SOLVENCY II

# REPORT ON LONG-TERM GUARANTEES MEASURES AND MEASURES ON EQUITY RISK 2020

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# Executive summary

The Solvency II Directive requires a review of the long-term guarantees measures (LTG) and the measures on equity risk until 1 January 2021. As part of this review, EIOPA reports annually on the impact of the application of the LTG measures and the measures on equity risk to the European Parliament, the Council and the Commission. This report on the LTG measures and the measures on equity risk is the fifth and last annual report.

The LTG measures are the extrapolation of risk-free interest rates, the matching adjustment, the volatility adjustment, the extension of the recovery period in case of non-compliance with the Solvency Capital Requirement, the transitional measure on the risk-free interest rates and the transitional measure on technical provisions. The equity risk measures are the application of a symmetric adjustment mechanism to the equity risk charge and the duration-based equity risk sub-module.

The use of the matching adjustment, the volatility adjustment, the two transitional measures and the duration-based equity risk sub-module are not mandatory for undertakings. In the European Economic Area (EEA), 651 insurance and reinsurance undertakings in 21 countries were using at least one of these measures on 31 December 2019.

The aggregated amount of technical provisions for the undertakings using the matching adjustment, the volatility adjustment, the transitional measure on the risk-free interest rates, the transitional measure on technical provisions and the duration-based equity risk sub-module amounts to 80% of the technical provisions in the EEA insurance and reinsurance market. 631 undertakings representing 79% of the overall amount of technical provisions at EEA level are using the volatility adjustment. The transitional on technical provisions is the second most used measure, applied by 136 undertakings representing 19% of the overall amount of technical provisions at EEA level. The matching adjustment is used by 14 undertakings representing 2% of the overall amount of technical provisions in the EEA. The transitional on the risk-free interest rates is used by 8 undertakings with a negligible market share in technical provisions. Finally the duration-based equity risk sub-module is only used by one undertaking.

The impact of the measures on the financial position is reported to national supervisory authorities through the regular annual reporting. For the undertakings using these measures, removing the measures would result, on average, in a reduction to the Solvency Capital Requirement ratio of 43 percentage points; the weighted average ratio with the measures is 247% while the same ratio without the measures would be 204%. Insurance and reinsurance undertakings comply with the Solvency Capital Requirement if their Solvency Capital Requirement ratio is at least 100%. Removing these measures would decrease the amount of eligible own funds to cover the Solvency Capital Requirement by 76 billion euro and increase the Solvency Capital Requirement by 40 billion euro.

Where insurance or reinsurance undertakings depend on the transitional measures to comply with the Solvency Capital Requirement, national supervisory authorities are generally confident that undertakings will be able to reduce the dependency on transitional measures, to the point of no dependency by 1 January 2032. National

supervisory authorities reported that the measures planned by undertakings in their phasing-in plans have already provided an effective contribution to strengthening undertakings' solvency position under the low-rate environment. However, they also noted that it is still very early in the transitional period. The total number of undertakings not complying with the Solvency Capital Requirement without the transitional measures at EEA level increased by 3 from 13 undertakings at the beginning of 2019, to 16 undertakings at the end of the year. The missing amount of eligible own funds to comply with the Solvency Capital Requirement without the transitional measures increased by 1.34 billion euro, from 0.61 billion euro at the beginning of 2019 to 1.95 billion euro at the end of the year.

At the end of 2019, the symmetric adjustment to the equity capital charge, which can vary from -10 to +10 percentage points, was at -0.08 percentage points. At EEA level the estimated average impact of removing the symmetric adjustment on the SCR is negligible.

The feedback from national supervisory authorities indicates that there is almost no specific case where undue capital relief was observed for an undertaking due to the application of the LTG measures or measures on equity risk, only one case of undue capital relief in relation to the VA and SA in 2019 and beginning of 2020.

Most of the national supervisory authorities have identified no relevant and significant trends in the investment behaviour of the insurance undertakings they supervise. Most of the trends that were identified relate to search-for-yield behaviour in the ongoing context of low interest rates. None of the observations could be clearly linked to the use of LTG-measures on the basis of factual evidence. A search-for-yield was observed by five national supervisory authorities, with explicit mention of a switch to alternative investments such as infrastructure, mortgages and loans and other property investments.

