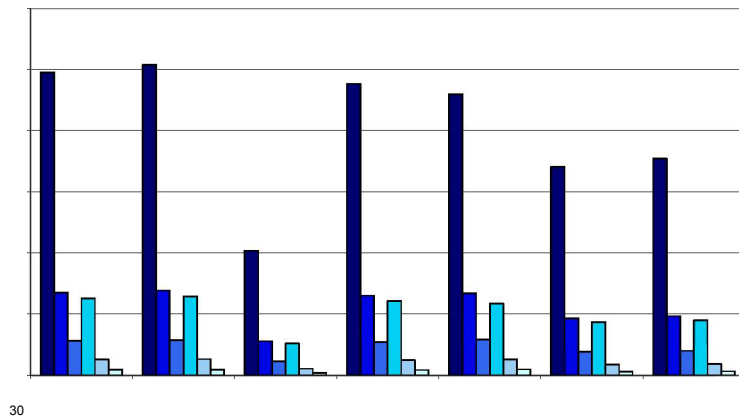
Luxembourg - Total Insurance



Luxembourg - Life Insurance



Luxembourg - Non-Life insurance

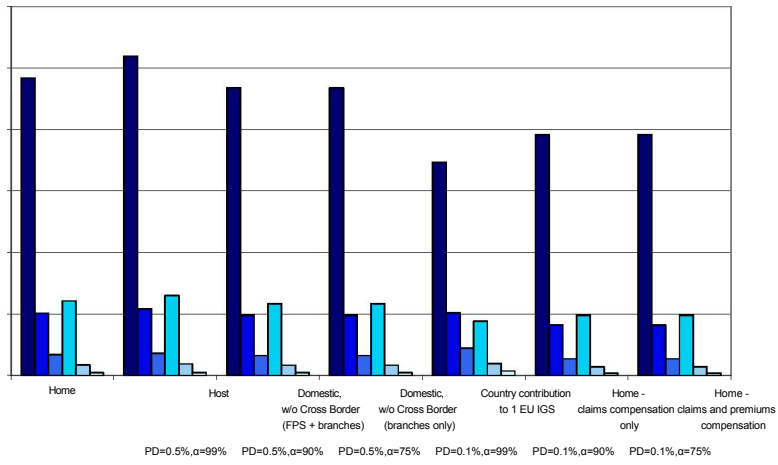


z/b

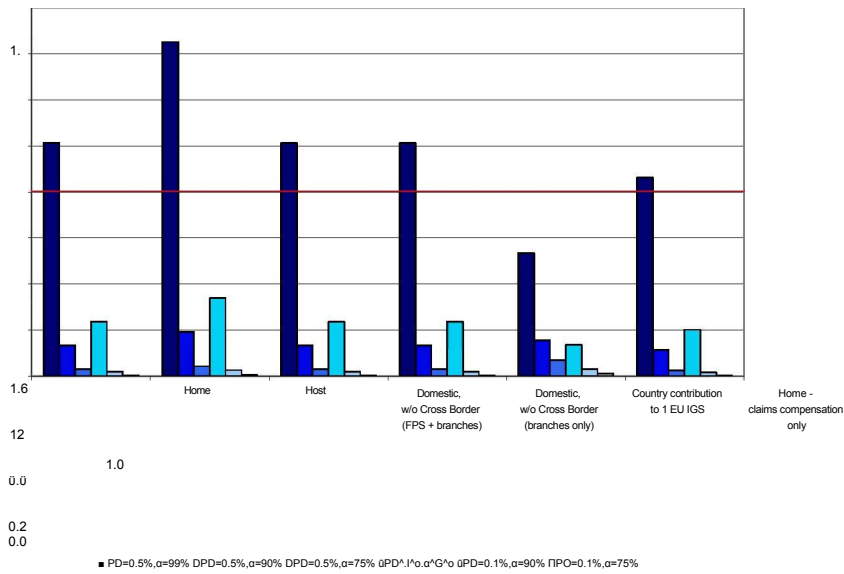
Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%	

A6.20 Latvia

Latvia - Total Insurance

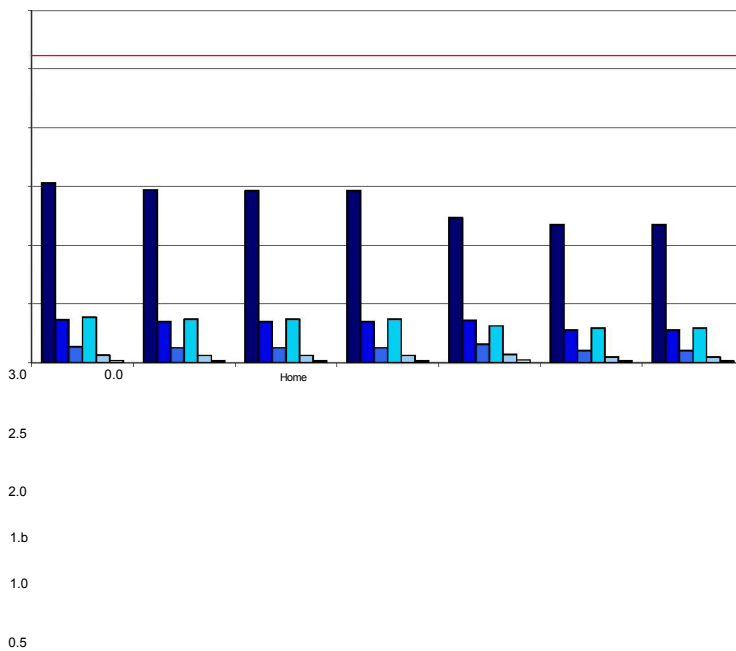


Latvia - Life Insurance



Note: red line refers to the 2006 fund size

Latvia - Non-Life Insurance



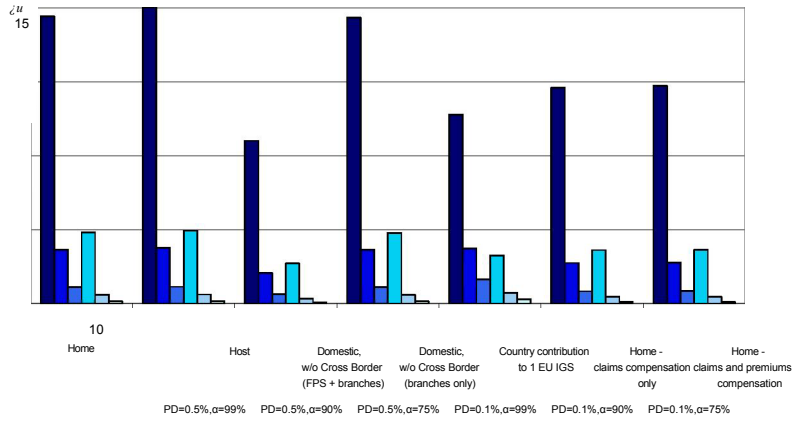
Host	Domestic, foreign	Domestic, foreign	Country contributor	EU IGS (FPS + branches)	claims compensation (branches only)	claims and only	premiums compensation	
			PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%
Country contributor								
EU IGS (FPS + branches)								
claims compensation (branches only)								
claims and only								
premiums compensation								

Note: red line refers to the 2006 fund size

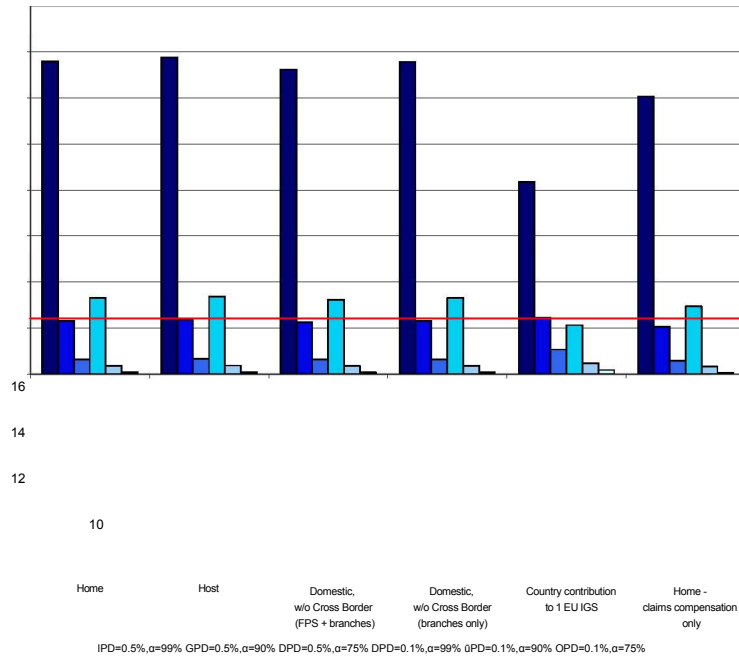
A6.21 Malta

Malta - Total Insurance

2b

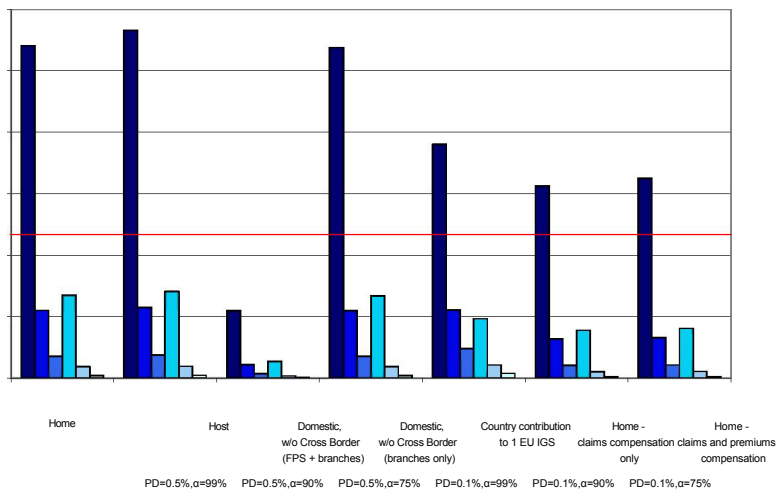


Malta - Life Insurance



Note: red line refers to the target fund size

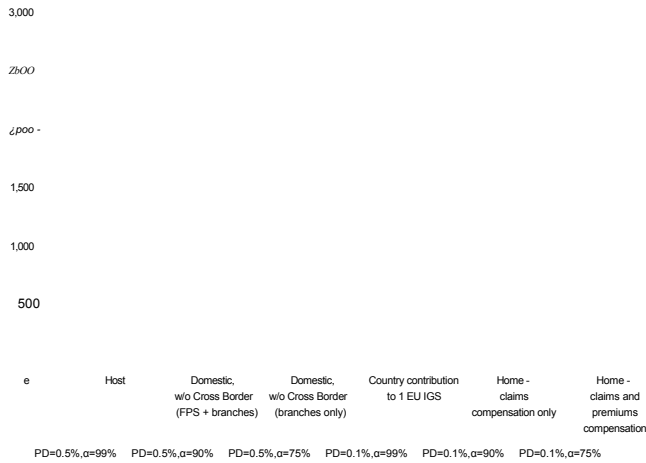
Malta - Non-Life Insurance



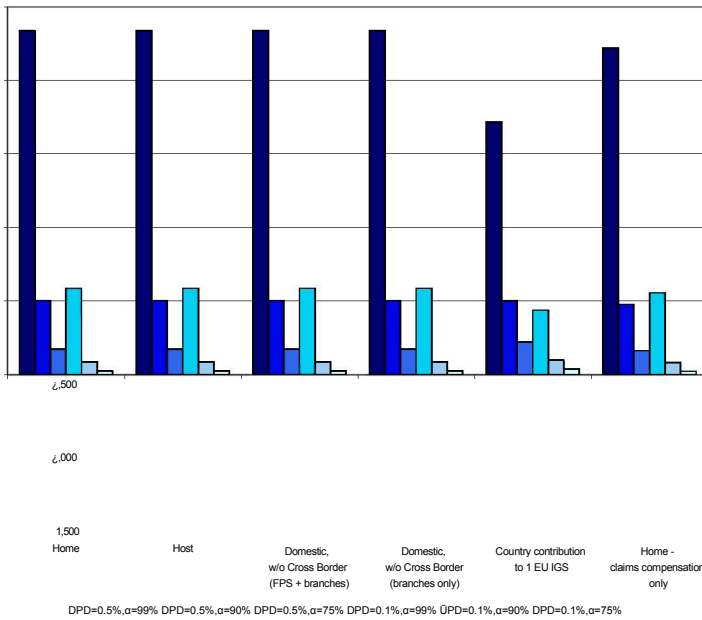
Note: red line refers to the target fund size

A6.22 The Netherlands

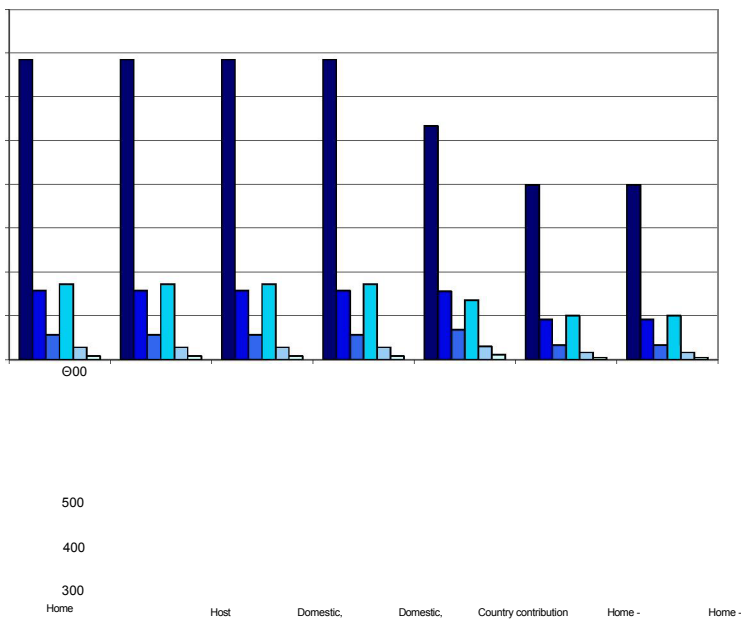
The Netherlands - Total Insurance



The Netherlands - Life Insurance



The Netherlands - Non-Life Insurance



	o Cross Border (FPS + branches)	(branches only)	to 1 EU IGS	claims compensation only	claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75

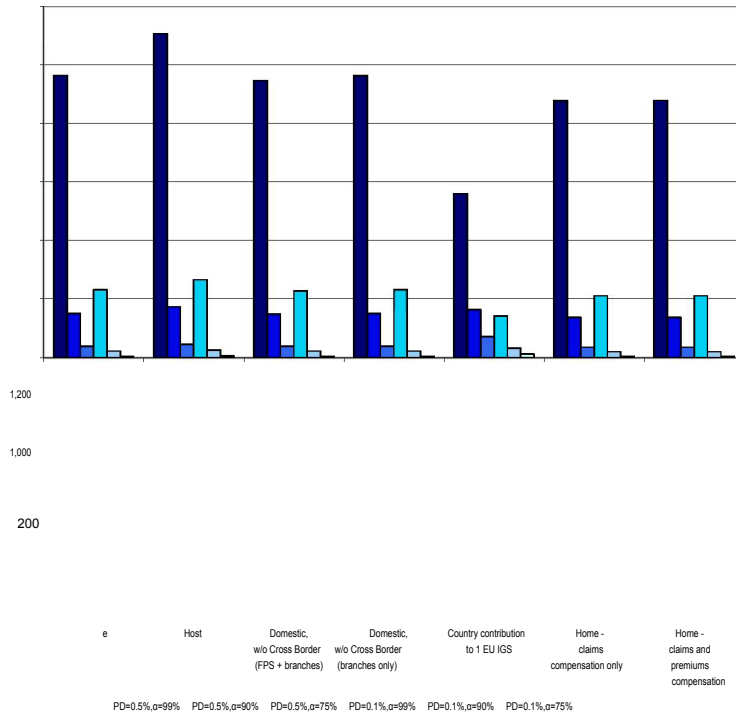
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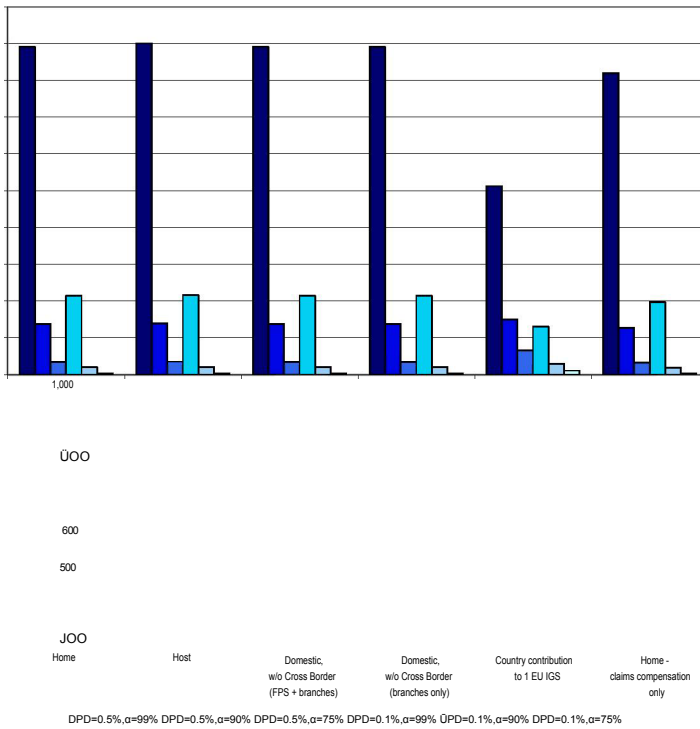
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 /

A6.23 Norway

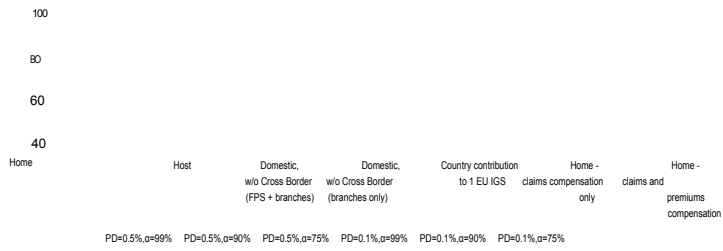
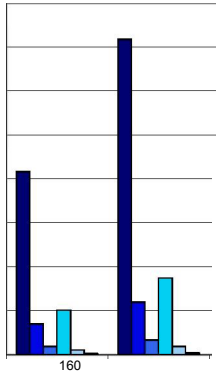
Norway - Total Insurance



Norway - Life Insurance

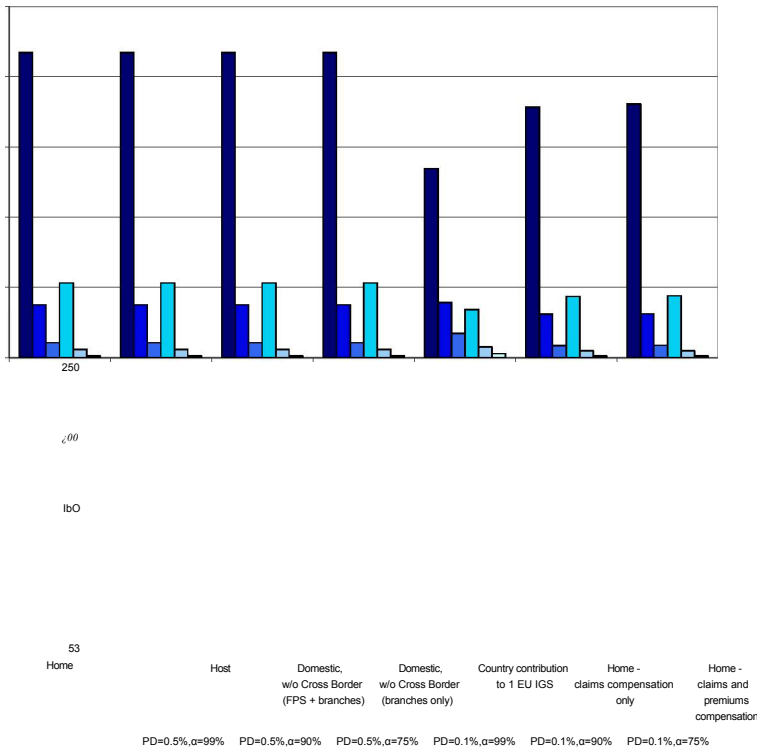


Norway - Non-Life Insurance

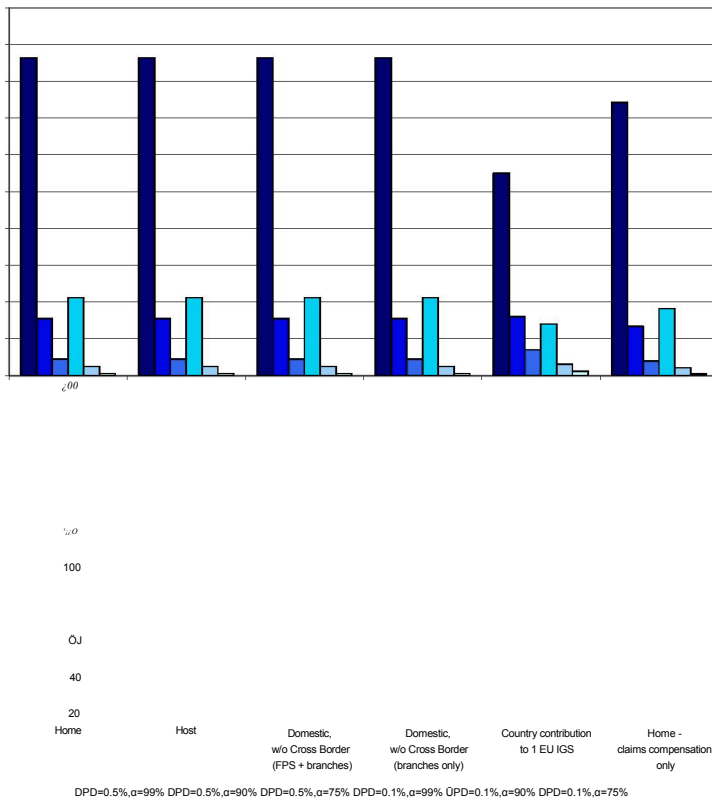


A6.24 Poland

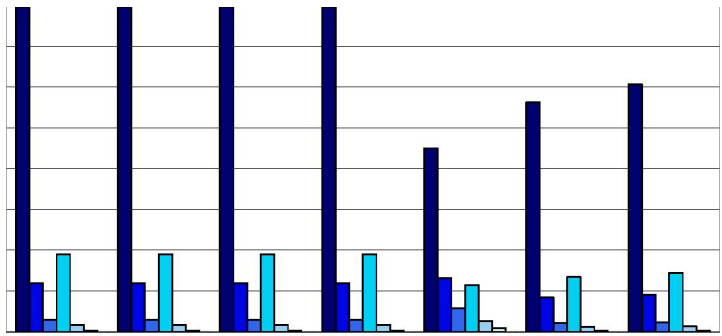
Poland - Total Insurance



Poland - Life Insurance



Poland - Non-Life Insurance



db

30

25

20

10

Home

Host

Domestic,
w/o Cross Border
(FPS + branches)

Domestic,
w/o Cross Border
(branches only)

Country contribution
to 1 EU IGS

Home -
claims compensation
only

Home -
claims and premiums
compensation

PD=0.5%, α=99%

PD=0.5%, α=90%

PD=0.5%, α=75%

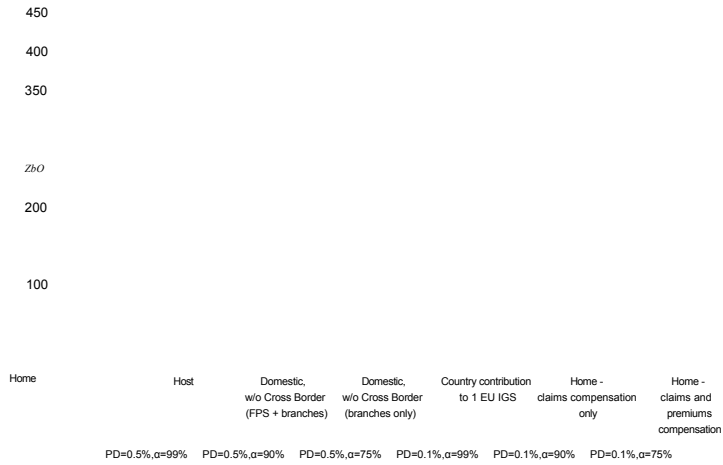
PD=0.1%, α=99%

PD=0.1%, α=90%

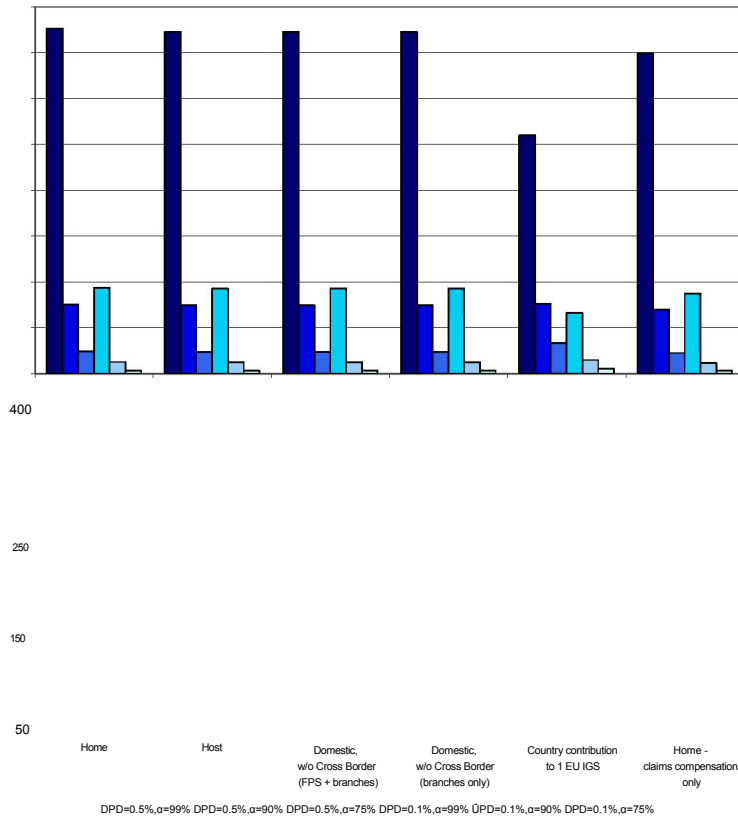
PD=0.1%, α=75%

A6.25 Portugal

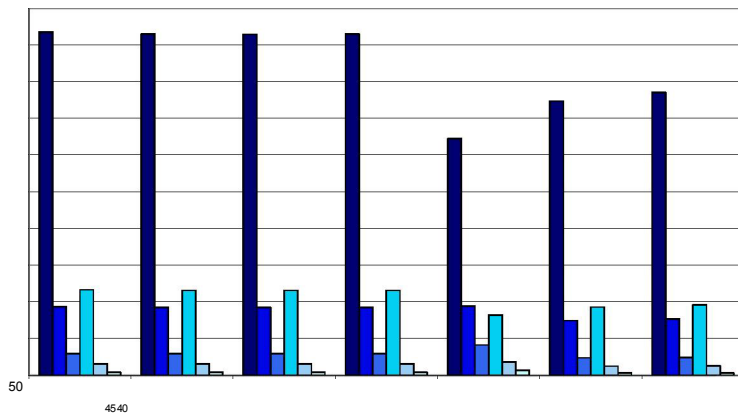
Portugal - Total Insurance



Portugal - Life Insurance



Portugal - Non-Life Insurance



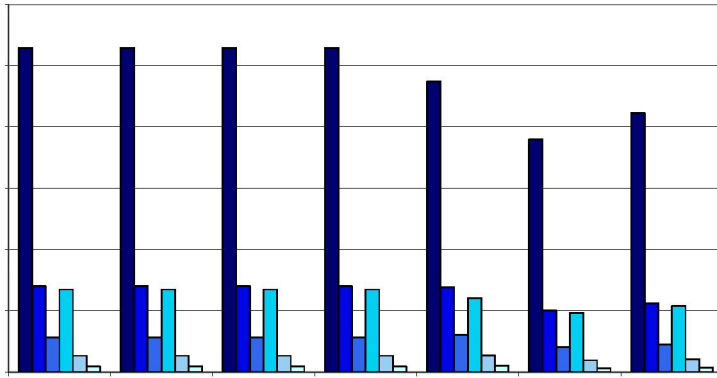
20

10
Home

Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%

A6.26 Romania

Romania - Total Insurance

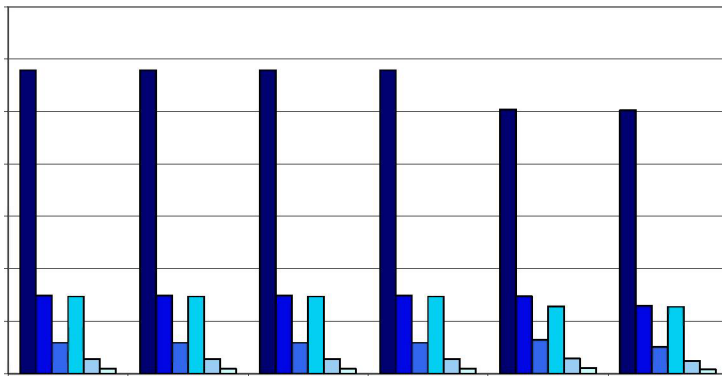


12

10

Home Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home - claims compensation only Home - claims and premiums compensation
 PD=0.5, α=99% PD=0.5, α=90% PD=0.5, α=75% PD=0.1, α=99% PD=0.1, α=90% PD=0.1, α=75%

Romania - Life Insurance



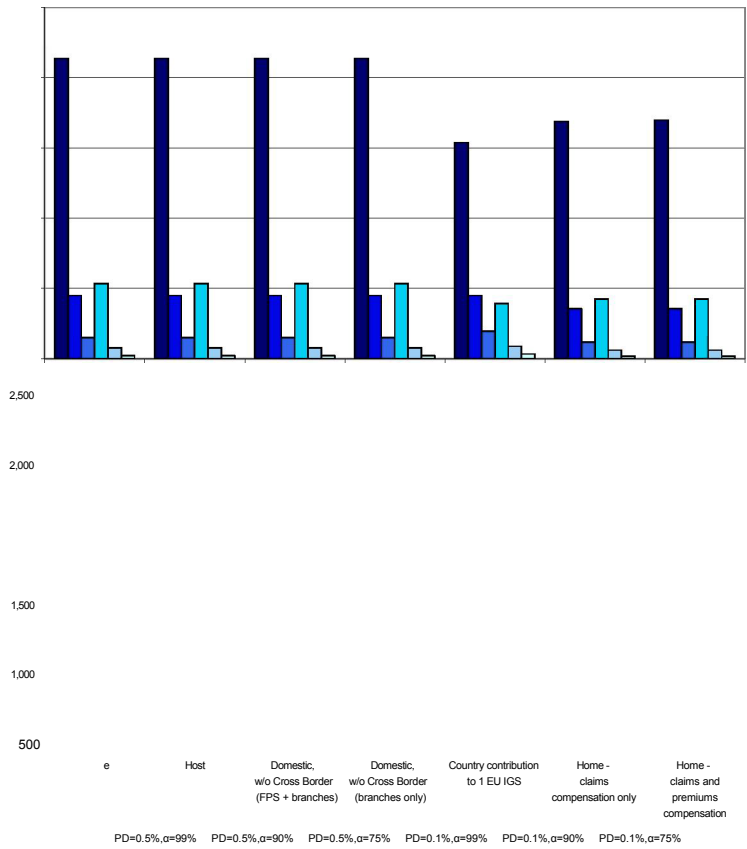
Home Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home - claims compensation only
 ■ PM5%, α=99% DPD=0.5, α=90% DPD=0.5, α=75% DPD=0.1, α=99% DPD=0.1, α=90% DPD=0.1, α=75%

Romania - Non-Life Insurance

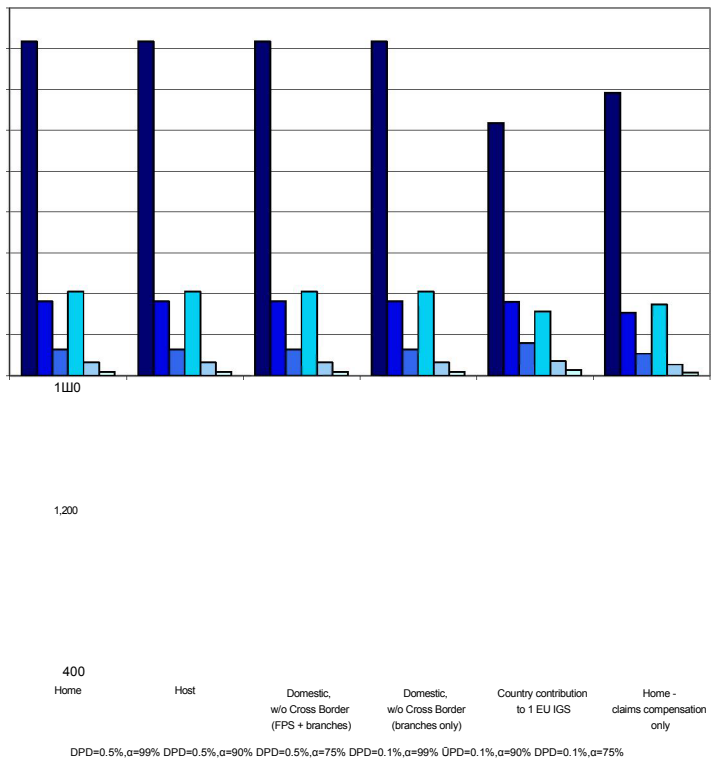
Home Host Domestic, w/o Cross Border (FPS + branches) Domestic, w/o Cross Border (branches only) Country contribution to 1 EU IGS Home - claims compensation only Home - claims and premiums compensation
 ■ PD=0.5, α=99% DPD=0.5, α=90% DPD=0.5, α=75% DPD=0.1, α=99% DPD=0.1, α=90% DPD=0.1, α=75%

A6.27 Sweden

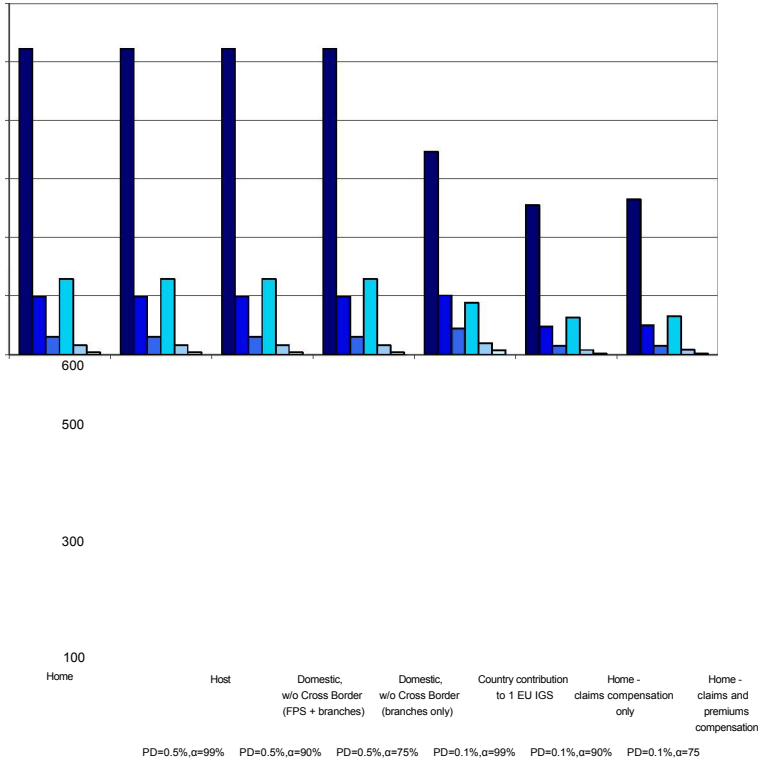
Sweden - Total Insurance



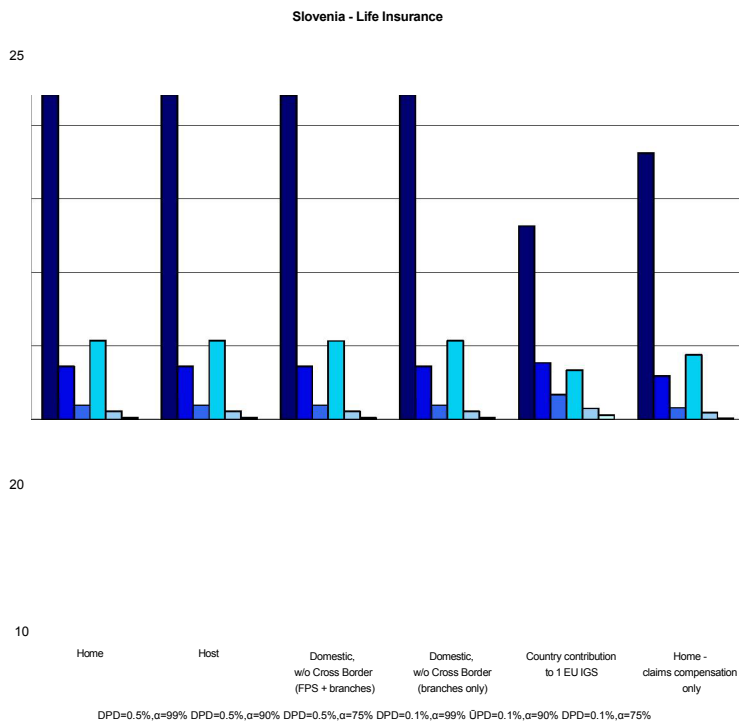
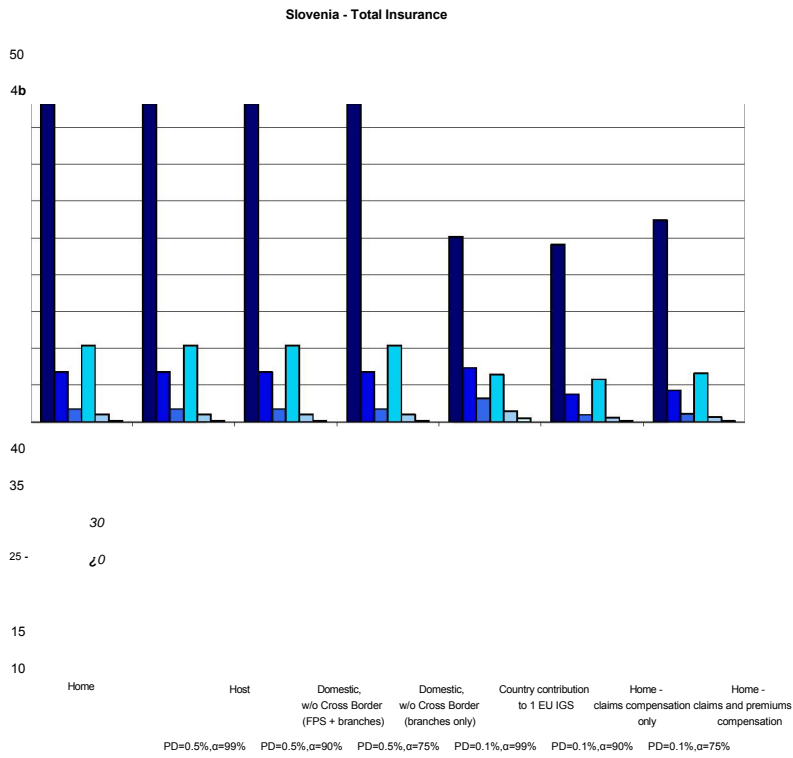
Sweden - Life Insurance



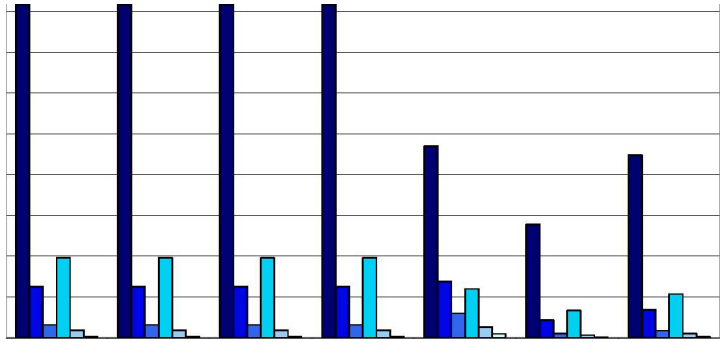
Sweden - Non-Life Insurance



A6.28 Slovenia



Slovenia - Non-Life Insurance



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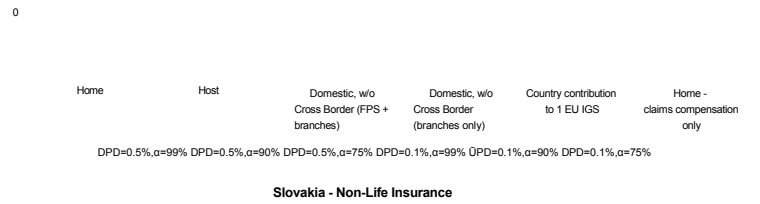
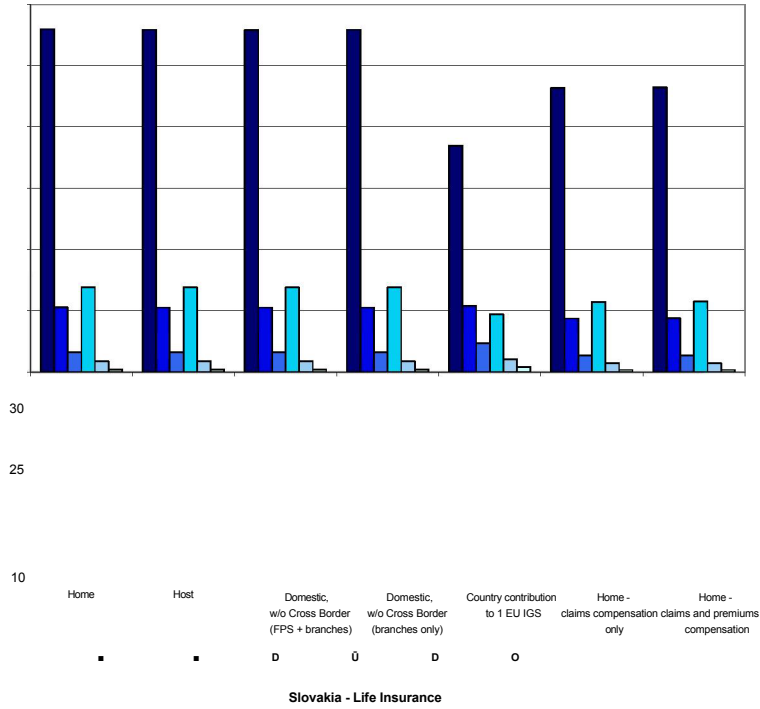
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Home	Host	Domestic, w/o Cross Border (FPS + branches)	Domestic, w/o Cross Border (branches only)	Country contribution to 1 EU IGS	Home - claims compensation only	Home - claims and premiums compensation
PD=0.5%, α =99%	PD=0.5%, α =90%	PD=0.5%, α =75%	PD=0.1%, α =99%	PD=0.1%, α =90%	PD=0.1%, α =75%	

A6.29 Slovakia

Slovakia - Total Insurance





EUROPEAN COMMISSION

Brussels, 12.7.2010
SEC(2010)840

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

PART V

Accompanying document to the

WHITE PAPER

on Insurance Guarantee Schemes

{COM(2010) 370}
{SEC(2010) 841}



**EUROPEAN
COMMISSION**

Impact Assessment Board

Brussels, 2 g H/II 201

D(2010)

Opinion

Title

**Impact Assessment accompanying the White Paper on
Insurance Guarantee Schemes (Resubmitted draft version of 10
May 2010)**

(A) Context

Guarantee schemes exist in a number of sectors in the financial services industry, and minimum protection standards have been harmonised at the European level by the 1994 Deposit Guarantee Scheme (DGS) Directive and the 1997 Investor Compensation Scheme (ICS) Directive. However, there is no such European framework in the insurance sector. To remedy this, the de Larosière Group recommended the setting-up of harmonised Insurance Guarantee Schemes (IGS) throughout the EU. In its Communication of 4 March 2009 “Driving European recovery”, the Commission announced that it would review the adequacy of existing guarantee schemes in the insurance sector and make legislative proposals. To this end it will adopt a White Paper in early 2010. This report follows earlier impact assessments accompanying the White Paper on Enhancing the Single Market Framework for Investment Funds in 2006 and the legislative proposal amending the UCITS Directive in 2008.

(B) Overall assessment

The report has been improved on a number of issues mentioned in the IAB’s first opinion, and provides a significant amount of analysis. It remains, however, highly technical and a further effort should be made to explain more clearly the link between the likelihood of default of insurance companies, the need for enhanced consumer protection and the need for action at EU level. The presentation of the objectives and the most relevant policy options should be simplified and made more transparent. The Board recommends a thorough editing of the report to remove repetitions and unnecessary detail.

The Board welcomes the fact that stakeholders will be able to give feedback on the White Paper that this IA report accompanies, and that a further impact assessment will accompany any follow-up measures and will analyse in detail the design features of any proposed insurance guarantee scheme.

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(C) Main recommendations for improvements

- (1) Further clarify the extent of the problem, to show why EU intervention is necessary.** The analysis in the problem definition has been strengthened and provides more statistical evidence concerning the likelihood of major defaults. The report should, however, summarise this in a less technical way, make more use of historical and hypothetical examples, and clarify the terminology used (in particular relating to losses, default and failures as it is not always clear what the potential losses passed to policy holders entail (*e.g.* unpaid claims or lost premiums). Some of the technical analysis could be moved to the Annexes. The report should also present a more balanced assessment of the extent of possible problems rather than examples of worst case scenarios only (high probability of default, high security), and the estimations of potential losses passed on to consumers should be put in perspective, for example with respect to GDP, revenues of the sector. Given that cross-border insurance activity is one of the justifications for EU action, and given that it is currently relatively small, the report should clarify the drivers of the expected growth of this share. The reference to the negative effects on competition caused by the different approaches across Member States and the lack of a level playing field in 3.2.2 and 3.3 should be clarified or omitted in view of the doubts that the report expresses about the ability of policyholders to assess the available information on insurance products and providers.
- (2) Present the objectives and all relevant policy options more transparently.** While the presentation of objectives and policy options in diagrammatic form can be helpful, it should be complemented by a clearly written explanation in the main text. The links with the problem description and in particular to the issue of financial stability should be further clarified in the report. Unclear terminology such as ‘paramount objective’ should be avoided. The specific objectives should be expressed more clearly and explicitly indicate that the aim is to protect consumers. In this context the report should also clarify if the current level of protection offered by existing IGS is too low since this is suggested by the calculations made in section 2. If this is the case then an additional objective could be to increase protection level for policy holders. The report should analyse in greater detail why it considers that different forms of EU intervention, such as exchange of best practice or a recommendation could not attain the objectives.

Some more technical comments have been transmitted directly to the author DG and are expected to be incorporated in the final version of the impact assessment report.

(D) Procedure and presentation

The report should be presented in a more succinct and less technical way. Unnecessary technical detail should be omitted and detailed data and analysis that supports the argument in the main text should be moved to Annexes. These annexes should, however, only contain material which is directly relevant to the report. Cross-links between the main text and the Annexes should be checked for consistency.

The report should give more prominence to the planned next steps in the development of this policy, and what impact assessment will need to be undertaken to inform these. As requested in the Board’s first opinion, the report should clarify to what extent previous consultation results - some of which are several years old - are still representative for current Member State and stakeholder opinion.

(E) IAB scrutiny process

Reference number	2009/MARKT/075
External expertise used	No
Date of IAB meeting	Written procedure



EUROPEAN COMMISSION

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COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

PART VI

Accompanying document to the

WHITE PAPER

on Insurance Guarantee Schemes

{COM(2010) 370}
{SEC(2010) 841}



EUROPEAN COMMISSION
DIRECTORATE-GENERAL JRC
JOINT RESEARCH CENTRE

PART I

METHODOLOGICAL REPORT

Insurance Guarantee Schemes: derivation of loss distributions and funding needs.

European Commission, Joint Research Centre, Unit G09, Ispra (Italy)

*For internal use by the European Commission
18 January 2010*

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Introduction

Insurance guarantee schemes (IGS) provide last-resort protection for policyholders and other beneficiaries when insurers are unable to fulfil their contractual commitments. IGSs offer protection against the risk that claims will not be met in the event of failure of an insurance undertaking by paying compensation or by securing continuation of the contract.