Consistent with the trends observed in the last years, availability of long-term guarantee products is mainly stable or decreasing across EEA. In the 2019 report, approximately half of the jurisdictions observed a reduction in the availability of traditional life insurance products with long-term guarantees and an increase in the availability of unit-linked business. All jurisdictions that observed this trend last year, have responded that the trend has continued this year. Overall, national supervisory authorities have observed a decrease in the size and duration of guarantees.

With regard to the impact of the LTG measures and the measures on equity risk on competition and level playing field or on financial stability, the majority of national supervisory authorities did not report any observed impact.

# I. Introduction

## I.1 Review of the LTG measures and measures on equity risk

The long-term guarantees (LTG) measures were introduced in the Solvency II Directive[1] through the Omnibus II Directive[2] in order to ensure an appropriate treatment of insurance products that include long-term guarantees. The measures on equity risk should ensure an appropriate measure of equity risk in setting the capital requirement for insurance and reinsurance undertakings in relation to the risks arising from changes in the level of equity prices.

The Solvency II Directive requires a review of the LTG measures and the measures on equity risk by 1 January 2021. The review consists of the following elements:

EIOPA annually reports on the impact of the application of the LTG measures and the measures on equity risk to the European Parliament, the Council and the Commission.

EIOPA provides an opinion on the assessment of the application of the LTG measures and the measures on equity risk to the Commission.

Based on the opinion submitted by EIOPA the Commission submits a report on the impact of the LTG measures and the measures on equity risk to the European Parliament and to the Council. The report will be accompanied, if necessary, by legislative proposals.

The 2020 EIOPA report on the LTG measures and the measures on equity risk is the fifth annual report[3]. The 2020 report is structured in three main sections. The first section provides introductory information, among others on the legal background of the review of the LTG measures and measures on equity risk and on the data used for this report, and concludes with a short overview of the European insurance market. The second section captures the overall impact of the LTG measures and measures on equity risk on the financial position of the undertakings, the impact on policyholder protection, the impact on investments, the impact on consumer protection and availability of products, the impact on competition and level playing field in the EU insurance market and the impact on financial stability.

The third section of the report sets out in more detail the impact of each of the measures.

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[1] Directive 2009/138/EC of 25 November 2009 of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), OJ L 335, 17.12.2009, p.1.

[2] Directive 2014/51/EU of the European Parliament and of the Council of 16 April 2014 amending Directives 2003/71/EC and 2009/138/EC and Regulations (EC) No 1060/2009, (EU) No 1094/2010 and (EU) No 1095/2010 in respect of the powers of the European Supervisory Authority (European Insurance and Occupational Pensions Authority) and the European Supervisory Authority (European Securities and Markets Authority), OJ L153, 22.05.2014, p.1.

[3] The 2016, 2017,2018 and 2019 reports can be found on EIOPA's website at the following links:
https://eiopa.europa.eu/Publications/Responses/EIOPA-BoS-16-279_LTG_REPORT_2016.pdf
https://eiopa.europa.eu/Publications/Reports/2017-12-20%20LTG%20Report%202017.pdf
https://eiopa.europa.eu/Publications/Reports/2018-12-18%20_LTG%20AnnualReport2018.pdf
https://www.eiopa.europa.eu/sites/default/files/publications/reports/eiopa-ltg-report2019.pdf

EIOPA plans to submit the opinion on the assessment of the application of the LTG measures and the measures on equity risk to the Commission by the end of 2020, based on the annual reports submitted by then.

In February 2019, the European Commission issued a request to EIOPA for technical advice on the review of the Solvency II Directive[4] on several topics, including LTG measures and measures on equity risk. EIOPA will provide its technical advice in the form of an opinion, in line with the requirement of Article 77f(2) of the Solvency II Directive to provide an opinion on the assessment of the application of the LTG measures and measures on equity risk. On 15 October 2019, EIOPA has published a consultation paper on the opinion on the 2020 review of Solvency II[5], which includes a draft assessment on the application of the LTG measures and measures on equity risk based on the LTG reports 2016-2018. EIOPA will provide its final assessment, including eventual proposed changes regarding the measures, by 31 December 2020.