In its Communication of 4 March 2009 'Driving European recovery', the Commission stressed the need to reinforce the protection of consumers. It stressed in particular that additional measures are needed to reinforce depositor, investor and insurance policyholder protection. The Communication stated that an effective and comprehensive legal framework for retail financial services needs to be put in place and that, among other moves, the Commission would therefore review, in the beginning of 2010 the adequacy of existing guarantee schemes in the insurance sector and make appropriate legislative proposals.

To this end, the Commission intends to adopt a White Paper on IGSs by the beginning of this year. The White Paper will set out a possible European solution for IGSs and propose appropriate follow-up measures. In line with the better regulation agenda, the White Paper will be accompanied by an impact assessment (IA).

In this context, Unit H2 'Insurance and Pensions' of the Internal Market and Services Directorate-General asked the Joint Research Centre to support the impact assessment process by providing scientific expertise.

In response Unit G09 'Econometrics and Applied Statistics' of the Joint Research Centre, in cooperation with Unit MARKT-H2, developed the methodology presented in this report and used it to conduct a quantitative assessment of several of the policy options considered for inclusion in the White Paper.

In order to provide data in timely fashion to the other services of the Commission, the results presented in the report are based exclusively on publicly available data, allowing estimation of results under several high-level policy options by employing some simplifying assumptions. More precise estimates and results referring to lower-level policy options could be performed depending on the availability of additional data.

It should be noted that the methodology proposed takes into consideration the fact that introducing IGSs in the EU context means establishing a new prudential tool in a field already subject to solvency prudential requirements for insurance undertakings and in which the Solvency II measures are also going to be introduced in the near future. Consequently, the IA methodology will take into account, wherever possible, the features of current and future prudential regulation and make use of data gathered in the evaluation exercises aimed at assessing the impact of the introduction of Solvency II.

The rest of this report is organised as follows. The first section proposes the methodology for the IA exercise: estimation of loss distributions for IGSs based on a default risk model. The second section analyses the data available and the derivation of the input parameters. It also presents the current best parameter settings. The third section presents the results and compares them with: the results provided in the Oxera report, actual fund sizes and data on past failures as reported by Oxera. The fourth section compares the results obtained under different policy options. The final section contains all the annexes.

Motor insurance falls outside the scope of this report and is therefore not included in the figures on non-life and total insurance.

1 Problem definition and methodology

1.1 Protection offered by insurance guarantee schemes and its costs

Insurance guarantee schemes (IGS) provide last-resort protection for policyholders and other beneficiaries in case an insurance company becomes insolvent and is unable to meet its claims. IGS can offer protection in two main ways:

1. by compensating policyholders/beneficiaries or,
2. by securing continuation of the insurance portfolio.

The IGS protection can also be limited to specific subsets of policyholders and/or be subject to other limits, for example on the amounts of the protected claims, the location of the risk or insurance contract or the nationality of the underwriting insurer.

In order to provide protection, the IGS must gather funds from market players on either an ex-ante or an ex-post basis. The size of the funds collected depends on the yearly expected losses that can be caused by the default of one or more insurance undertakings and on the extent of protection provided.

The expected costs of an insurers' insolvency over a certain period (one year in this report) depend on three main factors:

1. The average **probability of default** (PD) over the period considered;
2. The **exposure at default** (EAD), which is the average maximum amount of a company's liabilities to claimants, beneficiaries and insured;
3. The **loss given default** (LGD), which is the average shortfall of assets over liabilities or the share of the exposure which it is not possible to recover from the defaulting company's assets.

Combination of these three components yields a very simple formula for determining the expected amount:

$$\text{Expected Costs of Insolvencies} = LGD \times EAD \times PD$$

Equation 1.1

This formula can also be used to calculate expected losses within an insurance market if all insurers are assumed to be identical and defaulting independently from each other. However, such an approach does not provide any information on the possible variation on the size of defaults or on the probability associated to defaults of different sizes.

Information on the distribution of losses from insurance defaults is indeed necessary in order to assess the effective level of risk to which the public is exposed and take decisions on the desired level of protection.

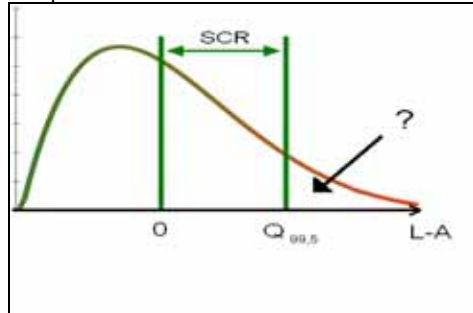
In particular, as IGS funds constitute a cost, a trade-off will be faced between cost and protection. A decision will therefore need to be taken on the maximum loss which could be covered by an IGS, based on the cost of funds and the probability of occurrence of such a loss. Therefore, in order to be able to take decisions on the desired amount of funds, it is necessary to estimate the distribution of the losses an IGS might suffer. The distribution of losses that can hit the IGS then makes it possible to calculate the amount of funds it would need to collect in order to cover all losses incurred with a chosen probability level.

1.2 Calculating the IGS loss distribution

In order to know the distribution of the losses generated by the default of a single undertaking, the distribution of the difference between the undertaking's liabilities and assets would need to be known.

Computing the distribution of losses in case of default in the Solvency II framework would imply knowing the distribution of the difference between liabilities and assets conditional on the fact that this value exceeds the SCR (Solvency Capital Requirements). This in turn calls for estimation of the tail of the 'liabilities – assets' distribution lying beyond the 99.5 percentile for each insurance company covered by the IGS (see Figure 1.1).

Figure 1.1: Example of distribution of 'liabilities-assets' and the role of SCR



Therefore, if we could reliably estimate the tails of these distributions and their correlation factors, we could obtain the complete distribution of IGS losses. It is, however, very difficult to estimate the tails of these distributions, as it requires highly complex actuarial models dealing with risks and losses stemming from extreme events plus precise data at individual company level.

As we are interested only in the total loss distribution of an IGS and not in the losses of the individual undertakings, it is possible to include some simplifying assumptions which allow direct estimation of the IGS loss distributions without any need to estimate the individual loss distributions.

The first simplification that can be introduced deals with the size of the losses: by considering average rather than individual increases in expected liabilities it is possible to introduce a limit on the maximum increase in the expected liabilities faced by an insurer (see Annex 2 for details). By introducing this simplification, the EAD can be estimated as a function of the capital requirements on the current date.

Focusing on an EAD calculated in this way frees the IGS loss distribution calculation problem of complications linked to estimation of the tails of the individual loss distribution. Also, the EAD of the IGS to a defaulting insurer can be obtained on the basis of information easily available at this time.

The IGS loss distribution calculation problem can then be seen as that of calculating the losses on a portfolio of exposures to a number of insurance undertakings. This, in turn, makes it possible to build on the extensive work on portfolio loss theory developed in the literature on financial risk management.

Various well-established portfolio models are available. However, for familiarity and diffusion reasons in the prudential regulation context, a natural choice is to pick the Merton-Vasicek model¹. The Merton-Vasicek model is one of the most widely applied tools for quantitative financial risk management. It is routinely used to assess default portfolio risk across a variety of business sectors, including insurance, and forms the basis for the derivation of the FIRB Basel II formula.

¹ The Vasicek model is based on the Merton model of firm default, which has been used in the literature to calculate the loss distributions and funding needs of American IGSs.

This methodology allows easy calculation of the IGS loss distribution on the basis of a formula² giving the maximum loss which should not be exceeded in one year under any given probability level α ³, an amount known as the 'Value at Risk (α)':

$$VaR_{\alpha} = EAD \times LGD \times N \left(\frac{N^{-1}(1-\alpha) \sqrt{\rho + \delta(1-\rho)} + N^{-1}(PD)}{\sqrt{1-\rho - \delta(1-\rho)}} \right)$$

Equation 1.2

where:

- EAD is 'Exposure At Default' or the maximum amount for which the guarantor could be exposed towards the defaulting company;
 - LGD is 'Loss Given Default' or the percentage of the loss which will effectively be incurred on the exposure once the rate of recovery from remaining assets of the defaulting company has been taken into account;
 - α is the confidence level, or the probability of not facing a loss larger than VaR_{α} ;
 - N and N^{-1} are the normal distribution and the inverse normal distribution respectively;
 - ρ is the correlation coefficient with the 'systematic' risk factor ;
 - δ is a correction term to take into account the fact that the portfolio is made up of a discrete number of relatively large exposures and not of a very large number of identical small exposures. This correction term is called a 'granularity adjustment' and is calculated as the sum of the squares of the shares of all exposures in the portfolio; and
 - PD is the average probability of default of any insurance undertaking over the period considered.
- By letting the confidence level vary in the formula presented in Equation 1.2 the loss corresponding to each confidence level can be computed, obtaining a distribution of losses. An example of the shape of this 'Vasicek distribution' for different values of α and other parameters is given in Table 1.1.

Table 1.1: Example of the shape of the Vasicek distribution of losses under different parameters

	Input parameters ($\rho=0.2$)					
	PD=0.1%			PD=0.5%		
	$\delta=0$	$\delta=0.1$	$\delta=0.3$	$\delta=0$	$\delta=0.1$	$\delta=0.3$
	Loss not exceeded with probability α , expressed as share of total exposure					
$\alpha=70\%$	0.07%	0.05%	0.01%	0.44%	0.34%	0.15%
$\alpha=95\%$	0.42%	0.44%	0.38%	1.98%	2.22%	2.36%
$\alpha=99\%$	1.10%	1.42%	1.93%	4.30%	5.65%	8.38%
$\alpha=99.5\%$	1.51%	2.09%	3.24%	5.57%	7.65%	12.33%
$\alpha=99.9\%$	2.81%	4.32%	8.22%	9.10%	13.38%	24.11%
$\alpha=99.99\%$	5.53%	9.30%	20.24%	15.38%	23.69%	44.21%
$\alpha=99.999\%$	9.30%	16.30%	36.35%	22.74%	35.35%	63.24%

The version of the Vasicek model presented above is one of its simplest forms. Many more detailed variants of the model are presented in the literature, but this particular form was chosen to combine the advantages of limited data needs with those of scientific rigour and acceptability. In fact, it is easy to see that, when the correlation factor and the market granularity adjustment are both set to zero, Equation 1.2 reduces to the elementary formula presented in Equation 1.1⁴:

² The derivation of Equation 1.2 is illustrated in Vasicek, 2002, 'The distribution of loan portfolio value', published in *Risk*. The model can also be solved computationally if the whole structure of the exposures is known.

³ Strictly speaking, α is defined as a confidence level. This means that, for any α , the model output is the smallest value such that losses will exceed it with a probability no larger than $1-\alpha$ over the reference period.

$$VaR = EAD \times LGD \times PD$$

which is also used in the Oxera report and is based on the implicit assumptions that default events are completely uncorrelated and that the exposure is made up of an extremely large number of very small companies.

What the Vasicek model does, therefore, is to provide a probability distribution of losses by taking into consideration the fact that in the real world the exposure can be concentrated and defaults can be correlated.

A more detailed description of model assumptions and how they relate to insurance undertakings can be found in Annex **Error! Reference source not found.**

⁴ Here the VaR has no confidence level as the distribution is degenerate and concentrated in the single point.

1.3 Estimation of the exposure at default

As discussed in the previous section, by considering the average maximum joint exposure rather than individual exposures it is possible to derive a formula for determining the exposure at default⁵ which depends solely on known values rather than on estimation of the tail of the individual loss distributions.

The best estimate for the exposure of an insurance company to claimants and policy holders is given by the Technical Provisions (TP) including the risk margin.⁶

However, consideration must be given to the fact that, in the event of default due to a miscalculation of the risk margins, the exposure could be higher than the current level of technical provisions (see, e.g., the Mannheimer case described on page 89 of the 2007 Oxera report and Annex **Error! Reference source not found.**).

Moreover, in cases where 'continuation of the contracts' or 'portfolio transfer' are pursued, rather than pure compensation of outstanding claims, the prudential viability of the portfolio must be reconstructed⁷.

For these reasons, in order to estimate the average maximum exposure at default, it is necessary to include additional terms proportional to solvency capital requirements, which offer the best estimate of the additional capital required in case the technical provisions are exhausted.

Therefore, for cases in which continuation of the portfolio is desired, the formula for estimation of the exposure at default to be used is (for derivations see Annex A2):

$$EAD = TP_0 + SCR_0 \left(2 - w_M + (1 - w_M) \frac{SCR_0}{TP_0} \right)$$

Equation 1.3

where:

- TP_0 are the adjusted technical provisions at the current date⁸;

- SCR_0 is the solvency capital requirement at the current date; and

- w_M is the ratio of the solvency capital requirement for market risk to the total SCR⁹.

In cases of a pure compensation of the claimants and beneficiaries with exclusion of the unearned premiums, the EAD for non-life insurance is estimated as:

$$EAD = (TP_0 + (1 - w_M)SCR_0) \times \frac{Tot\pi_0 - U\pi_0}{Tot\pi_0}$$

Equation 1.4

⁵ More precisely, the actual amount of funds needed at the end of the IGS intervention is given by the EAD x LGD where the loss given default is calculated as one minus the ratio of remaining assets over liabilities. In this report LGD is assumed to be 15%. For further details of the reasons of this choice see section 2.2.1 and Annex **Error! Reference source not found.**

⁶ The technical provisions are the amounts set aside for the liabilities and to meet the insurer's commitments under the contracts.

⁷ This applies in the case that ALL existing policies will remain covered until their original contractual expiry date. In cases where some insurance policies are allowed to be discontinued at the time of default, only the viability of the 'surviving' part of the original portfolio will have to be secured.

⁸ See Annex **Error! Reference source not found.**

⁹ A detailed explanation of how the SCR and its components are computed in the Solvency II framework is available in the document 'QIS4 Technical Specifications (MARKT/2505/08)'.

where

$U\pi_0$ are the unearned premiums at the current date;

$Tot\pi_0$ are the total written premiums at the current date;

and the other abbreviations have the same meaning as in Equation 1.3.

In cases of pure compensation including the unearned premiums, the EAD for non-life insurance is considered to be:

$$EAD = (TP_0 + (1 - w_M)SCR_0) \times \frac{Tot\pi_0 - U\pi_0}{Tot\pi_0} + U\pi_0$$

Equation 1.5

where:

all abbreviations have the same meaning as in Equation 1.3.

Finally, in the case of a pure compensation option in life insurance the formula for determining the EAD is given as:

$$EAD = TP_0 + (1 - w_m)SCR_0$$

Equation 1.6

2 Input analysis

Motor insurance falls outside the scope of this report and is therefore not included in the figures on non-life and total insurance.

2.1 *Input parameters*

Based on Equation 1.2, the loss distribution of the insurance sector can be estimated knowing five parameters:

- 1- the average probability of default for each undertaking in the portfolio (ρ);
- 2- the correlation between defaults (ρ);
- 3- the loss given default incurred on the exposures in case of default (LGD);
- 4- the total potential exposure at default of the covered undertakings (EAD);
- 5- the granularity (concentration) of exposures in the portfolio of covered undertakings (δ).

Moreover, as adopting a certain set of policy options over another would determine a difference in the value of some of the parameters (e.g. a different exposure or a different concentration in the portfolio of IGS exposures), loss distributions corresponding to different policy choices can be obtained.

The loss distributions can then be used to calculate funding needs associated with any desired confidence level and form a basis for guiding policy-makers in choosing the coverage level desired.

2.2 *Available data and parameter estimation*

In this report the aim is to produce approximate figures based on publicly available aggregate data. The results based on these figures, while not immediately usable for policy implementation, should none the less be precise enough to add detail to previous work on the subject (such as the Oxera report). They offer guidance the first phase of the discussion and provide cross-checks against previously proposed quantifications of potential IGS losses.

By relying on publicly available aggregate data (i.e. data from CEIOPS, CEA and the OECD¹⁰), it is possible to estimate a loss function based on the home country responsibility principle, under the additional assumption that the national market structure is a good proxy for the structure of exposures based on home country responsibility. Under some additional assumptions, the data currently available also allow estimation of the loss function for a pan-EU IGS and loss functions for the host country responsibility principle.

As data on the structure of claims are lacking, it is not possible to evaluate loss functions under limits on reimbursement amounts in this phase: it is therefore assumed that all claims will be fully repaid. By employing some restrictive proportionality assumptions, it will instead be possible to

¹⁰ CEIOPS refers to the statistical annex to the 'Report on Financial Conditions and Financial Stability in the European Insurance and Occupational Pension Fund Sector 2007-2008 (Risk Update)' by CEIOPS (<http://www.ceiops.eu/media/files/publications/reports/SA-Insurance-2007.xls>), QIS4 to the selected tables from the CEIOPS report on its Fourth Quantitative Impact Study (QIS4) for Solvency I (<http://www.ceiops.eu/media/files/consultations/QIS/CEIOPS-SEC-82-8%20QIS4%20Report%20Table%20Annex.pdf>) and CEA to 'Tables from European Insurance in Figures (2007 Data)' (http://www.cea.eu/uploads/DocumentsLibrary/documents/1225184978_eif-2006_fix.xls)

calculate loss distributions for the cases in which portfolio continuation is chosen and in which a pure compensation option is pursued (with or without consideration of unearned premiums). Finally, it is possible to obtain the joint loss function and the separate loss functions for the life and non-life business lines, again under some assumption of proportionality.

2.2.1 Calibration of the default probability, correlation and loss given default

The EAD and the 'granularity adjustment' (δ) can be recovered from aggregate data and are discussed below in subsections 2.2.2 and 2.2.3. The remaining parameters are chosen to be in line with the relevant literature and the Oxera report (see Annex **Error! Reference source not found.** for details). In some cases several choices are explored:

- the default probability p is set at values of 0.5% (the maximum allowed under Solvency II) and 0.1% (the value consistent with default insurance ratings obtained by Oxera);
- the correlation parameter ρ is kept fixed at 0.2 for both business lines, in line with the literature;
- the loss given default is fixed at 15% (in line with the Oxera report).

If the asset shortfall were increased to 45% (in line with the Basel II foundation guidelines), the resulting funding needs would equal three times the funding needs under the asset shortfall of 15%.

2.2.2 Estimation of the EAD

Table 2.1 shows, step-by-step, the calculations used to obtain the EAD from the publicly available data; the results for France are given as an example. The example presented here focuses on the case where the loss distribution is calculated based on the home state principle, portfolio continuation and full coverage. This corresponds to the case where the EAD is calculated in accordance with Equation 1.3. The calculations provide results for the total insurance sector, as well as for the life and non-life business lines separately.

In the calculation three main parts can be identified:

1. the calculation relating to the gross premiums written by business line (rows A to I);
2. the calculations relating to the technical provisions (rows J to V);
3. the calculations relating to the term for the additional capital requirements as presented in Equation 1.3, including SCR (rows W to AL).

The first part of the calculation aims to quantify the share of composite companies activities' in the life and non-life business lines, as the information provided by CEIOPS divides companies into three mutually exclusive categories: companies active only in the life business, companies active only in the non-life business and composite companies, with both activities. The 'Market' column indicates the reference business line used for the calculations in each row: 'Total' means total activities in the whole insurance sector; 'Total Life' and 'Total Non-Life' refer to total activities in the life and non-life business lines, respectively; 'Pure Life Companies' and 'Pure Non-Life Companies' mean the activities of companies engage in only life or non-life business (i.e. activities of composite companies are excluded).

Next, technical provisions are calculated by using CEIOPS data (rows J to M). As the technical provisions reported in CEIOPS tables are calculated under the Solvency I settings they need to be adjusted to correspond to technical provisions under QIS4 by applying the ratio of the QIS4 provisions to Solvency I provisions. For countries where this ratio is not available a simple average by business line across all other countries is calculated, while the ratio for the total insurance business (not provided in the QIS4 report) is obtained by taking the weighted average between life and non-life business with weights proportional to the size of their premiums.

The calculations for the SCR are slightly more complicated. The only absolute number available refers to the total eligible QIS4 capital and is presented only for the total insurance sector and for companies which responded to the QIS4 questionnaire. This number is expanded to represent also non respondents by multiplying it by the rate of response in terms of total premiums. Next, by using the solvency ratio, the current SCR (SCR_0) can be obtained for the total insurance sector in each Member State. SCR_0 can then be split up between the different business lines based on their shares of total gross premiums.

SCR_0 is then used to calculate the additional capital requirement as specified in the last term of Equation 1.3, which is referred to in the table as SCR_{total} . All the information necessary for this part can be obtained from Tables 77 and 78 in the Annex of selected tables in the QIS 4 Report. Plugging them into the formula, the second term of Equation 1.3 is obtained in rows AG to AJ of the table for the different business lines. Splitting this between life and non-life and adding the technical provisions lead to the EAD for the total insurance sector, for the non-life business line and for the total life business line.

Table 2.1: Detailed Calculation of EAD for France (rows Δ and A to V)

Label	Parameters	Market	Source	France
Δ	Share of Motor in Non-Life	Total Non-Life	CEA	31.16%
A	Gross Premiums Written (m€)	Composite Companies	CEIOPS Sheet 2	112 409
B	Gross Premiums Written (m€)	Pure Life Companies	CEIOPS Sheet 2	37 667
C	Gross Premiums Written (m€)	Pure Non-Life Companies	CEIOPS Sheet 2	58 068
D	Gross Premiums Written (m€)	Total	CEIOPS Sheet 2	208 144
E	Gross Premiums Written (m€)	Total Life	CEIOPS Sheet 4	136 528
$F=(E-B)/A$	Gross Premiums Written (m€)	Total Life		87.95%
$G=1-F$	Share of Life Insurance in Composite Companies	Total Non-Life		12.05%
$H=B+F*A$	Share of Life Insurance in Composite Companies	Total Life		136 528
$I=(C+G*A)*(1-\Delta)$	Gross Premiums Written (m€)	Non-Life		49 297
J	Gross Technical Provisions (m€)	Composite Companies	CEIOPS Sheet 7	891 543
K	Gross Technical Provisions (m€)	Pure Life Companies	CEIOPS Sheet 7	311 323
L	Gross Technical Provisions (m€)	Pure Non-Life Companies	CEIOPS Sheet 7	121 027
M	Gross Technical Provisions (m€)	Total	CEIOPS Sheet 7	1 323 893
$N=K+F*J$	Gross Technical Provisions (m€)	Total Life		1 095 414
$O=(L+G*J)*(1-\Delta)$	Gross Technical Provisions (m€)	Non-Life		157 276
$P=N+O$	Gross Technical Provisions (m€)	Total		1 252 689
Q	Gross Technical Provisions (m€)	Total Life	QIS4	100.50%
R	TP_QIS4/TP_Soll	Non-Life	QIS4	81.05%
S	TP_QIS4/TP_Soll	Total	QIS4	93.81%
$T=N*Q$	TP_QIS4/TP_Soll	Total Life		1 100 891
$U=O*R$	Corrected TP (m€)	Non-Life		127 479
$V=P*S$	Corrected TP (m€)	Total		1 175 140

Table 2.1: Detailed Calculation of EAD for France (continued: rows W to AO)

W	Total Eligible Capital QIS4 (m€)	Total	QIS4-HOME	191 472
X	QIS4 Eligible Capital to SCR	Total	QIS4-HOME	2.51
Y	Market Share of Questionnaire QIS4	Total Life	QIS4-HOME	95.00%
Z	Market Share of Questionnaire QIS4	Total Non-Life	QIS4-HOME	79.40%
$AA=(Y*H+Z*I)/(H+I)$	Market Share of Questionnaire QIS4	Total		90.86%
$AB=W/AA$	Total Eligible Capital by MS (m€)	Total	QIS4-HOME	210 730
$AC=AB/X$	SCR ₀ (m€)	Total		83 822
$AD=AC*A/D$	SCR ₀ (m€)	Composite Companies		45 269
$AE=AC*B/D$	SCR ₀ (m€)	Pure Life Companies		15 169
$AF=AC*C/D$	SCR ₀ (m€)	Pure Non-Life Companies		23 385
			
AG	SCR _{total} (m€)	Composite Companies		68 827
AH	SCR _{total} (m€)	Pure Life Companies		29 444
AI	SCR _{total} (m€)	Pure Non-Life Companies		51 540
AJ	SCR _{total} (m€)	Total		170 768
$AK=AH+F*AG$	SCR _{total} (m€)	Total Life		89 976
$AL=(AI+G*AG)*(1-\Delta)$	SCR _{total} (m€)	Non-Life		41 188
$AM=T+AK$	EAD- Home State Principle (m€)	Total Life		1 190 866
$AN=U+AL$	EAD- Home State Principle (m€)	Non-Life		168 667
$AO=V+AJ$	EAD- Home State Principle (m€)	Total		1 345 909

CEA refers to 'European Insurance in Figures (2007 Data)' by CEA¹¹; CEIOPS refers to the statistical annex to the 'Report on Financial Conditions and Financial Stability in the European Insurance and Occupational Pension Fund Sector 2007-2008 (Risk Update)' by CEIOPS¹² and QIS4 to the selected tables from the CEIOPS report on its Fourth Quantitative Impact Study (QIS4) for Solvency II¹³.

2.2.3 Calculation of the market granularity

The granularity adjustment is calculated on a country basis and for each business line. It is based on the number of market players and their market shares. The granularity correction terms are estimated using data from CEA¹⁴ on the market shares for the top 5, top 10 and top 15 companies for the life and non-life business line at country level, together with data on the number of companies. Additionally, for several countries, detailed information on the first 5 companies in the life and non-life business lines is available.

A separate granularity correction coefficient is computed for the life and non-life business lines, while the coefficient for the total insurance sector is based on a weighted average of the coefficients for each business line.

As data for the top 5 companies are sometimes provided for each individual company and sometimes as an aggregate, for each country and business line the following approach has been used: in cases where the individual sizes of the top 5 companies are available, these will be used

¹¹ http://www.cea.eu/uploads/DocumentsLibrary/documents/1225184978_eif-2006_fix.xls

¹² <http://www.ceiops.eu/media/files/publications/reports/SA-Insurance-2007.xls>

¹³ <http://www.ceiops.eu/media/files/consultations/QIS/CEIOPS-SEC-82-08%20QIS4%20Report%20Table%20Annex.pdf>

¹⁴ Tables from European Insurance in Figures (2007 data):

http://www.cea.eu/uploads/DocumentsLibrary/documents/1225184978_eif-2006_fix.xls

directly to calculate their market share; in cases where individual data on market shares are not complete or absent, any available shares are subtracted from the total top 5 market share and the difference is equally split between the companies for which no data are available.

Similarly, in order to allocate a market share to all the top 10 companies, the market shares already allocated to the top 5 companies are deducted from the total market share of the top 10 and then the residual market share is split equally between the remaining five companies. The same approach is used for the other companies making up the top 15. For the remaining companies (up to the total number in the market), the market share not yet allocated to the top 15 companies is equally divided between them.

For several countries only the number of companies in the country is available but their market shares are unknown, hence the total market is equally divided between all companies¹⁵.

The granularity adjustment, δ , is then obtained by taking the sum of the squares of all market shares within each country and business line. A granularity factor of one corresponds to the case where a single company is present on the market, while the correction factor tends towards zero as the market structure tends towards the limit case where an infinite number of identical companies are operating on the market. Missing information will lead to an underestimate of granularity adjustment, especially in the cases where only the number of companies in the country is available.

2.2.4 Parameter values

The values of EAD, total premiums and δ based on the home state principle for each country and business line are summarised in Table 2.2. The values of the probability of default, ρ and LGD are constant across countries and business lines, as discussed in section 2.2.1, and set at 0.1% and 0.5%, 0.2 and 15% respectively. Total premiums are reported for comparison purposes.

¹⁵ This is the case for Hungary, Luxembourg and Romania for the life business line and for Bulgaria, the Czech Republic, Denmark, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg and Romania for the non-life business line.

Table 2.2: δ , EAD and total gross premiums written for the total insurance sector and by business line, all EEA countries, 2007

	Total			Life			Non-life		
	δ	EAD (m€)	Total gross premiums written (m€)	δ	EAD (m€)	Total gross premiums written (m€)	δ	EAD (m€)	Total gross premiums written (m€)
AT	0.13	67 554	12 992	0.12	58 188	7 141	0.14	10 984	5 851
BE	0.13	190 151	27 886	0.14	168 163	22 179	0.09	19 236	5 707
BG	0.07	392	354	0.12	203	120	0.05	212	234
CY	0.15	3 078	531	0.18	2 717	358	0.07	344	173
CZ	0.10	8 994	3 338	0.15	6 544	2 034	0.02	1 877	1 304
DE	0.05	1 006 801	144 749	0.05	765 180	75 170	0.05	248 637	69 579
DK	0.05	135 949	18 304	0.07	118 090	13 190	0.01	10 074	5 114
EE	0.30	569	193	0.33	509	118	0.25	101	75
ES	0.06	213 026	42 653	0.05	164 938	23 455	0.06	50 081	19 198
FI	0.21	44 020	4 704	0.21	37 099	2 784	0.20	7 888	1 920
FR	0.08	1 347 573	185 825	0.08	1 189 627	136 528	0.07	168 067	49 297
GB	0.07	2 092 219	351 427	0.06	2 034 005	305 184	0.07	103 562	46 243
GR	0.09	9 495	3 537	0.10	7 630	2 504	0.05	1 693	1 032
HU	0.04	5 887	2 728	0.05	5 282	2 017	0.03	340	712
IE	0.08	161 216	41 428	0.08	147 444	37 563	0.01	13 425	3 865
IS	0.19	795	223	0.35	147	34	0.17	650	189
IT	0.12	423 251	78 452	0.11	389 126	61 438	0.13	32 622	17 014
LI	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	0.10	643	326	0.12	525	204	0.06	157	122
LU	0.02	80 074	11 107	0.02	76 571	10 093	0.03	3 558	1 014
LV	0.13	269	224	0.28	83	53	0.08	191	171
MT	0.17	1 980	454	0.20	1 293	214	0.13	589	240
NL	0.10	313 024	70 162	0.11	266 317	26 437	0.09	82 629	43 725
NO	0.23	86 755	12 179	0.23	79 468	9 838	0.21	7 803	2 341
PL	0.19	20 855	8 634	0.18	17 059	6 743	0.24	3 490	1 890
PT	0.14	45 402	11 561	0.14	40 297	9 205	0.14	4 992	2 356
RO	0.04	1 468	1 044	0.05	781	415	0.03	646	629
SE	0.12	238 147	20 316	0.10	191 510	12 985	0.16	53 695	7 331
SI	0.23	3 897	1 246	0.21	2 041	443	0.24	1 455	803
SK	0.16	2 860	1 161	0.14	2 299	848	0.23	496	313
EU total ¹⁶	0.08	6 418 794	1 045 336	0.08	5 693 521	759 423	0.08	821 041	285 912

¹⁶ The EU row indicates the average δ (weighted average by total gross premiums written) and total EAD and premiums.

2.3 Data needed for improved estimation

The values of the parameters presented above, and used in this report, are based on publicly available data. The nature of this data implies that the estimation of some parameters has to rely on assumptions (e.g. some aggregated amounts are split proportionally to gross premiums written in each business line or market) and that some policy options cannot currently be evaluated as this would require additional disaggregated data.

In order to obtain more precise estimates, additional data would need to be gathered from other sources, such as supervisors or associations of insurers.

In order to try gathering such additional data, a questionnaire has been constructed in parallel with the development of the methodology: the questionnaire aims to collect specific data which would improve the precision of estimates, make available additional details for evaluation of different policy options and allow the generation of more detailed problem definition statistics.

Following consultation with the services, the questionnaire has been distributed to national associations of insurers in the second half of 2009. A report summarizing the main results of the questionnaire and the usability of the data gathered is presented together with this methodological report.

3 Model results

3.1 Selection of cases and policy options

As explained in the White Paper Impact Assessment and in the previous sections, the funding needs and the level of protection for any given IGS will depend on the policy options adopted for its operations.

Given the availability of data and the nature of the exercise, in this report the comparison will be limited to a set of high-level policy options.

In particular, throughout the rest of the analysis, the funding needs based on the loss distribution calculated on the basis of the home state principle, portfolio continuation and full coverage will be used as a baseline case.

Table 3.1 below summarises all the policy options used for the construction of the baseline case. Alternative sets of policy options and the associated funding needs will be discussed in Section 4.

3.2 IGS funding needs at selected probability levels (home state principle)

The initial results based on the proposed model and on the aggregate publicly available data are presented in this section. The model provides, for any given confidence level α , the Value at Risk (VaR_α) which is the maximum loss which should be expected with probability α . In other words, if an IGS holds this amount, it will be able to cover all losses in $\alpha\%$ for all years.

As holding capital and using funds to cover default losses is costly, the choice of α will depend on the trade-off chosen by the policymakers between additional security for consumers and higher costs for firms contributing to the fund. If the policymakers or supervisors would like to put in place a very prudent IGS, then a very high value for α (such as 99.9%) would be chosen, resulting in a very large funding needs and/or the possibility of involvement in very large interventions. However, too prudent choice of α could be costly and the policymakers might therefore decide to put in place an IGS which covers less risk and is less prudent in order to balance current costs and the possibility of facing losses which could not be covered.

Table 3.2 to Table 3.6 show, for each EEA country, the expected losses an IGS will have to face for different confidence levels and the corresponding size as a share of the total premium gathered in the national insurance sector. The estimates were obtained by considering that each country would have an individual IGS fund operating under the home state principle in place for both the life and non-life insurance businesses, for all policies and without limitations on payment¹⁷. The results can be read as follows: for the French total insurance sector with a LGD of 15% and a PD of 0.1%, the result shows that if the IGS holds a fund of €138.69m (which is equal to 0.07% of the total premium collected in 2007) it will hold enough capital to cover all losses happening in $\alpha=75\%$ of the years. Only in 25% of the years will a fund of this size not be sufficient to cover the losses suffered.

Additional tables dealing with the robustness of schemes to extremely large default incidents are available in Annex **Error! Reference source not found.**. A comparison of the potential costs to participants in IGS schemes funded using an ex-post and ex-ante mechanism in the case of large defaults has also been provided in Annex **Error! Reference source not found.**.

¹⁷ For a more detailed discussion on policy options see Annex **Error! Reference source not found.**

Table 3.1: Summary of policy options applied in the calculation of the baseline case model results

	Baseline case (home state principle)
Status quo versus change	
Introduce a legally binding EU-wide approach to IGS	X
Only partially binding EU-wide approach	
No binding EU-wide approach	
Nature of intervention	
Pure compensation to claimants	
Continuation of contracts	X
Eligible claimants	
Natural persons only	
Natural persons + SMEs	
Natural and legal persons except financial institutions	
Natural and legal entities	X
Compensation limits and reductions	
Capping payouts	
Capping payouts for non-compulsory insurance (MT)	
Level of coverage in percentage terms	100
Level of coverage in percentage terms (compulsory, MT)	
Fixed deductible	
Other reduction in benefits	
Policies covered	
Only life	X
Only non-life	X
Both life and non-life	X
Funding	
Ex-ante	NC
Ex-post	NC
Capping the level of contributions over a period	NC
Other sources of funding	
Borrowing power	NC
Credit facility from members in place	NC
State guarantee on borrowing	NC
Additional guarantees as private initiative (large failures)	NC
Geographic scope	
An IGS in each MS based on the home state principle	X*
An IGS in each MS based on the host state principle	
A single EU-wide IGS	
An IGS in each MS covering only domestic activity supplemented by an additional IGS covering cross-border transactions	
Types of policies covered	
Without exclusions	X
With exclusions	

*: Home state principle results based on the assumption that exposure structure is proportional to national market structure.

NC stands for 'not considered'.

Table 3.2: IGS funding needs for the total insurance sector, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; funding needs in absolute value and as a share of the total gross premiums written

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	41.56	126.82	616.39	5.63	21.59	153.91
	Share of premiums	0.32%	0.98%	4.74%	0.04%	0.17%	1.18%
BE	Funding needs (m€)	118.45	357.71	1 717.44	16.17	61.22	429.37
	Share of premiums	0.42%	1.28%	6.16%	0.06%	0.22%	1.54%
BG	Funding needs (m€)	0.28	0.75	3.11	0.04	0.14	0.79
	Share of premiums	0.08%	0.21%	0.88%	0.01%	0.04%	0.22%
CY	Funding needs (m€)	1.82	5.74	28.98	0.24	0.96	7.21
	Share of premiums	0.34%	1.08%	5.46%	0.05%	0.18%	1.36%
CZ	Funding needs (m€)	6.06	17.09	75.76	0.87	3.03	19.08
	Share of premiums	0.18%	0.51%	2.27%	0.03%	0.09%	0.57%
DE	Funding needs (m€)	753.31	1 921.86	7 539.74	116.25	357.05	1 913.98
	Share of premiums	0.52%	1.33%	5.21%	0.08%	0.25%	1.32%
DK	Funding needs (m€)	102.02	259.49	1 014.21	15.78	48.27	257.50
	Share of premiums	0.56%	1.42%	5.54%	0.09%	0.26%	1.41%
EE	Funding needs (m€)	0.19	0.90	7.11	0.02	0.12	1.64
	Share of premiums	0.10%	0.47%	3.68%	0.01%	0.06%	0.85%
ES	Funding needs (m€)	157.54	406.72	1 619.01	24.11	75.16	410.70
	Share of premiums	0.37%	0.95%	3.80%	0.06%	0.18%	0.96%
FI	Funding needs (m€)	21.33	78.33	470.36	2.48	12.01	114.23
	Share of premiums	0.45%	1.67%	10.00%	0.05%	0.26%	2.43%
FR	Funding needs (m€)	941.76	2 568.60	10 928.65	138.69	462.69	2 761.11
	Share of premiums	0.51%	1.38%	5.88%	0.07%	0.25%	1.49%
GB	Funding needs (m€)	1 519.96	3 994.22	16 246.62	229.81	732.18	4 116.51
	Share of premiums	0.43%	1.14%	4.62%	0.07%	0.21%	1.17%
GR	Funding needs (m€)	6.58	18.09	77.66	0.96	3.25	19.61
	Share of premiums	0.19%	0.51%	2.20%	0.03%	0.09%	0.55%
HU	Funding needs (m€)	4.51	11.23	42.79	0.71	2.11	10.88
	Share of premiums	0.17%	0.41%	1.57%	0.03%	0.08%	0.40%
IE	Funding needs (m€)	114.25	307.53	1 287.85	16.98	55.74	325.73
	Share of premiums	0.28%	0.74%	3.11%	0.04%	0.13%	0.79%
IS	Funding needs (m€)	0.40	1.43	8.27	0.05	0.22	2.02
	Share of premiums	0.18%	0.64%	3.70%	0.02%	0.10%	0.90%
IT	Funding needs (m€)	272.42	800.06	3 717.40	37.98	138.92	932.40
	Share of premiums	0.35%	1.02%	4.74%	0.05%	0.18%	1.19%
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	Funding needs (m€)	0.43	1.22	5.44	0.06	0.22	1.37
	Share of premiums	0.13%	0.38%	1.67%	0.02%	0.07%	0.42%
LU	Funding needs (m€)	63.97	152.01	546.08	10.34	29.11	139.03
	Share of premiums	0.58%	1.37%	4.92%	0.09%	0.26%	1.25%
LV	Funding needs (m€)	0.17	0.51	2.42	0.02	0.09	0.61
	Share of premiums	0.07%	0.23%	1.08%	0.01%	0.04%	0.27%
MT	Funding needs (m€)	1.10	3.65	19.43	0.14	0.59	4.80
	Share of premiums	0.24%	0.80%	4.28%	0.03%	0.13%	1.06%
NL	Funding needs (m€)	209.47	594.48	2 652.50	29.96	105.03	667.70
	Share of premiums	0.30%	0.85%	3.78%	0.04%	0.15%	0.95%
NO	Funding needs (m€)	39.01	151.16	963.68	4.34	22.45	231.80
	Share of premiums	0.32%	1.24%	7.91%	0.04%	0.18%	1.90%
PL	Funding needs (m€)	10.58	37.56	217.08	1.27	5.88	53.03
	Share of premiums	0.12%	0.44%	2.51%	0.01%	0.07%	0.61%
PT	Funding needs (m€)	27.09	84.78	424.36	3.60	14.24	105.62
	Share of premiums	0.23%	0.73%	3.67%	0.03%	0.12%	0.91%
RO	Funding needs (m€)	1.13	2.80	10.58	0.18	0.53	2.69
	Share of premiums	0.11%	0.27%	1.01%	0.02%	0.05%	0.26%
SE	Funding needs (m€)	149.65	448.61	2 135.34	20.54	77.07	534.33
	Share of premiums	0.74%	2.21%	10.51%	0.10%	0.38%	2.63%
SI	Funding needs (m€)	1.76	6.80	43.21	0.20	1.01	10.40
	Share of premiums	0.14%	0.55%	3.47%	0.02%	0.08%	0.83%
SK	Funding needs (m€)	1.60	5.27	27.97	0.20	0.86	6.91
	Share of premiums	0.14%	0.45%	2.41%	0.02%	0.07%	0.60%

The 'EU average' is obtained from the weighted average (by total gross premiums written) of funding needs for the 27 Member States of the EU. The 'EU total' is the simple sum of the funding needs for all 27 Member States of the EU.

Table 3.3: IGS funding needs for EU total and EU average for the total insurance sector, based on the home state principle, for different confidence levels and default probabilities; funding needs in absolute value and as a share of the total gross premiums written

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
EU total	Funding needs (m€)	4 528.98	12 212.81	51 477.48	673.24	2 209.05	13 001.11
	Share of premiums	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%
EU avg	Funding needs (m€)	837.77	2 222.02	9 150.66	125.89	405.44	2 316.28
	Share of premiums	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%

Figure 3.1: IGS funding needs for the total insurance sector, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs as a share of the total gross premiums written; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

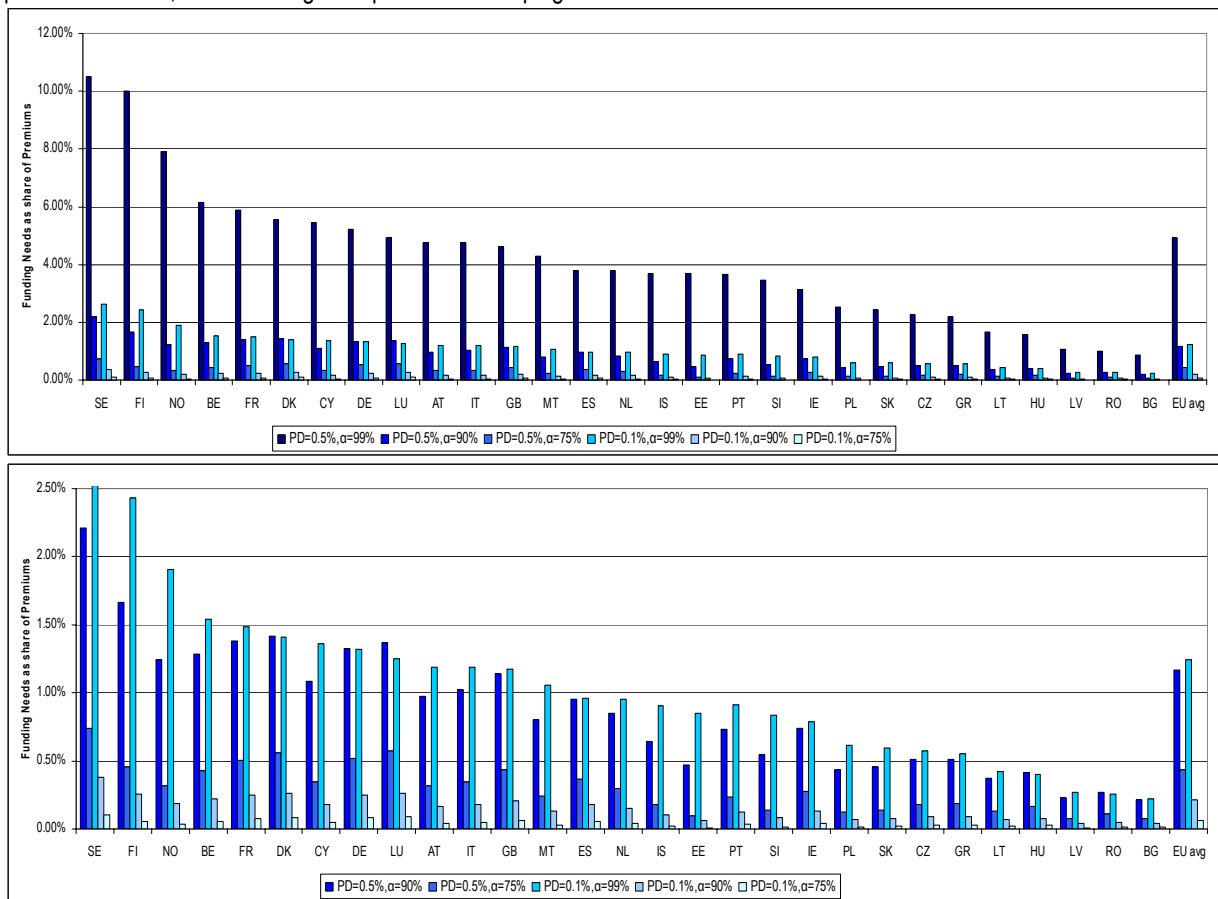


Figure 3.2: Summary of IGS funding needs for the total insurance sector, based on the home state principle, for different confidence levels and default probabilities as a share of the total gross premiums written; EU average and minimum, maximum and median values across all EEA countries

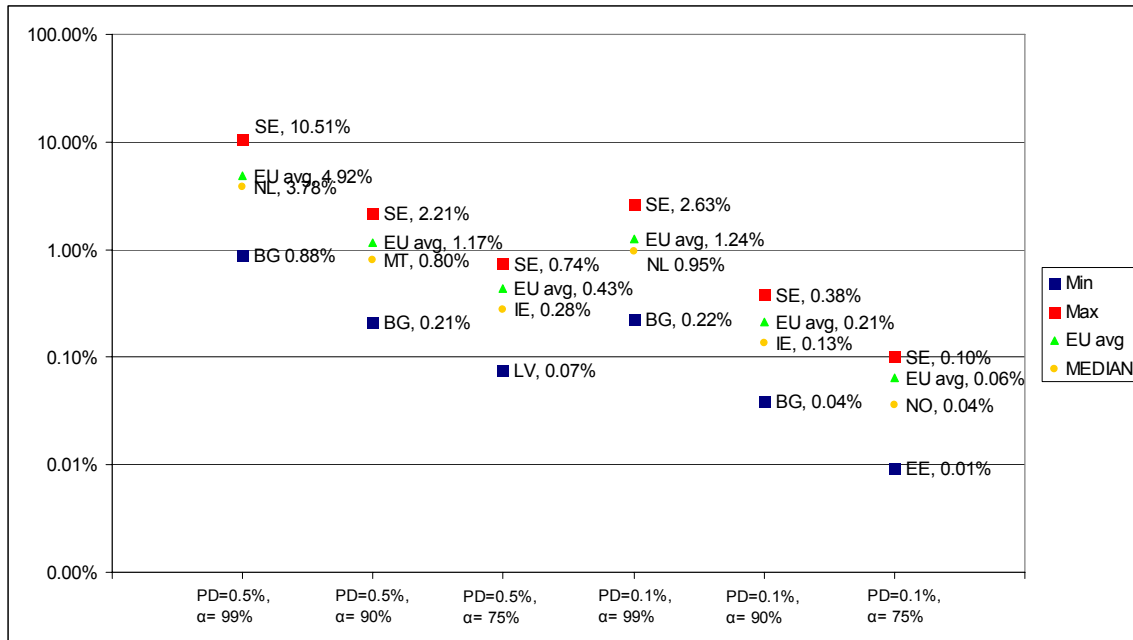


Figure 3.3: IGS funding needs for the total insurance sector, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs in absolute terms; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$ case

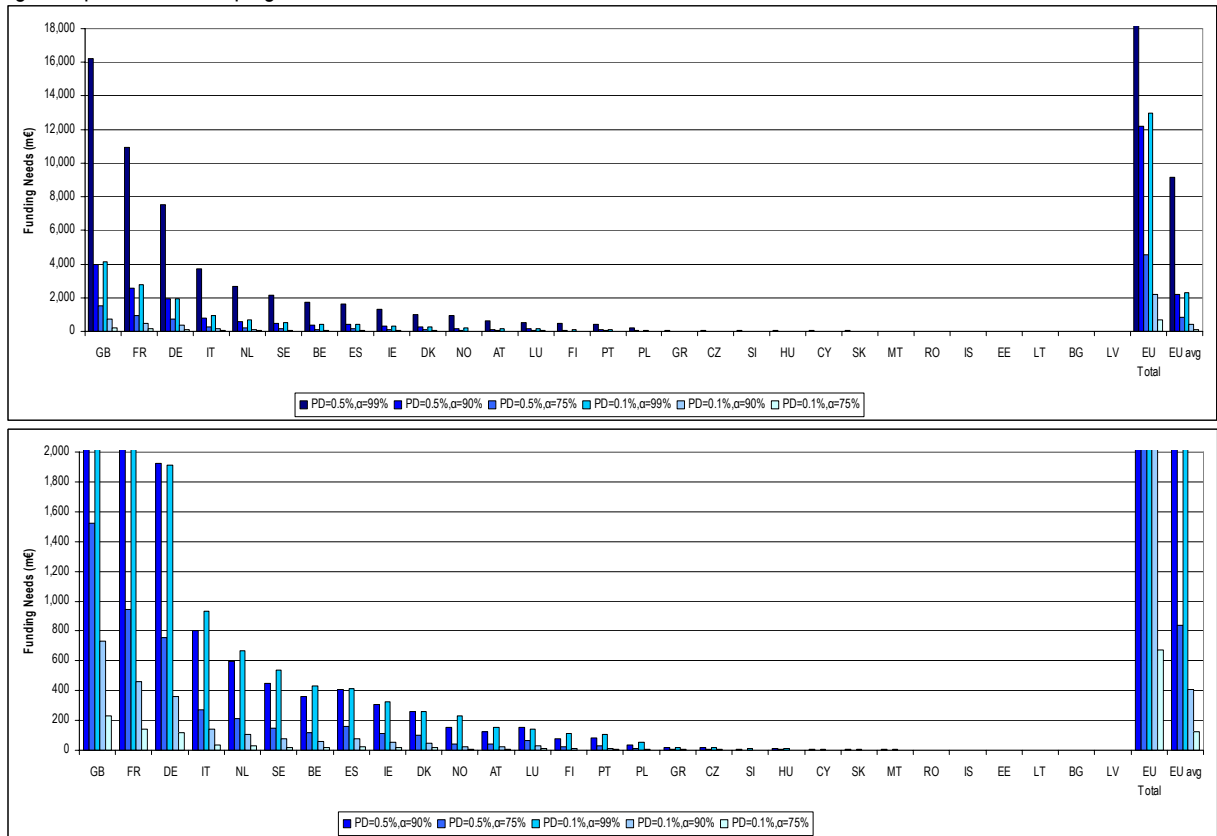


Table 3.4: IGS funding needs for the life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; funding needs in absolute value and as a share of the total gross premiums written

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	36.63	109.64	520.95	5.03	18.85	130.38
	Share of premiums	0.51%	1.54%	7.30%	0.07%	0.26%	1.83%
BE	Funding needs (m€)	102.17	315.03	1 549.77	13.72	53.32	386.46
	Share of premiums	0.46%	1.42%	6.99%	0.06%	0.24%	1.74%
BG	Funding needs (m€)	0.13	0.38	1.81	0.02	0.07	0.45
	Share of premiums	0.11%	0.32%	1.51%	0.01%	0.05%	0.38%
CY	Funding needs (m€)	1.43	4.94	27.62	0.18	0.79	6.78
	Share of premiums	0.40%	1.38%	7.73%	0.05%	0.22%	1.90%
CZ	Funding needs (m€)	3.87	12.20	61.60	0.51	2.04	15.32
	Share of premiums	0.19%	0.60%	3.03%	0.03%	0.10%	0.75%
DE	Funding needs (m€)	571.87	1 460.67	5 738.76	88.18	271.23	1 456.70
	Share of premiums	0.76%	1.94%	7.63%	0.12%	0.36%	1.94%
DK	Funding needs (m€)	85.61	225.44	919.33	12.92	41.28	232.90
	Share of premiums	0.65%	1.71%	6.97%	0.10%	0.31%	1.77%
EE	Funding needs (m€)	0.15	0.77	6.69	0.01	0.09	1.51
	Share of premiums	0.13%	0.65%	5.67%	0.01%	0.08%	1.28%
ES	Funding needs (m€)	122.95	314.87	1 241.05	18.92	58.40	314.98
	Share of premiums	0.52%	1.34%	5.29%	0.08%	0.25%	1.34%
FI	Funding needs (m€)	17.58	65.61	401.24	2.02	9.96	97.16
	Share of premiums	0.63%	2.36%	14.41%	0.07%	0.36%	3.49%
FR	Funding needs (m€)	825.92	2 266.56	9 715.04	121.09	407.08	2 453.20
	Share of premiums	0.60%	1.66%	7.12%	0.09%	0.30%	1.80%
GB	Funding needs (m€)	1 479.55	3 883.16	15 770.79	223.90	712.24	3 996.29
	Share of premiums	0.48%	1.27%	5.17%	0.07%	0.23%	1.31%
GR	Funding needs (m€)	5.09	14.49	64.85	0.73	2.56	16.32
	Share of premiums	0.20%	0.58%	2.59%	0.03%	0.10%	0.65%
HU	Funding needs (m€)	4.00	10.08	38.92	0.62	1.88	9.89
	Share of premiums	0.20%	0.50%	1.93%	0.03%	0.09%	0.49%
IE	Funding needs (m€)	102.75	280.99	1 199.39	15.10	50.55	302.96
	Share of premiums	0.27%	0.75%	3.19%	0.04%	0.13%	0.81%
IS	Funding needs (m€)	0.04	0.21	2.00	0.00	0.03	0.45
	Share of premiums	0.11%	0.62%	5.84%	0.01%	0.07%	1.30%
IT	Funding needs (m€)	253.42	736.69	3 381.89	35.61	128.59	849.20
	Share of premiums	0.41%	1.20%	5.50%	0.06%	0.21%	1.38%
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	Funding needs (m€)	0.33	0.99	4.72	0.05	0.17	1.18
	Share of premiums	0.16%	0.49%	2.31%	0.02%	0.08%	0.58%
LU	Funding needs (m€)	61.25	145.33	521.14	9.91	27.84	132.68
	Share of premiums	0.61%	1.44%	5.16%	0.10%	0.28%	1.31%
LV	Funding needs (m€)	0.03	0.13	1.01	0.00	0.02	0.24
	Share of premiums	0.06%	0.25%	1.91%	0.01%	0.03%	0.45%
MT	Funding needs (m€)	0.64	2.32	13.59	0.08	0.36	3.31
	Share of premiums	0.30%	1.08%	6.35%	0.04%	0.17%	1.55%
NL	Funding needs (m€)	171.55	503.46	2 337.43	23.93	87.45	586.32
	Share of premiums	0.65%	1.90%	8.84%	0.09%	0.33%	2.22%
NO	Funding needs (m€)	35.06	137.69	890.97	3.85	20.28	213.77
	Share of premiums	0.36%	1.40%	9.06%	0.04%	0.21%	2.17%
PL	Funding needs (m€)	9.06	31.07	172.78	1.12	4.96	42.44
	Share of premiums	0.13%	0.46%	2.56%	0.02%	0.07%	0.63%
PT	Funding needs (m€)	24.06	75.26	376.40	3.20	12.64	93.69
	Share of premiums	0.26%	0.82%	4.09%	0.03%	0.14%	1.02%
RO	Funding needs (m€)	0.59	1.49	5.79	0.09	0.28	1.47
	Share of premiums	0.14%	0.36%	1.39%	0.02%	0.07%	0.35%
SE	Funding needs (m€)	127.14	363.39	1 635.17	18.09	63.97	411.32
	Share of premiums	0.98%	2.80%	12.59%	0.14%	0.49%	3.17%
SI	Funding needs (m€)	0.97	3.61	22.09	0.11	0.55	5.35
	Share of premiums	0.22%	0.81%	4.98%	0.03%	0.12%	1.21%
SK	Funding needs (m€)	1.39	4.30	21.27	0.19	0.73	5.30
	Share of premiums	0.16%	0.51%	2.51%	0.02%	0.09%	0.63%

Table 3.5: IGS funding needs: EU total and EU average for the life business line, based on the home state principle, for different confidence levels and default probabilities; funding needs in absolute value and as a share of the total gross premiums written.

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
EU total	Funding needs (m€)	4 010.12	10 832.88	45 751.09	595.32	1 957.90	11 553.79
	Share of premiums	0.53%	1.43%	6.02%	0.08%	0.26%	1.52%
EU avg	Funding needs (m€)	843.30	2 237.15	9 214.04	126.69	408.17	2 332.37
	Share of premiums	0.53%	1.43%	6.02%	0.08%	0.26%	1.52%

Figure 3.4: IGS funding needs for the life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs as a share of the total gross premiums written, the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

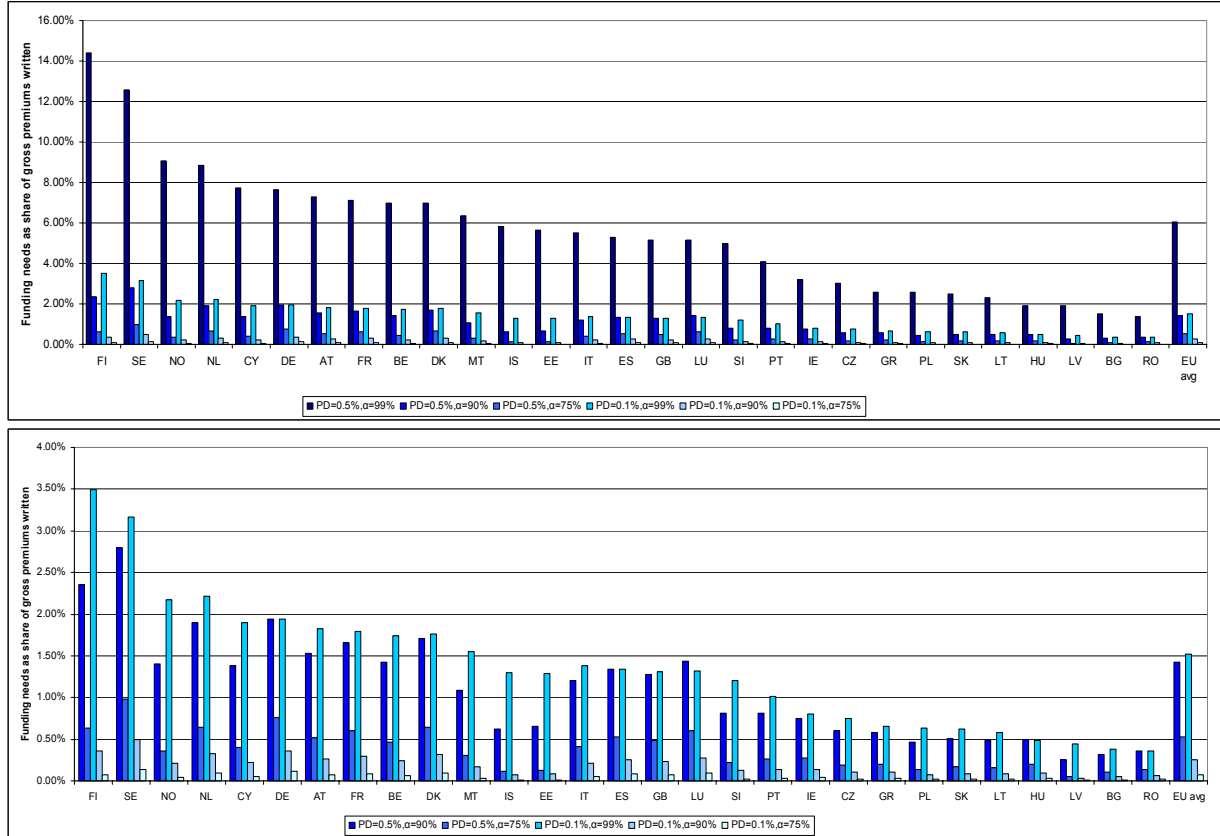


Figure 3.5: Summary of IGS funding needs for the life business line, based on the home state principle, for different confidence levels and default probabilities as a share of the total gross premiums written; EU average and minimum, maximum and median values across all EEA countries

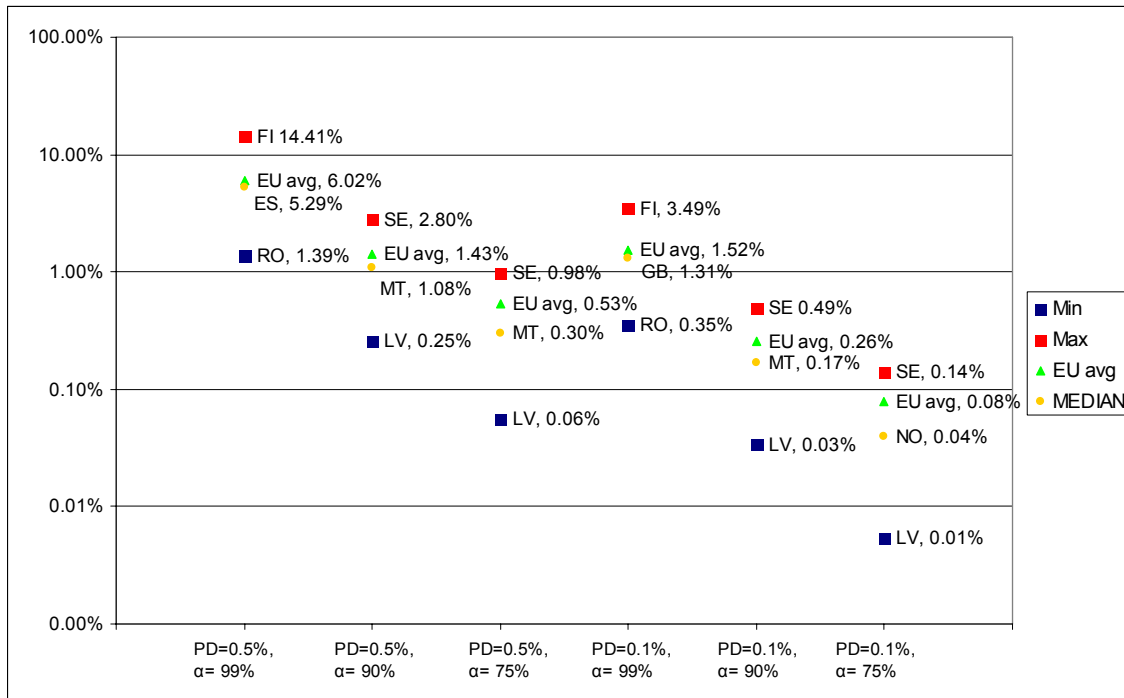


Figure 3.6: IGS funding needs for the life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs in absolute terms; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

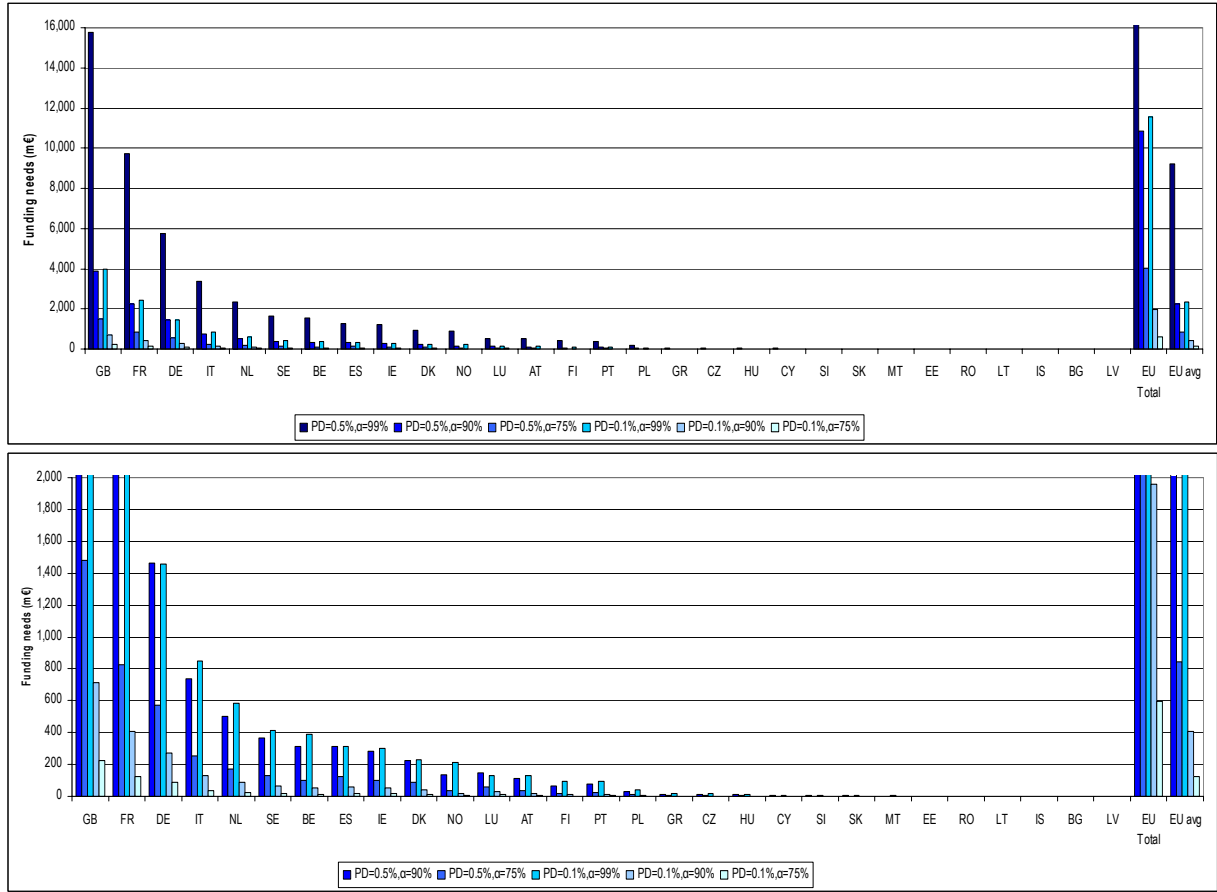


Table 3.6: IGS funding needs for the non-life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; expressed in absolute value and as a share of total gross premiums written

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
AT	Funding needs (m€)	6.56	20.52	102.53	0.87	3.45	25.52
	Share of premiums	0.11%	0.35%	1.75%	0.01%	0.06%	0.44%
BE	Funding needs (m€)	13.12	36.60	160.02	1.90	6.52	40.35
	Share of premiums	0.23%	0.64%	2.80%	0.03%	0.11%	0.71%
BG	Funding needs (m€)	0.16	0.40	1.57	0.02	0.08	0.40
	Share of premiums	0.07%	0.17%	0.67%	0.01%	0.03%	0.17%
CY	Funding needs (m€)	0.25	0.66	2.71	0.04	0.12	0.69
	Share of premiums	0.14%	0.38%	1.57%	0.02%	0.07%	0.40%
CZ	Funding needs (m€)	1.49	3.57	12.93	0.24	0.68	3.29
	Share of premiums	0.11%	0.27%	0.99%	0.02%	0.05%	0.25%
DE	Funding needs (m€)	186.27	474.60	1 859.02	28.77	88.22	471.95
	Share of premiums	0.27%	0.68%	2.67%	0.04%	0.13%	0.68%
DK	Funding needs (m€)	8.19	19.07	66.74	1.34	3.68	17.00
	Share of premiums	0.16%	0.37%	1.31%	0.03%	0.07%	0.33%
EE	Funding needs (m€)	0.04	0.17	1.17	0.00	0.02	0.28
	Share of premiums	0.06%	0.23%	1.55%	0.01%	0.03%	0.37%
ES	Funding needs (m€)	36.67	95.62	385.25	5.57	17.59	97.66
	Share of premiums	0.19%	0.50%	2.01%	0.03%	0.09%	0.51%
FI	Funding needs (m€)	3.95	14.16	82.81	0.47	2.20	20.19
	Share of premiums	0.21%	0.74%	4.31%	0.02%	0.11%	1.05%
FR	Funding needs (m€)	119.58	320.65	1 336.68	17.82	58.23	338.18
	Share of premiums	0.24%	0.65%	2.71%	0.04%	0.12%	0.69%
GB	Funding needs (m€)	74.60	197.67	812.18	11.21	36.10	205.66
	Share of premiums	0.16%	0.43%	1.76%	0.02%	0.08%	0.44%
GR	Funding needs (m€)	1.28	3.23	12.54	0.20	0.60	3.18
	Share of premiums	0.12%	0.31%	1.21%	0.02%	0.06%	0.31%
HU	Funding needs (m€)	0.27	0.65	2.37	0.04	0.12	0.60
	Share of premiums	0.04%	0.09%	0.33%	0.01%	0.02%	0.08%
IE	Funding needs (m€)	10.96	25.38	88.25	1.80	4.91	22.48
	Share of premiums	0.28%	0.66%	2.28%	0.05%	0.13%	0.58%
IS	Funding needs (m€)	0.36	1.20	6.39	0.05	0.19	1.58
	Share of premiums	0.19%	0.63%	3.38%	0.02%	0.10%	0.83%
IT	Funding needs (m€)	20.09	61.26	297.37	2.72	10.43	74.26
	Share of premiums	0.12%	0.36%	1.75%	0.02%	0.06%	0.44%
LI	Funding needs (m€)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Share of premiums	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
LT	Funding needs (m€)	0.12	0.30	1.19	0.02	0.06	0.30
	Share of premiums	0.10%	0.25%	0.98%	0.01%	0.05%	0.25%
LU	Funding needs (m€)	2.81	6.77	24.75	0.45	1.29	6.30
	Share of premiums	0.28%	0.67%	2.44%	0.04%	0.13%	0.62%
LV	Funding needs (m€)	0.14	0.36	1.53	0.02	0.07	0.39
	Share of premiums	0.08%	0.21%	0.89%	0.01%	0.04%	0.23%
MT	Funding needs (m€)	0.36	1.10	5.41	0.05	0.19	1.35
	Share of premiums	0.15%	0.46%	2.25%	0.02%	0.08%	0.56%
NL	Funding needs (m€)	56.53	157.25	685.05	8.21	28.06	172.78
	Share of premiums	0.13%	0.36%	1.57%	0.02%	0.06%	0.40%
NO	Funding needs (m€)	3.79	13.89	83.28	0.44	2.13	20.23
	Share of premiums	0.16%	0.59%	3.56%	0.02%	0.09%	0.86%
PL	Funding needs (m€)	1.48	5.98	39.83	0.16	0.87	9.51
	Share of premiums	0.08%	0.32%	2.11%	0.01%	0.05%	0.50%
PT	Funding needs (m€)	2.97	9.32	46.77	0.39	1.56	11.64
	Share of premiums	0.13%	0.40%	1.99%	0.02%	0.07%	0.49%
RO	Funding needs (m€)	0.50	1.23	4.56	0.08	0.23	1.16
	Share of premiums	0.08%	0.20%	0.73%	0.01%	0.04%	0.18%
SE	Funding needs (m€)	30.32	99.17	522.29	3.89	16.26	129.20
	Share of premiums	0.41%	1.35%	7.12%	0.05%	0.22%	1.76%
SI	Funding needs (m€)	0.64	2.52	16.35	0.07	0.37	3.92
	Share of premiums	0.08%	0.31%	2.04%	0.01%	0.05%	0.49%
SK	Funding needs (m€)	0.22	0.86	5.57	0.02	0.13	1.34
	Share of premiums	0.07%	0.27%	1.78%	0.01%	0.04%	0.43%

Table 3.7: IGS funding needs: EU total and EU average for the non-life business line, based on the home state principle, for different confidence levels and default probabilities; funding needs in absolute value and as a share of the total gross premiums

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
EU total	Funding needs (m€)	579.55	1 559.05	6 577.43	86.39	282.02	1 659.57
	Share of premiums	0.20%	0.55%	2.30%	0.03%	0.10%	0.58%
EU avg	Funding needs (m€)	91.87	241.52	985.11	13.89	44.24	249.44
	Share of premiums	0.20%	0.55%	2.30%	0.03%	0.10%	0.58%

Figure 3.7: IGS funding needs for the non-life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs as a share of the total gross premiums written; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

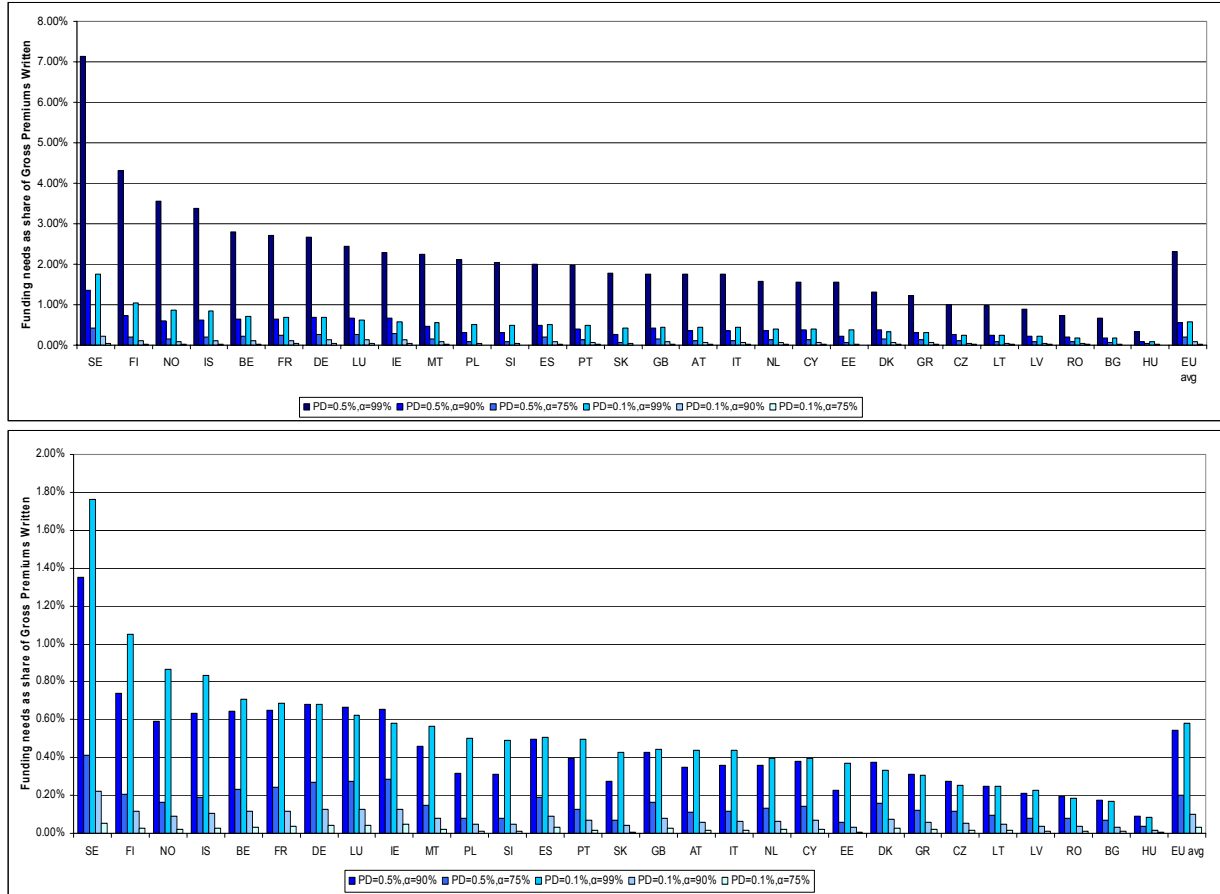


Figure 3.8: Summary of IGS funding needs for the non-life business line sector, based on the home state principle, for different confidence levels and default probabilities as a share of the total gross premiums written; EU average and minimum, maximum and median values across all EEA countries

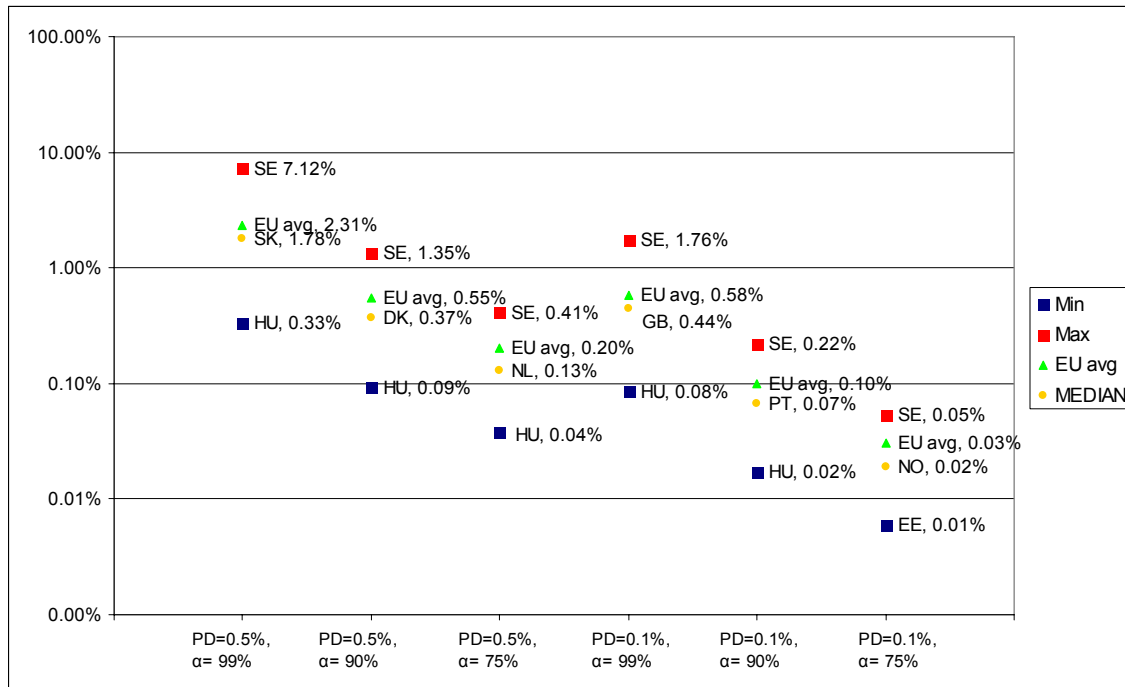


Figure 3.9: IGS funding needs for the non-life business line, based on the home state principle, for different confidence levels and default probabilities; all EEA countries; the top figure indicates funding needs in absolute terms; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

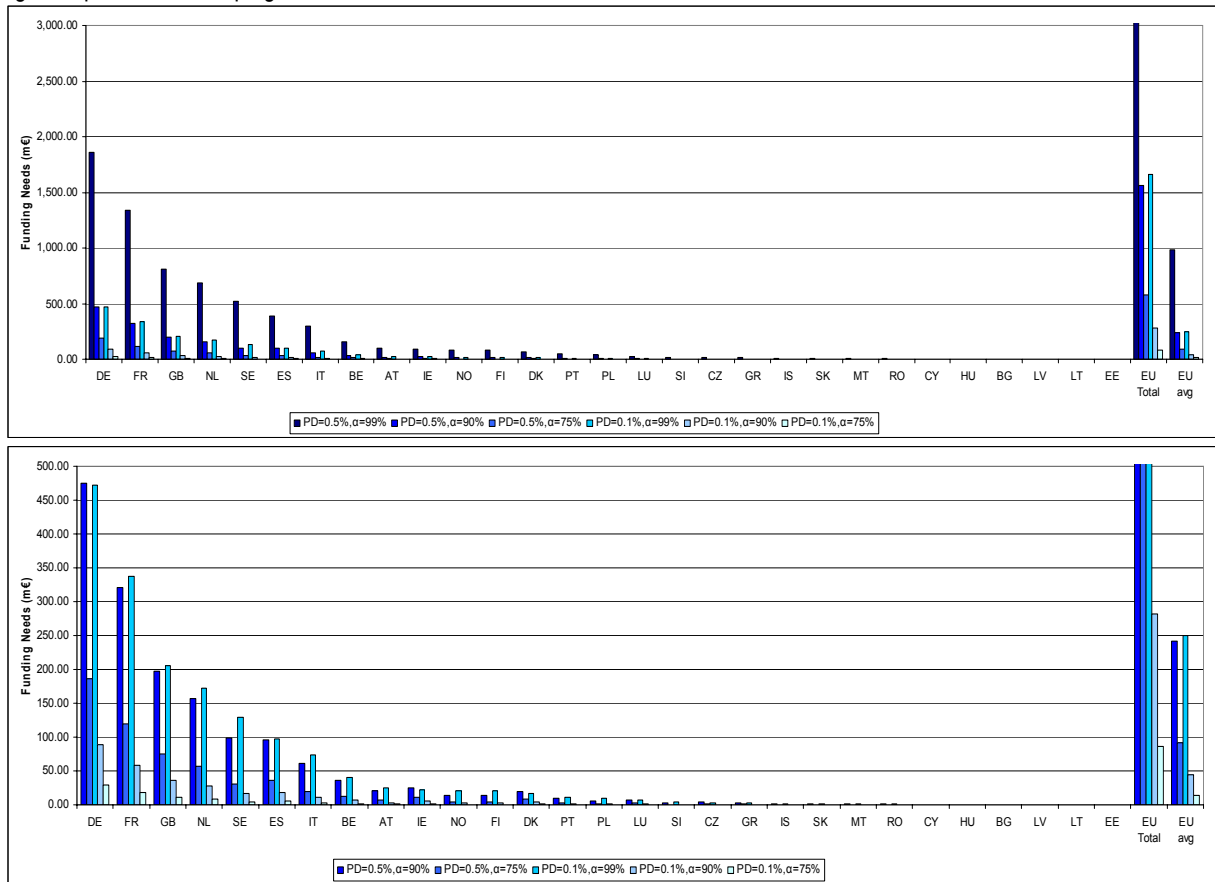


Table 3.8: IGS funding needs: EU total in absolute value and as a share of total premiums, based on the home state principle, for total insurance sector, life and non-life business lines

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Absolute values (in m€)						
Total insurance (EU)	4 529	12 213	51 477	673	2 209	13 001
Life (EU)	4 010	10 833	45 751	595	1 958	11 554
Non-life (EU)	580	1 559	6 577	86	282	1 660
As share of total premiums						
Total insurance (EU)	0.43%	1.17%	4.92%	0.06%	0.21%	1.24%
Life (EU)	0.53%	1.43%	6.02%	0.08%	0.26%	1.52%
Non-life (EU)	0.20%	0.55%	2.30%	0.03%	0.10%	0.58%

3.2.1 Analysis of probability levels associated with funding needs presented in the Oxera report

This section compares the results from the previous section with the results presented in the Oxera report (2007). Note that the current data availability limitations make it impossible to reproduce detailed results reflecting the policy options activated at country level. Moreover, it should be kept in mind that the results given in this report were obtained using 2006 and 2007 data, whereas the Oxera report is based on 2004-2006 data.

Oxera's IGS report (Oxera 2007; and updated figures in CEIOPS 2009) not only provides figures on actual fund sizes, but also aims to estimate the expected future insurance guarantee costs (for which the results are presented on pages 102 and 103 in Tables 5.4 and 5.5). The same results can be obtained with the model presented in Equation 1.2 when setting ρ and δ at zero, highlighting how this result reflects the situation on a market with infinite granularity populated by insurers with completely independent default risks. The full model of Equation 1.2, however, makes it possible to obtain, besides the funding needs, the probability of exceeding any given loss threshold for the various EU countries.

The first comparison therefore aims to calculate the confidence level associated with the IGS sizes proposed in the Oxera report, in other words the probability that losses in any given year will not be higher than the proposed funding needs.

In order to favour comparability with the Oxera report, the EAD estimate in this section will be limited to technical provisions for calculations with the full model as well, but the adjustment for technical provisions will be taken into account¹⁸. The other input parameters of the model are: PD is set at 0.1%; ρ is taken as equal to 0.2 and an asset shortfall of 15% is assumed. These parameters are completed by adding the business line and country-specific δ presented in Table 2.2. Results reproducing Table 5.4 from the Oxera report are presented in Table 3.9 and Table 3.10. The first column of each table indicates the funding needs obtained using the Oxera formula based on the updated EAD data, the second the confidence level and the last two the input parameters used in the calculations.

Table 3.9: Comparison of loss distributions calculated in accordance with the model expressed by Equation 1.2 with the results of the formula employed in the Oxera report (2007, updated figures in CEIOPS, 2009) to obtain Tables 5.4 and 5.5; the yellow column indicates the probability that losses over a certain period will not exceed the amounts in the first column, when the loss distributions are calculated using the parameters in the last two columns (data for the life business line)

	Expected costs of insolvencies using OXERA formula (m€)	Probability of NOT exceeding this value, according to model	Input parameters ($\rho=0.2$ $PD=0.1\%$ $LGD=15\%$)	
			EAD used for this calculation (adjusted TPs) (m€)	δ
Germany	104.59	79.15%	697 273	0.05
Spain	23.23	79.21%	154 875	0.05
United Kingdom	265.95	79.70%	1 772 996	0.06
Poland	2.75	84.21%	18 349	0.18
Italy	56.25	81.61%	374 968	0.11
France	164.31	80.56%	1 095 414	0.08
Malta	0.17	84.85%	1 147	0.20

¹⁸ See section 2.2.2 'Estimation of the EAD and Annex Error! Reference source not found. for further details on this procedure.

Table 3.10: Comparison of loss distributions calculated in accordance with the model expressed by Equation 1.2 with the results of the formula employed in the Oxera report (2007, updated figures in CEIOPS, 2009) to obtain Tables 5.4 and 5.5; the yellow column indicates the probability that losses over a certain period will not exceed the amounts in the first column, when the loss distributions are calculated using the parameters in the last two columns (non-life business line)

	Expected costs of insolvencies using OXERA formula (m€)	Probability of NOT exceeding this value, according to model	Input parameters ($\rho=0.2$ PD=0.1% LGD=15%)	
			EAD used for this calculation (adjusted TPs) (m€)	δ
Germany	29.46	79.10%	196 403	0.05
Spain	6.46	79.57%	43 090	0.05
United Kingdom	13.53	20.49%	90 215	0.05
Poland	0.40	86.27%	2 647	0.05
Italy	4.28	82.41%	28 547	0.05
France	23.59	80.12%	157 276	0.05
Malta	0.04	82.53%	272	0.05

The same approach could be applied for all the expected shares of losses indicated in Table 5.5 of the Oxera report to calculate, for each of the resulting losses, the probability of not exceeding such a loss.

Besides calculating the probability of not exceeding a certain loss, it might also be interesting to know the effect of the different inputs on the resulting IGS funding needs. For this reason Table 3.11 shows the effect of changing the different inputs one by one when moving from the Oxera formula to the full model used to obtain the results in Table 3.2 to Table 3.6. The first six rows in Table 3.11 indicate the input parameters for the life insurance business in Germany. In every row, the green cells indicate the difference from the first column where the Oxera input has been used¹⁹. The row 'Expected costs using Oxera formula' indicates the cost proposed by Oxera ($EAD \cdot PD \cdot LGD$) for each combination of input parameters. Below this row the corresponding probability that the IGS will have to bear a loss which does not exceed these funding needs is added. To emphasise the effect of changing the input parameters, the last rows indicate for various α values, the corresponding cost to set up an IGS with such a confidence level and the corresponding size as a share of the total premium.

¹⁹ As outlined in section 1.2, Oxera's equation for funding needs ($EAD \times LGD \times p$) can be seen as a particular case for this model where both p and δ are set to zero and the distribution collapses to a single point.

Table 3.11: The effects of changes in the model parameters on results. Example using data for the life insurance business line in Germany. The first column is obtained by applying the formula presented in the Oxera report (2007), which is equivalent to the model expressed in Equation 1.2 with ρ and δ set to zero, the second and third column introduce positive correlation and granularity parameters, the next three columns show the effects of changes in PD, EAD and LGD, the last column resets δ to zero.

	Data from OXERA report	Include ρ	Include δ	Set PD=0.5 %	Update EAD data	Set LGD=45 % with updated EAD data	Set $\delta =0$ with updated EAD data	
δ	0.00	0.00	0.05	0.05	0.05	0.05	0.00	
PD	0.10%	0.10%	0.10%	0.50%	0.10%	0.10%	0.10%	
ρ	0	0.2	0.2	0.2	0.2	0.2	0.2	
EAD (in m€)	641 078	641 078	641 078	641 078	765 639	765 639	765 639	
LGD	15%	15%	15%	15%	15%	45%	45%	
Gross premiums written(in m€)	73 969	73 969	73 969	73 969	75 170	75 170	75 170	
Expected costs using Oxera formula (in m€)								
	96.16	96.16	96.16	480.81	114.85	344.54	344.54	
Probability of not exceeding value								
	N.A.	76.72%	79.15%	75.07%	79.15%	79.15%	76.72%	
Funding needs (in m€)								
α	75.00%	96	88	74	479	88	265	314
	90.00%	96	235	227	1 224	271	814	842
	95.00%	96	407	423	2 039	505	1 514	1 460
	99.00%	96	1 054	1 220	4 808	1 458	4 373	3 776
	99.50%	96	1 453	1 740	6 374	2 078	6 235	5 208
	99.90%	96	2 700	3 422	10 810	4 086	12 259	9 673
	Funding needs as a share of gross premiums written							
α	75.00%	0.13%	0.12%	0.10%	0.65%	0.12%	0.35%	0.42%
	90.00%	0.13%	0.32%	0.31%	1.65%	0.36%	1.08%	1.12%
	95.00%	0.13%	0.55%	0.57%	2.76%	0.67%	2.01%	1.94%
	99.00%	0.13%	1.42%	1.65%	6.50%	1.94%	5.82%	5.02%
	99.50%	0.13%	1.96%	2.35%	8.62%	2.76%	8.29%	6.93%
	99.90%	0.13%	3.65%	4.63%	14.61%	5.44%	16.31%	12.87%

3.3 Analysis of probability levels associated with existing IGS fund sizes

Another comparison which can be performed is between funding needs according to the model expressed by Equation 1.2 and the actual fund sizes in place or target fund sizes across European states. This comparison is shown in Table 3.12, which also indicates the probability of not exceeding the actual or target funds according to the model, assuming a given set of policy options.

The first two rows of the table compare the funding needs calculated by the model with the actual fund sizes — or in some cases the target fund sizes — of existing IGSs in Member States, as reported by Oxera. Note that the data presented concern only IGSs of countries which have an ex-ante funding system in place and for which the actual or the target level fund has been provided.

This comparison assumed the correlation coefficient ρ to be 0.2, the confidence level $\alpha = 90\%$, the loss given default 15% and the probability of default 0.1% and 0.5%. The results show that there are several countries with an actual fund that exceeds the maximum loss results given the parameter values assumed.

It is also interesting to see which combinations of parameters in this model would produce maximum losses that correspond to the actual or target funds. This is shown in the lower section of the table. The first row in the lower section shows what confidence level²⁰ has to be chosen, leaving everything else unchanged, to obtain maximum losses identical to the actual funds. In the case of Germany, for instance, the result is an α of around 77.1%, which means a probability of 77.1% that the losses will not exceed the target fund of €640bn.

The next three rows show how the level α changes as different sets of parameters are applied. The fifth and sixth rows show what probability of default would have to be assumed to obtain a maximum loss equal to the actual funds with an α of 90% and an asset shortfall of 15% and 45% respectively.

The last two rows show what level of asset shortfall would reproduce, in this model, the actual funding needs given a probability of default of 0.5% and 0.1% respectively.

The last row of the table, in particular, shows how using a PD of 0.1% the actual fund sizes of certain countries could be obtained only by assuming assets shortfalls in excess of 100%.

Note that countries can choose several different policy options which can have a major impact on the expected payout. Table 3.13 provides a summary of the differences among policy options adopted in the Member States cited in Table 3.12 and in the model used in obtaining the results. Options marked in parentheses refer to alternative options analyzed in Section 4.

²⁰ The probability that the actual fund size is the maximum loss that will not be exceeded with that probability during the reference period.

Table 3.12: Comparison of estimated IGS funding needs indicated in section 3.2 with actual funding reported by Oxera (2007)

	Life					Non-life				Total Spain	
	Latvia	Malta(#)	France	Germany	Romania	Latvia	Malta(#)	Romania	Denmark		
Estimated IGS funding needs ($\rho=0.2$, $\alpha=90\%$, PD=0.5%,LGD 15%) (in m€)	0.13	2.35	2 266.56	1 460.67	1.49	0.36	1.16	1.23	19.07	406.72	
Estimated IGS funding needs ($\rho=0.2$, $\alpha=90\%$, PD=0.1%,LGD 15%)(in m€)	0.02	0.36	407.08	271.23	0.28	0.07	0.20	0.23	3.68	75.16	
Actual fund size (OXERA, latest available figures) (in m€)	0.8 (1)	2.33 (2)	569 (4)	640 (2)	136 (3)	17.1 (3)	2.8 (1)	2.33 (2)	84.5 (3)	40.3 (2)	1331 (3)

The model used in this study would produce results identical to the actual fund size with the following parameters:

$\rho=0.2$, LGD=15%, PD=0.5% then	$\alpha =$	98.55%	89.93%	67.99%	77.15%	44.24%	99.97%	99.79%	95.62%	100.00%	97.00%	98.47%
$\rho=0.2$, LGD=45%, PD= 0.5% then	$\alpha =$	94.49%	77.39%	45.94%	53.99%	24.00%	98.96%	97.36%	85.48%	100.00%	84.67%	91.00%
$\rho=0.2$, LGD=15%, PD= 0.1% then	$\alpha =$	99.85%	98.36%	92.80%	96.33%	81.64%	100.00%	99.99%	99.58%	100.00%	99.87%	99.93%
$\rho=0.2$, LGD=45%, PD= 0.1% then	$\alpha =$	99.15%	94.62%	81.38%	63.32%	63.32%	99.96%	99.84%	97.64%	100.00%	98.44%	99.13%
$\rho=0.2$, $\alpha =90\%$, LGD=15% then	PD =	2.35%	0.50%	0.14%	0.05%	0.05%	6.11%	3.85%	0.97%	65.26%	1.06%	1.62%
$\rho=0.2$, $\alpha =90\%$, LGD=45%then	PD =	0.89%	0.19%	0.05%	0.02%	0.02%	1.91%	1.25%	0.35%	13.72%	0.35%	0.54%
$\rho=0.2$, $\alpha =90\%$, PD=0.5% then	LGD =	89.32%	14.88%	3.77%	1.40%	1.40%	172.03%	115.07%	30.24%	1030.23%	31.71%	49.09%
$\rho=0.2$, $\alpha =90\%$, PD=0.1% then	LGD =	662.41%	95.84%	20.97%	7.52%	7.52%	922.67%	635.40%	178.30%	5437.75%	164.23%	265.63%

Notes: (#)IGS funding needs for Malta are estimated based on the host state principle, as explained in section 4.
 (1) 2006 data; (2) target fund size as given for 2008; (3) 2008 data; (4) 2007 data.

Table 3.13: Summary of policy options currently applied in selected EU Member States and used for the model employed in this report

	Used in this report	Life					Non-life				Total ES
		LV	MT	FR	DE	RO	LV	MT	RO	DK	
Status quo versus change											
Introduce a legally binding EU-wide approach to IGS	X										
Only partially binding EU-wide approach											
No binding EU-wide approach		X	X	X	X	X	X	X	X	X	X
Nature of intervention											
Pure compensation to claimants	X	X	X	X		X	X	X	X	X	X
Continuation of contracts	(X)			X	X						X
Eligible claimants											
Natural persons only		X					X	X			
Natural persons + SMEs										X	
Natural and legal persons except financial institutions				X							
Natural and legal entities	X		X		X	X			X		X
Compensation limits and reductions											
Capping payouts		X		X			X				n/a
Capping payouts for non-compulsory insurance (MT)			X					X			
Level of coverage in percentage terms	100	100	75	100		100	50	75	100	100	n/a
Level of coverage in percentage terms (compulsory)			100					100			
Fixed deductible										X	
Other reduction in benefits					X						X
Policies covered											
Only life	X	X	X	X	X	X					
Only non-life	X						X	X	X	X	
Both life and non-life	X										X
Funding											
Ex-ante	NC•	X	X	X	X	X	X	X	X	X	X
Ex-post	NC•			X							
Capping the level of contributions over a period	NC	X		X	X		X				
Other sources of funding											
Borrowing power	NC		X	X	X			X		X	
Credit facility from members in place	NC			X							
State guarantee on borrowing	NC									X	
Additional guarantees as private initiative (large failures)	NC				X						
Geographic scope											
An IGS in each MS based on the home state principle	X*			X	X	X			X	X	X
An IGS in each MS based on the host state principle	(X)	X	X				X	X			
A single EU-wide IGS	(X)										
An IGS in each MS covering only domestic activity supplemented by an additional IGS covering cross-border transactions	(X)										
Other											X
Types of policies covered											
Without exclusions	X			X	X	X			X		
With exclusions		X	X				X	X		X	X

*: Home state principle results based on the assumption that exposure structure is proportional to national market structure.

•: This topic is shortly discussed in Annex A4

NC stands for not considered; Options marked (X) are analysed in Section 4

Source: CEIOPS 2009

3.4 Analysis of historical losses stemming from selected defaults of insurance undertakings

An initial comparison has been performed between historical observed costs for IGS funds and the loss distribution of IGS funds obtained under the settings applied in this study. There are several cases where IGSs have provided protection to claimants in relation to both life and non-life business. Three failures in relation to non-life business and one in relation to life business are considered here. Their historical data are taken from the Oxera report (p. 89 et seq.) and are summarised in Table 3.14.