## I.2 Legal background

Article 77(f)(1) of the Solvency II Directive requires EIOPA on an annual basis and until 1 January 2021 to report to the European Parliament, the Council and the Commission about the impact of the application of Articles 77a to 77e and 106, Article 138(4) and Articles 304, 308c and 308d, including the delegated or implementing acts adopted pursuant thereto.

The table below summarises the LTG measures and the measures on equity risk subject to the review and the relevant articles of the Solvency II Directive.

Table 1.1

| Articles | Name of the measure | Abbreviation in this report |
| --- | --- | --- |
| 77a | Extrapolation of the risk-free interest rates | - |
| 77b, 77c | Matching adjustment | MA |
| 77d | Volatility adjustment | VA |
| 106 | Symmetric adjustment mechanism to the equity risk charge | SA |
| 138(4) | Extension of the recovery period | - |
| 304 | Duration-based equity risk sub-module | DBER |
| 308c | Transitional on the risk-free rate | TRFR |
| 308d | Transitional on technical provisions | TTP |

[4] Commission's call for advice can be found in the following link: https://eiopa.europa.eu/Publications/Requests%20for%20advice/RH_SRAnnex%20-%20CfA%202020%20SII%20review.pdf

[5] See Consultation paper in the folloing link: https://eiopa.europa.eu/Pages/Consultation-Paper-on-the-Opinion-on-the-2020-review-of-Solvency-II.aspx

The review also covers Article 77e of the Solvency Directive on technical information on the risk-free interest rates produced by EIOPA.

Article 77(f)(1) also requires national supervisory authorities (NSAs) to provide the following information to EIOPA on an annual basis:

- the availability of long-term guarantees in insurance products in their national markets and the behaviour of insurance and reinsurance undertakings as long-term investors;
- the number of insurance and reinsurance undertakings applying the matching adjustment, the volatility adjustment, the extension of the recovery period in accordance with Article 138(4), the duration-based equity risk sub-module and the transitional measures set out in Articles 308c and 308d;
- the impact on the insurance and reinsurance undertakings' financial position of the matching adjustment, the volatility adjustment, the symmetric adjustment mechanism to the equity capital charge, the duration-based equity risk sub-module and the transitional measures set out in Articles 308c and 308d, at national level and in anonymised way for each undertaking;
- the effect of the matching adjustment, the volatility adjustment, the symmetric adjustment mechanism to the equity capital charge and the duration-based equity risk sub-module on the investment behaviour of insurance and reinsurance undertakings and whether they provide undue capital relief;
- the effect of any extension of the recovery period in accordance with Article 138(4) on the efforts of insurance and reinsurance undertakings to re-establish the level of eligible own funds covering the Solvency Capital Requirement or to reduce the risk profile in order to ensure compliance with the Solvency Capital Requirement;
- where insurance and reinsurance undertakings apply the transitional measures set out in Articles 308c and 308d, whether they comply with the phasing-in plans referred to in Article 308e of the Solvency II Directive and the prospects for a reduced dependency on these transitional measures, including measures that have been taken or are expected to be taken by the undertakings and supervisory authorities, taking into account the regulatory environment of the Member State concerned.

## I.3 Data

The data used for this report are taken from the quantitative reporting templates (QRT) submitted by insurance and reinsurance undertakings to their NSAs with reference date 31 December 2019[6].

[6] Few undertakings with a reporting year different than the natural year reported data for a point in time earlier than 31 December 2019. Implausible figures affecting individual data submitted by 2 undertakings were disregarded in the analysis. This is not expected to have a material impact on the results presented in the report. Data from the QRT were

It should be noted that, consistently with the withdrawal of the United Kingdom (UK) from the European Union (EU) on 31 January 2020, the EEA data shown in the report do not take into account data from UK undertakings (i.e. EEA equals EU27 plus IS, NO and LI). UK data with respect to the use and impact of the measures at the end of 2019 are presented separately in Annex 4 of this report.

EIOPA also carried out a questionnaire to ascertain the experience of NSAs with regard to the impact of the LTG measures and the measures on equity risk during 2019 as well as during the first half of 2020.

## I.4 Introduction to Solvency II quantitative requirements

The main objective of Solvency II is to protect the insurance policyholders and beneficiaries. An essential aspect of policyholder protection is the ability of insurance and reinsurance undertakings to fulfil their insurance and reinsurance contracts, even under adverse circumstances, for example in a financial crisis or when a natural catastrophe occurs. Solvency II includes quantitative requirements on insurance and reinsurance undertakings to ensure that their financial position allows them to pay the expected insurance benefits and also to bear unexpected losses that they might incur under adverse circumstances.

The quantitative requirements include in particular:

- market-consistent valuation of assets and liabilities,
- economic determination of own funds,
- risk-based capital requirements.

**Assets and liabilities**

Solvency II introduced a valuation of assets and liabilities specifically for supervisory purposes. Assets and liabilities are valued at the amount for which they could be exchanged between knowledgeable willing parties in an arm's length transaction.

The assets of an insurance or reinsurance undertaking consist mainly of the investments that insurers make with the insurance premiums they receive. Typically these investments comprise bonds, equities and real estate, held directly or through investment funds.

The liabilities of an insurance or reinsurance undertaking consist mainly of technical provisions set up for the insurance and reinsurance obligations of the undertaking. Insurance and reinsurance obligations can be of long duration.

The long-term guarantee measures extrapolation, MA, VA, TRFR and TTP relate to the calculation of technical provisions, the first four of them specifically to the risk-free interest rates.

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extracted between 28 July and 6 October 2020. Figures in the report may differ from what is published as part of EIOPA statistics due to differences in sample selection, size and extraction date.

**Own funds and capital requirements**

Insurance and reinsurance undertakings have to hold own funds that cover their capital requirements. The own funds are based on the difference between assets and liabilities.

There are two capital requirements in Solvency II, the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR).

The SCR is a risk-based capital requirement. The SCR corresponds to the amount of own funds needed to withstand the worst annual loss expected to occur over the next 200 years. If an insurance or reinsurance undertaking is not complying with the SCR, it has to take measures to meet the SCR again within six months, for example by increasing its capital or by reducing its risk.

The SCR can be calculated with a standard formula that is specified in the law or with an internal model that was approved by the NSA. It is also possible to calculate a part of the SCR with an internal model (partial internal model) and the remaining part with the standard formula.

The SCR standard formula consists of modules for the different risks that an insurance and reinsurance undertaking is exposed to (in particular market risks, underwriting risks, counterparty default risks, operational risks). The risk that relates to the change of equity prices is captured in the equity risk sub-module of the standard formula. The measures on equity risk relate to the calculation of the equity risk sub-module.

The MCR is usually lower than the SCR. It corresponds to the minimum level of security that is required under Solvency II. An insurance or reinsurance undertaking not complying with the MCR would expose policyholders and beneficiaries to an unacceptable level of risk. If an insurer does not cover the MCR with own funds, its authorisation will be withdrawn unless the MCR is covered again within 3 months.

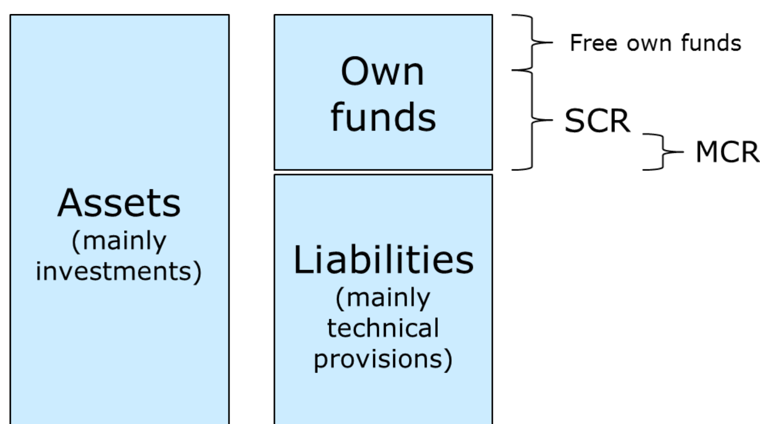
Other than the SCR, the MCR is calculated in a simple manner. The MCR is usually between 25% and 45% of the SCR.

The existence of two capital requirements establishes a “ladder of supervisory intervention”. It allows NSAs and undertakings to take early measures to ensure that the capital requirements are met.