Table 3.14: Historical losses stemming from defaults of selected insurance undertakings

Country	Failure	Sector	Total cost (m€)	As share of country total premium	Fund size in country (year) (m€)	Target fund size in country (m€)
Germany	Mannheimer	Life	100	0.13%	136 (2008)	640
Denmark	Plus Forsiking A/S	Non life	13.1	0.18%		40.3
United Kingdom	Independent Insurance	Non life	738	0.84%		
United Kingdom	Chester Street	Non life	146.5	0.17%		

The graphs set out below present the cumulative loss distribution functions implied by Equation 1.2 under two different PD values. For each country and line of business the fund sizes as a share of premium are plotted on the x-axis on a logarithmic scale²¹ while confidence levels are indicated on the y-axis. The curves indicate the maximum losses which should not be exceeded with a certain probability and the pink and blue curves correspond to different choices for the PD parameter (0.1% and 0.5%). The vertical green line starts from the point on the x-axis corresponding to the size of a historic failure and the confidence level of not exceeding this loss with a given choice of PD can be read where the vertical green line crosses the curves.

For calculation of the fund needs, the following parameters have been set: PD has been taken as 0.1% and 0.5%; p as 0.2 and the asset shortfall as 15%.

²¹ I.e. doubling the distance along the axis equals a tenfold increase in the loss.

Figure 3.10: Position of the losses generated by the Mannheimer default on the estimated loss distribution function for the life business line in Germany, based on home state principle and two different probabilities of default

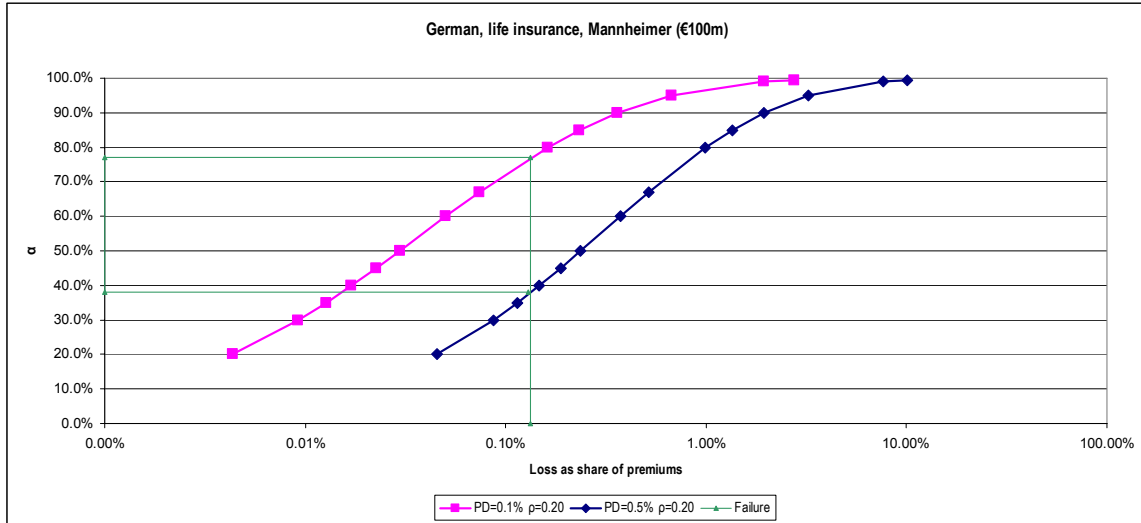


Figure 3.11: Position of the losses generated by the Plus Forsikring default on the estimated loss distribution function for the non-life business line in Denmark, based on home state principle and two different probabilities of default

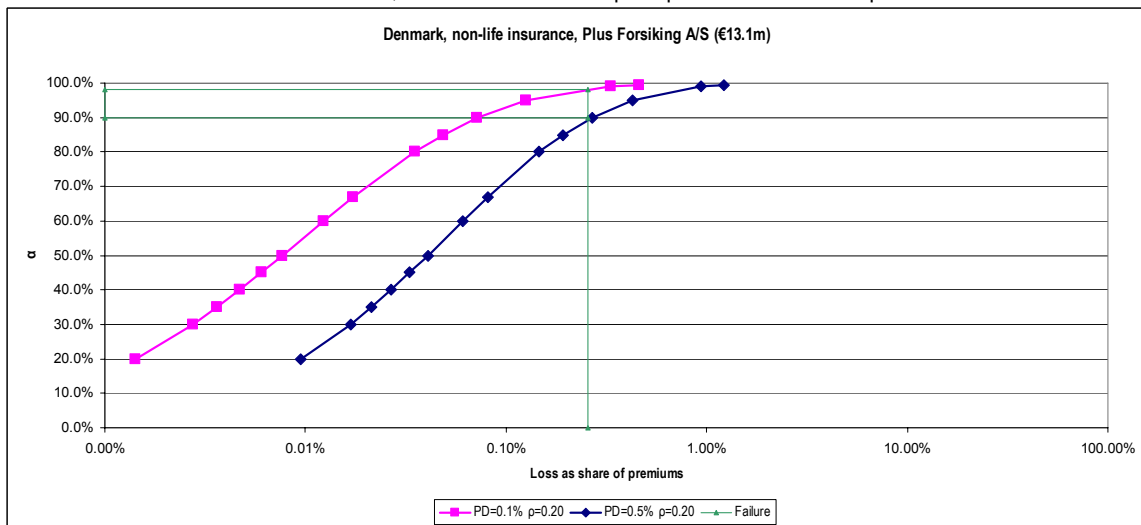


Figure 3.12: Position of the losses generated by the Independent Insurance default on the estimated loss distribution function for the non-life business line in the United Kingdom, based on home state principle and two different probabilities of default

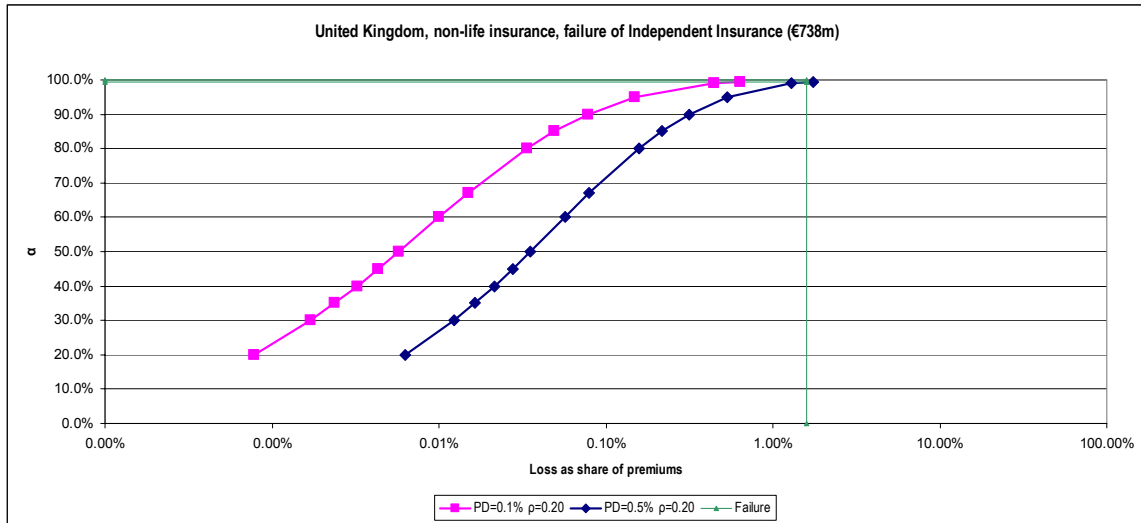
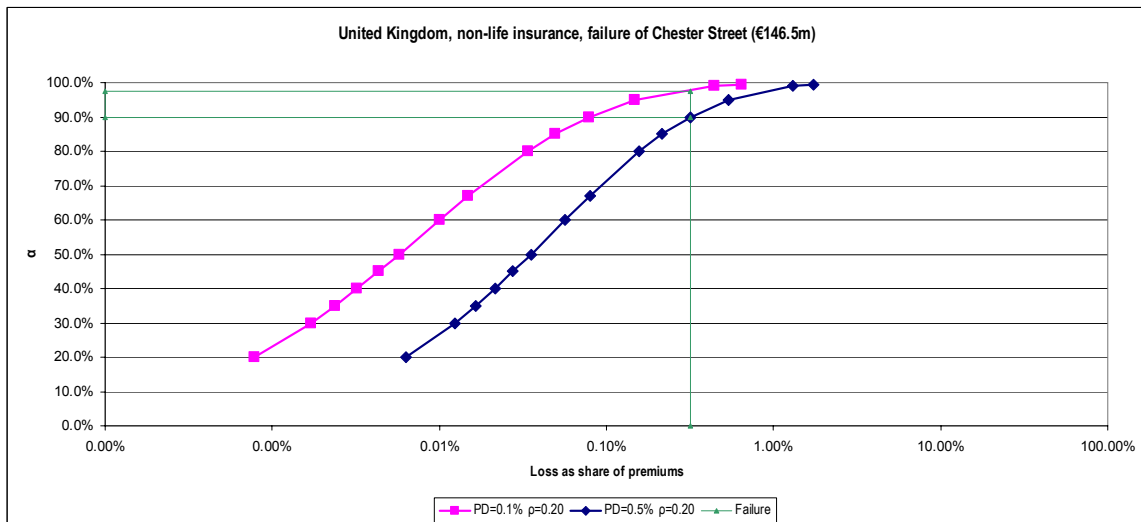


Figure 3.13: Position of the losses generated by the Chester Street default on the estimated loss distribution function for the non-life business line in the United Kingdom, based on home state principle and two different probabilities of default



4 Analysis of alternative policy options

4.1 Introduction

The previous chapter presented one specific policy option and calculated the corresponding funding needs. That option corresponded to the case where each Member State puts in place an IGS working on the basis of the home state principle, portfolio continuation and full coverage.

This chapter compares the funding needs if different policy options are introduced, such as changing the geographical scope and the nature of interventions, with that baseline case.

Policy options used in this analysis include:

- using the host state rather than the home state principle;
- using a national IGS covering domestic activities supplemented by an additional EU-wide IGS for cross-border insurance transactions:
 - a. including cross-border activities conducted under the freedom to provide services (FPS);
 - b. excluding cross-border activities conducted under the freedom to provide services;
- using a single pan-European scheme rather than national schemes;
- using a pure compensation mechanism rather than portfolio continuation/transfer.

The definition of home, host and domestic activities are presented in Table 4.3.

An overview of all the selected scenarios is given in Table 4.1.

Table 4.1: Summary of the structure of the different policy options

	Home state	Host state	Domestic w/o cross-border (FPS and branches)	Domestic w/o cross-border (branches only)	Pan-EU IGS	Home state with compensation
Status quo versus change						
Introduce a legally binding EU-wide approach to IGS	X	X	X	X	X	X
Only partially binding EU-wide approach						
No binding EU-wide approach						
Nature of intervention						
Pure compensation to claimants						X
Continuation of contracts	X	X	X	X	X	
Eligible claimants						
Natural persons only						
Natural persons + SMEs						
Natural and legal persons except financial institutions						
Natural and legal entities	X	X	X	X	X	X
Compensation limits and reductions						
Capping payouts						
Capping payouts for non-compulsory insurance						
Level of coverage in percentage terms	100	100	100	100	100	100
Level of coverage in percentage terms (compulsory)						
Fixed deductible						
Other reduction in benefits						
Policies covered						
Only life						
Only non-life						
Both life and non-life	X	X	X	X	X	X
Funding						
<i>Not covered</i>						
Ex-ante						
Ex-post						
Capping the level of contributions over a period						
Other sources of funding						
<i>Not covered</i>						
Borrowing power						
Credit facility from members in place						
State guarantee on borrowing						
Additional guarantees as private initiative (large failures)						
Geographic scope						
An IGS in each MS based on the home state principle	X					X
An IGS in each MS based on the host state principle		X				
A single EU-wide IGS					X	
An IGS in each MS covering only domestic activity and an additional IGS covering cross-border transactions			X	X		
Types of policies covered						
Without exclusions	X	X	X	X	X	X
With exclusions						

To obtain the data necessary for calculation of the funding needs under the different policy options, CEIOPS data on premiums for 2007 are used. Table 4.2 presents the data given by CEIOPS, while Table 4.3 shows how these data were used to obtain the premiums covered for different policy options.

Due to the limitations of the data currently available, δ was kept constant for each country over the different policy options. As a consequence, the probability distribution of losses remains invariant across policy options.

Moreover, in each country, due to lack of detailed data, the change of the EAD when moving from one policy option to another was adjusted proportionally to the change in the total premiums covered under each policy option with respect to the baseline case.

The combined result of these two simplifications is that at this stage the loss as a share of covered premiums will remain constant across all policy options. For this reason this result is not reported.

A further limitation of the data currently available is that the data on cross-border transactions available from CEIOPS are based on an EEA aggregation. As a consequence, figures for common schemes such as single schemes for cross-border transactions and pan-EU schemes will refer to an EEA basis.

Table 4.4 to Table 4.9 present the whole set of input parameters used for all the policy options for all three business lines considered.

Table 4.2: Gross premiums written as reported by CEIOPS: total insurance sector (including motor), all EEA countries, 2007 (m€)

	National enterprises				by branches of non-EU/EEA countries in the MS (5)	by branches of other EU/EEA countries in the MS (6)
	Total (1)	of which: under FPS in other EU/EEA countries (2)	of which: by branches in other EU/EEA countries (3)	of which: by branches in non-EU/EEA countries (4)		
AT	16 019	0	59	0	27	0
BE	30 738	428	1 437	44	0	856
BG	770	0	0	0	0	0
CY	622	48	18	55	53	27
CZ	4 647	2	10	0	9	323
DE	165 171	498	1 351	34	2 001	2 490
DK	20 302	157	1 042	225	0	0
EE	356	0	63	0	0	16
ES	55 699	0	0	0	0	0
FI	5 888	15	196	0	0	0
FR	207 231	499	3 379	1 105	913	0
GB	349 166	0	0	0	18 590	3 163
GR	4 798	0	0	0	343	75
HU	3 674	0	0	0	0	0
IE	44 234	20 014	6 123	306	73	1 842
IS	429	4	0	0	0	0
IT	100 594	840	449	194	1 562	4 798
LI	2 798*	2 776	1	3	0	0
LT	556	2	3	0	0	45
LU	11 410*	10 300	854	36	0	111
LV	437	0	17	0	0	25
MT	689	385	3	0	5	28
NL	73 392	0	0	0	1 560	0
NO	13 698	353	10	0	0	2 909
PL	11 560	0	1	0	18	0
PT	13 497	3	120	1	68	0
RO	2 105	0	0	0	0	0
SE	23 796	0	0	0	0	0
SI	1 799	1	0	0	0	0
SK	1 707	2	7	0	0	0
Total	1 167 782	36 327	15 143	2 003	25 222	16 708

Source: 'Report on Financial Conditions and Financial Stability in the European Insurance and Occupational Pension Fund Sector 2007-2008 (Risk Update)', Statistical Annex 2007, sheet 2.1: <http://www.ceiops.eu/content/view/20/24/>

* For Liechtenstein and Luxembourg the FPS activity has been included in 'National enterprises'.

Table 4.3: Calculations to obtain gross premiums written covered under different policy options. Example with data referring to the total insurance sector (life, non-life and motor), all EEA countries, 2007 (m€), assuming no exclusions or limitations are applied; numbers in column headings refer to columns in Table 4.2

	Home state principle (=1+5)	Host state principle (=1+5+6-3-4)	Cross-border (branches + FPS) (=2+3+4)	Domestic w/o cross-border (branches + FPS) (=1+5-2-3-4)	Cross-border (branches only) (=3+4)	Domestic w/o cross-border (branches only) (=1+5-3-4)	Total activity (=1+5+6)
AT	16 046	15 987	59	15 987	59	15 987	16 046
BE	30 738	30 113	1 909	28 829	1 481	29 257	31 594
BG	770	770	0	770	0	770	770
CY	675	629	121	554	73	602	702
CZ	4 656	4 969	12	4 644	10	4 646	4 979
DE	167 172	168 277	1 884	165 289	1 385	165 787	169 662
DK	20 302	19 035	1 424	18 878	1 267	19 035	20 302
EE	356	309	63	293	63	293	372
ES	55 699	55 699	0	55 699	0	55 699	55 699
FI	5 888	5 692	211	5 677	196	5 692	5 888
FR	208 144	203 660	4 983	203 161	4 484	203 660	208 144
GB	367 756	370 919	0	367 756	0	367 756	370 919
GR	5 141	5 216	0	5 141	0	5 141	5 216
HU	3 674	3 674	0	3 674	0	3 674	3 674
IE	44 307	39 720	26 443	17 864	6 429	37 878	46 149
IS	429	429	4	425	0	429	429
IT	102 156	106 311	1 483	100 673	643	101 513	106 954
LI	2 798	2 794	2 780	18	4	2 794	2 798
LT	556	598	4	551	3	553	601
LU	11 410	10 631	11 190	220	890	10 520	11 521
LV	437	445	17	420	17	420	462
MT	694	719	388	306	3	691	722
NL	74 952	74 952	0	74 952	0	74 952	74 952
NO	13 698	16 597	364	13 335	10	13 688	16 607
PL	11 578	11 577	1	11 577	1	11 577	11 578
PT	13 565	13 444	123	13 441	121	13 444	13 565
RO	2 105	2 105	0	2 105	0	2 105	2 105
SE	23 796	23 796	0	23 796	0	23 796	23 796
SI	1 799	1 799	1	1 798	0	1 799	1 799
SK	1 707	1 700	10	1 698	7	1 700	1 707
Total	1 193 004	1 192 566	53 473	1 139 531	17 146	1 175 858	1 209 712

Table 4.4: Premiums covered under different policy options, in terms of gross premiums written, for the total insurance sector (life and non-life only; excluding motor), all EEA countries, 2007 data (m€)

	Gross premiums written						
	Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation	Home state principle; compensation (including unearned premiums)
Austria	12 992	12 946	12 946	12 946		12 992	12 992
Belgium	27 886	27 413	26 447	26 804		27 886	27 886
Bulgaria	354	354	354	354		354	354
Cyprus	531	485	416	464		531	531
Czech Republic	3 338	3 630	3 330	3 331		3 338	3 338
Germany	144 749	145 772	143 227	143 663		144 749	144 749
Denmark	18 304	17 371	17 253	17 371		18 304	18 304
Estonia	193	135	130	130		193	193
Spain	42 653	42 653	42 653	42 653		42 653	42 653
Finland	4 704	4 508	4 499	4 508		4 704	4 704
France	185 825	182 441	182 057	182 441		185 825	185 825
United Kingdom	351 427	353 767	351 427	351 427		351 427	351 427
Greece	3 537	3 569	3 537	3 537		3 537	3 537
Hungary	2 728	2 728	2 728	2 728		2 728	2 728
Ireland	41 428	37 864	17 538	36 371		41 428	41 428
Iceland	223	223	222	223		223	223
Italy	78 452	81 778	77 519	78 046		78 452	78 452
Liechtenstein	2 798	2 794	18	2 794		2 798	2 798
Lithuania	326	359	324	325		326	326
Luxembourg	11 107	10 320	417	10 228		11 107	11 107
Latvia	224	241	217	217		224	224
Malta	454	468	257	452		454	454
The Netherlands	70 162	70 162	70 162	70 162		70 162	70 162
Norway	12 179	13 979	11 958	12 173		12 179	12 179
Poland	8 634	8 633	8 633	8 633		8 634	8 634
Portugal	11 561	11 453	11 451	11 453		11 561	11 561
Romania	1 044	1 044	1 044	1 044		1 044	1 044
Sweden	20 316	20 316	20 316	20 316		20 316	20 316
Slovenia	1 246	1 246	1 246	1 246		1 246	1 246
Slovakia	1 161	1 158	1 157	1 158		1 161	1 161
Cross-border scheme			44 254	10 539			
Pan-EEA scheme					1 057 738		

Table 4.5: Input parameters (EAD and δ) under different policy options, total insurance sector (life and non-life only; excluding motor), all EEA countries, 2007 (EAD in m€)

Name	δ	EAD						Home state principle; compensation (including unearned premiums)
		Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation	
Austria	0.13	67 554	67 317	67 317	67 317		59 911	60 583
Belgium	0.13	190 151	186 928	180 338	182 773		167 926	167 926
Bulgaria	0.07	392	392	392	392		338	358
Cyprus	0.15	3 078	2 811	2 413	2 691		2 814	2 814
Czech Republic	0.10	8 994	9 780	8 971	8 974		6 632	6 632
Germany	0.05	1 006 801	1 013 915	996 216	999 247		945 831	948 962
Denmark	0.05	135 949	129 020	128 145	129 020		118 926	118 975
Estonia	0.30	569	398	383	383		522	526
Spain	0.06	213 026	213 026	213 026	213 026		190 826	192 003
Finland	0.21	44 020	42 186	42 099	42 186		40 358	40 481
France	0.08	1 347 573	1 323 032	1 320 242	1 323 032		1 233 672	1 241 835
United Kingdom	0.07	2 092 219	2 106 151	2 092 219	2 092 219		1 976 408	1 978 512
Greece	0.09	9 495	9 582	9 495	9 495		8 249	8 256
Hungary	0.04	5 887	5 887	5 887	5 887		4 737	4 737
Ireland	0.08	161 216	147 348	68 250	141 537		148 896	148 896
Iceland	0.19	795	795	788	795		440	479
Italy	0.12	423 251	441 195	418 216	421 060		387 111	388 629
Liechtenstein	N.A.	N.A.	N.A.	N.A.	N.A.		0	0
Lithuania	0.10	643	708	640	641		542	554
Luxembourg	0.02	80 074	74 404	3 009	73 738		71 814	71 911
Latvia	0.13	269	288	260	260		218	218
Malta	0.17	1 980	2 042	1 123	1 973		1 489	1 502
The Netherlands	0.10	313 024	313 024	313 024	313 024		300 900	300 900
Norway	0.23	86 755	99 576	85 184	86 711		78 965	79 007
Poland	0.19	20 855	20 852	20 852	20 852		17 129	17 320
Portugal	0.14	45 402	44 978	44 971	44 978		41 409	41 531
Romania	0.04	1 468	1 468	1 468	1 468		1 053	1 173
Sweden	0.12	238 147	238 147	238 147	238 147		188 189	189 240
Slovenia	0.23	3 897	3 897	3 895	3 897		2 171	2 473
Slovakia	0.16	2 860	2 853	2 851	2 853		2 367	2 372
Cross-border scheme				236 521	77 766			
Pan-EEA scheme						6 506 344		

Table 4.6: Premiums covered under different policy options, in terms of gross premiums written, life business line, all EEA countries, 2007 data (m€)

	Gross premiums written					
	Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation
Austria	7 141	7 121	7 121	7 121		7 141
Belgium	22 179	22 011	21 680	21 895		22 179
Bulgaria	120	120	120	120		120
Cyprus	358	312	251	299		358
Czech Republic	2 034	2 305	2 029	2 030		2 034
Germany	75 170	75 937	74 771	75 012		75 170
Denmark	13 190	13 112	13 095	13 112		13 190
Estonia	118	55	55	55		118
Spain	23 455	23 455	23 455	23 455		23 455
Finland	2 784	2 588	2 588	2 588		2 784
France	136 528	135 578	135 445	135 578		136 528
United Kingdom	305 184	305 194	305 184	305 184		305 184
Greece	2 504	2 509	2 504	2 504		2 504
Hungary	2 017	2 017	2 017	2 017		2 017
Ireland	37 563	35 373	17 101	34 348		37 563
Iceland	34	34	34	34		34
Italy	61 438	64 169	60 899	61 202		61 438
Liechtenstein	2 756	2 756	21	2 756		2 756
Lithuania	204	232	204	204		204
Luxembourg	10 093	9 281	0	9 252		10 093
Latvia	53	76	53	53		53
Malta	214	217	209	214		214
The Netherlands	26 437	26 437	26 437	26 437		26 437
Norway	9 838	9 944	9 838	9 838		9 838
Poland	6 743	6 742	6 742	6 742		6 743
Portugal	9 205	9 112	9 111	9 112		9 205
Romania	415	415	415	415		415
Sweden	12 985	12 985	12 985	12 985		12 985
Slovenia	443	443	443	443		443
Slovakia	848	848	848	848		848
Cross-border scheme			33 639	3 442		
Pan-EEA scheme					769 296	

Table 4.7: Input parameters (EAD and δ) under different policy options, life business line, all EEA countries, 2007 data (EAD in m€)

Name	δ	EAD					
		Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation
Austria	0.12	58 188	58 028	58 028	58 028		53 452
Belgium	0.14	168 163	166 891	164 380	166 012		152 592
Bulgaria	0.12	203	203	203	203		183
Cyprus	0.18	2 717	2 367	1 904	2 268		2 564
Czech Republic	0.15	6 544	7 415	6 528	6 530		5 448
Germany	0.05	765 180	772 985	761 114	763 568		736 269
Denmark	0.07	118 090	117 390	117 243	117 390		112 060
Estonia	0.33	509	237	237	237		464
Spain	0.05	164 938	164 938	164 938	164 938		153 808
Finland	0.21	37 099	34 487	34 487	34 487		34 770
France	0.08	1 189 627	1 181 346	1 180 195	1 181 346		1 114 114
United Kingdom	0.06	2 034 005	2 034 070	2 034 005	2 034 005		1 898 896
Greece	0.10	7 630	7 645	7 630	7 630		6 897
Hungary	0.05	5 282	5 282	5 282	5 282		4 651
Ireland	0.08	147 444	138 848	67 126	134 825		136 608
Iceland	0.35	147	147	147	147		111
Italy	0.11	389 126	406 424	385 715	387 632		364 670
Liechtenstein	0.03	0	0	0	0		0
Lithuania	0.12	525	598	525	525		449
Luxembourg	0.02	76 571	70 414	0	70 189		69 366
Latvia	0.28	83	119	83	83		70
Malta	0.20	1 293	1 310	1 260	1 291		1 148
The Netherlands	0.11	266 317	266 317	266 317	266 317		252 736
Norway	0.23	79 468	80 324	79 468	79 468		73 074
Poland	0.18	17 059	17 056	17 056	17 056		14 664
Portugal	0.14	40 297	39 891	39 886	39 891		37 423
Romania	0.05	781	781	781	781		678
Sweden	0.10	191 510	191 510	191 510	191 510		161 984
Slovenia	0.21	2 041	2 041	2 039	2 041		1 677
Slovakia	0.14	2 299	2 299	2 299	2 299		2 007
Cross-border scheme				182 750	37 157		
Pan-EEA scheme						5 773 137	

Table 4.8: Premiums covered under different policy options, in terms of gross premiums written, non-life business line, all EEA countries, 2007 data (m€)

	Gross premiums written						
	Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation	Home state principle; compensation (including unearned premiums)
Austria	5 851	5 825	5 825	5 825		5 851	5 851
Belgium	5 707	5 402	4 766	4 908		5 707	5 707
Bulgaria	234	234	234	234		234	234
Cyprus	173	173	166	166		173	173
Czech Republic	1 304	1 325	1 301	1 301		1 304	1 304
Germany	69 579	69 835	68 456	68 651		69 579	69 579
Denmark	5 114	4 259	4 158	4 259		5 114	5 114
Estonia	75	80	75	75		75	75
Spain	19 198	19 198	19 198	19 198		19 198	19 198
Finland	1 920	1 920	1 911	1 920		1 920	1 920
France	49 297	46 864	46 611	46 864		49 297	49 297
United Kingdom	46 243	48 573	46 243	46 243		46 243	46 243
Greece	1 032	1 060	1 032	1 032		1 032	1 032
Hungary	712	712	712	712		712	712
Ireland	3 865	2 491	437	2 023		3 865	3 865
Iceland	189	189	187	189		189	189
Italy	17 014	17 609	16 620	16 844		17 014	17 014
Liechtenstein	43	38	-2	38		43	43
Lithuania	122	127	120	121		122	122
Luxembourg	1 014	1 039	417	976		1 014	1 014
Latvia	171	165	164	164		171	171
Malta	240	251	49	238		240	240
The Netherlands	43 725	43 725	43 725	43 725		43 725	43 725
Norway	2 341	4 035	2 120	2 335		2 341	2 341
Poland	1 890	1 890	1 890	1 890		1 890	1 890
Portugal	2 356	2 341	2 340	2 341		2 356	2 356
Romania	629	629	629	629		629	629
Sweden	7 331	7 331	7 331	7 331		7 331	7 331
Slovenia	803	803	803	803		803	803
Slovakia	313	310	310	310		313	313
Cross-border scheme			10 615	7 135			
Pan-EEA scheme					288 442		

Table 4.9: Input parameters (EAD and δ) under different policy options, non-life business line, all EEA countries, 2007 data (EAD in m€)

Name	δ	EAD						
		Home	Host	Domestic + single cross-border (branches and FPS)	Domestic + single cross-border (branches only)	Pan-EU/EEA	Home state principle; pure compensation	Home state principle; compensation (including unearned premiums)
Austria	0.14	10 984	10 936	10 936	10 936		6 459	7 131
Belgium	0.09	19 236	18 209	16 067	16 545		15 334	15 334
Bulgaria	0.05	212	212	212	212		155	175
Cyprus	0.07	344	344	329	329		250	250
Czech Republic	0.02	1 877	1 907	1 872	1 873		1 184	1 184
Germany	0.05	248 637	249 552	244 626	245 321		209 563	212 693
Denmark	0.01	10 074	8 390	8 191	8 390		6 865	6 915
Estonia	0.25	101	108	101	101		58	61
Spain	0.06	50 081	50 081	50 081	50 081		37 017	38 195
Finland	0.20	7 888	7 888	7 850	7 888		5 588	5 711
France	0.07	168 067	159 770	158 909	159 770		119 558	127 721
United Kingdom	0.07	103 562	108 780	103 562	103 562		77 512	79 616
Greece	0.05	1 693	1 738	1 693	1 693		1 352	1 360
Hungary	0.03	340	340	340	340		86	86
Ireland	0.01	13 425	8 653	1 519	7 027		12 288	12 288
Iceland	0.17	650	650	644	650		329	368
Italy	0.13	32 622	33 763	31 866	32 296		22 441	23 959
Liechtenstein	0.04	0	0	0	0		0	0
Lithuania	0.06	157	164	155	156		93	105
Luxembourg	0.03	3 558	3 645	1 464	3 425		2 449	2 545
Latvia	0.08	191	184	183	183		147	147
Malta	0.13	589	616	120	585		340	354
The Netherlands	0.09	82 629	82 629	82 629	82 629		48 165	48 165
Norway	0.21	7 803	13 450	7 068	7 782		5 890	5 933
Poland	0.24	3 490	3 490	3 490	3 490		2 465	2 657
Portugal	0.14	4 992	4 960	4 958	4 960		3 986	4 109
Romania	0.03	646	646	646	646		375	495
Sweden	0.16	53 695	53 695	53 695	53 695		26 205	27 256
Slovenia	0.24	1 455	1 455	1 455	1 455		495	797
Slovakia	0.23	496	492	490	492		361	366
Cross-border scheme				34 345	22 982			
Pan-EEA scheme						829 493		

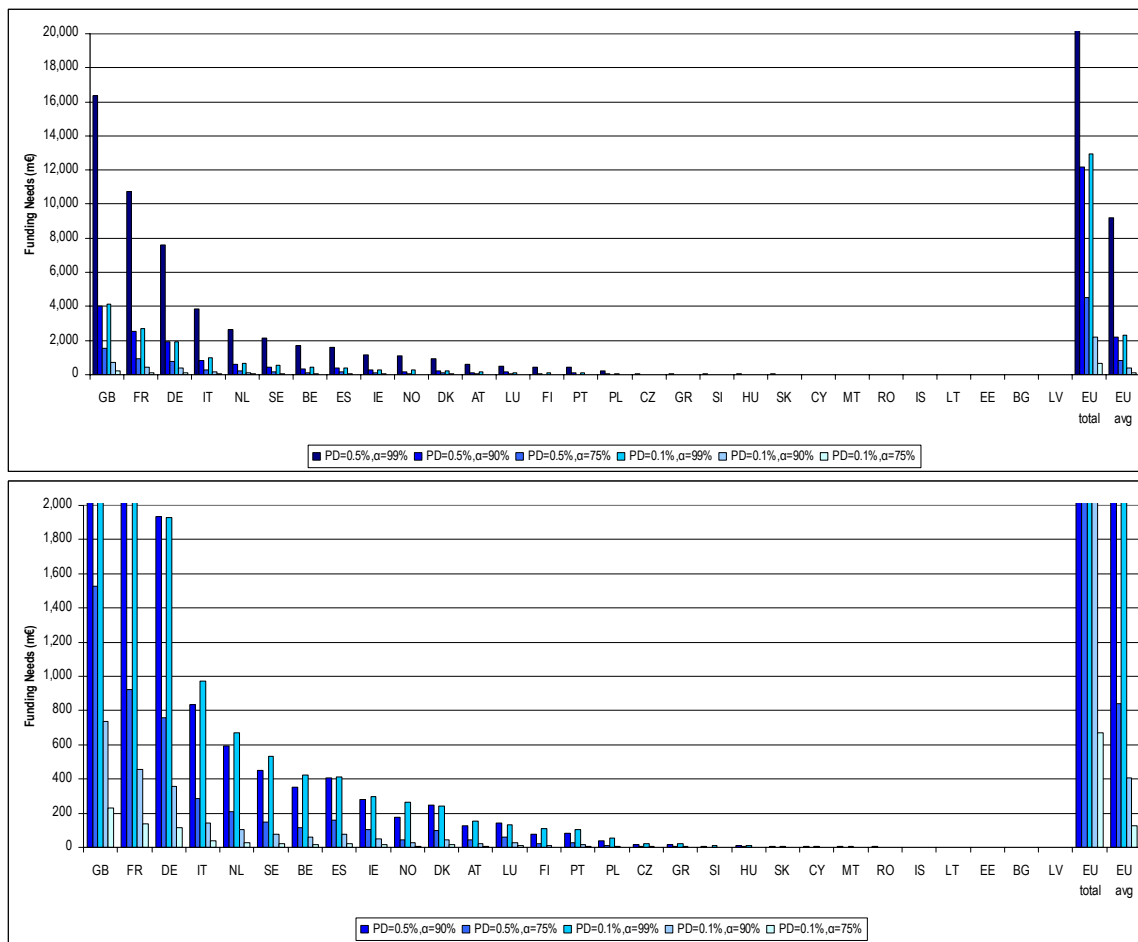
4.2 Using the host state rather than the home state principle

Under this option an IGS should be put in place in each Member State using the host state principle to determinate the policies covered. In this case the total premiums covered can be calculated using totals under national supervision plus the branches of EU/EEA countries operating in the country minus branches from the country operating in other EU/EEA or in non-EU/EEA countries.

As no data is available for the calculation of a different δ under different policy options, δ is kept constant in these estimates, while total premiums and EAD are adjusted.

4.2.1 Total insurance

Figure 4.1: IGS funding needs for the total insurance sector based on the host state principle for different confidence levels and default probabilities, all EEA countries, EU total and average, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$



The funding needs obtained for this policy option are then compared with those obtained under the home state principle. As δ has been kept constant across policy options, the probability distribution of losses remains unchanged in the two cases. This leads to a constant relative impact for each country and each choice of PD and α when moving from the home state to the host state principle. Relative differences in funding needs at country level are shown in Figure 4.2 and Table 4.10. Differences in the EU totals are presented in Table 4.14.

Figure 4.2: Relative difference between funding needs when moving from the home state principle to the host state principle, total insurance sector, all EEA countries, countries in order of gross premiums written.

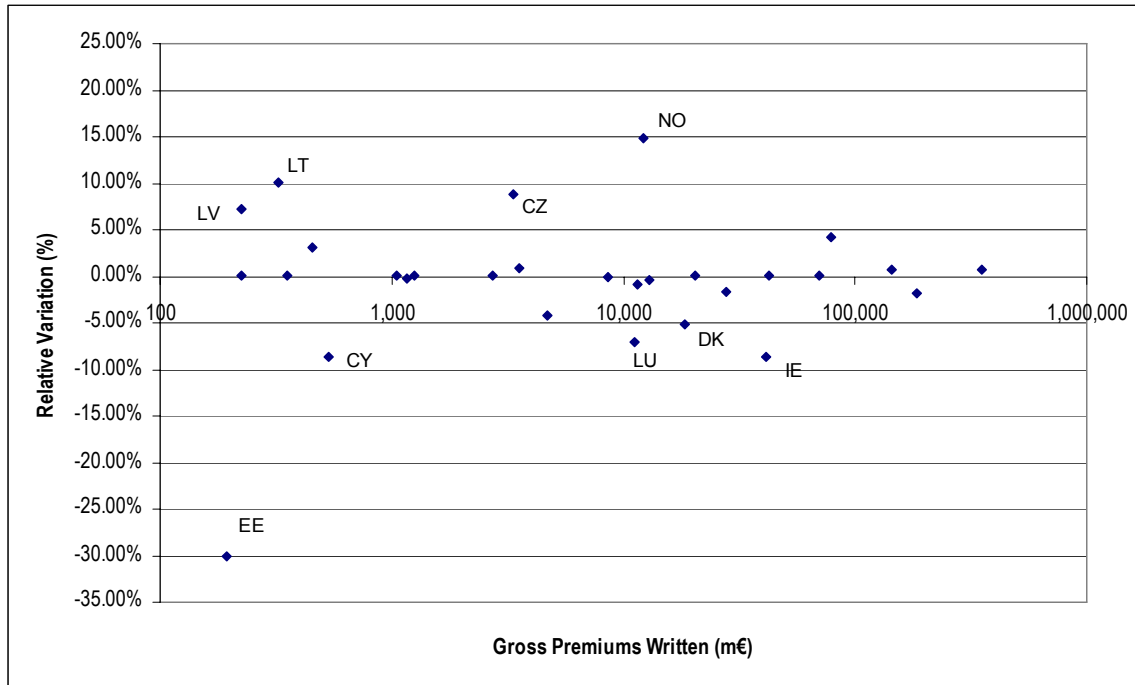


Table 4.10: Summary of relative differences between funding needs when moving from the home state principle to the host state principle, EU average and minimum, median and maximum across all EEA countries; total insurance sector

MIN		MEDIAN		MAX		EU avg
-30.00%	EE	0.00%	NL	14.78%	NO	0.29%

4.2.2 Life insurance

Figure 4.3: IGS funding needs for the life business line based on the host state principle for different confidence levels and default probabilities, all EEA countries, EU total and average, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

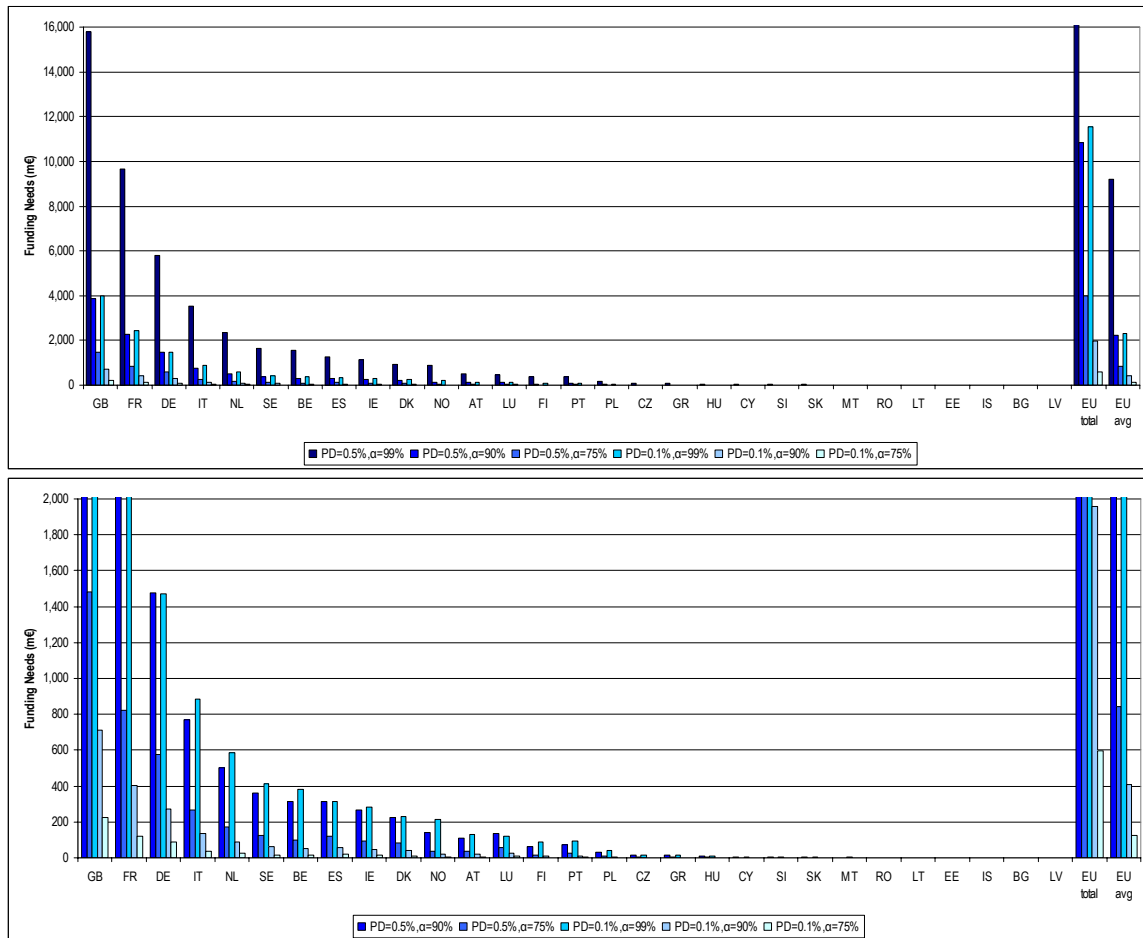


Figure 4.4: Relative difference between funding needs when moving from the home state principle to the host state principle, life business line; all EEA countries; countries in order of gross premiums written in the life business line

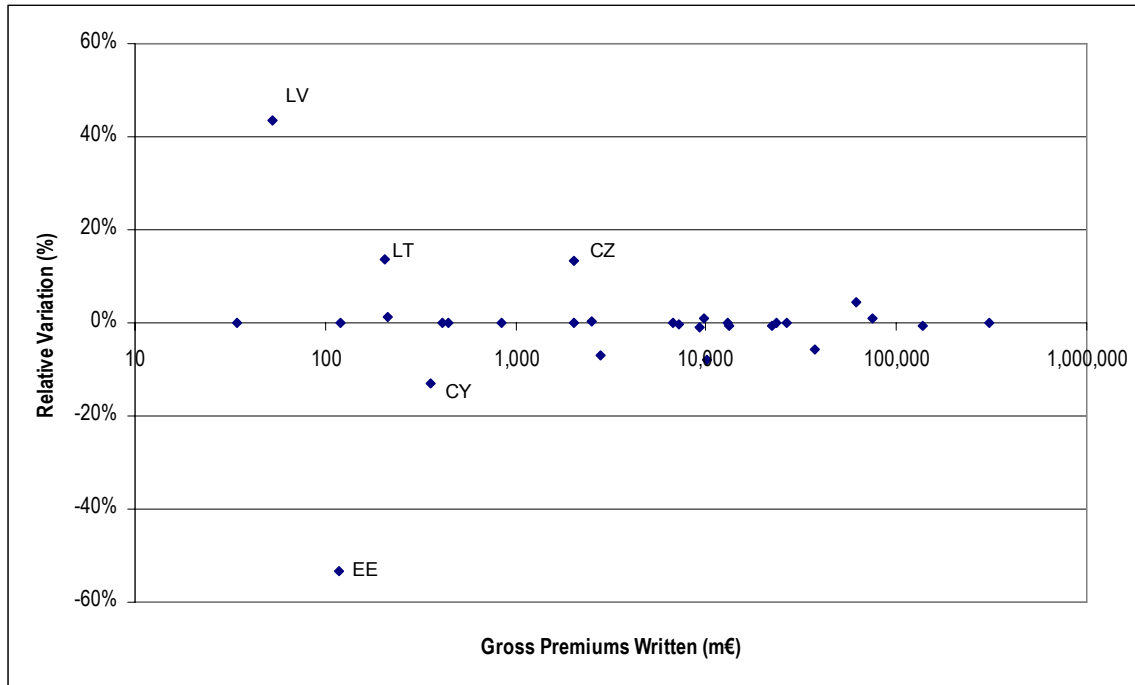


Table 4.11: Summary of relative differences between funding needs when moving from the home state principle to the host state principle; EU average and minimum, median and maximum across all EEA countries; life business line

MIN		MEDIAN		MAX		EU avg
-53.39%	EE	0.00%	NL	43.40%	LV	0.14%

4.2.3 Non-life insurance

Figure 4.5: IGS funding needs for the non-life business line based on the host state principle for different confidence levels and default probabilities, all EEA countries, EU total and average, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

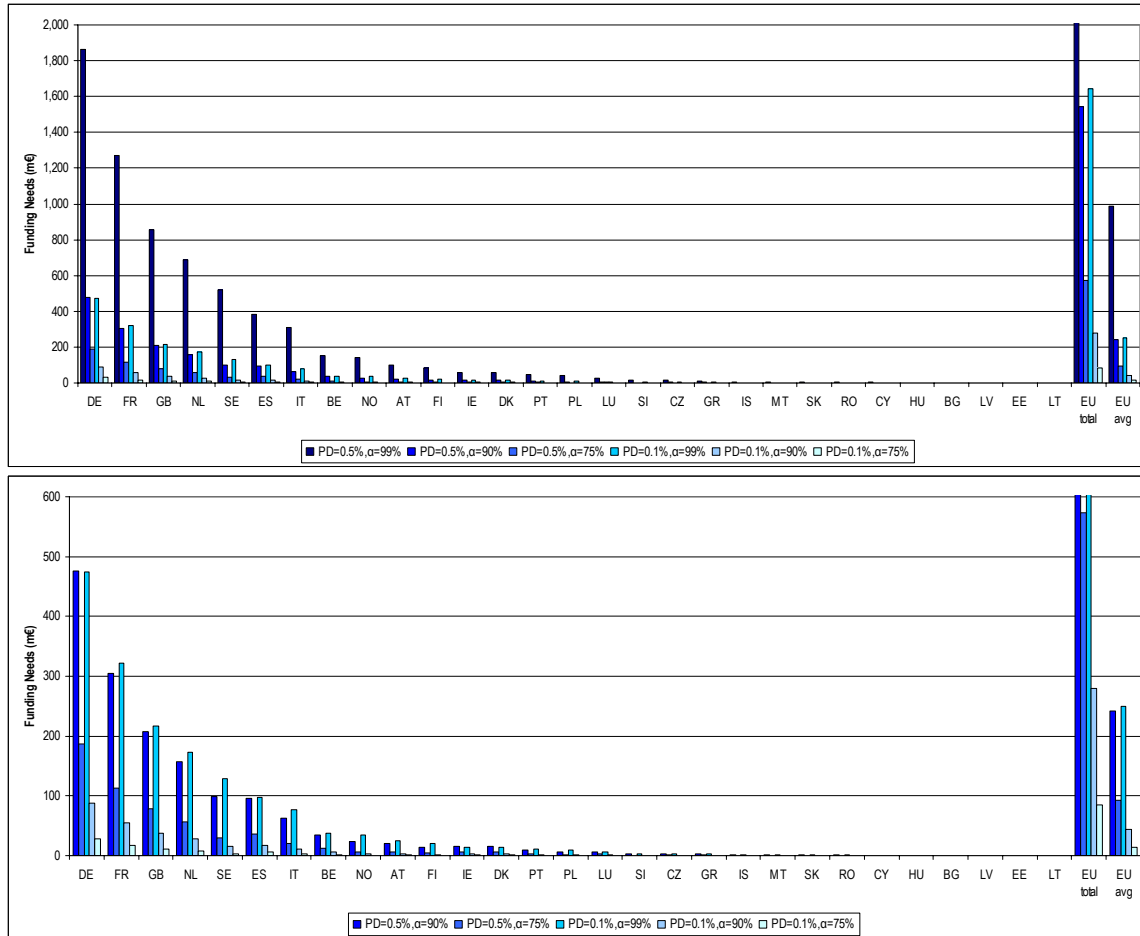


Figure 4.6: Relative difference between funding needs when moving from the home state principle to the host state principle, non-life business line, all EEA countries, countries in order of gross premiums written in the non-life business line

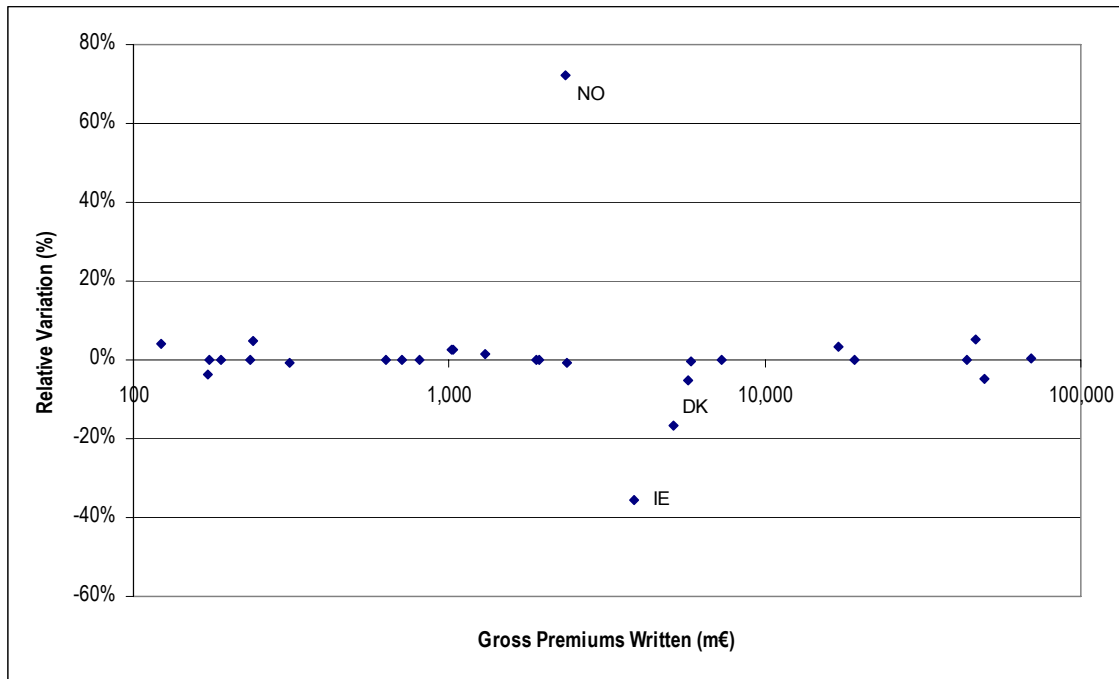


Table 4.12: Summary of relative differences between funding needs when moving from the home state principle to the host state principle; EU average and minimum, median and maximum across all EEA countries; non-life business line

MIN		MEDIAN		MAX		EU avg
-35.54%	IE	0.00%	NL	72.36%	NO	0.04%

4.2.4 Summary of statistics at EU level

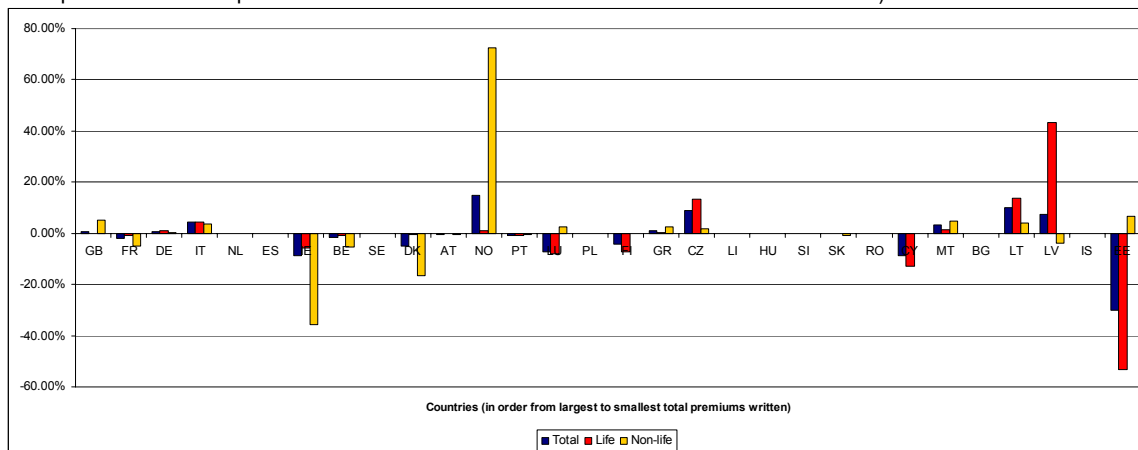
Table 4.13: Average funding needs at EU level based on the host state principle under different probabilities of default and confidence levels; weighted averages by gross premiums written for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Total insurance (EU)	840	2 229	9 177	126	407	2 323
Life (EU)	841	2 232	9 194	126	407	2 327
Non-life (EU)	92	242	986	14	44	250

Table 4.14: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle to the host state principle under different probabilities of default and confidence levels for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total insurance (EU)	Funding needs under home	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under host	4 516	12 180	51 345	671	2 203	12 968
	Relative variation	-0.28%	-0.27%	-0.26%	-0.29%	-0.27%	-0.26%
Life (EU)	Funding needs under home	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under host	4 008	10 828	45 733	595	1 957	11 549
	Relative variation	-0.05%	-0.04%	-0.04%	-0.06%	-0.05%	-0.04%
Non-life (EU)	Funding needs under home	580	1 559	6 577	86	282	1 660
	Funding needs under host	573	1 543	6 519	85	279	1 645
	Relative variation	-1.14%	-1.02%	-0.89%	-1.23%	-1.08%	-0.89%

Figure 4.7: Relative difference between funding needs when moving from the home state principle to the host state principle for the total insurance sector and the life and non-life business lines, for all EEA countries (relative differences are equal across model parameterizations due to use of the same loss distribution function)



4.3 Setting up an EU-wide IGS covering cross-border activity (branches and FPS)

This section analyses the possibility of introducing an IGS in each Member State, covering all domestic activity²², supplemented by an additional pan-EU scheme covering all cross-border activities, including those conducted under the freedom to provide services (FPS). Under this option the premiums covered by the national schemes covering domestic activity are obtained by starting from the total premiums under national supervision and subtracting premiums from branches, in both EU/EEA and non-EU/EEA countries and from activities conducted under the FPS²³.

Once the funding needs under the domestic activity principle are calculated, the funding needs for the additional cross-border IGS are obtained by adding up the differences between the funding needs based on the home state principle across all countries and the funding needs based on the domestic activity principle²⁴.

Note that the data available for Luxembourg on the life business line indicate domestic activity equal to zero. Again, due to lack of data for recalculation of δ under this policy option, the values of this parameter have been kept constant at to the values presented in section 2.

Under the assumption that there will be no appreciable diversification effects obtained by pooling the cross-border fraction at EU level the total amount of funds payable to the two funds (the domestic and the EU-wide) at country level will stay the same. As a consequence, the EU-level variation in funding needs due to introduction of this additional IGS can be obtained by adding up the individual differences across Member States.

²² The definition of home, host and domestic activities are presented in Table 4.3.

²³ As explained in section 4.1, CEIOPS data do not provide separate data for cross-border activities within the EU and within the wider EEA. For this reason the EEA is taken as the basis for the calculations referring to this option.

²⁴ The implicit assumptions are that the single correlation factor in the model operates at country level only (decreasing the estimated funding needs for the additional scheme) and that no appreciable diversification effects are obtained by pooling the cross-border fraction at EU level (increasing the estimated funding needs for the additional scheme).

4.3.1 Total insurance

Figure 4.8: IGS funding needs for the total insurance sector under a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, for different confidence levels and default probabilities, all EEA countries, EU total and average, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

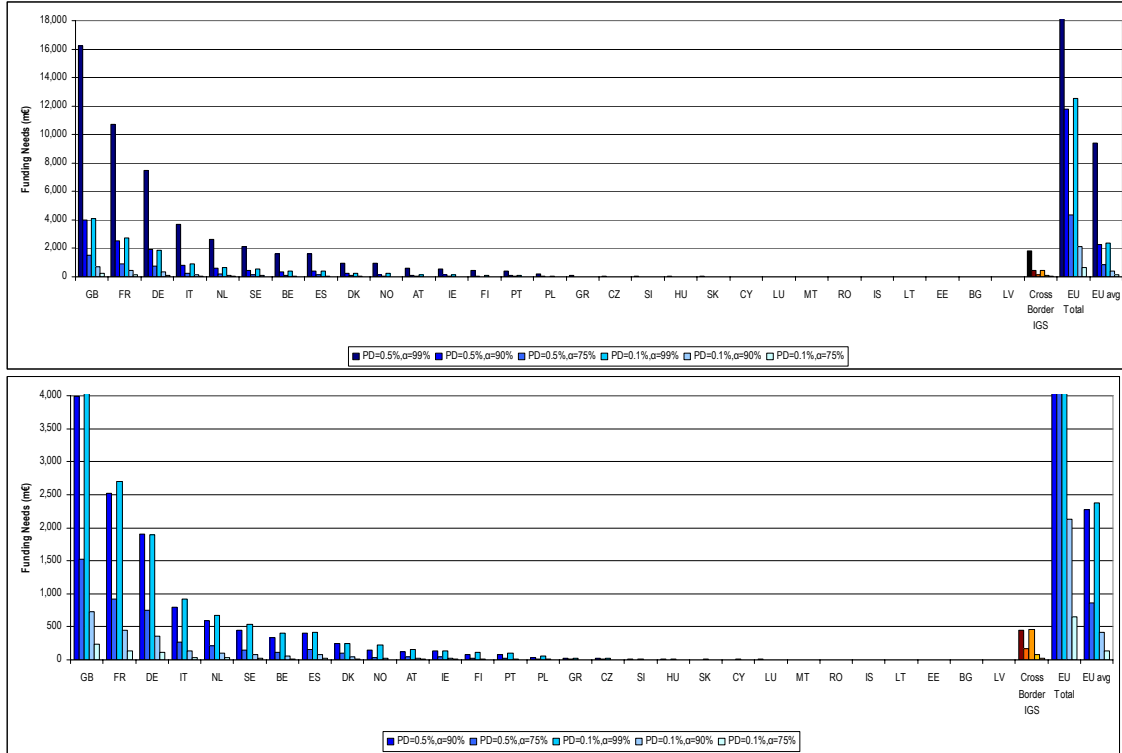


Figure 4.9: Absolute difference between funding needs when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, total insurance sector; all EEA countries; countries in order of funding needs (the sum of all the differences at country level gives the funding needs for the additional cross-border scheme)

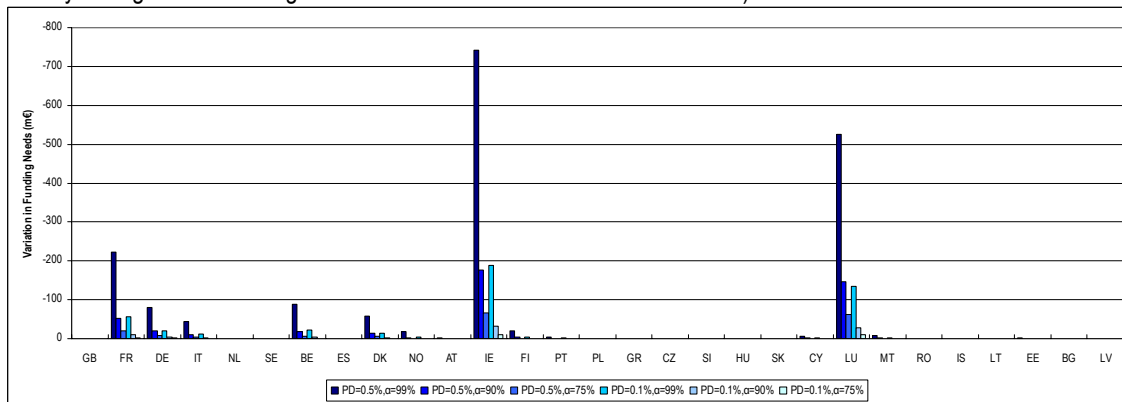


Figure 4.10: Relative difference between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, total insurance sector; all EEA countries; countries in order of gross premiums written

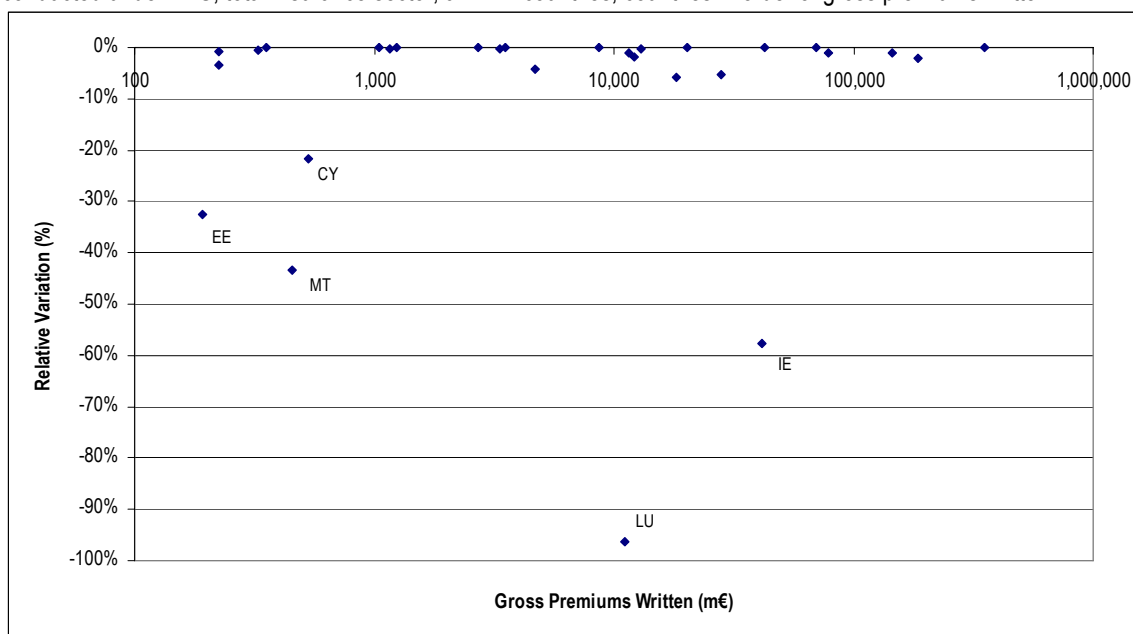


Table 4.15: Summary of relative difference between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS; EU average and minimum, median and maximum across all EEA countries; total insurance sector

MIN		MEDIAN		MAX		EU avg
-96.24%	LU	-0.78%	IS	0.00%	GB	2.84%

4.3.2 Life insurance

Figure 4.11: IGS funding needs for the life business line under a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, for different confidence levels and default probabilities, all EEA countries, EU total and average, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

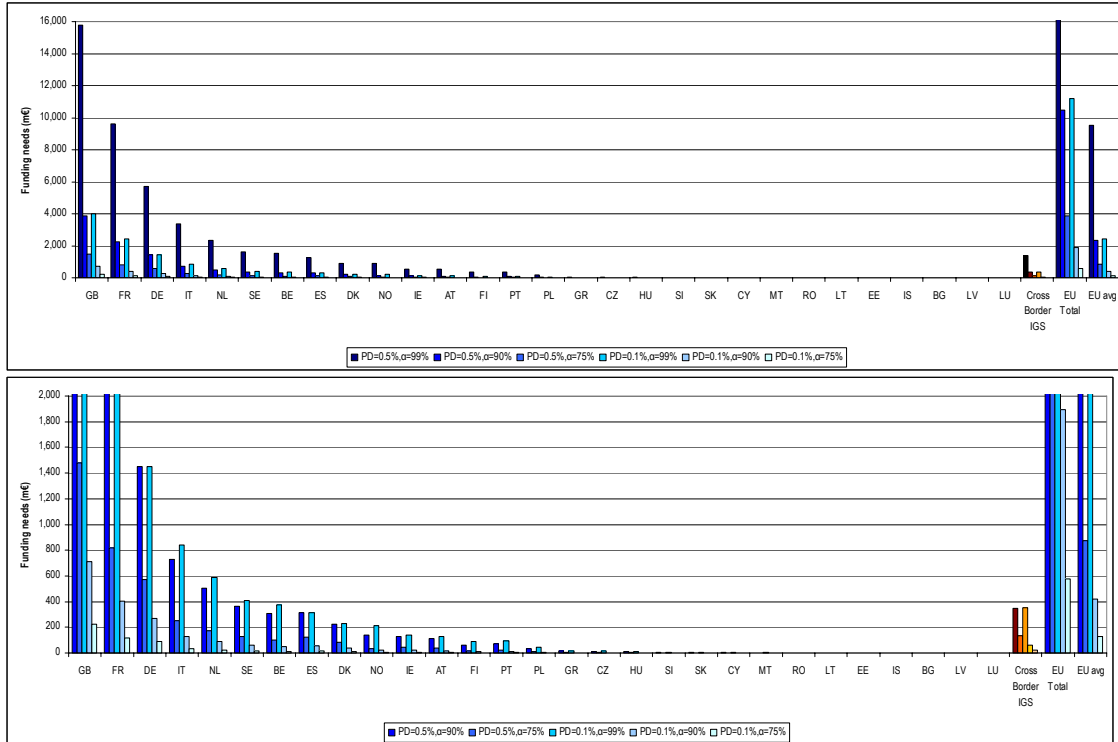


Figure 4.12: Absolute difference between funding needs when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, life business line; all EEA countries; countries in order of funding needs (the sum of all the differences at country level gives the funding needs for the additional cross-border scheme)

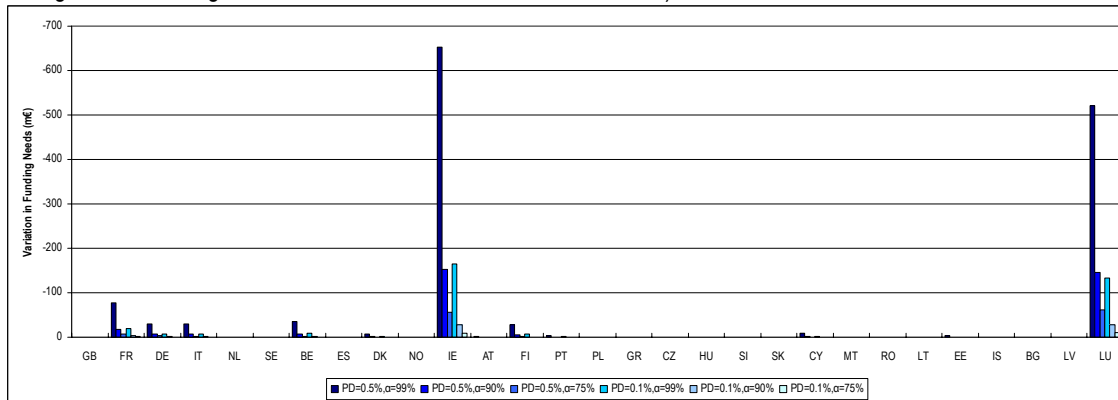


Figure 4.13: Relative difference between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, life business line; all EEA countries; countries in order of gross premiums written

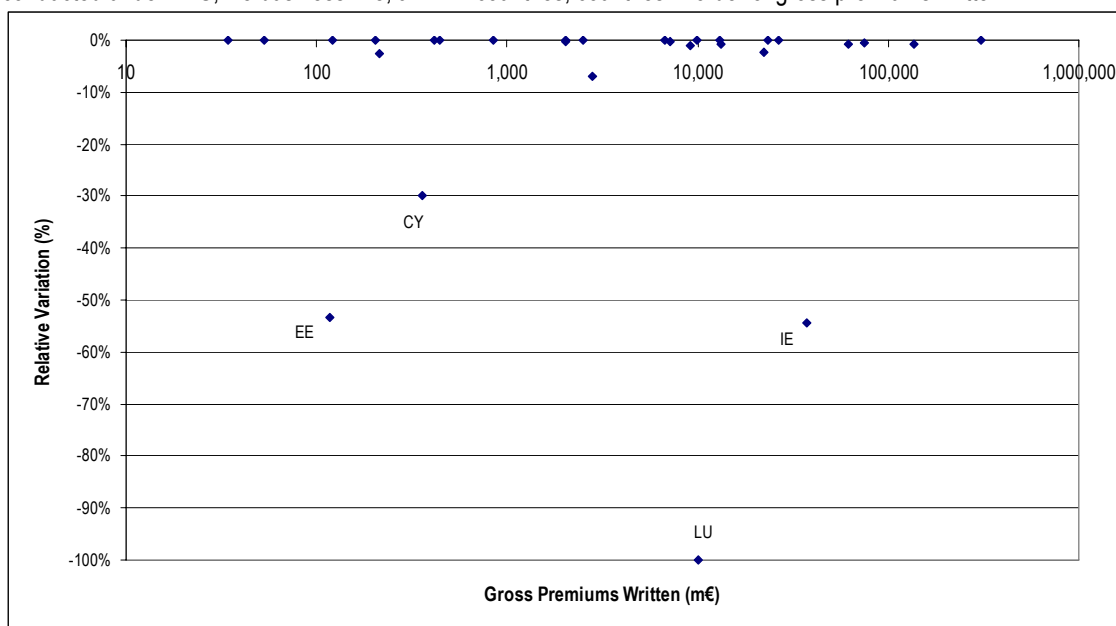


Table 4.16: Relative difference between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS; EU average and minimum, median and maximum across all EEA countries; life business line

MIN		MEDIAN		MAX		EU avg
-100.00%	LU	-0.09%	SI	0.00%	GR	3.93%

4.3.3 Non-life insurance

Figure 4.14: IGS funding needs for the non-life insurance business line under a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average and cross-border IGS, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

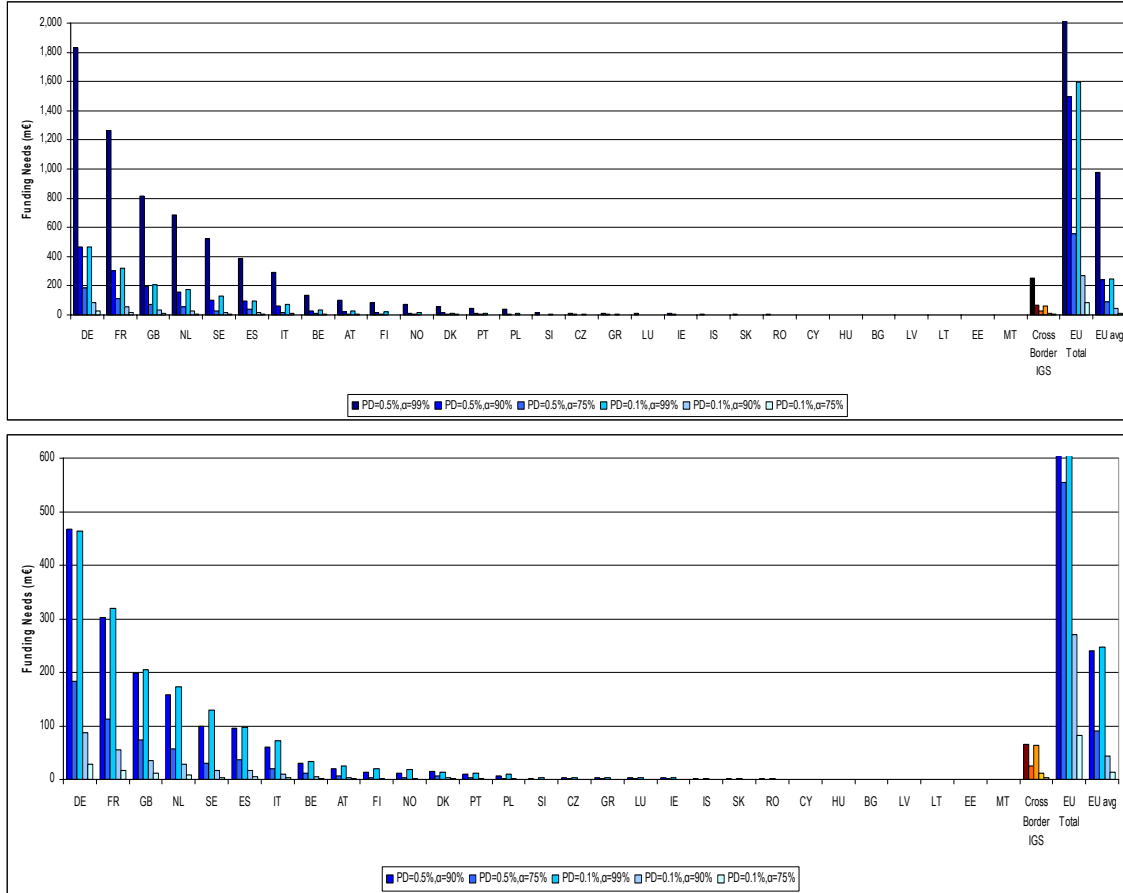


Figure 4.15: Relative difference between funding needs when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, non-life business line; all EEA countries; countries in order of funding needs (the sum of all the differences at country level gives the funding needs for the additional cross-border scheme)

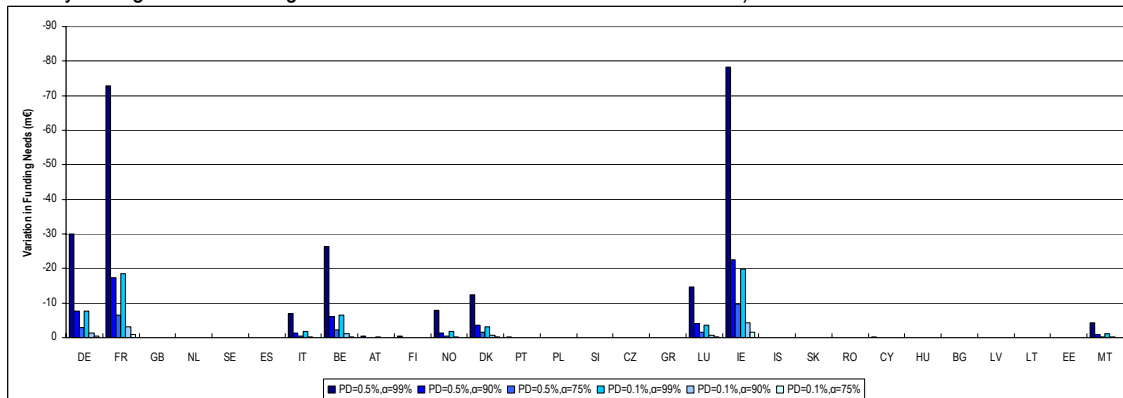


Figure 4.16: Relative difference between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, non-life business line; all EEA countries; countries in order of gross premiums written

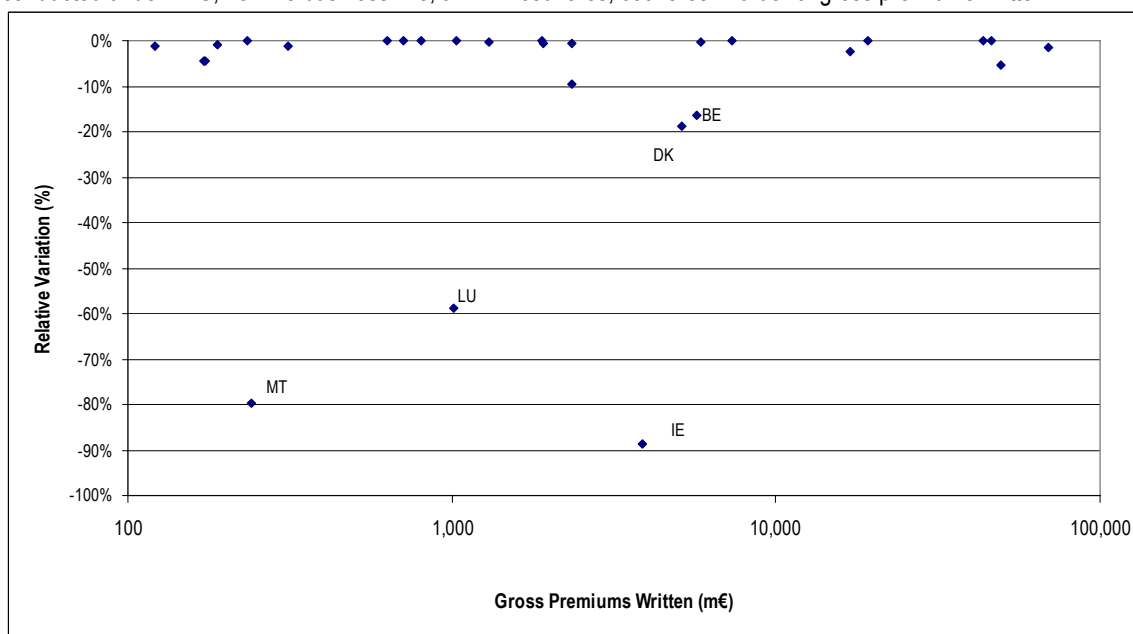


Table 4.17: Summary of relative differences between funding needs at country level when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS; EU average and minimum, median and maximum across all EEA countries; non-life business line

MIN		MEDIAN		MAX		EU avg
-88.69%	IE	-0.68%	PT	0.00%	GB	-0.69%

4.3.4 Summary of statistics at EU level

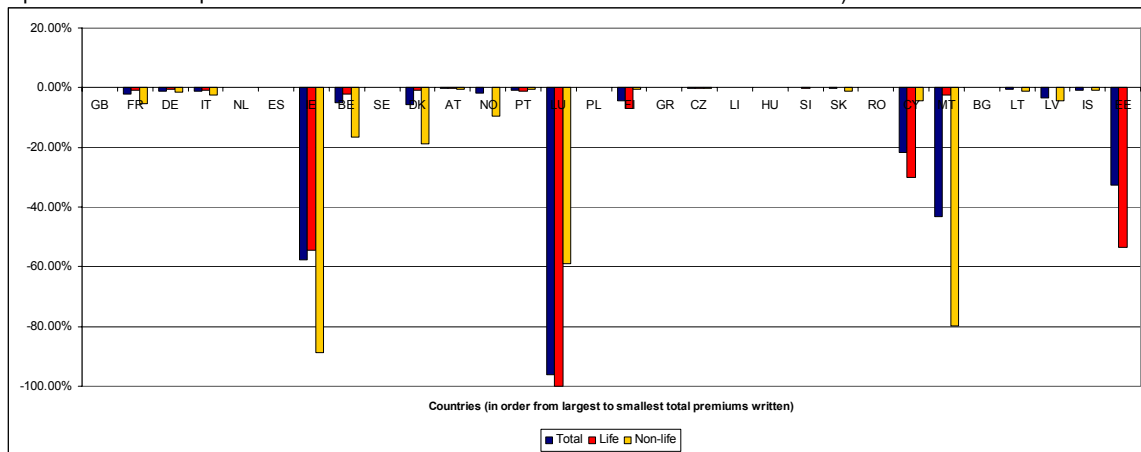
Table 4.18: Average funding needs at EU level under a domestic activity regime excluding all cross-border activities; under different probabilities of default and confidence levels; weighted averages by gross premiums written, for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Total insurance (EU)	860	2 280	9 385	129	416	2 376
Life (EU)	874	2 317	9 542	131	423	2 415
Non-life (EU)	91	240	978	14	44	248

Table 4.19: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS; under different probabilities of default and confidence levels for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total insurance (EU)	Funding needs under home	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under domestic	4 357	11 766	49 673	647	2 127	12 545
	Relative difference	-3.80%	-3.66%	-3.51%	-3.90%	-3.72%	-3.51%
	Funding needs for cross-border IGS	172	447	1 804	26	82	457
Life (EU)	Funding needs under home	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under domestic	3 876	10 486	44 352	575	1 894	11 200
	Relative difference	-3.34%	-3.20%	-3.06%	-3.45%	-3.26%	-3.06%
	Funding needs for cross-border IGS	134	347	1 399	21	64	354
Non-life (EU)	Funding needs under home	580	1 559	6 577	86	282	1 660
	Funding needs under domestic	554	1 495	6 330	82	270	1 597
	Relative difference	-4.39%	-4.09%	-3.76%	-4.60%	-4.22%	-3.78%
	Funding needs for cross-border IGS	25	64	247	4	12	63

Figure 4.17: Relative difference between funding needs when moving from the home state principle to a domestic activity regime supplemented by an additional IGS covering all cross-border activities, including those conducted under FPS, for the total insurance sector and the life and non-life business lines, for all EEA countries (relative differences are equal across model parameterisations due to use of the same loss distribution function)





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PART VII

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PART II

METHODOLOGICAL REPORT

Insurance Guarantee Schemes: derivation of loss distributions and funding needs.

European Commission, Joint Research Centre, Unit G09, Ispra (Italy)

For internal use by the European Commission
18 January 2010

1.1 Setting up an EU IGS covering cross-border activities (only branches)

This section analyses the case where an IGS covering all domestic activities and cross-border activities conducted under FPS is present in each Member State, supplemented by an additional scheme covering all cross-border activities excluding those conducted under the freedom to provide services. Under this option the total premiums covered are obtained by subtracting premiums from branches, both in EU/EEA¹ and in non-EU/EEA countries, from the total premiums under national supervision.

The funding needs for the additional cross-border IGS are obtained by adding up country-level differences between the funding needs based on the home state principle and the funding needs based on the domestic activity principle (including FPS activity).

¹ As explained in section **Error! Reference source not found.**, CEIOPS data do not provide separate data for cross-border activities within the EU and within the wider EEA. For this reason the EEA is taken as the basis for the calculations for this option.

1.1.1 Total insurance

Figure 0.1: IGS funding needs for the total insurance sector under a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average and cross-border IGS, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

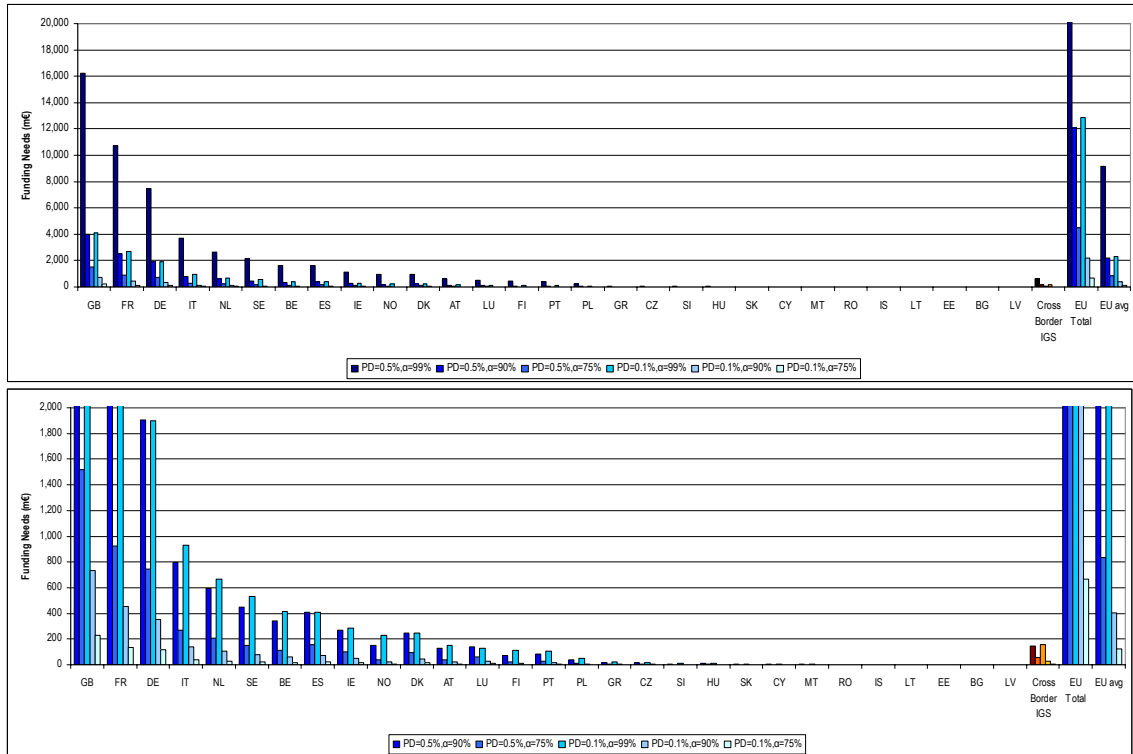


Figure 0.2: Absolute differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; total insurance sector; all EEA countries, countries in order of gross premiums written (the sum of all the differences at country level gives the funding need for the additional cross-border scheme)

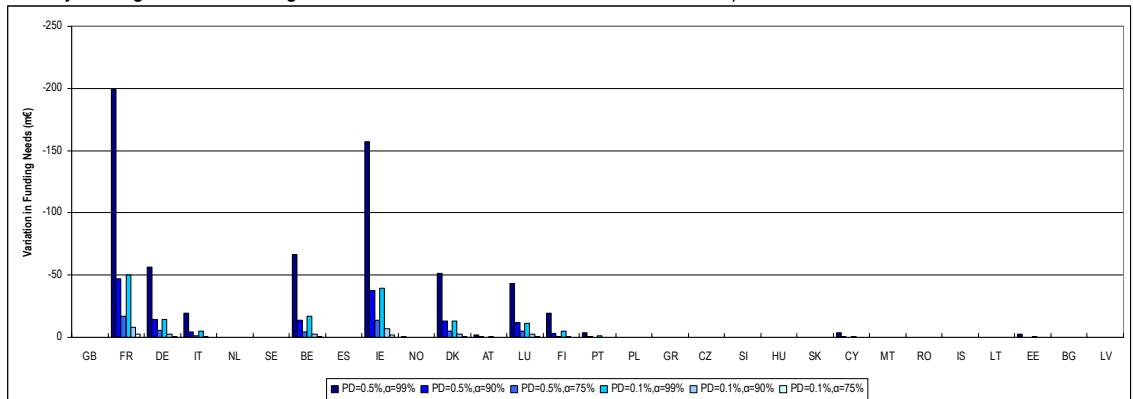


Figure 0.3: Relative differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; total insurance sector; all EEA countries, countries in order of gross premiums written

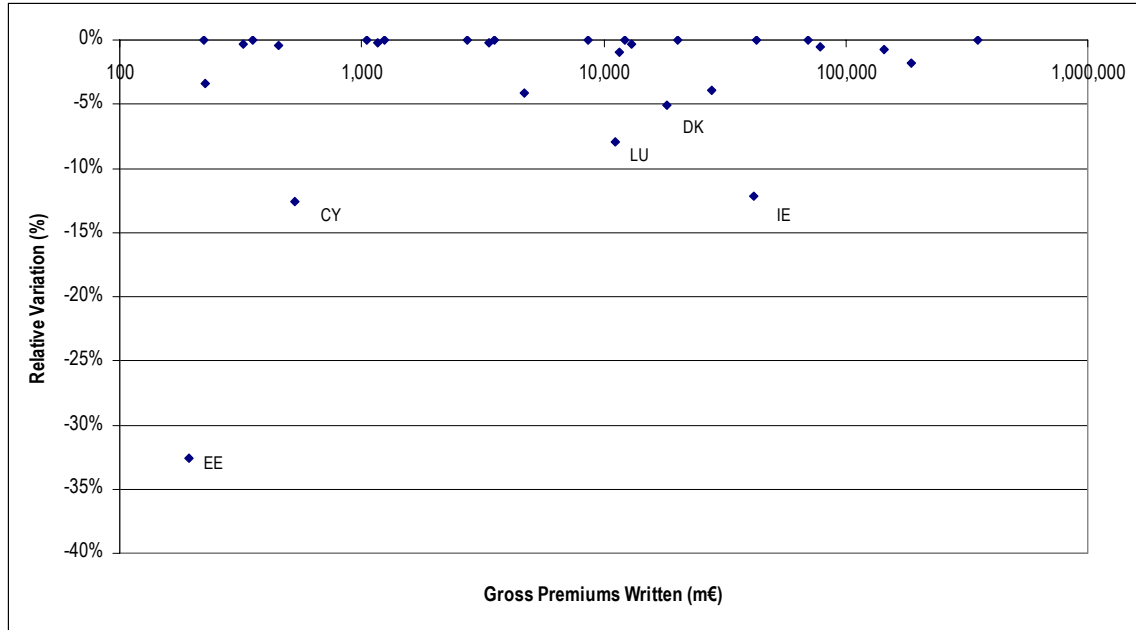


Table 0.1: Summary of relative difference between funding needs at country level when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; EU average and minimum, median and maximum across all EEA countries; total insurance sector

MIN		MEDIAN		MAX		EU avg
-32.62%	EE	-0.29%	LT	0.00%	GB	0.11%

1.1.2 Life insurance

Figure 0.4: IGS funding needs for the life business line under a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average and cross-border IGS, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

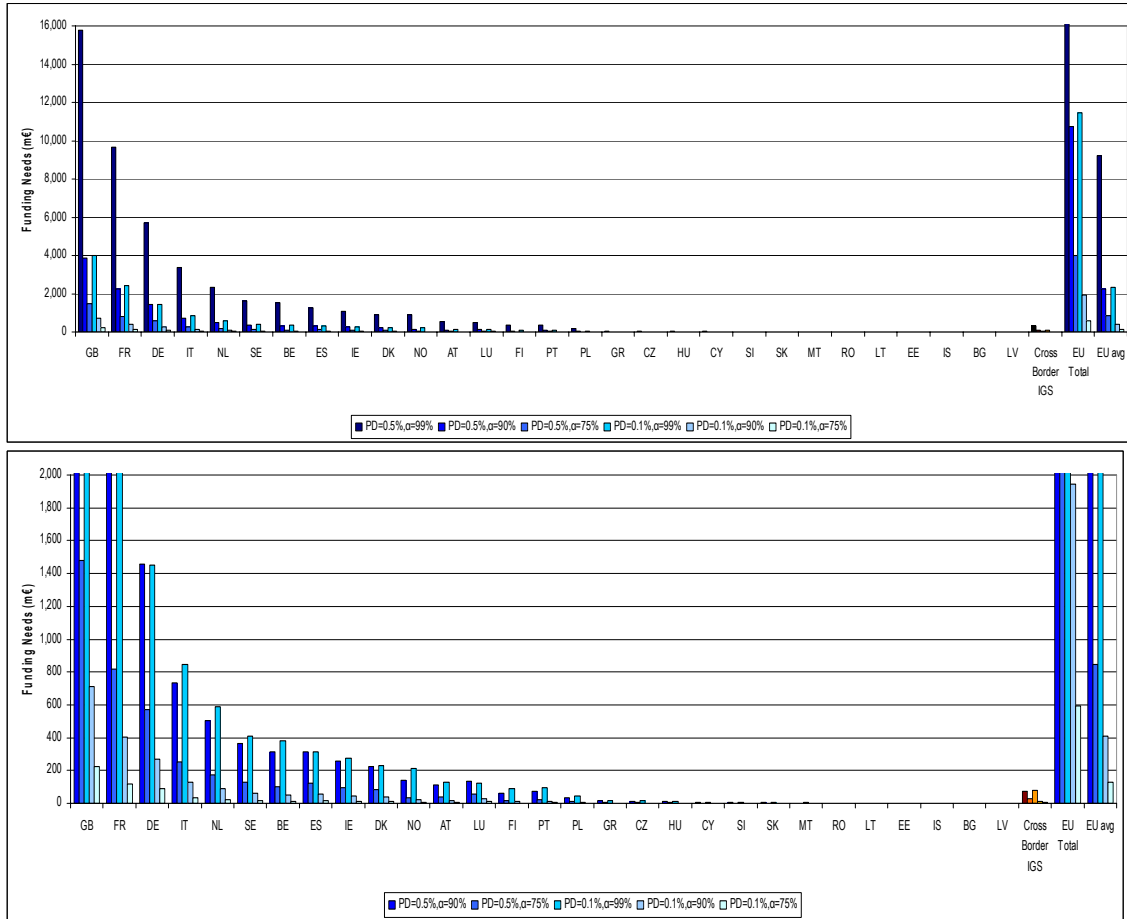


Figure 0.5: Absolute differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; life business line; all EEA countries, countries in order of funding needs (the sum of all the differences at country level gives the funding needs for the additional cross-border scheme)

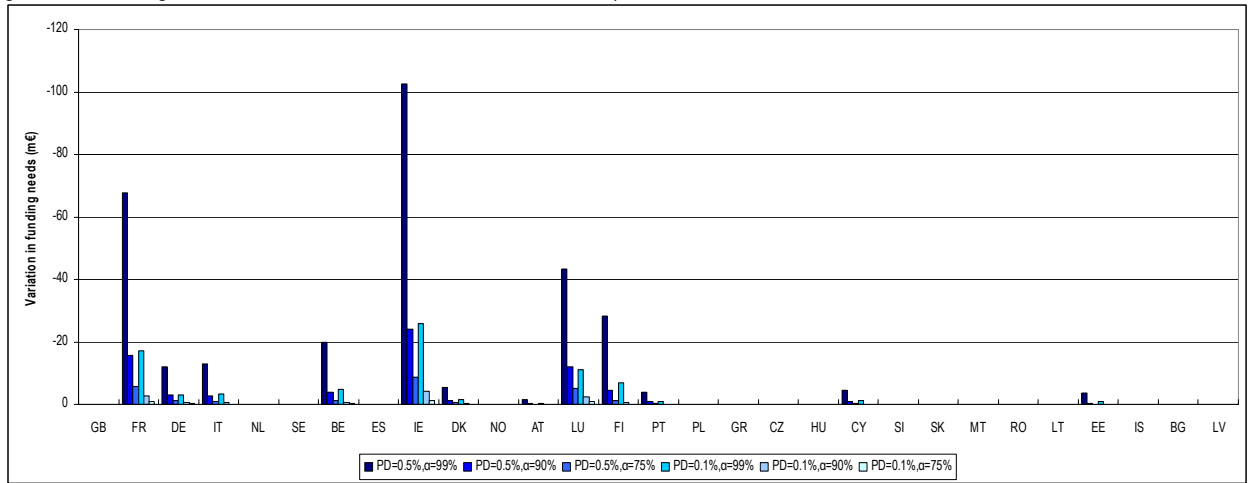


Figure 0.6: Relative differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; life business line; all EEA countries; countries in order of gross premiums written

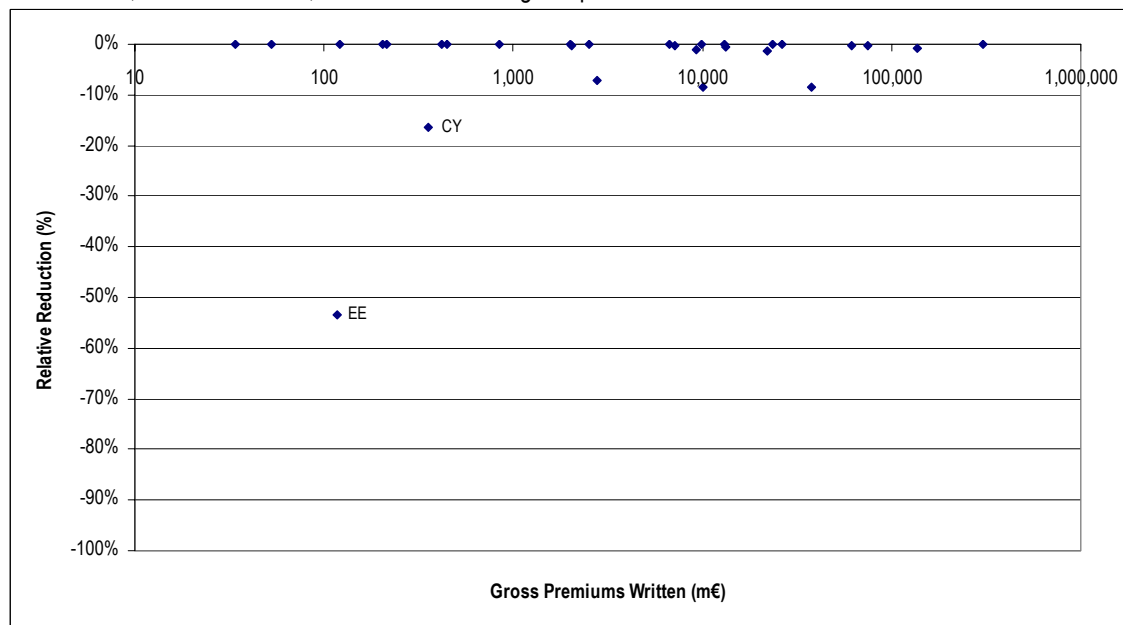


Table 0.2: Summary of relative differences between funding needs for national IGS when moving from the home state principle to a domestic activity regime supplemented by an additional cross-border IGS covering branches only; EU average and minimum, median and maximum across all EEA countries; life business line

MIN		MEDIAN		MAX		EU avg
-53.39%	EE	-0.01%	PL	0.00%	GR	0.37%

1.1.3 Non-life insurance

Figure 0.7: IGS funding needs for the non-life business line under a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average and cross-border IGS, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

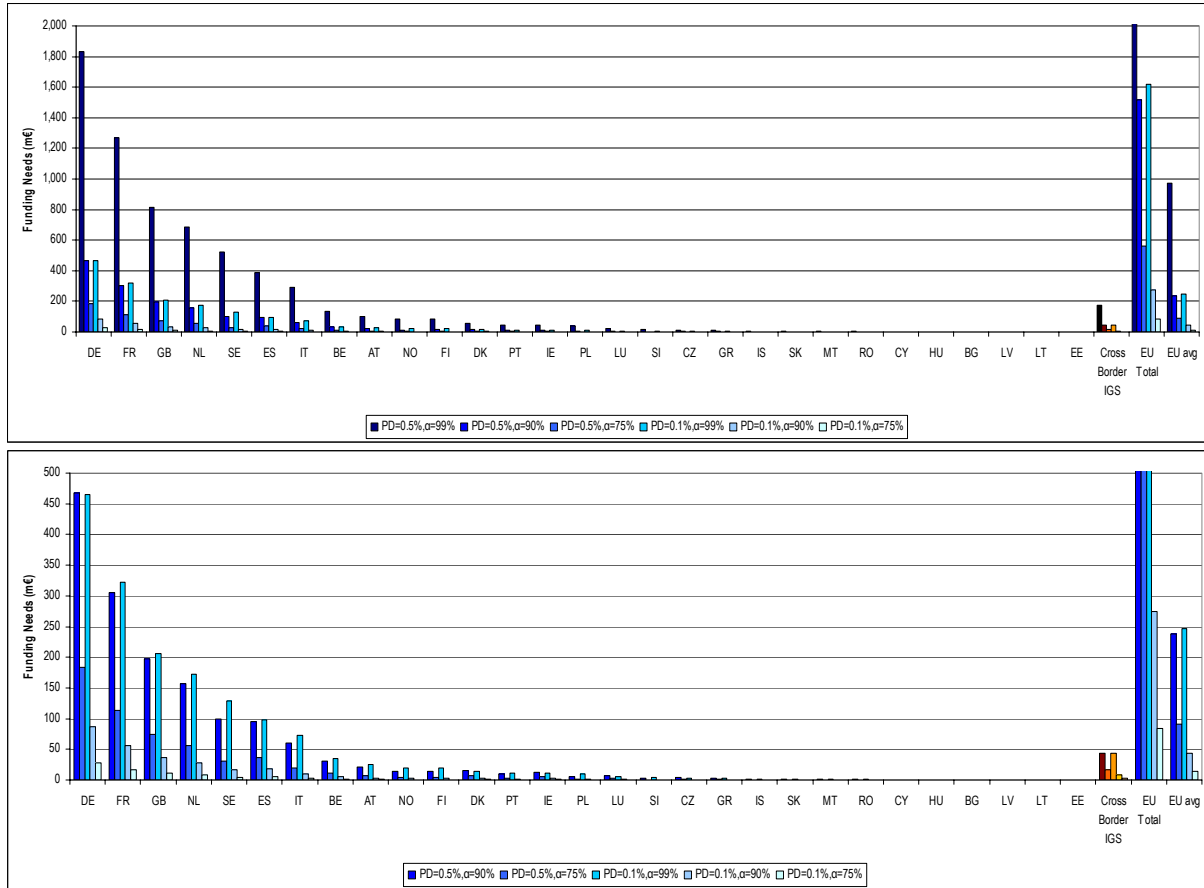


Figure 0.8: Absolute differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; non-life business line; all EEA countries; countries in order of gross premiums written (the sum of all the differences at country level gives the funding need for the additional cross-border scheme)

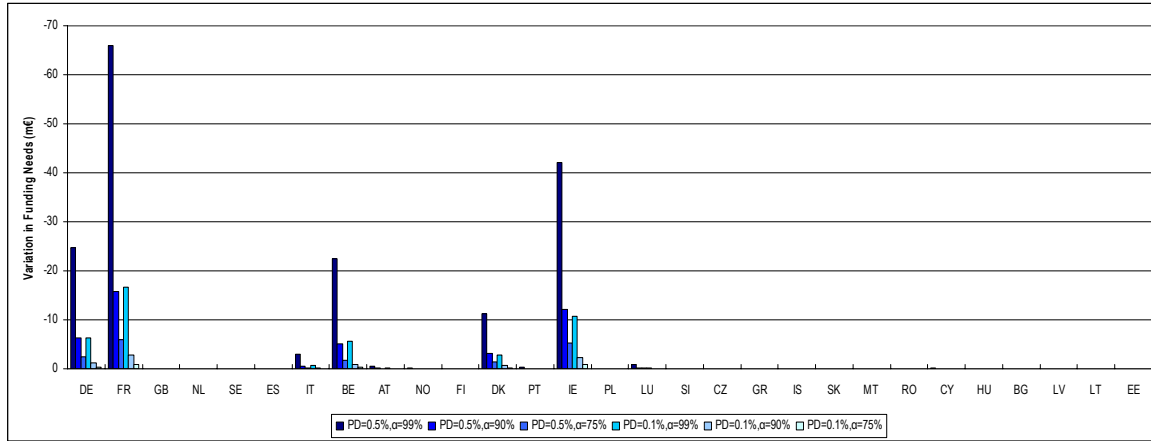


Figure 0.9: Relative differences between funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; non-life business line; all EEA countries; countries in order of gross premiums written

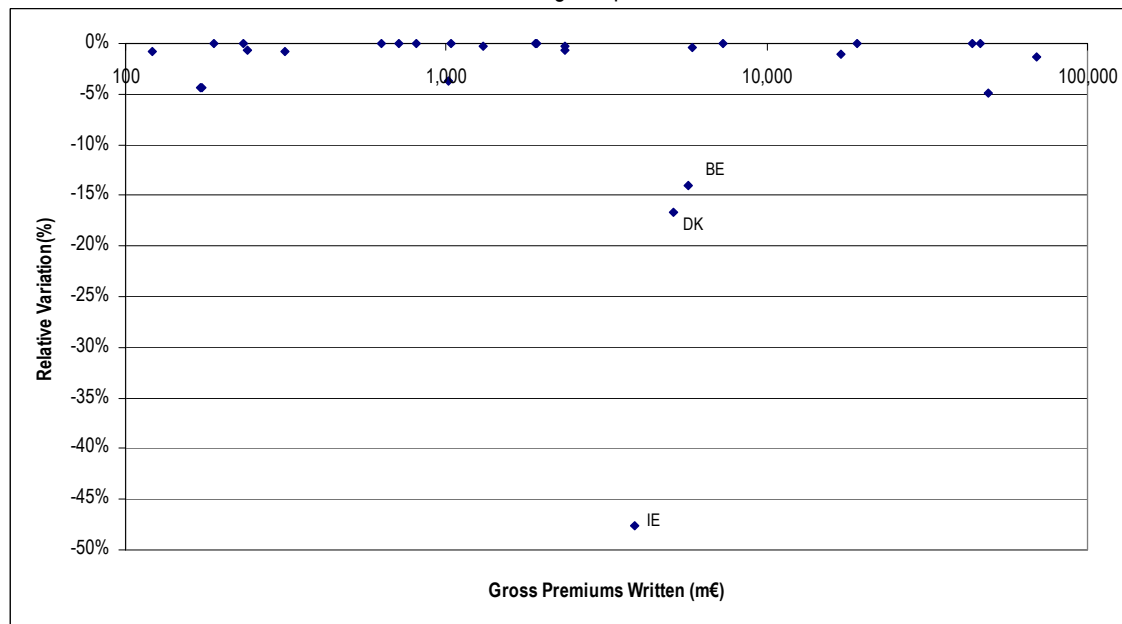


Table 0.3: Summary of relative difference between funding needs at country level when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; EU average and minimum, median and maximum across all EEA countries; non-life business line

MIN		MEDIAN		MAX		EU avg
-47.66%	IE	-0.27%	NO	0.00%	GB	-1.26%

1.1.4 Summary of statistics at EU level

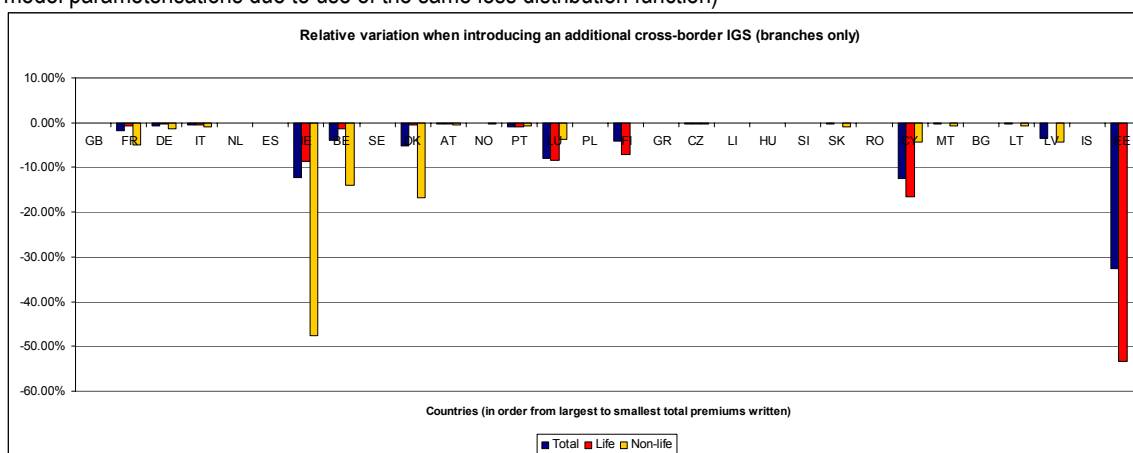
Table 0.4: Average funding needs at EU level under a domestic plus FPS activity regime, excluding cross-border activity conducted via branches; under different probabilities of default and confidence levels; weighted averages by gross premiums written, for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Total insurance (EU)	837	2 219	9 136	126	405	2 313
Life (EU)	844	2 238	9 215	127	408	2 333
Non-life (EU)	91	238	973	14	44	246

Table 0.5: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches; under different probabilities of default and confidence levels for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total insurance (EU)	Funding needs under home	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under domestic + FPS	4 474	12 065	50 852	665	2 182	12 843
	Relative variation	-	-	-	-	-	-
		1.21%	-1.21%	1.22%	-1.21%	-1.21%	-1.21%
	Funding needs for cross-border IGS	55	148	626	8	27	158
Life (EU)	Funding needs under home	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under domestic + FPS	3 985	10 763	45 445	592	1 945	11 477
	Relative variation	-	-	-	-	-	-
		0.64%	-0.65%	0.67%	-0.63%	-0.64%	-0.67%
	Funding needs for cross-border IGS	26	70	306	4	13	77
Non-life (EU)	Funding needs under home	580	1 559	6 577	86	282	1 660
	Funding needs under domestic + FPS	562	1 515	6 406	84	274	1 616
	Relative variation	-	-	-	-	-	-
		2.97%	-2.80%	2.60%	-3.09%	-2.88%	-2.62%
	Funding needs for cross-border IGS	17	44	171	3	8	43

Figure 0.10: Relative difference between funding needs when moving from the home state to a domestic plus FPS activity regime supplemented by an additional IGS covering cross-border activities conducted via branches, for the total insurance sector and the life and non-life business lines, for all EEA countries (relative differences are equal across model parameterisations due to use of the same loss distribution function)



1.2 Using a single pan-EU IGS

This section considers the case where a single mandatory IGS for the whole European Union is introduced. In order to test this scenario, the total EAD at EU/EEA level² is obtained as the sum of EADs over all countries. The loss distribution function is then calculated by setting parameter δ to zero to reflect the lower granularity of the market at European level. The contributions that each country would need to make to this pan-EU/EEA IGS can be obtained by considering its share of the total EAD.

Setting δ to zero changes each country's loss distribution function compared with the baseline case. Therefore, in this case relative changes in funding needs will be different for each choice of α and PD when moving from the baseline case to introduction of a single pan-EU/EEA scheme.

² As explained in section **Error! Reference source not found.**, CEIOPS does not provide separate data for cross-border activity within the EU and within the larger EEA. Calculations for a single EU/EEA-wide scheme are therefore based on EEA data for coherency reasons.

1.2.1 Total insurance

Figure 0.11: IGS funding needs at country level for the total insurance sector under a single pan-European scheme, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average and cross-border IGS, countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

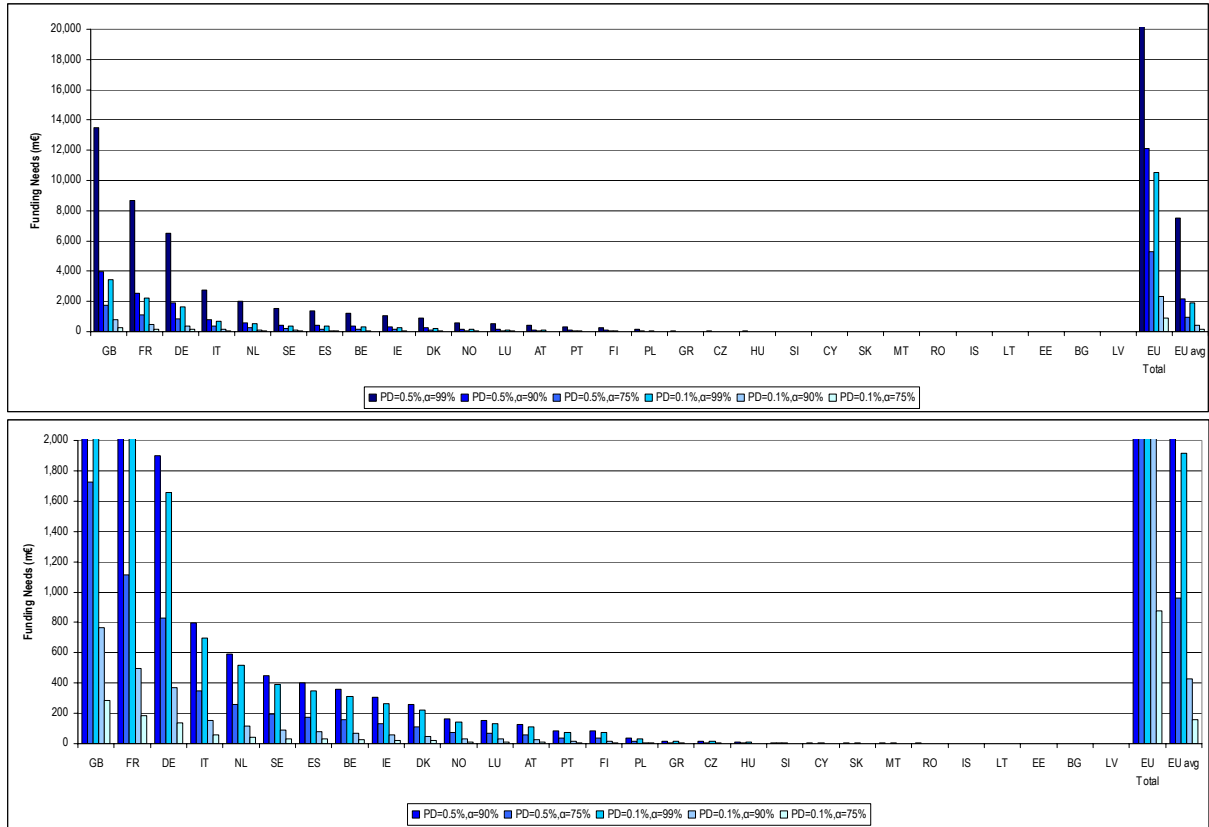


Figure 0.12: Absolute variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; total insurance sector; all EEA countries; countries in order of gross premiums written

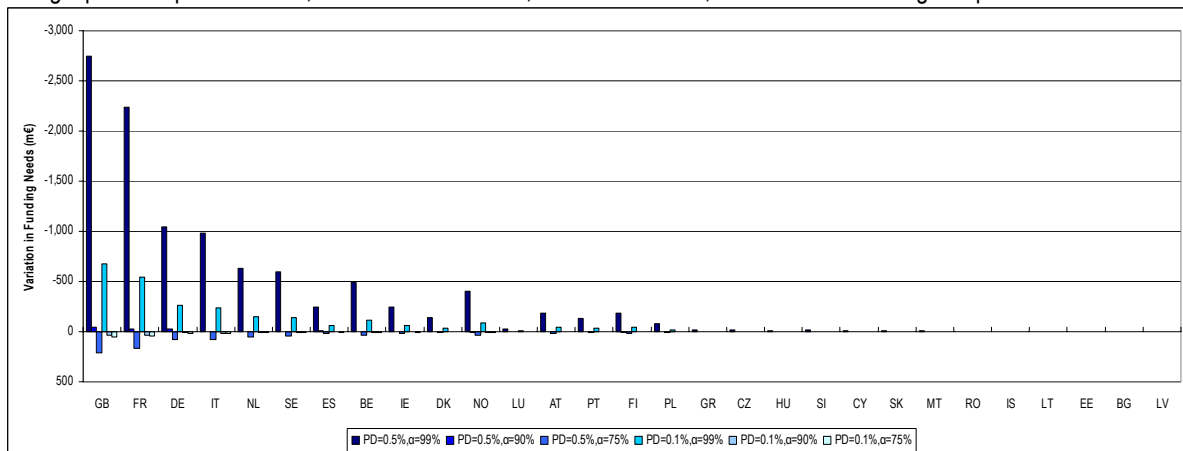


Figure 0.13: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; total insurance sector, PD=0.1% and $\alpha=90\%$; countries in order of gross premiums written

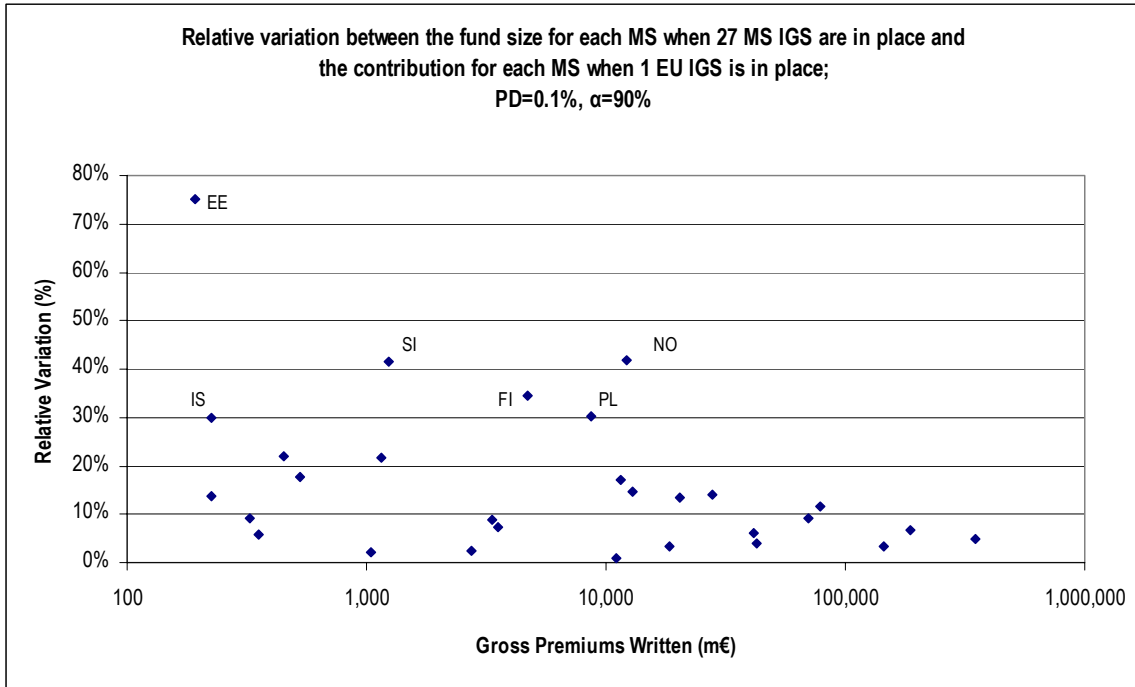


Figure 0.14: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; total insurance sector, PD=0.5% and $\alpha=90\%$; countries in order of gross premiums written

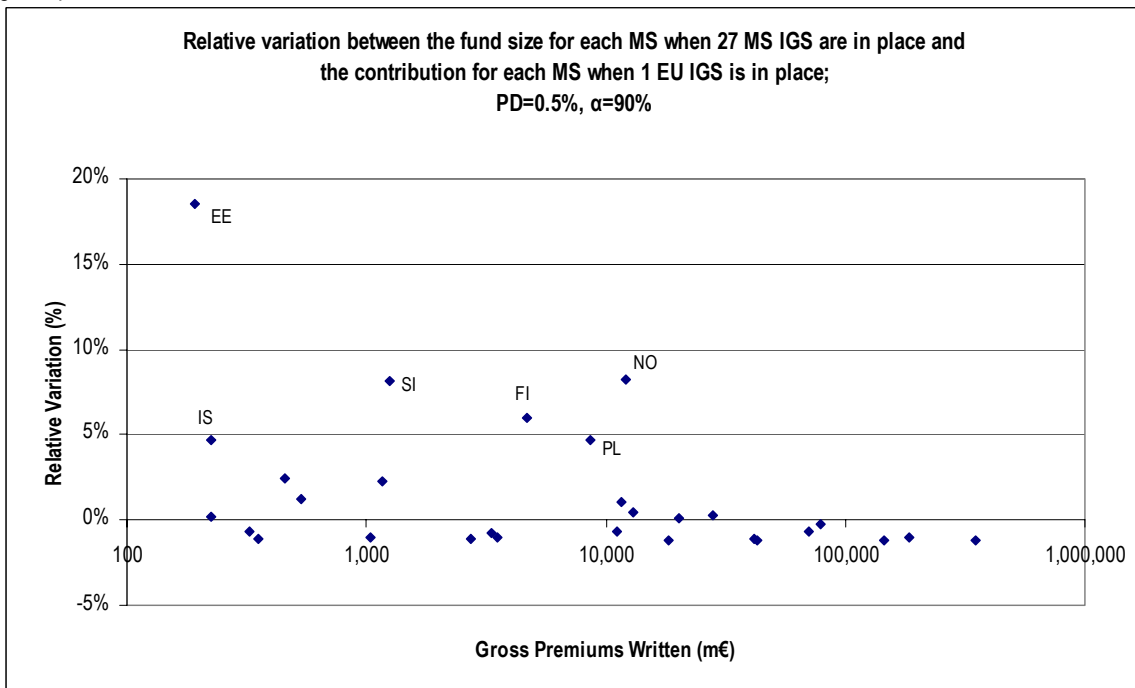


Table 0.6: Summary of relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; EU average and minimum, median and maximum across all EEA countries; total insurance sector

	MIN		MEDIAN		MAX		EU avg
PD=0.1%, $\alpha=90\%$	0.89%	LU	11.73%	IT	75.22%	EE	5.65%
PD=0.5%, $\alpha=90\%$	-1.20%	ES	-0.21%	IT	18.54%	EE	-1.37%

1.2.2 Life insurance

Figure 0.15: IGS funding needs at country level for the life business line under a single pan-European scheme, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average; countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

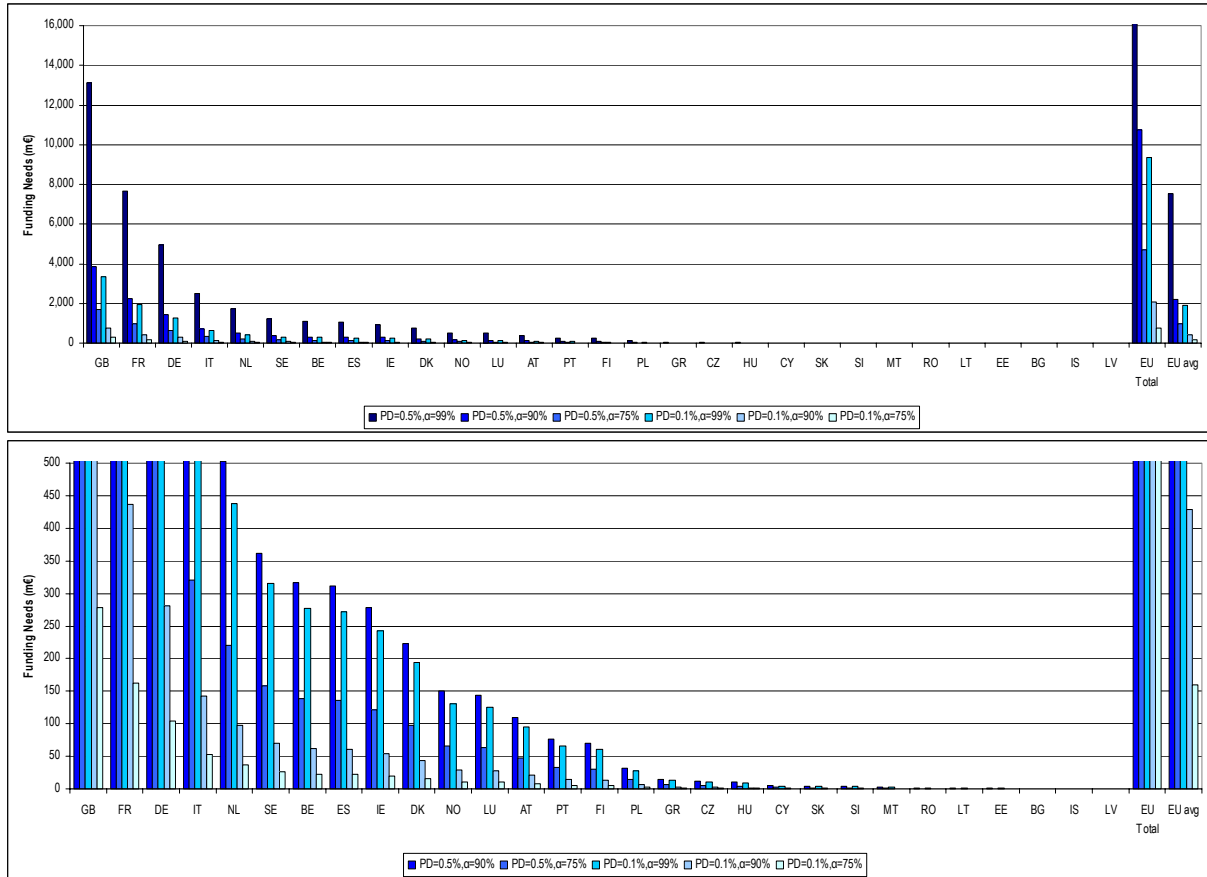


Figure 0.16: Absolute differences between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; life business line; countries in order of gross premiums written

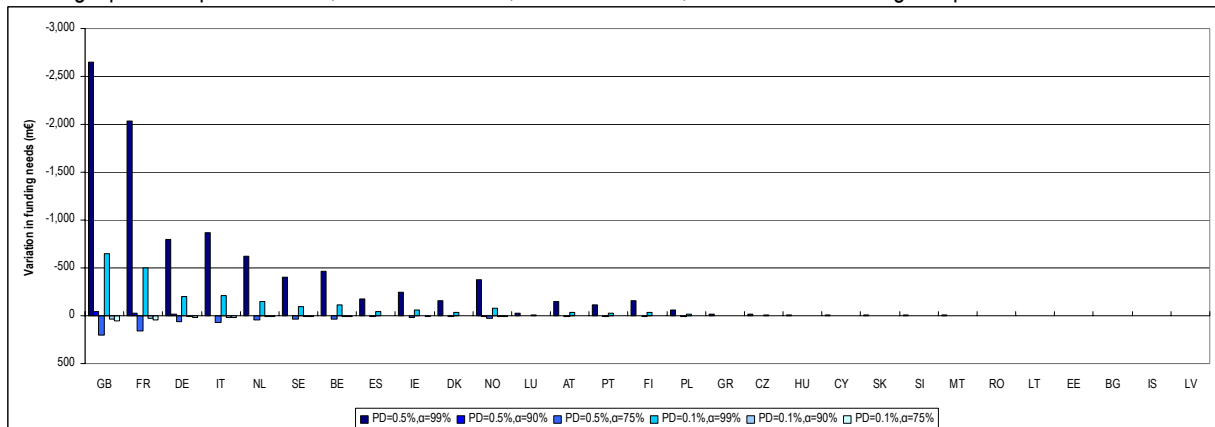


Figure 0.17: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; life business line, PD=0.1% and $\alpha=90\%$; countries in order of gross premiums written

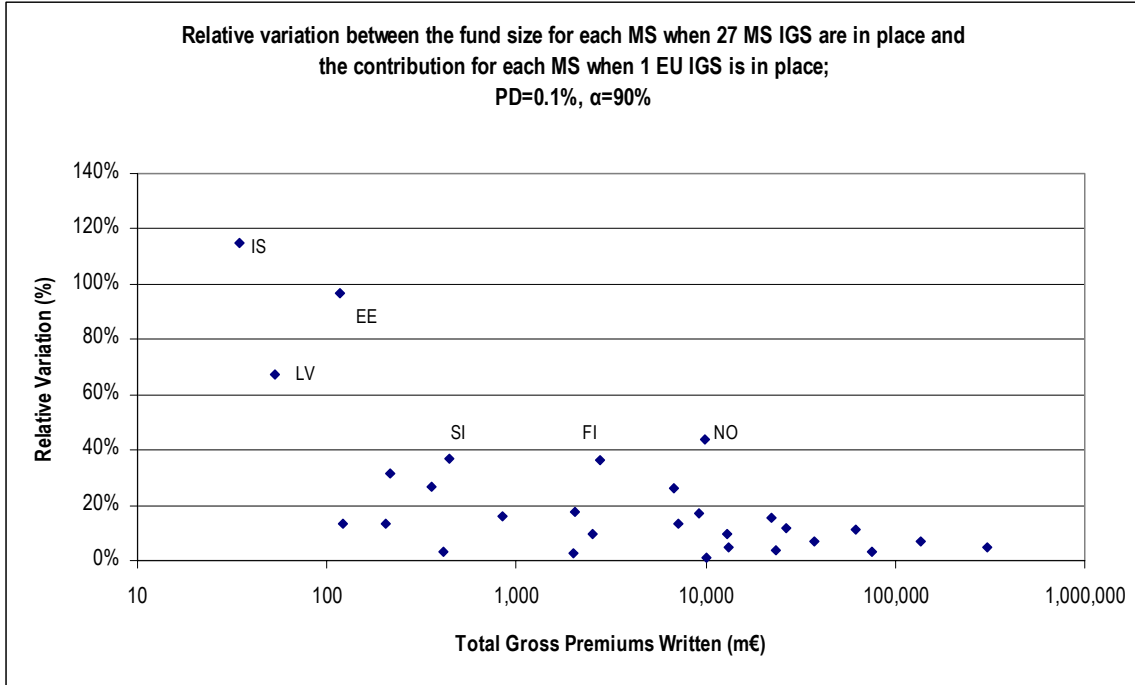


Figure 0.18: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; life business line, PD=0.5% and $\alpha=90\%$; countries in order of gross premiums written

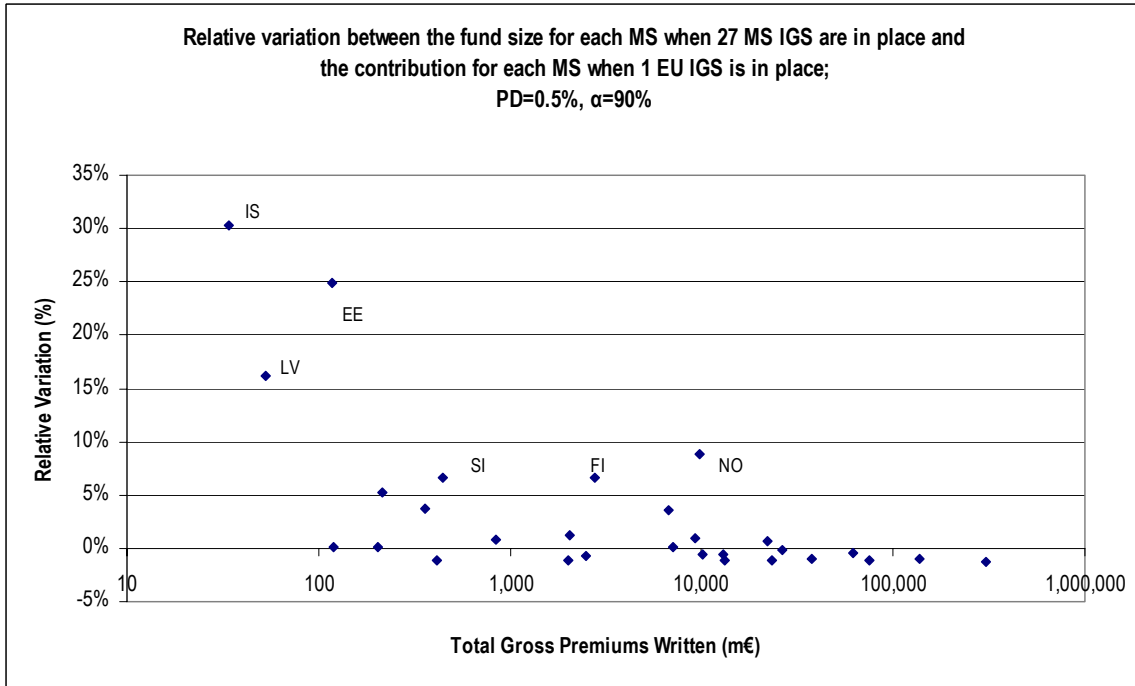


Table 0.7: Summary of relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; EU average and minimum, median and maximum across all EEA countries; life business line, PD=0.1% and 0.5% and $\alpha=90\%$

	MIN		MEDIAN		MAX		EU avg
PD=0.1%, $\alpha=90\%$	0.85%	LU	13.20%	AT	115.00%	IS	5.37%
PD=0.5%, $\alpha=90\%$	-1.20%	GB	0.11%	AT	30.23%	IS	-1.12%

1.2.3 Non-life insurance

Figure 0.19: IGS funding needs at country level for the non-life business line under a single pan-European scheme, for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average; countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

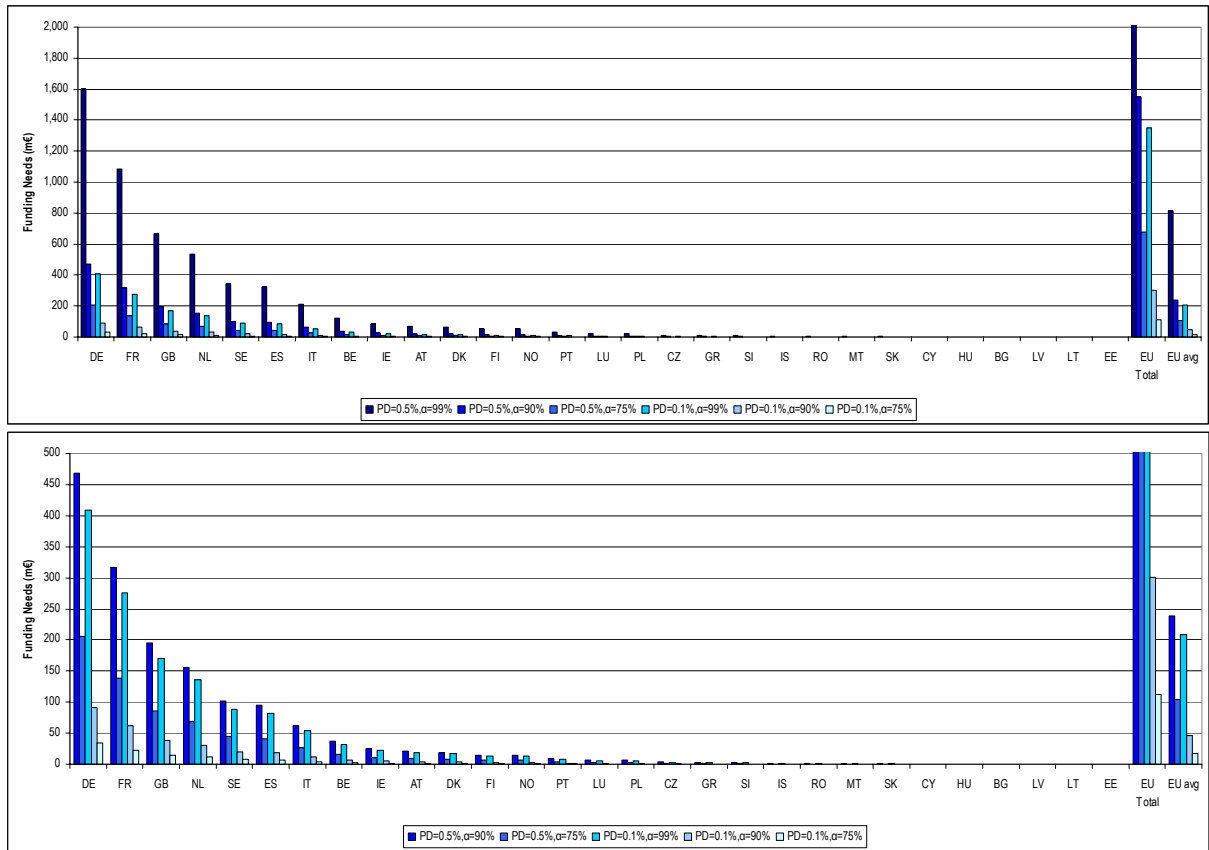


Figure 0.20: Absolute differences between funding needs at country level when moving from the home state principle to a single pan-European scheme; non-life business line; all EEA countries; countries in order of funding needs

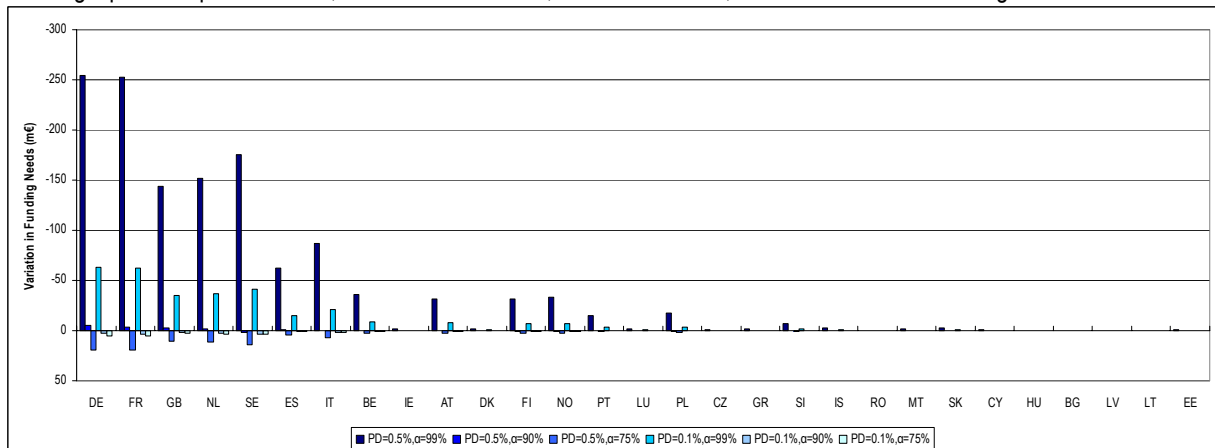


Figure 0.21: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; non-life business line, PD=0.1% and $\alpha=90\%$; countries in order of gross premiums written

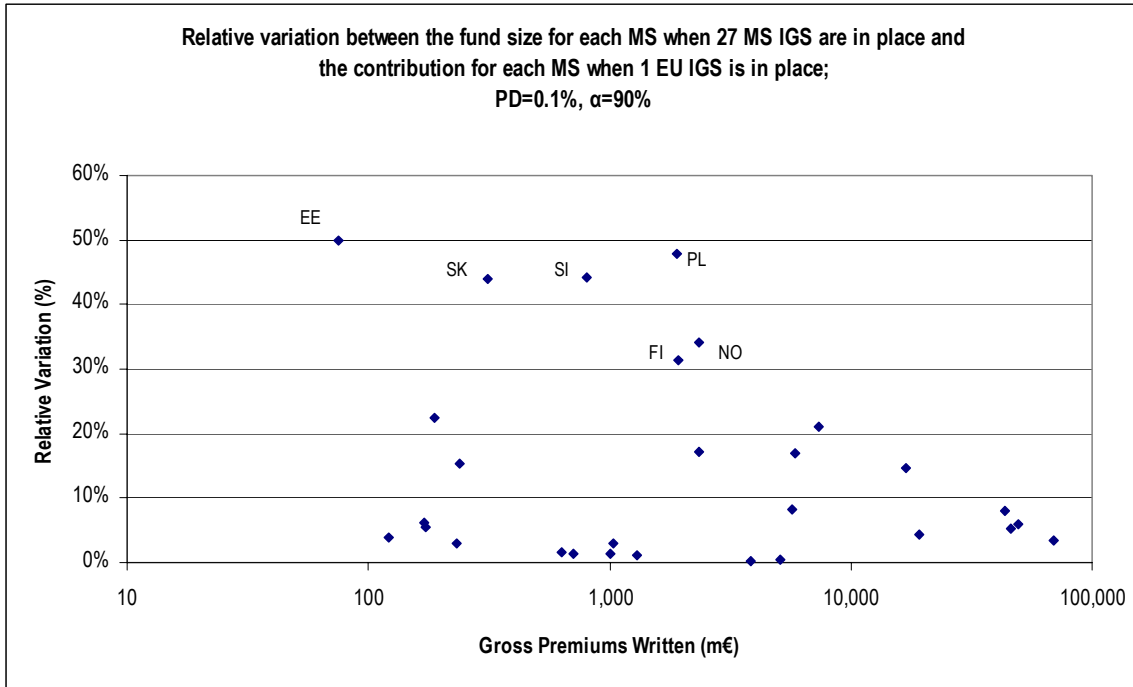


Figure 0.22: Relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; all EEA countries; non-life business line, PD=0.5% and $\alpha=90\%$; countries in order of gross premiums written

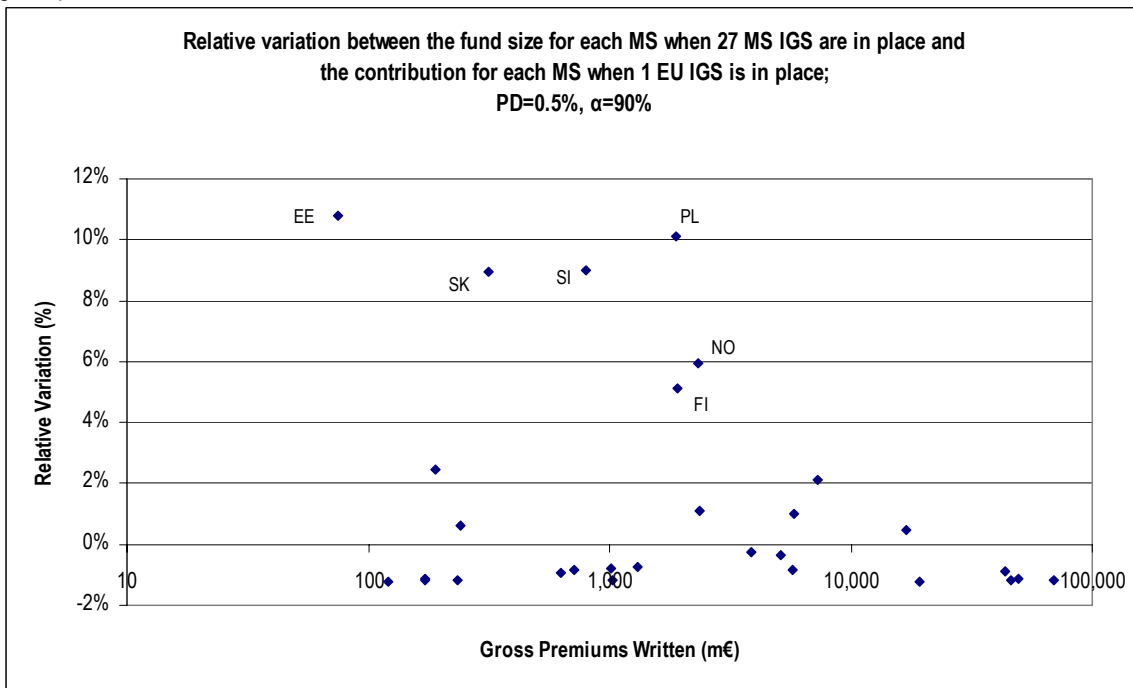


Table 0.8: Summary of relative variations between funding needs at country level when moving from the home state principle to a single pan-European scheme; EU average and minimum, median and maximum across all EEA countries; non-life business line, PD=0.1% and 0.5% and $\alpha=90\%$

	MIN		MEDIAN		MAX		EU avg
PD=0.1%, $\alpha=90\%$	0.25%	IE	6.17%	LV	49.98%	EE	5.02%
PD=0.5%, $\alpha=90\%$	-1.20%	ES	-0.73%	CZ	10.80%	EE	-1.07%

1.2.4 Summary of statistics at EU level

Table 0.9: Average funding needs at country level for EU Member States under a single pan-European scheme for different probabilities of default and confidence levels; weighted averages by gross premiums written, for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
Total insurance (EU)	959	2 191	7 497	159	427	1 915
Life (EU)	964	2 204	7 540	160	429	1 921
Non-life (EU)	105	239	817	17	46	208

Table 0.10: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle to a single pan-European scheme under different probabilities of default and confidence levels for the total insurance sector and the life and non-life business lines (in m€)

$\alpha \rightarrow$		PD = 0.5%			PD=0.1%		
		75%	90%	99%	75%	90%	99%
Total insurance (EU)	Funding needs under home	4 529	12 213	51 477	673	2 209	13 001
	Funding needs under a single EU IGS	5 297	12 108	41 418	877	2 354	10 551
	Relative difference	16.95%	-0.86%	-19.54%	30.32%	6.56%	-18.85%
Life (EU)	Funding needs under home	4 010	10 833	45 751	595	1 958	11 554
	Funding needs under a single EU IGS	4 698	10 739	36 738	778	2 088	9 359
	Relative difference	17.16%	-0.86%	-19.70%	30.72%	6.64%	-19.00%
Non-life (EU)	Funding needs under home	580	1 559	6 577	86	282	1 660
	Funding needs under a single EU IGS	678	1 549	5 298	112	301	1 350
	Relative difference	16.90%	-0.66%	-19.45%	29.90%	6.76%	-18.68%

Figure 0.23: Relative difference between funding needs at country level when moving from the home state principle to a single pan-European scheme, for the total insurance sector and the life and non-life business lines; PD=0.1% and $\alpha=90\%$; all EEA countries; countries in order of gross premium written in the total insurance sector

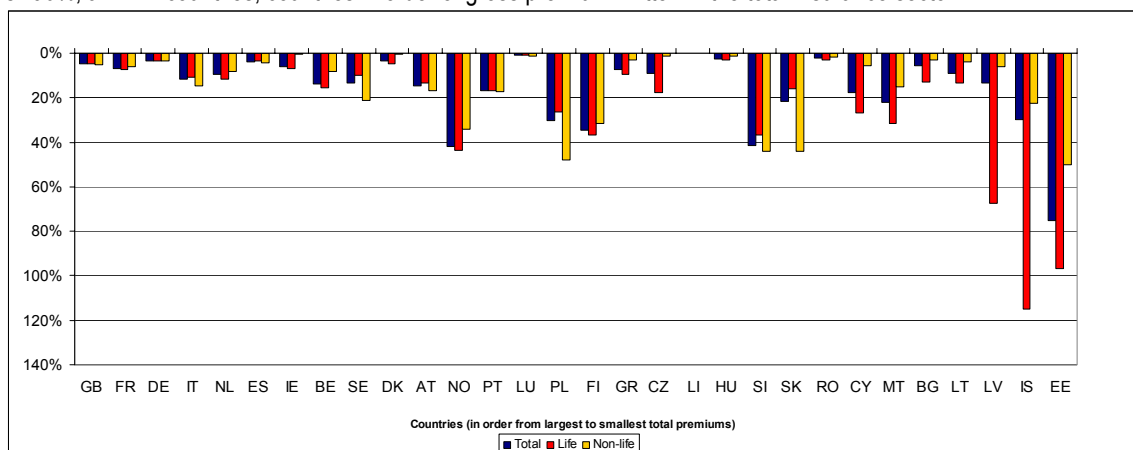
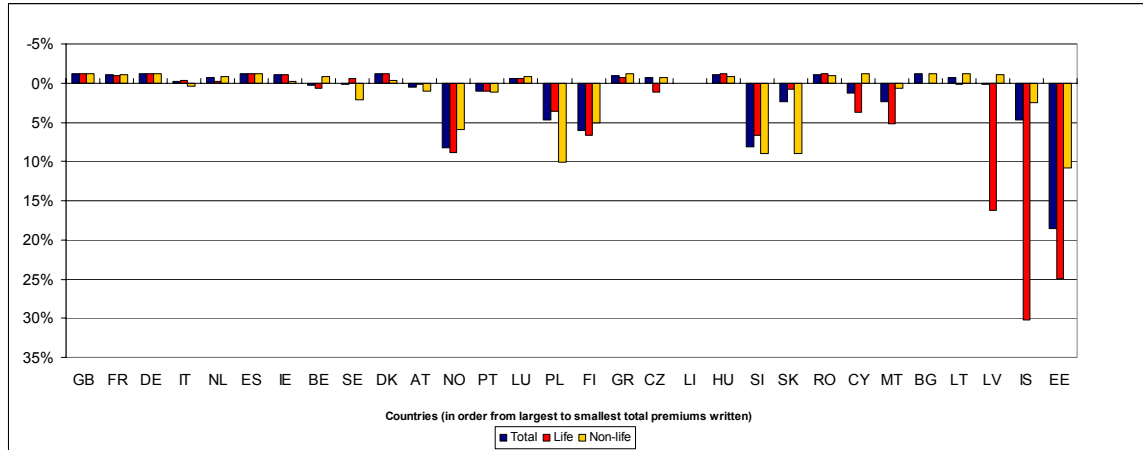


Figure 0.24: Relative difference between funding needs at country level when moving from the home state principle to a single pan-European scheme, for the total insurance sector and the life and non-life business lines; PD=0.5% and $\alpha=90\%$; all EEA countries; countries in order of gross premium written in the total insurance sector



1.3 Using a pure compensation mechanism rather than portfolio continuation/transfer

Under this policy option the portfolio of the failed insurance company is not continued/transferred but the IGS only provides compensation for claims incurred up to the date of default. Additionally, coverage for unearned premiums could be provided to policy-holders.

As discussed in Section **Error! Reference source not found.**, this implies that the EAD is lower than in the baseline case to reflect the fact that the regulatory viability of the portfolio might not need to be re-established. In this case the EAD is therefore calculated in accordance with **Error! Reference source not found.** for the life business line and **Error! Reference source not found.** or **Error! Reference source not found.** for the non-life business line.

1.3.1 Total insurance

1.3.1.1 Compensation of claims only

Figure 0.25: IGS funding needs for the total insurance sector under the home state principle and a pure compensation mechanism covering only claims for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average; countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

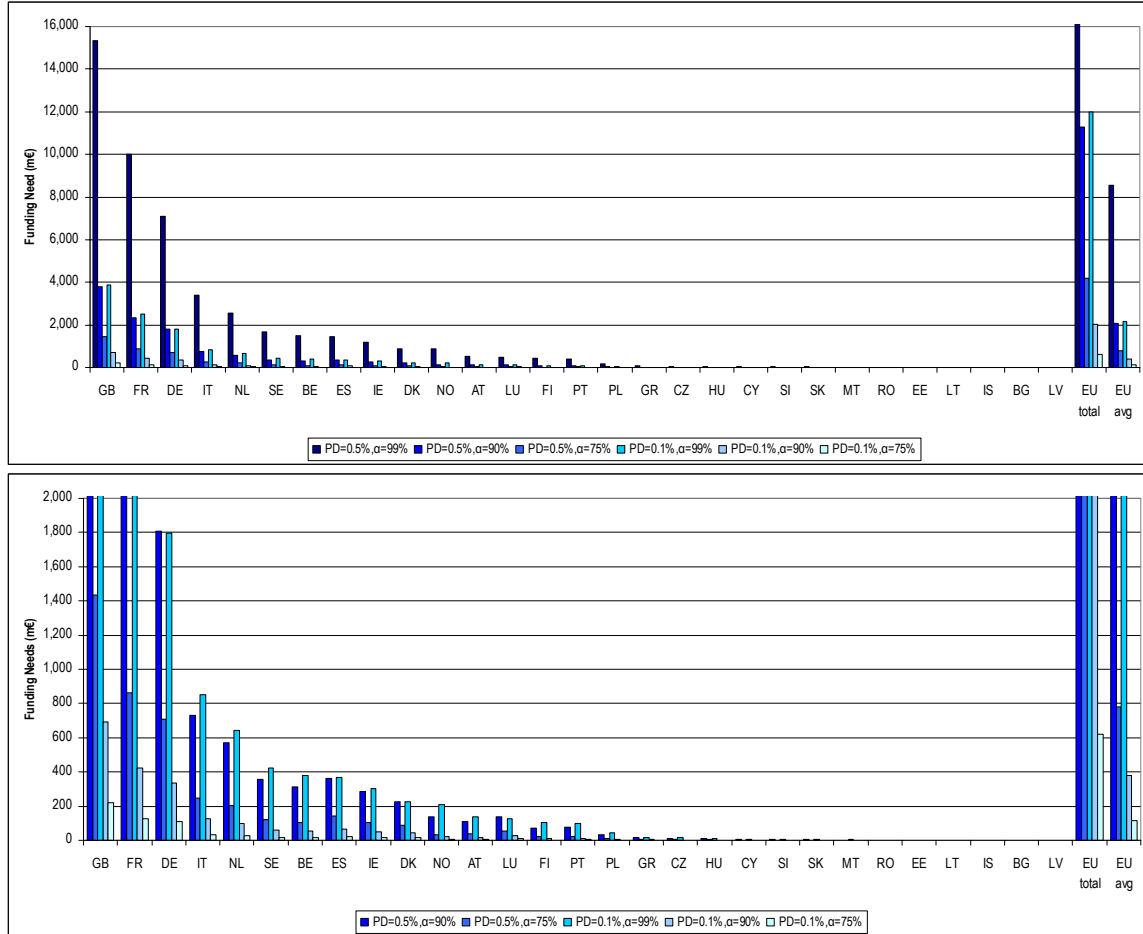


Figure 0.26: Absolute variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; total insurance sector; all EEA countries, plus EU total and EU average ;countries in order of funding needs

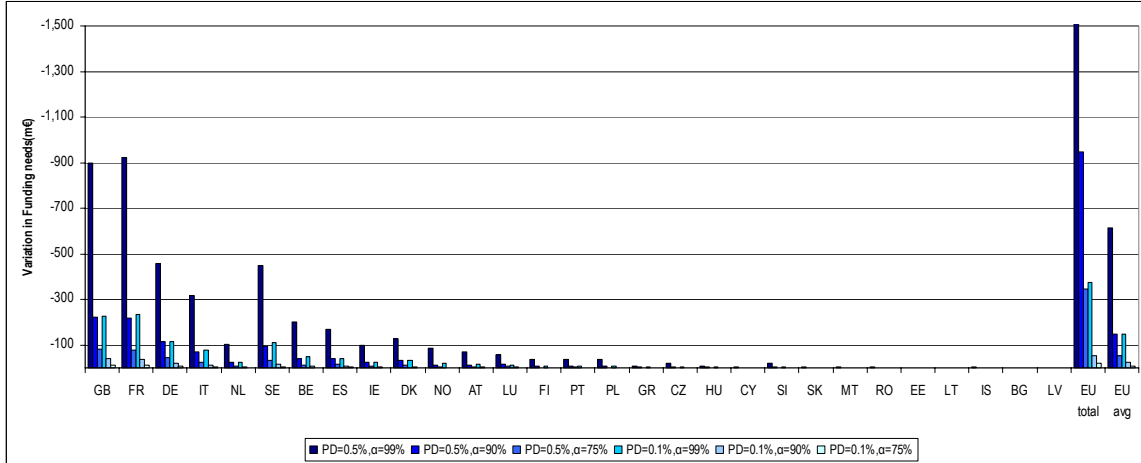


Figure 0.27: Relative variations between funding needs at country level when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; total insurance sector; all EEA countries; countries in order of gross premiums written

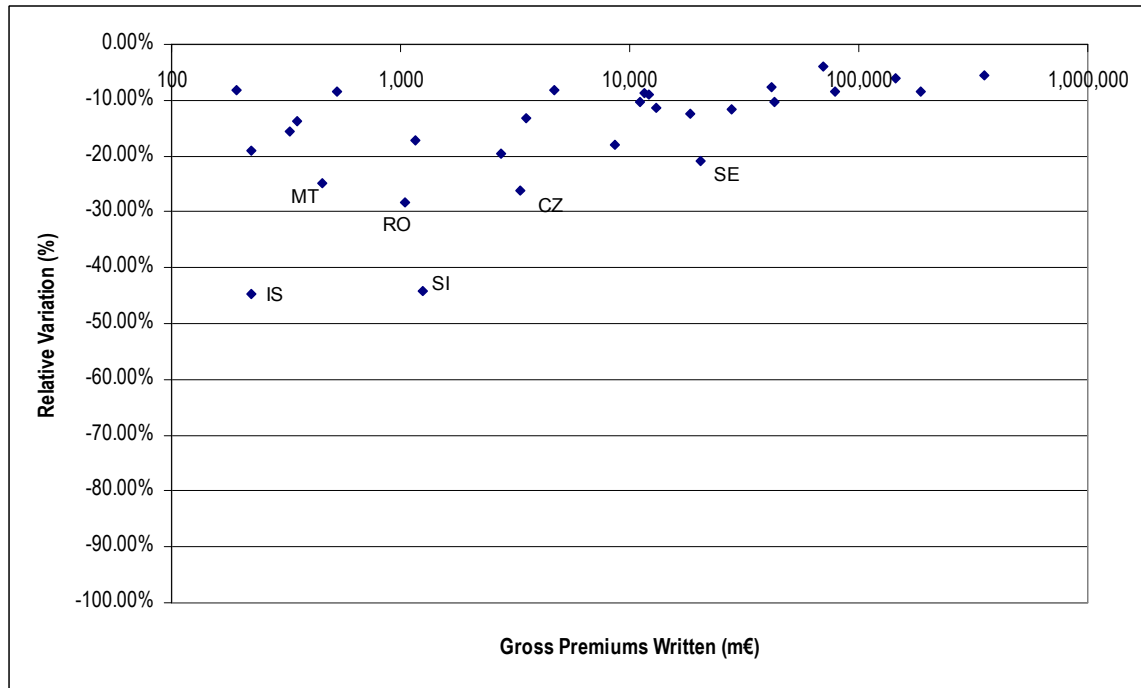


Table 0.11: Summary of relative variations between funding needs at country level when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; EU average and minimum, median and maximum across all EEA countries; total insurance sector

MIN		MEDIAN		MAX		EU avg
-44.65%	IS	-11.69%	BE	-3.87%	NL	-6.70%

Table 0.12: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; under different probabilities of default and confidence levels for the total insurance sector (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
EU, funding needs under home with portfolio transfer	4 529	12 213	51 477	673	2 209	13 001
EU, funding needs under home; compensation only	4 182	11 266	47 419	622	2 039	11 978
Relative difference	-7.65%	-7.75%	-7.88%	-7.59%	-7.70%	-7.87%

1.3.1.2 Pure compensation for life insurance and pure compensation including unearned premiums for non-life insurance

Figure 0.28: IGS funding needs for the total insurance sector under the home state principle and a pure compensation mechanism covering only claims in the life business and covering claims and unearned premiums in the non-life business; for different confidence levels and default probabilities, all EEA countries, plus EU total and EU average; countries in order of funding needs; the top figure indicates funding need; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

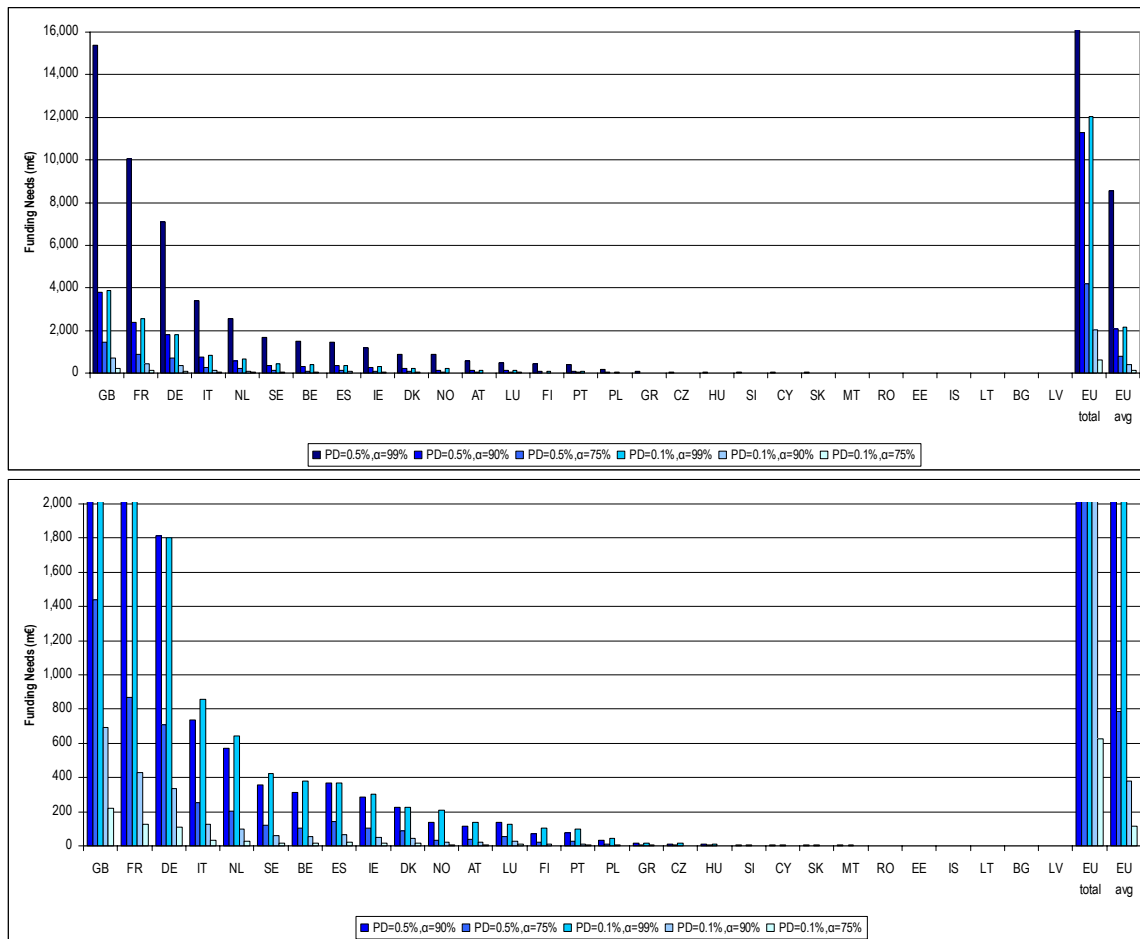


Figure 0.29: Absolute variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering only claims in the life business and covering claims and unearned premiums in the non-life business; total insurance sector; all EEA countries, plus EU total and EU average; countries in order of funding needs

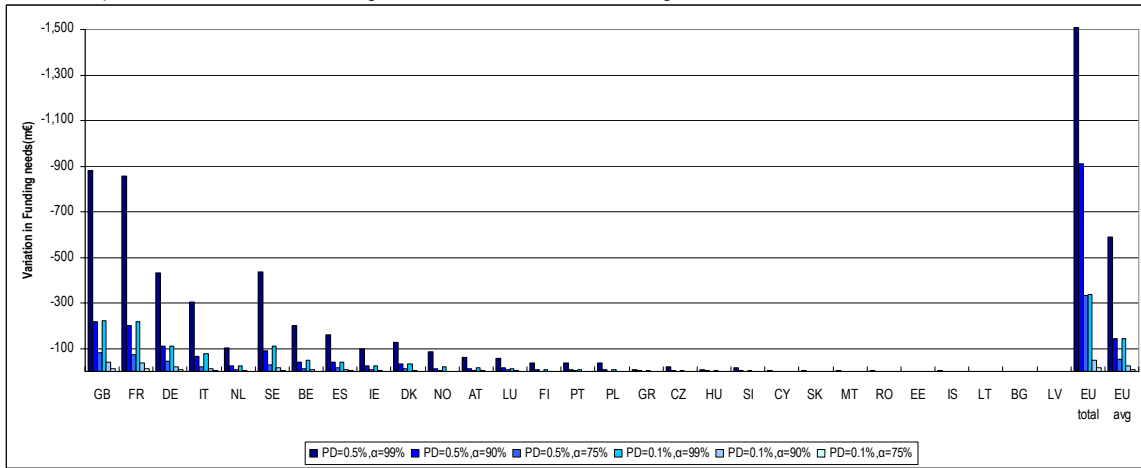


Figure 0.30: Relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering only claims in the life business and covering claims and unearned premiums in the non-life business; total insurance sector; all EEA countries; countries in order of gross premiums written

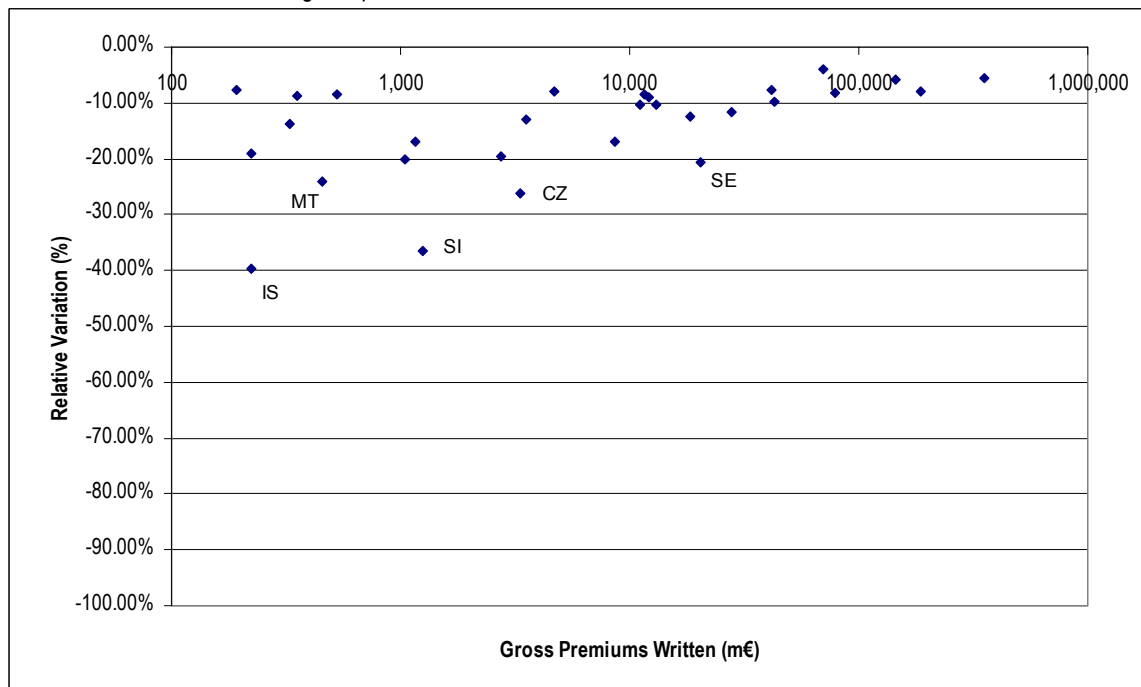


Table 0.13: Relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering only claims in the life business and covering claims and unearned premiums in the non-life business; EU average and minimum, median and maximum across all EEA countries; total insurance sector

MIN		MEDIAN		MAX		EU avg
-39.77%	IS	-10.32%	AT	-3.87%	NL	-6.46%

Table 0.14: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering only claims in the life business and covering claims and unearned premiums in the non-life business; under different probabilities of default and confidence levels for the total insurance sector (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
EU, funding needs under home with portfolio transfer	4 529	12 213	51 477	673	2 209	13 001
EU, funding needs under home; compensation only	4 196	11 302	47 573	624	2 045	12 016
Relative difference	-7.36%	-7.46%	-7.59%	-7.30%	-7.41%	-7.57%

1.3.2 Compensation for life insurance

In the life insurance business line the EAD for the pure compensation case is determined in accordance with **Error! Reference source not found.**

Figure 0.31: IGS funding needs for the life business line under the home state principle and a pure compensation mechanism covering only claims; for different confidence levels and default probabilities, all EEA countries, plus EU total, EU average; countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

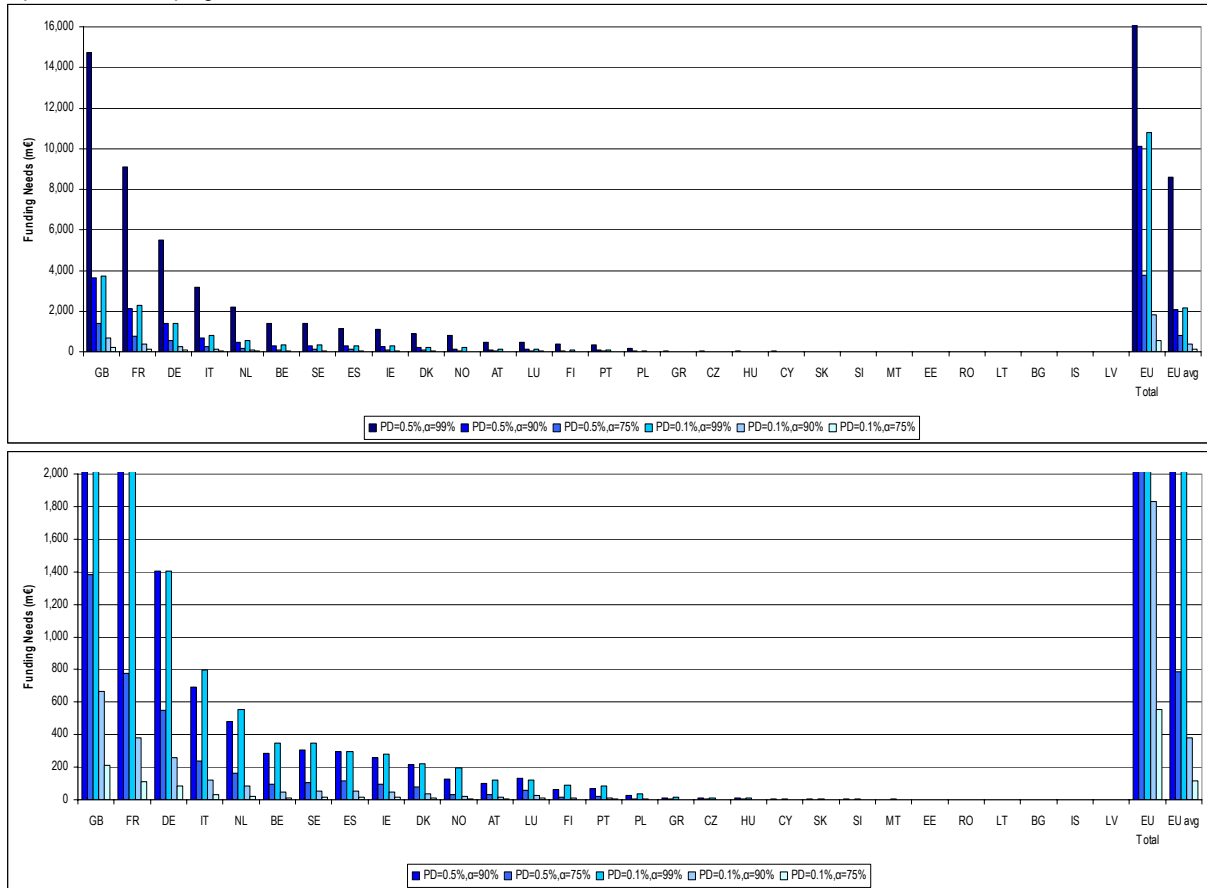


Figure 0.32: Absolute variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; life business line; all EEA countries; countries in order of funding needs

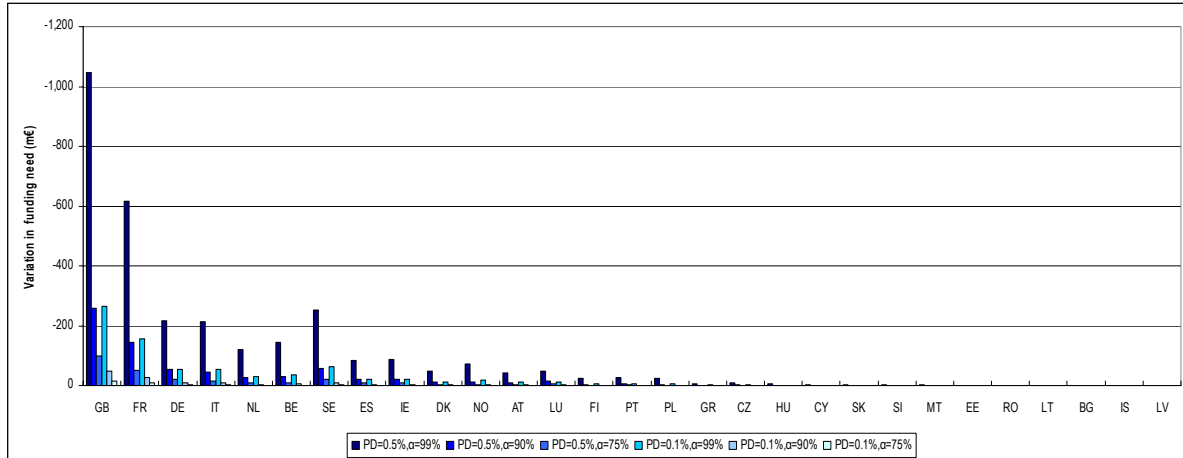


Figure 0.33: Relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; life business line; all EEA countries; countries in order of gross premiums written

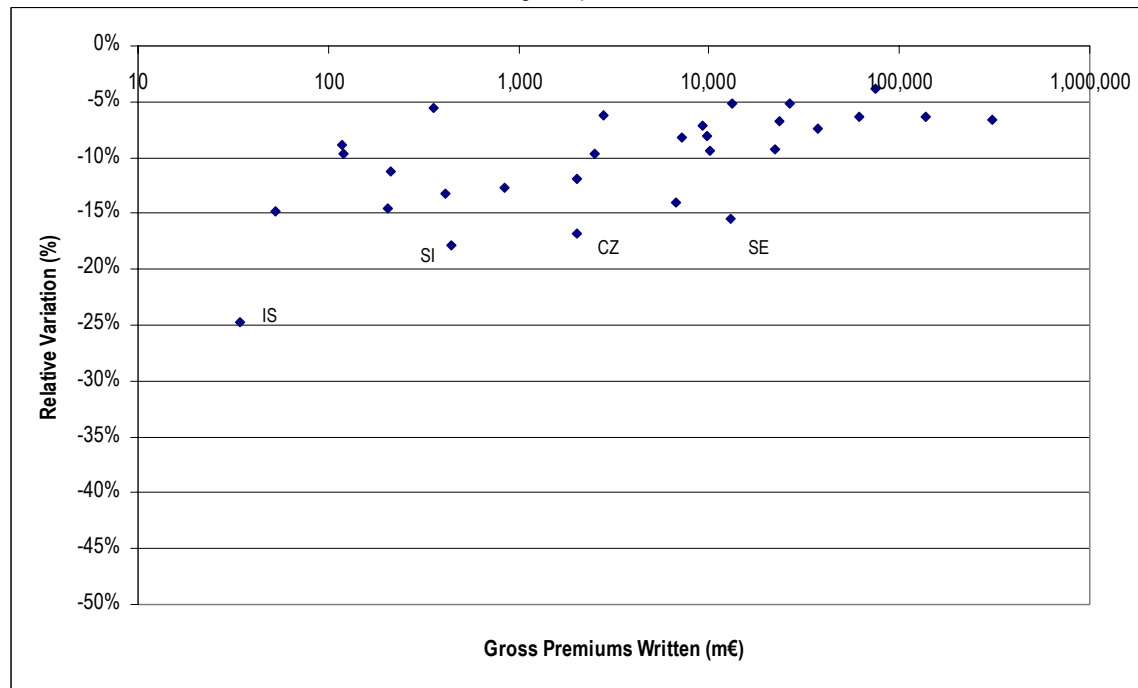


Table 0.15: Summary of relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; EU average and minimum, median and maximum across all EEA countries; life business line

MIN		MEDIAN		MAX		EU avg
-24.78%	IS	-9.26%	BE	-3.78%	DE	-6.43%

Table 0.16: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; under different probabilities of default and confidence levels for the life business line (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
EU, funding needs under home, with portfolio transfer	4,010	10,833	45,751	595	1,958	11,554
EU, funding needs under home, compensation only	3,749	10,122	42,723	557	1,830	10,790
Relative difference	-6.52%	-6.56%	-6.62%	6.49%	6.54%	-6.61%

1.3.3 Compensation for non-life insurance

When a compensation option is applied to non-life insurance policies there are two possible options for the part premium which is unearned: ignore it or reimburse it.

1.3.3.1 Compensation of claims only

If the unearned premium is not covered, the EAD will be given by **Error! Reference source not found.**, reflecting the fact that the regulatory viability of the portfolio will not need to be reconstructed.

Figure 0.34: IGS funding needs for the non-life business line under the home state principle and a pure compensation mechanism covering only claims; for different confidence levels and default probabilities all EEA countries, countries in order of funding needs the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

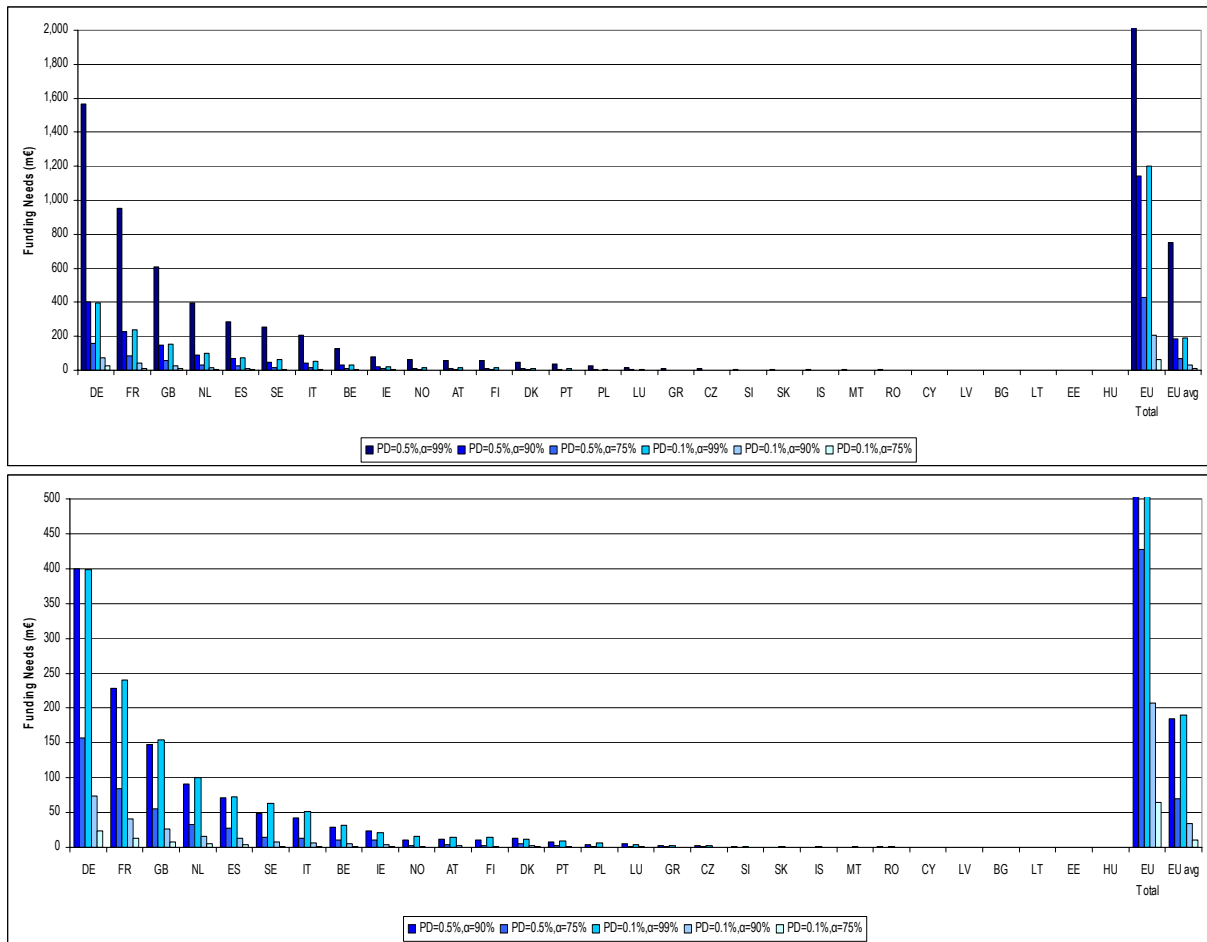


Figure 0.35: Absolute variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; non-life business line; all EEA countries; countries in order of funding needs

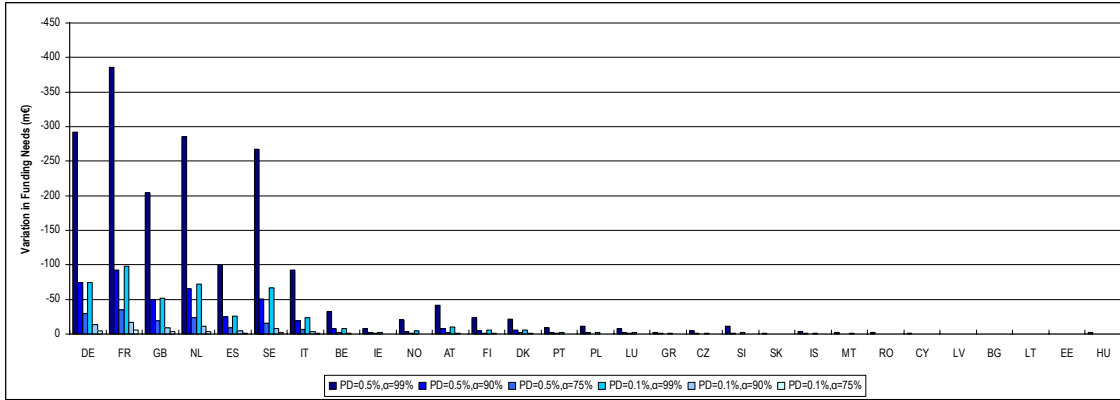


Figure 0.36: Relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; non-life business line; all EEA countries; countries in order of gross premiums written.

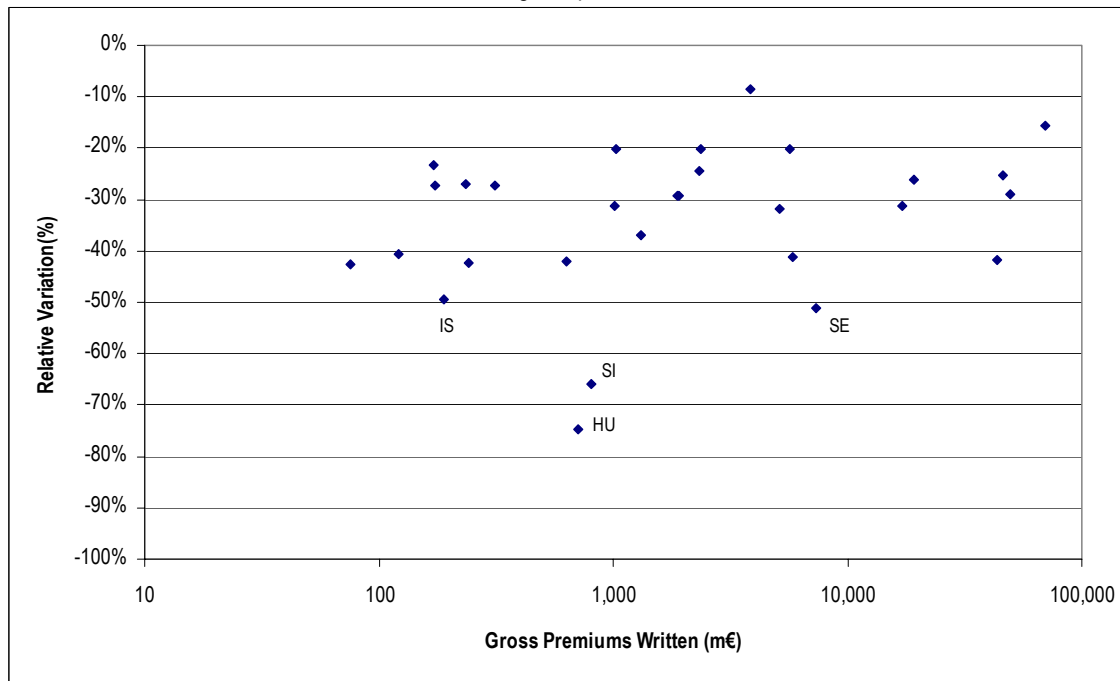


Table 0.17: Summary of relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; EU average and minimum, median and maximum across all EEA countries; non-life business line

MIN		MEDIAN		MAX		EU avg
-74.62%	HU	-29.35%	PL	-8.47%	IE	-23.93%

Table 0.18: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims only; under different probabilities of default and confidence levels for the non-life business line (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
EU, funding needs under home, with portfolio transfer	580	1 559	6 577	86	282	1 660
EU, funding needs under home, compensation only	428	1 142	4 764	64	207	1 203
Relative difference	-26.14%	-26.76%	-27.57%	-25.73%	-26.45%	-27.50%

1.3.3.2 Pure compensation including unearned premiums

If unearned premiums are covered by the IGS, the EAD will also include a term corresponding to unearned premiums, as illustrated in **Error! Reference source not found.**

Figure 0.37: IGS funding needs for the non-life business line under the home state principle and a pure compensation mechanism covering claims and unearned premiums for different confidence levels and default probabilities, all EEA countries, plus EU total and EU average; countries in order of funding needs; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

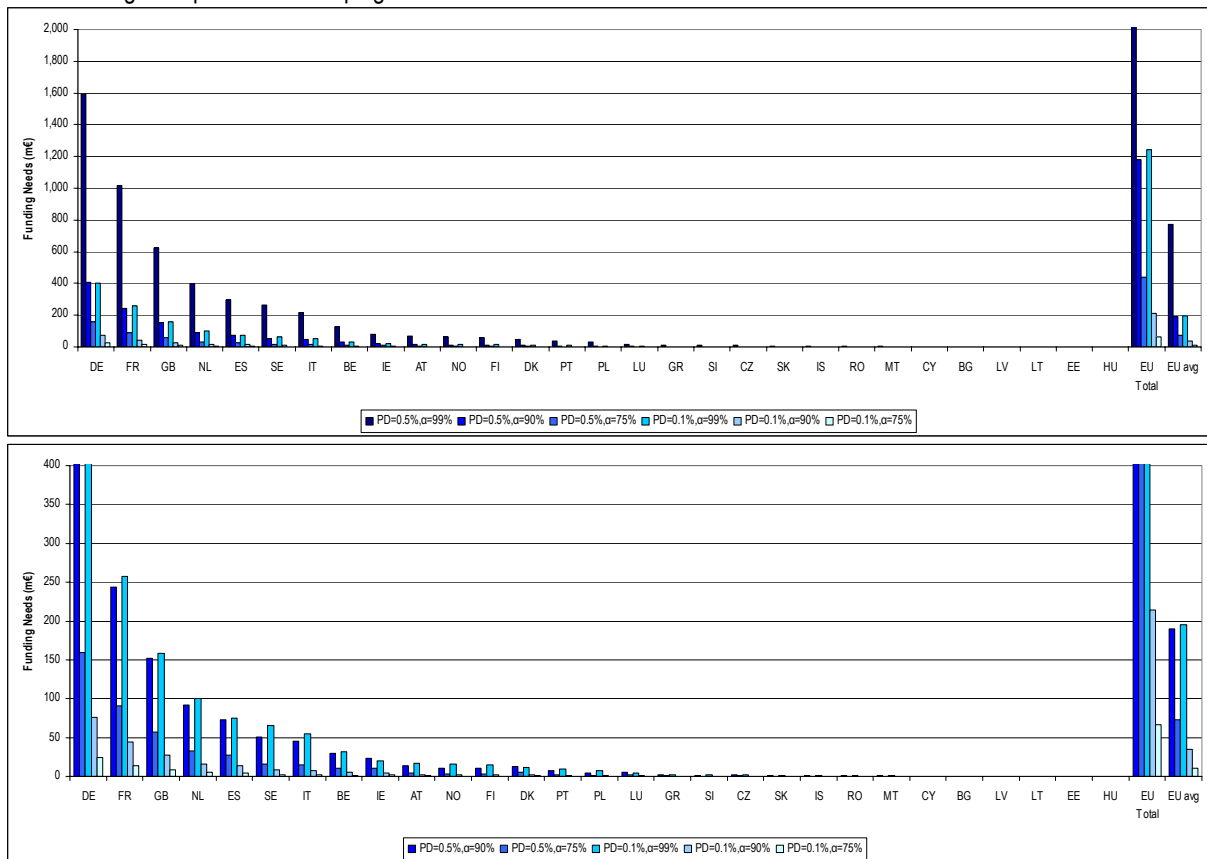


Figure 0.38: Absolute variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims and unearned premiums; non-life business line; all EEA countries; countries in order of funding needs

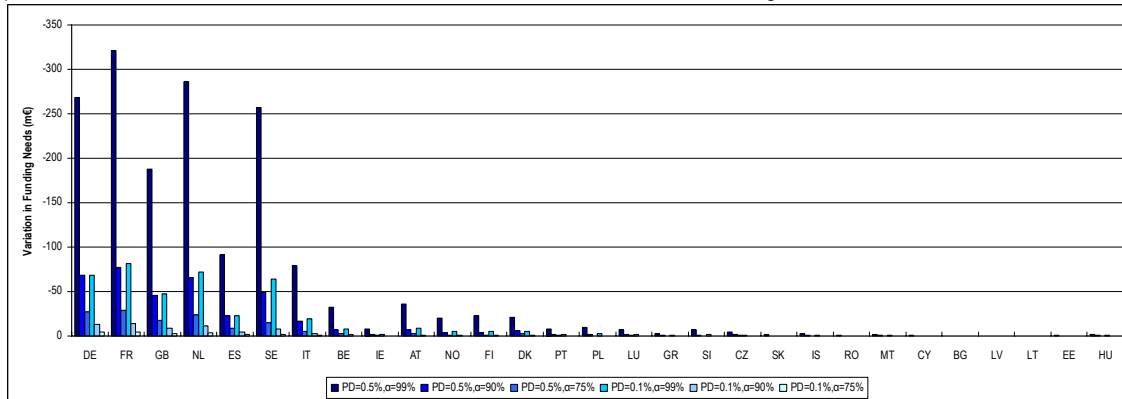


Figure 0.39: Relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims and unearned premiums; non-life business line; all EEA countries; countries in order of gross premiums written

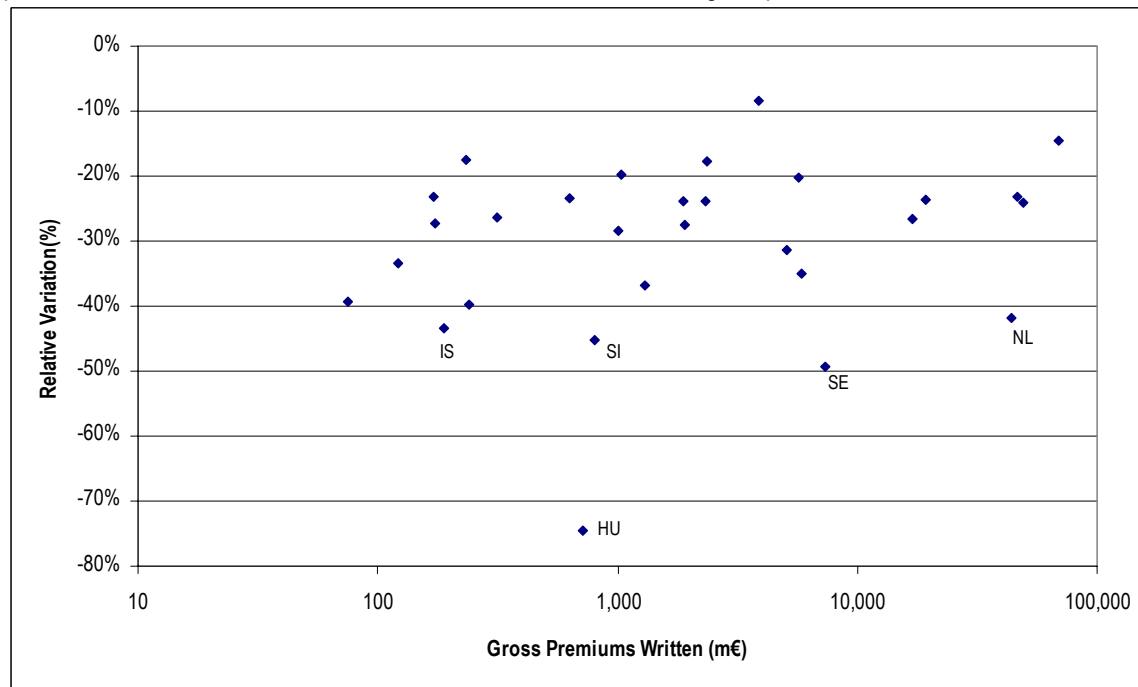


Table 0.19: Summary of relative variations between funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims and unearned premiums; EU average and minimum, median and maximum across all EEA countries; non-life business line

MIN		MEDIAN		MAX		EU avg
-74.62%	HU	-26.56%	IT	-8.47%	IE	-21.75%

Table 0.20: Total funding needs at EU level and relative variations in funding needs when moving from the home state principle and a portfolio transfer mechanism to the home state principle and a pure compensation mechanism covering claims and unearned premiums; under different probabilities of default and confidence levels for the non-life business line (in m€)

$\alpha \rightarrow$	PD = 0.5%			PD=0.1%		
	75%	90%	99%	75%	90%	99%
EU, funding needs under home, with portfolio transfer	580	1 559	6 577	86	282	1 660
EU, funding needs under home, compensation only (including unearned premiums)	441	1 178	4 919	66	214	1 242
Relative difference	-23.89%	-24.46%	-25.22%	-23.50%	-24.17%	-25.15%

1.4 Comparison of policy options for the EU

Figure 0.40: Total insurance sector, comparison of different policy options for the EU total; the top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

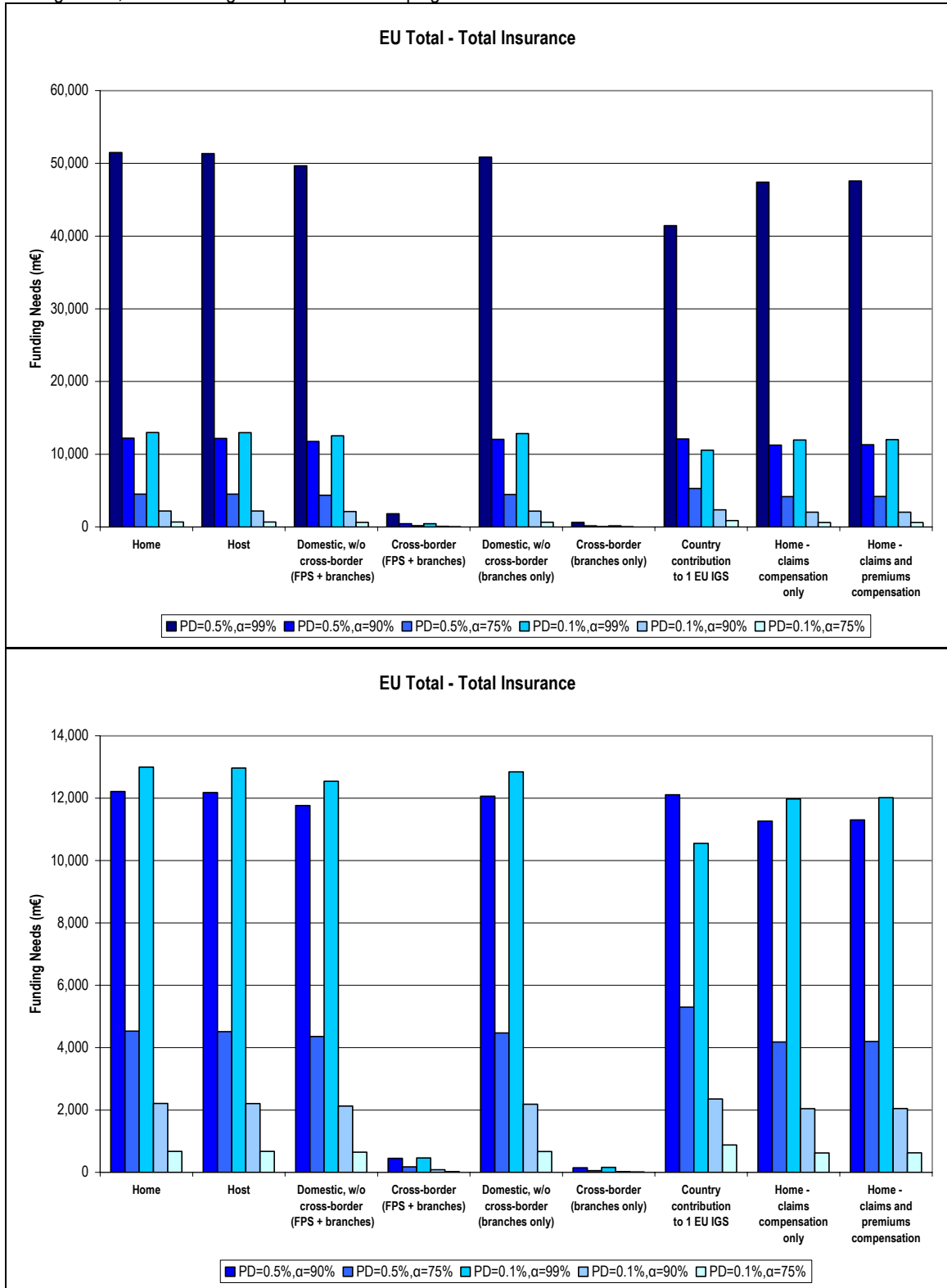


Figure 0.41: Life insurance, comparison of different policy options for the EU total. The top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$

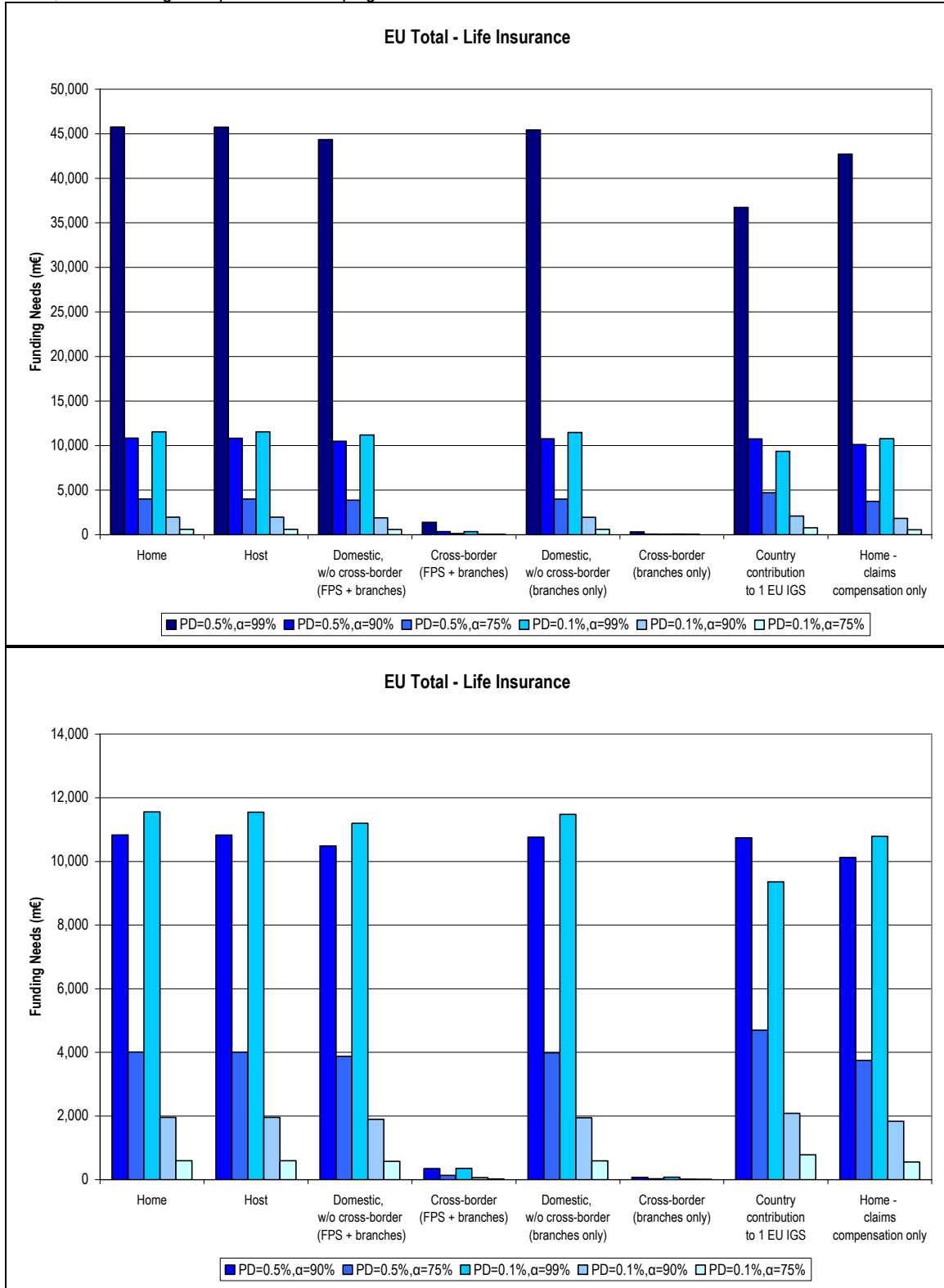
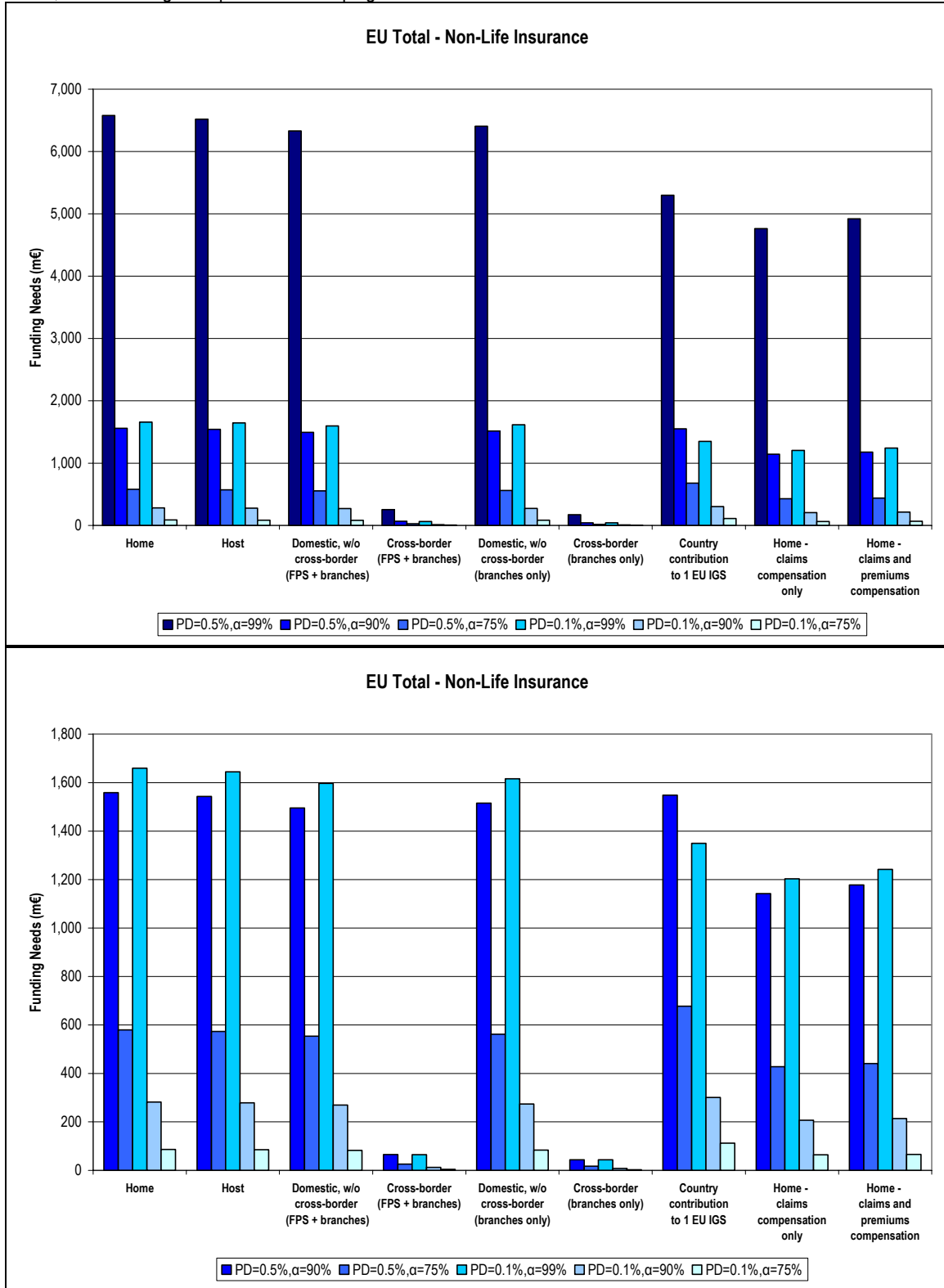


Figure 0.42: Non-life insurance, comparison of different policy options for the EU total. The top figure indicates funding needs; the bottom figure reproduces the top figure with the exclusion of the case PD=0.5% and $\alpha=99\%$



Annexes

A1 Derivation of the Vasicek portfolio default model (Error! Reference source not found.)

A Merton-type one-factor model of credit risk was employed. The Merton model assumes that a company defaults if the value V_i of its assets is below the value of its liabilities at a predefined horizon³. Within this framework, the owner of the firm can then be seen as holding a ‘put’ option on the assets of the firm with a selling price equal to the total of its non-equity liabilities⁴. The distribution of the value of non-equity liabilities at the end of the period can therefore be calculated using the option-pricing theory developed by Black, Scholes, and Merton.

As in the standard Black-Scholes-Merton model a geometric Brownian motion is assumed to drive the dynamics of the firm’s value. Consequently, the logarithmic difference of the asset returns between time 0 and horizon H , formally written as $\ln(V_{iH}/V_{i0}) = Z_i$, follows a normal distribution.

Under these assumptions, the firm defaults when this logarithm (or, more conveniently, its standardised value V) falls below threshold L . As the value of the firm in the Black-Scholes-Merton model is normally distributed, this implies that default occurs when

$$Z_i \leq L_i = N^{-1}(p),$$

where:

p is the probability of default (PD in the main text)

$N(\cdot)$ is the cumulative normal distribution function⁵ and N^{-1} is the inverse of N , such that if $N(x)=a$, then $x = N^{-1}(a)$.

The main feature of the Vasicek version of the Merton model is the introduction of dependence on a common factor in the driving process of value when considering a portfolio of companies. The simplest set-up for this model is obtained by considering a single normally distributed common factor and a single correlation coefficient ρ for all companies in the portfolio. Under this assumption the value of the assets of any company can be seen as being driven by a combination of a common factor Y and an idiosyncratic factor X_i with the result that the default condition is given by

$$Z_i = Y\sqrt{\rho} + X_i\sqrt{1-\rho} \leq L_i = N^{-1}(p)$$

This representation makes it possible to calculate a stressed default probability by considering the distribution of Z_i when the systemic factor Y is not average, or $Y \neq 0$. This stressed default probability, designated PD^* , can thus be written as follows:

³ An alternative interpretation is that the firm defaults if the value of the firm falls below zero. In the current framework the development of the model is identical in both cases. The only difference is that in the second case X has to be interpreted as the net value of assets and the default threshold L is set at zero.

⁴ In other words, if the value of assets falls below the value of liabilities, the owner of the firm can ‘exercise the option’ by defaulting and ‘selling’ the firm’s assets to the creditors. The ‘price’ paid by the creditors for acquiring the assets is the value of their outstanding credits.

⁵ $N(x)=P(\mathbf{X}<x)$ where x is a specific value of the random variable \mathbf{X} and $P(\cdot)$ stands for probability.

$$PD^* = P(Z_i < L | Y) = P(\sqrt{\rho}Y + \sqrt{1-\rho}X_i < L | Y)$$

If L is replaced by $N^{-1}(p)$ in the equation above, the following is obtained:

$$PD^* = P(\sqrt{\rho}Y + \sqrt{1-\rho}X_i < N^{-1}(p))$$

Isolating the firm-specific factor (X_i) on the left-hand side, PD^* can be written as:

$$PD^* = P\left(X_i < \frac{N^{-1}(p) - \sqrt{\rho}Y}{\sqrt{1-\rho}}\right)$$

Given that $P(X_i < a) = N(a)$, the equation can be rewritten as:

$$PD^*(Y) = N\left(\frac{N^{-1}(p) - \sqrt{\rho}Y}{\sqrt{1-\rho}}\right)$$

This $PD^*(Y)$ indicates, for any company, the probability that default could occur under the given scenario of $Y = N^{-1}(1-\alpha)$, where $(1-\alpha)$ is the probability that the common factor will take a value lower than Y .

To obtain the loss distribution function for the portfolio, start by considering that:

$$PD^* = P(F_i = 1 | Y)$$

where F_i is a random variable equal to 1 if the insurer defaults and 0 otherwise.

The total loss on the portfolio, expressed as a share between 0 and 1 (i.e. 0% to 100%), can be obtained as:

$$F = \sum_{i=1}^n F_i / n$$

Conditional on the value of Y , the variables F_i are independent equally distributed variables with finite variance. Applying the law of large numbers, the loss of the whole insurance market conditional on Y converges to its expectation $PD^*(Y)$ as n goes to infinity. Or:

$$P(F \leq x) = P\left(\sum_{i=1}^n F_i / n \leq x\right) = P(PD^*(Y) \leq x)$$

The probability that a loss smaller than $x\%$ will be incurred in a large portfolio can be written as⁶:

$$P(F \leq x) = N\left(\frac{\sqrt{1-\rho}N^{-1}(x) - N^{-1}(p)}{\sqrt{\rho}}\right)$$

⁶ This result is obtained relying on the fact that the common factor is normally distributed.

Inverting this formula provides, for each possible probability α , the corresponding 'Value at Risk' x of the loss which is not going to be exceeded with probability α :

$$\alpha = P(F \leq VaR_\alpha) \Leftrightarrow VaR_\alpha = N\left(\frac{\sqrt{\rho}N^{-1}(\alpha) + N^{-1}(p)}{\sqrt{1-\rho}}\right).$$

This gives only the percentage loss; the real loss can then be obtained by multiplying this share by the EAD and the asset shortfall (LGD).

The result above is obtained under the assumptions that the insurance market is equally distributed and that the law of large numbers can be applied. Vasicek (2002) proposes an adjustment to take into consideration the market granularity of insurance companies. He proposes replacing ρ by $\rho + \delta(1-\rho)$ which leads to **Error! Reference source not found.** where δ is the quadratic sum of the weights and the weights are defined as the ratio of the size of each insurance company to the total market size.

A2 Estimation of the EAD of a defaulting insurance company

An insurance undertaking facing expected estimated liabilities TP_0 and solvency capital requirement SCR_0 at time t_0 will be taken as an example, starting by considering the case of continuation of the portfolio.

The insurance undertaking can be hit by one of several kinds of shocks at t_1 that could trigger its default.

1. A shock due to incurring a ‘market’ risk, resulting in a fall in the value of its assets to below the technical provisions;
2. A shock due to incurring an ‘underwriting’ risk for a particular business line (e.g. life, non-life, health, etc.), resulting in an increase in the amount of technical provisions to above the value of its assets;
3. A shock due to incurring an ‘operational risk’, where, due to errors or malpractice, the technical provisions turn out to be undervalued or assets turn out to be overvalued in such a way that the real value of assets is lower than the real value of the technical provisions;
4. A shock due to incurring a ‘counterparty risk’, where, due to the default of a counterparty (e.g. a reinsurer), the value of the technical provisions needs to be updated and will then exceed the value of the undertaking’s assets.

In the case of a shock due to incurring a market risk, liabilities remain constant and the exposure at default can therefore be estimated as equal to liabilities before the shock:

$$EAD = TP_0 + SCR_0.$$

Equation A2.1

In the case of a shock due to incurring an underwriting risk, the value of liabilities increases. The exposure at default is therefore estimated by considering the value of liabilities after the shock⁷ $TP_1 = TP_0 + SCR_0$ and adding an extra term equal to the SCR that the insurer would need in order to operate when facing this new level of liabilities. The estimated value of the EAD in this case is:

$$EAD = TP_1 + SCR_1 = (TP_0 + SCR_0) + SCR_1.$$

Equation A2.2

By considering SCR_1 as directly proportional to TP_1 ⁸, equation A2.2 can be rewritten as:

$$EAD = (TP_0 + SCR_0) + SCR_0 \frac{TP_1}{TP_0} = (TP_0 + SCR_0) \left(1 + \frac{SCR_0}{TP_0} \right).$$

Equation A2.3

This procedure can be used to estimate the EAD in the case of shocks due to incurring any kind of underwriting risk and also in the cases of shocks due to incurring

⁷ The increase can not be easily estimated. As the SCR is the best current estimate of unexpected losses, it is assumed that the increase will stay below this value.

⁸ $SCR_1 \approx TP_1 \times SCR_0 / TP_0$.

counterparty or operational risk, as they all basically imply a revision of the value of liabilities⁹.

As the value of the EAD would depend on which kind of shock is incurred, the expected EAD can be calculated as the weighted average of the EADs that would result from all types of shocks, the weights reflecting the relative importance of the operational, counterparty, market and underwriting risks, as measured by the relative sizes of the corresponding components of the SCR:

$$w_M = \frac{SCR_M}{\sum_{i=OP,CP,M,NL,L,H} SCR_i} \quad ; \quad w_j = \frac{SCR_j}{\sum_{i=OP,CP,M,NL,L,H} SCR_i} \quad \text{for } j = OP, CP, L, NL, H.$$

Consequently, the expected EAD is given as:

$$EAD = w_M (TP_0 + SCR_0) + \left(\sum_{j=OP,CP,NL,L,H} w_j \right) (TP_0 + SCR_0) \left(1 + \frac{SCR_0}{TP_0} \right),$$

which can be written as:

$$EAD = TP_0 + SCR_0 \left(2 - w_M + (1 - w_M) \frac{SCR_0}{TP_0} \right).$$

Equation A2.5

In cases where continuation of the portfolio is not contemplated (i.e. the scheme follows a pure compensation logic), the terms relating to replenishment of the SCR can be ignored. In addition, as all policies will be considered to terminate at the time of default, in the non-life line the exposure will need to be rescaled in proportion to the share of premiums which have been earned. This leads to the following formula for the EAD:

$$EAD = \left(w_M (TP_0) + \sum_{j=OP,CP,NL,L,H} w_j (TP_0 + SCR_0) \right) \frac{Tot\pi_0 - U\pi_0}{Tot\pi_0},$$

which can be simplified to:

$$EAD = (TP_0 + (1 - w_M) SCR_0) \frac{Tot\pi_0 - U\pi_0}{Tot\pi_0},$$

Equation A2.6

where

$Tot\pi_0$ is the total premium written at t_0 ; and

$U\pi_0$ is the unearned premium at t_0 .

In cases where reimbursement of unearned premiums is contemplated, the EAD becomes:

⁹ A different procedure for estimation of the EAD in these two cases was considered to lead to a very small increase in precision, while introducing considerable additional complexity.

$$EAD = (TP_0 + (1 - w_M)SCR_0) \frac{Tot\pi_0 - U\pi_0}{Tot\pi_0} + U\pi_0.$$

Equation A2.7

The case of life insurance rescaling the exposure by the share of earned premiums would be appropriate only for the term life insurance, but as this normally makes up only a very small share of premiums the EAD for Life insurance in the pure compensation case is calculated using the formula:

$$EAD = (TP_0 + (1 - w_M)SCR_0).$$

Equation A2.8

A3 Questions and answers on the Vasicek portfolio model used for estimation of IGS loss distribution

A3.1 Is using a geometric Brownian motion for the assets process appropriate?

Yes. Use of the diffusion process is an ‘industry standard’ for portfolio default risk modelling. In the literature on insurance, a generalised geometric Brownian motion process, like the one characterising the Merton model (Merton 1974) and the Vasicek portfolio credit risk model (Vasicek 1991; Vasicek 2002), has been employed to calculate the value of IGS guarantees in the USA (Chang, Dong, and Yu 1998; Lindset and Persson 2008; Duan and Yu 2005). This method is also used to represent the process driving the value of a bank’s assets in the literature on the valuation of DGS guarantees (Merton 1977; Kuritzkes, Schuermann, and Weiner 2005).

A3.2 Could a stochastic liabilities process be introduced?

Not at this stage. Although liabilities could be modelled as a stochastic process, and this would make to the model more generally applicable, it would, however, add to the complexity and require additional data (Chang, Dong, and Yu 1998; Cummins 1998; Lindset and Persson 2008; Alvarez 2009). Given that, provided the correct parameters are chosen, the same default intensity can be obtained from models with and without stochastic liabilities and considering the current operational and time constraints, modelling stochastic liabilities was not considered a priority.

A3.3 Why not use a compound Poisson process driving liabilities for the IGS?

In order to limit the complexity of the model and to be able to estimate parameters with the limited data available. A standard representation in actuarial literature of the process driving the liabilities of an individual insurance undertaking to policyholders is based on a compound Poisson distribution (see e.g. Dickson 2005 and references therein). For large numbers of relatively frequent homogeneous claims this distribution can be approximated by a normal distribution (Dickson 2005). Introducing this approximation allows use of geometric Brownian motion for the liabilities process and, consequently, use of Merton-type models, which admit closed formula solutions and limited data for estimation of their parameters. This kind of approach therefore seems desirable in cases where a rapid assessment based on limited data is required, whereas a full model could be preferred in cases where greater precision is needed and data to estimate the model are available.

A3.4 Should the model allow for the fact that the duration of insurance undertakings’ assets and liabilities can be very different from one business line to another?

No, what matters is the duration of the exposures of the IGS to the insurers, which are all identical. In the Vasicek portfolio credit risk model it is assumed that companies make a decision to default or to stay in business at the end of each period of model time. As the default event is the trigger for intervention by an IGS, the maturity of all exposures off the IGS to the companies is therefore identical and equal to the length of this decision or review period. This kind of framework is adopted in the literature both for valuation of IGS guarantees (Chang, Dong, and Yu 1998; Lindset and Persson 2008) and for valuation of DGS guarantees (Merton 1977; Kuritzkes, Schuermann, and Weiner 2005).

A3.5 Is the Vasicek portfolio model appropriate to represent the default process of a portfolio of insurance companies?

Yes. The Vasicek portfolio model is used in one form or another to represent portfolio default processes in a wide range of settings in different industries and enterprise class sizes. From QIS4 of the Solvency II method of calculation of the under-writing solvency capital margin (CEIOPS 2008b, para. TS.X.A.13-20) requires insurers to include a module for risk of default by their reinsurers, using the Vasicek model for quantification.

A3.6 Why a granularity adjustment?

Granularity adjustment avoids underestimation of loss variability. In fact, as the standard form of the Vasicek model relies on an asymptotic approximation to obtain its analytical solution, the main consequence of ignoring granularity in the portfolio is that part of the residual ‘idiosyncratic risk’ which is not diversified in a small portfolio is ignored and that, in the case of portfolios dominated by a few large exposures, the variance of the losses could be under-estimated.

Vasicek (Vasicek 2002) tackles this problem by introducing a ‘correction term’ based on the squared sum of the shares of exposures in the portfolio. This is also applied in the estimations in this report. This approach has sometimes been criticised as not fully precise (Huang, Oosterlee, and Mesters 2007) for determining prudential capital requirements. The literature proposes a variety of solutions (Emmer and Tasche 2005; Wilde 2001; Federov 2009; Gordy and Lütkebohmert 2007) and the gain in precision as a result of introducing these additional terms has been measured by several authors (Huang, Oosterlee, and Mesters 2007; Gurtler, Heithecker, and Hibbeln 2006). Their results seem to imply that for portfolios of a few dozen exposures the error incurred by ignoring any granularity correction terms, while large (relative errors of between 2% and 30% compared with the Vasicek asymptotic version), could still be tolerable in a first rapid assessment of the magnitudes involved.

A3.7 Would it not be better to use Monte Carlo simulations, instead?

No, given the extremely high data and computational requirements of a Monte Carlo approach in proportion to the current needs and operational constraints.

While it is true that a full computational solution for the portfolio VaR can be made by Monte Carlo simulations (See e.g. Huang, Oosterlee, and Mesters 2007; Laurent 2008), this approach is computationally demanding and its precision depends directly on the quality of the inputs (i.e. the structure of exposures and estimated parameters of the model). Consequently, it can offer a significant improvement only when large and precise amounts of data are available and ease and speed of computation are considered to be less important than the resulting gain in precision.

A3.8 How is the loss given default parameter chosen? Should it be stochastic?

Loss given default is currently set at 15% in order to make the results from this model comparable with the results presented in Oxera’s IGS report (Oxera 2007, 102). A comparison with a value of 45%, as suggested in the Basel II foundation IRB credit risk module, was made but is not included in the tables as these figures can be obtained simply by multiplying the current results by 3.

The possibility of using different or even random LGD terms is discussed in the literature, which presents solutions tying the LGD to systemic risk factors (see e.g. Kupiec 2007 and references therein). This additional precision could be obtained only at

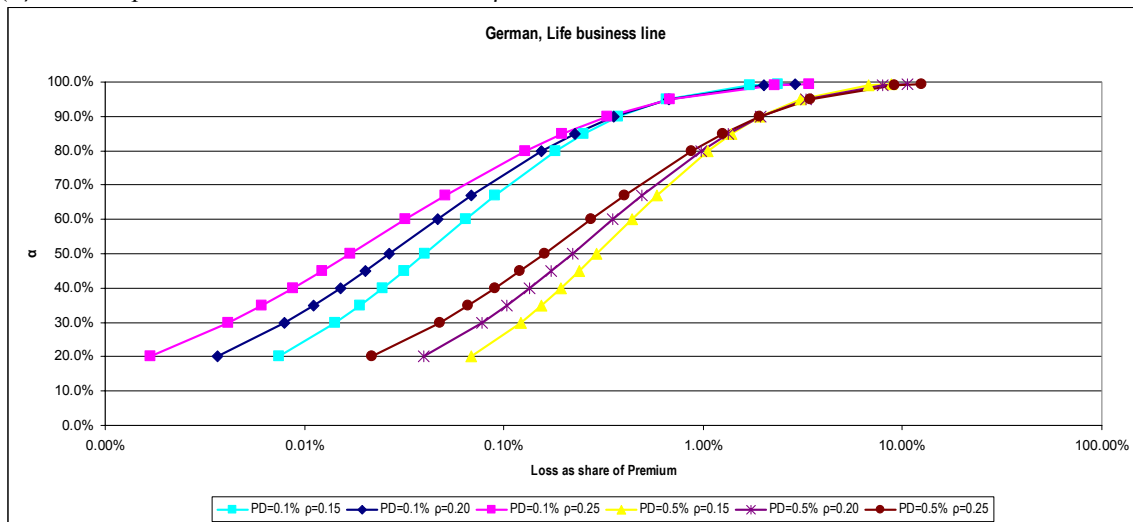
the cost of a relatively heavy additional burden in terms of data needs and model complexity, which does not seem justified given the needs and operational constraints of the White Paper Impact Assessment.

A3.9 How is the correlation coefficient chosen?

The value of ρ , the correlation coefficient has been set at 20% in line with the Basel II IRB foundations credit risk model recommendations. This estimate also lies at the upper bound of the sectoral default correlation coefficients provided by Demey et al. (2004, fig. E), which range from 0.136 to 0.178 for the one-factor model. Moody's KMV surveys this literature and presents some methods for estimating of this parameter (Zhang, Zhu, and Lee 2008 and references therein) but an independent estimation is not compatible with the current needs and operational constraints.

For completeness, Figure A3.1 presents a comparison of the effect of ρ in the German life insurance business. Along the x-axis, the loss as a share of the total Life premium is presented on a logarithmic scale. The y-axis shows the probability of not exceeding a given level of loss. The curves indicate loss functions obtained under different combinations of ρ and PD.

Figure A3.1: Effect of the correlation coefficient in the case off the German life insurance business. Horizontal axis: loss as a share of premiums. Vertical axis: probability of not exceeding any level of loss (α). Lines represent different combinations of ρ and PD



A3.10 How is the probability of default decided and is it realistic to employ a single average probability of default across EU markets?

The model is currently evaluated using two different probabilities of default: 0.1% and 0.5% per annum. The first is extracted from implied default probabilities recovered from the insurance companies' bonds' credit ratings as indicated in the Oxera report (Oxera 2007, 102). The second is the maximum probability of default which should be attained in the Solvency II framework and therefore marks an upper boundary to the probability distribution of defaults.

Different average probabilities of default could be used for different insurance markets or even within the same market. However, both these options would require substantial additional data, which might not even be available for some companies and markets, and, eventually, the introduction of additional complexity to the model.

A3.11 Why are the technical provisions adjusted?

The technical provisions are currently calculated under Solvency I which leaves Member States considerable freedom to impose an obligation on companies to include country-specific safety loadings. This way some countries will have higher technical provisions than others, as they include components calculated on the basis of different actuarial tables and levels of prudence. Differences between Member States in the calculations of the safety margins should diminish once capital requirements are calculated in the Solvency II framework.

In order to reduce any bias due to these differences in current practices the technical provisions have been adjusted by multiplying them by the ratio of current technical provisions to QIS4 capital requirements reported in the QIS4 results document.

A3.12 Is the model able to evaluate all possible proposed policy options?

Mostly yes. The Merton-Vasicek model can be used to evaluate all options which result in a variation of the model parameters. Currently, the biggest limits to estimation of the loss function associated with most policy options are the quantity and quality of the data available. Given the current data limitations, this means that at this time the model can be used to evaluate all options for which reliable quantification of the exposure at default is possible.

A3.13 Is it possible to evaluate all policy options based on the currently available data?

No, the publicly available data allows the estimation of a limited number of policy options, and even then only by employing some assumptions on the structure of markets and the allocation of technical provisions. Additional data would be necessary for a more precise estimation of high level policy options and for the evaluation of lower-level policy options.

A3.14 If the model cannot evaluate all policy options under currently available data would it not be simpler to use a scenario analysis and problem definition technique based on descriptive statistics?

Not really, as the data needs for the two approaches are basically identical. The Merton-Vasicek model used in the version adopted is very parsimonious and can produce estimates of the loss function from the same kind of data which would be needed for a detailed problem definition and scenario analysis. Descriptive statistics relating to most currently available data can be found in the Oxera report (Oxera, 2007).

A4 Robustness indicators and comparison of ex-ante and ex-post contributions in the case of very large defaults

For some countries the only available information on the market concentration was the number of active business players. No precise data on the size of the largest market players were found. In those cases all players were considered identical and default of the ‘largest player’ means default of one of the identical market participants. Those countries have been marked with an asterisk (*).

A4.1 Robustness indicators in the case of very large defaults

These tables present indicators showing how an IGS based on the obtained funding needs (column G) would cope with default of the largest market player in each country.

Table A4.1 Life insurance, ratios of calculated funding needs to the expected loss and to potential losses of the largest player

Input data	Total EAD	Total premium	δ	% of largest company	Total premium excluding the largest company	EAD of the largest company	Funding needs under δ , PD=0.1%, α =90%	Expected loss =EAD*LGD*PD	Ratio= funding needs (δ , PD=0.1%, α =90%)/expected loss	Loss for largest failure under LGD=15%	Max LGD in order to cover largest failure	Percentage of largest loss covered with funding needs (δ , PD=0.1%, α =90%)	Funding needs under $\delta=0$, PD=0.1%, α =90%	Ratio= funding needs ($\delta=0$, PD=0.1%, α =90%)/ expected loss	Percentage of largest loss covered by funding needs ($\delta=0$, PD=0.1%, α =90%)
	A	B	C	D	E	F	G	H=A*15%*0.1%	I=G/H	J=F*15%	K=G/F	L=G/J	M	N=M/H	O=M/J
AT	58 188	7 141	0.12	24.27%	5 408	14 120	18.85	8.73	2.16	2 118	0.13%	0.89%	21.34	2.44	1.01%
BE	168 163	22 179	0.14	21.77%	17 351	36 610	53.32	25.22	2.11	5 491	0.15%	0.97%	61.67	2.44	1.12%
BG	203	120	0.12	24.45%	91	50	0.07	0.03	2.16	7	0.13%	0.88%	0.07	2.44	1.00%
CY	2 717	358	0.18	26.37%	263	717	0.79	0.41	1.93	107	0.11%	0.73%	1.00	2.44	0.93%
CZ	6 544	2 034	0.15	31.79%	1 387	2 080	2.04	0.98	2.08	312	0.10%	0.65%	2.40	2.44	0.77%

DE	765 180	75 170	0.05	9.29%	68 187	71 085	271.23	114.78	2.36	10 663	0.38%	2.54%	280.6 2	2.44	2.63%
DK	118 090	13 190	0.07	15.29%	11 174	18 051	41.28	17.71	2.33	2 708	0.23%	1.52%	43.31	2.44	1.60%
EE	509	118	0.33	48.41%	61	247	0.09	0.08	1.24	37	0.04%	0.26%	0.19	2.44	0.51%
ES	164 938	23 455	0.05	9.78%	21 162	16 125	58.40	24.74	2.36	2 419	0.36%	2.41%	60.49	2.44	2.50%
FI	37 099	2 784	0.21	30.65%	1 931	11 372	9.96	5.56	1.79	1 706	0.09%	0.58%	13.61	2.44	0.80%
FR	1 189 627	136 528	0.08	16.58%	113 893	197 230	407.08	178.44	2.28	29 584	0.21%	1.38%	436.2 7	2.44	1.47%
GB	2 034 005	305 184	0.06	9.13%	277 312	185 763	712.24	305.10	2.33	27 864	0.38%	2.56%	745.9 3	2.44	2.68%
GR	7 630	2 504	0.10	18.16%	2 049	1 385	2.56	1.14	2.23	208	0.18%	1.23%	2.80	2.44	1.35%
HU*	5 282	2 017	0.05	4.55%	1 925	240	1.88	0.79	2.38	36	0.78%	5.23%	1.94	2.44	5.38%
IE	147 444	37 563	0.08	18.54%	30 600	27 331	50.55	22.12	2.29	4 100	0.18%	1.23%	54.07	2.44	1.32%
IS	147	34	0.35	44.61%	19	66	0.03	0.02	1.14	10	0.04%	0.25%	0.05	2.44	0.55%
IT	389 126	61 438	0.11	25.97%	45 483	101 050	128.59	58.37	2.20	15 158	0.13%	0.85%	142.7 0	2.44	0.94%
LT	525	204	0.12	24.03%	155	126	0.17	0.08	2.16	19	0.13%	0.90%	0.19	2.44	1.02%
LU*	76 571	10 093	0.02	1.75%	9 916	1 343	27.84	11.49	2.42	202	2.07%	13.82%	28.08	2.44	13.94%
LV	83	53	0.28	40.69%	31	34	0.02	0.01	1.46	5	0.05%	0.36%	0.03	2.44	0.60%
MT	1 293	214	0.20	20.00%	171	259	0.36	0.19	1.86	39	0.14%	0.93%	0.47	2.44	1.22%
NL	266 317	26 437	0.11	22.23%	20 560	59 205	87.45	39.95	2.19	8 881	0.15%	0.98%	97.67	2.44	1.10%
NO	79 468	9 838	0.23	33.12%	6 580	26 318	20.28	11.92	1.70	3 948	0.08%	0.51%	29.14	2.44	0.74%
PL	17 059	6 743	0.18	38.35%	4 157	6 542	4.96	2.56	1.94	981	0.08%	0.51%	6.26	2.44	0.64%
PT	40 297	9 205	0.14	21.56%	7 220	8 689	12.64	6.04	2.09	1 303	0.15%	0.97%	14.78	2.44	1.13%
RO*	781	415	0.05	4.76%	396	37	0.28	0.12	2.37	6	0.75%	4.98%	0.29	2.44	5.13%
SE	191 510	12 985	0.10	16.48%	10 844	31 569	63.97	28.73	2.23	4 735	0.20%	1.35%	70.23	2.44	1.48%
SI	2 041	443	0.21	37.72%	276	770	0.55	0.31	1.79	115	0.07%	0.47%	0.75	2.44	0.65%
SK	2 299	848	0.14	26.18%	626	602	0.73	0.34	2.11	90	0.12%	0.80%	0.84	2.44	0.93%

Table. A4.2: Non-life insurance, ratios of calculated funding needs to the expected loss and to potential losses of the largest player

Input data	Total EAD	Total premium	δ	% of largest company	Total premium excluding the largest company	EAD of the largest company	Funding needs under $\delta, PD=0.1\%, \alpha=90\%$	Expected loss =EAD*LGD*PD	Ratio= funding needs ($\delta, PD=0.1\%, \alpha=90\%$)/expected loss	Loss for largest failure under LGD=15%	Max LGD in order to cover largest failure	Percentage of largest loss covered with funding needs ($\delta, PD=0.1\%, \alpha=90\%$)	Funding needs under $\delta=0, PD=0.1\%, \alpha=90\%$	Ratio= funding needs ($\delta=0, PD=0.1\%, \alpha=90\%$)/ expected loss	Percentage of largest loss covered by funding needs ($\delta=0, PD=0.1\%, \alpha=90\%$)
	A	B	C	D	E	F	G	$H=A*15\%*0.1\%$	$I=G/H$	$J=F*15\%$	$K=G/F$	$L=G/J$	M	$N=M/H$	$O=M/J$
AT	10 984	5 851	0.14	23.05%	4 502	2 532	3.45	1.65	2.09	380	0.14%	0.91%	4.03	2.44	1.06%
BE	19 236	5 707	0.09	16.60%	4 759	3 194	6.52	2.89	2.26	479	0.20%	1.36%	7.05	2.44	1.47%
BG*	212	234	0.05	4.76%	223	10	0.08	0.03	2.37	2	0.75%	4.98%	0.08	2.44	5.13%
CY	344	173	0.07	15.90%	146	55	0.12	0.05	2.32	8	0.22%	1.46%	0.13	2.44	1.54%
CZ*	1 877	1 304	0.02	2.17%	1 276	41	0.68	0.28	2.42	6	1.67%	11.12%	0.69	2.44	11.25%
DE	248 637	69 579	0.05	8.94%	63 356	22 238	88.22	37.30	2.37	3 336	0.40%	2.64%	91.18	2.44	2.73%
DK*	10 074	5 114	0.01	0.85%	5 070	86	3.68	1.51	2.44	13	4.27%	28.50%	3.69	2.44	28.60%
EE	101	75	0.25	36.11%	48	37	0.02	0.02	1.63	5	0.07%	0.45%	0.04	2.44	0.68%
ES	50 081	19 198	0.06	18.26%	15 692	9 147	17.59	7.51	2.34	1 372	0.19%	1.28%	18.37	2.44	1.34%

FI	7 888	1 920	0.20	27.57%	1 391	2 175	2.20	1.18	1.86	326	0.10%	0.67%	2.89	2.44	0.89%
FR	168 067	49 297	0.07	13.90%	42 443	23 370	58.23	25.21	2.31	3 505	0.25%	1.66%	61.64	2.44	1.76%
GB	103 562	46 243	0.07	16.31%	38 701	16 891	36.10	15.53	2.32	2 534	0.21%	1.42%	37.98	2.44	1.50%
GR	1 693	1 032	0.05	14.62%	882	247	0.60	0.25	2.37	37	0.24%	1.62%	0.62	2.44	1.67%
HU*	340	712	0.03	2.63%	693	9	0.12	0.05	2.41	1	1.37%	9.16%	0.12	2.44	9.29%
IE*	13 425	3 865	0.01	0.60%	3 842	80	4.91	2.01	2.44	12	6.11%	40.73%	4.92	2.44	40.83%
IS*	650	189	0.17	16.67%	158	108	0.19	0.10	2.00	16	0.18%	1.20%	0.24	2.44	1.47%
IT	32 622	17 014	0.13	22.21%	13 236	7 244	10.43	4.89	2.13	1 087	0.14%	0.96%	11.96	2.44	1.10%
LT*	157	122	0.06	5.56%	115	9	0.06	0.02	2.36	1	0.64%	4.24%	0.06	2.44	4.40%
LU*	3 558	1 014	0.03	2.50%	989	89	1.29	0.53	2.41	13	1.45%	9.65%	1.30	2.44	9.78%
LV*	191	171	0.08	7.69%	158	15	0.07	0.03	2.30	2	0.45%	2.99%	0.07	2.44	3.18%
MT	589	240	0.13	16.14%	201	95	0.19	0.09	2.12	14	0.20%	1.31%	0.22	2.44	1.51%
NL	82 629	43 725	0.09	20.17%	34 906	16 665	28.06	12.39	2.26	2 500	0.17%	1.12%	30.30	2.44	1.21%
NO	7 803	2 341	0.21	38.00%	1 451	2 965	2.13	1.17	1.82	445	0.07%	0.48%	2.86	2.44	0.64%
PL	3 490	1 890	0.24	46.60%	1 009	1 626	0.87	0.52	1.65	244	0.05%	0.36%	1.28	2.44	0.52%
PT	4 992	2 356	0.14	32.62%	1 587	1 628	1.56	0.75	2.09	244	0.10%	0.64%	1.83	2.44	0.75%
RO*	646	629	0.03	3.03%	610	20	0.23	0.10	2.40	3	1.19%	7.94%	0.24	2.44	8.07%
SE	53 695	7 331	0.16	25.06%	5 494	13 454	16.26	8.05	2.02	2 018	0.12%	0.81%	19.69	2.44	0.98%

SI	1 455	803	0.2 4	38.49%	494	560	0.37	0.22	1.70	84	0.07%	0.44%	0.53	2.44	0.64%
SK	496	313	0.2 3	39.29%	190	195	0.13	0.07	1.70	29	0.06%	0.43%	0.18	2.44	0.62%

A4.2 Comparison of contributions necessary to cover large defaults in ex-ante and ex-post systems

These tables show the magnitude of the ex-ante or ex-post contributions that would be needed in order to obtain sufficient funds to cover the default of the largest market player in each country.

Table A4.3 Comparison of contributions in ex-ante and ex-post systems for the life insurance business line

Input data	Total premium	EAD	Market share of largest company	Funding needs (δ , PD=0.1% and $\alpha=90\%$)	Largest single loss	Contribution in an ex-ante system after failure of the largest company	Contribution in an ex-post system after failure of the largest company	Ratio between ex-post and ex-ante in case of the largest failure
	A	B	C	D	$E=B*C*15\%$	$F=D/A$	$G=\min(D, E)/[A*(1-B)]$	$H=G/F$
AT	7 141.00	58 187.84	24.27%	18.85	2 117.93	0.26%	0.35%	132.04%
BE	22 179.00	168 162.62	21.77%	53.32	5 491.50	0.24%	0.31%	127.83%
BG	120.42	202.87	24.45%	0.07	7.44	0.05%	0.07%	132.35%
CY	357.50	2 716.86	26.37%	0.79	107.48	0.22%	0.30%	135.82%
CZ	2 034.00	6 544.28	31.79%	2.04	312.04	0.10%	0.15%	146.60%
DE	75 170.13	765 180.21	9.29%	271.23	10 662.79	0.36%	0.40%	110.24%
DK	13 189.98	118 090.18	15.29%	41.28	2 707.70	0.31%	0.37%	118.04%
EE	118.00	509.34	48.41%	0.09	36.98	0.08%	0.16%	193.82%
ES	23 455.00	164 938.20	9.78%	58.40	2 418.82	0.25%	0.28%	110.84%
FI	2 784.00	37 099.21	30.65%	9.96	1 705.75	0.36%	0.52%	144.20%
FR	136 528.00	1 189 627.49	16.58%	407.08	29 584.48	0.30%	0.36%	119.87%
GB	305 184.22	2 034 004.57	9.13%	712.24	27 864.42	0.23%	0.26%	110.05%
GR	2 504.06	7 629.83	18.16%	2.56	207.78	0.10%	0.12%	122.18%
HU*	2 016.65	5 281.69	4.55%	1.88	36.01	0.09%	0.10%	104.76%
IE	37 563.00	147 444.31	18.54%	50.55	4 099.66	0.13%	0.17%	122.75%
IS	34.23	147.34	44.61%	0.03	9.86	0.07%	0.13%	180.54%
IT	61 438.00	389 126.42	25.97%	128.59	15 157.57	0.21%	0.28%	135.08%
LT	203.99	525.43	24.03%	0.17	18.94	0.08%	0.11%	131.63%
LU*	10 092.82	76 570.61	1.75%	27.84	201.50	0.28%	0.28%	101.79%
LV	53.00	82.78	40.69%	0.02	5.05	0.03%	0.06%	168.61%
MT	214.00	1 292.66	20.00%	0.36	38.78	0.17%	0.21%	125.00%
NL	26 437.00	266 316.57	22.23%	87.45	8 880.76	0.33%	0.43%	128.59%
NO	9 838.00	79 467.87	33.12%	20.28	3 947.70	0.21%	0.31%	149.52%
PL	6 743.20	17 058.98	38.35%	4.96	981.34	0.07%	0.12%	162.21%
PT	9 205.00	40 297.22	21.56%	12.64	1 303.30	0.14%	0.18%	127.49%
RO*	415.45	781.27	4.76%	0.28	5.58	0.07%	0.07%	105.00%
SE	12 985.00	191 510.40	16.48%	63.97	4 735.41	0.49%	0.59%	119.74%
SI	443.28	2 041.27	37.72%	0.55	115.49	0.12%	0.20%	160.56%

SK	847.59	2 299.01	26.18%	0.73	90.30	0.09%	0.12%	135.47%
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Table.A4.4 Comparison of contributions in ex-ante and -ex-post systems for the non-life insurance business line

Input data	Total premium	EAD	Market share of largest company	Funding needs (δ, PD=0.1% and $\alpha=90\%$)	Largest single loss	Contribution in an ex-ante system after failure of the largest company	Contribution in an ex-post system after failure of the largest company	Ratio between ex-post and ex-ante in case of the largest failure
	A	B	C	D	E=B*C*15%	F=D/A	G=min(D E)/[A*(1-B)]	H=G/F
AT	5 850.86	10 984.27	23.05%	3.45	379.80	0.06%	0.08%	129.96%
BE	5 706.63	19 236.29	16.60%	6.52	479.11	0.11%	0.14%	119.91%
BG*	233.70	211.73	4.76%	0.08	1.51	0.03%	0.03%	105.00%
CY	173.18	343.98	15.90%	0.12	8.21	0.07%	0.08%	118.91%
CZ*	1 304.03	1 876.67	2.17%	0.68	6.12	0.05%	0.05%	102.22%
DE	69 578.72	248 636.54	8.94%	88.22	3 335.71	0.13%	0.14%	109.82%
DK*	5 113.56	10 074.03	0.85%	3.68	12.92	0.07%	0.07%	100.86%
EE	75.15	101.31	36.11%	0.02	5.49	0.03%	0.05%	156.51%
ES	19 198.32	50 080.78	18.26%	17.59	1 372.05	0.09%	0.11%	122.35%
FI	1 920.20	7 888.49	27.57%	2.20	326.19	0.11%	0.16%	138.06%
FR	49 297.45	168 067.18	13.90%	58.23	3 505.44	0.12%	0.14%	116.15%
GB	46 242.77	103 561.51	16.31%	36.10	2 533.59	0.08%	0.09%	119.49%
GR	1 032.46	1 692.82	14.62%	0.60	37.12	0.06%	0.07%	117.12%
HU*	711.62	340.02	2.63%	0.12	1.34	0.02%	0.02%	102.70%
IE*	3 865.05	13 424.93	0.60%	4.91	12.06	0.13%	0.13%	100.60%
IS*	189.05	649.57	16.67%	0.19	16.24	0.10%	0.12%	120.00%
IT	17 014.37	32 622.31	22.21%	10.43	1 086.66	0.06%	0.08%	128.55%
LT*	121.78	157.33	5.56%	0.06	1.31	0.05%	0.05%	105.88%
LU*	1 014.04	3 557.75	2.50%	1.29	13.34	0.13%	0.13%	102.56%
LV*	171.45	191.35	7.69%	0.07	2.21	0.04%	0.04%	108.33%
MT	239.97	588.97	16.14%	0.19	14.26	0.08%	0.09%	119.25%
NL	43 724.84	82 628.50	20.17%	28.06	2 499.79	0.06%	0.08%	125.26%
NO	2 340.88	7 803.20	38.00%	2.13	444.78	0.09%	0.15%	161.29%
PL	1 890.35	3 489.57	46.60%	0.87	243.93	0.05%	0.09%	187.27%
PT	2 355.95	4 991.67	32.62%	1.56	244.26	0.07%	0.10%	148.42%
RO*	629.05	646.22	3.03%	0.23	2.94	0.04%	0.04%	103.13%
SE	7 330.79	53 694.52	25.06%	16.26	2 018.13	0.22%	0.30%	133.43%
SI	803.13	1 455.39	38.49%	0.37	84.02	0.05%	0.07%	162.56%
SK	313.04	495.97	39.29%	0.13	29.23	0.04%	0.07%	164.71%

A5 Tables relating to all policy options tested

See additional document.

A6 Comparison of policy options by country

See additional document.

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