The SCR ratio is the ratio of eligible own funds and SCR. If the SCR ratio is 100% or higher, then the SCR is complied with, otherwise not. The MCR ratio is the ratio of eligible own funds and MCR. If the MCR ratio is 100% or higher, then the MCR is complied with, otherwise not.

The following figure provides a stylised description of the quantitative requirements of Solvency II.

Figure 1.1




## I.5 Overview of the European insurance market

In the EEA insurance market 2458 insurance and reinsurance undertakings are under supervision according to Solvency II. The table below shows the number of undertakings split by type of undertakings and by the method of SCR calculation (standard formula, partial internal model or full internal model).

The total number of undertakings decreased by 339 compared with data at 31 December 2018, which included UK undertakings. Excluding UK, the total number of undertakings decreased by 51 compared to last year.

Table 1.2

| Number of undertakings | | | | |
|---|---|---|---|---|
| | Standard formula | Partial internal model | Full internal model | Total |
| Life undertakings | 353 | 29 | 5 | 387 |
| Non-life undertakings | 414 | 16 | 14 | 444 |
| Undertakings pursuing both life and non-life activities | 1259 | 39 | 24 | 1322 |
| Reinsurance undertakings | 285 | 7 | 13 | 305 |
| Total | 2311 | 91 | 56 | 2458 |

In the EEA insurance market 282 groups are under supervision according to Solvency II. 253 groups use the standard formula, 26 groups use a partial internal model and 3 groups use a full internal model to calculate the SCR.

The following diagram provides an overview of the amount of technical provisions and gross written premiums of all insurance and reinsurance undertakings subject to Solvency II in the EEA. The amounts are provided separately for life insurance and for

non-life insurance obligations. Additional information with respect to the European insurance market is presented in Annex 1 of this report.

**Technical provisions and gross written premiums of EEA undertakings**

Figure 1.2

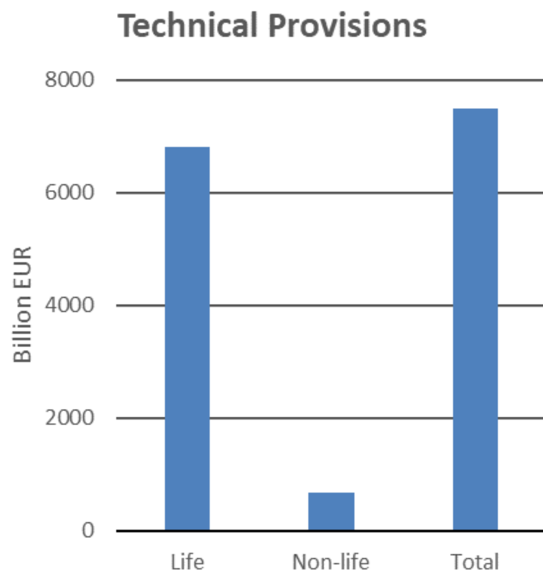



Figure 1.3

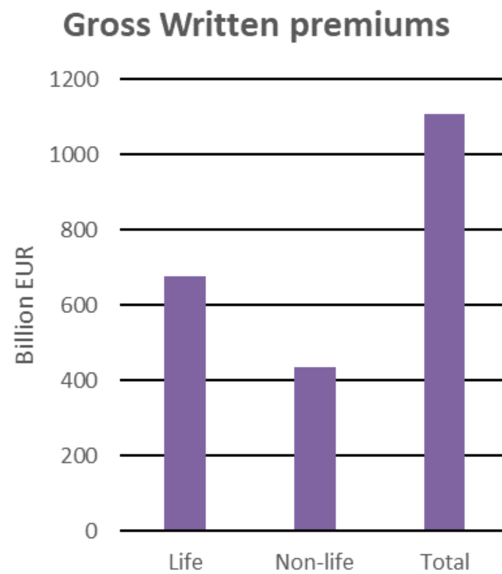



Table 1.3

| EEA undertakings | Life | Non-life | Total |
|---|---|---|---|
| Technical provisions (billion EUR) | 6809 | 677 | 7486 |
| Gross written premiums (billion EUR) | 676 | 434 | 1110 |

## II.1 Use of the measures

Some of the LTG measures and measures on equity risk are applied by insurance and reinsurance undertakings on an optional basis, while the use of other measures is mandatory.

The application of MA, VA, TRFR, TTP and DBER is optional for undertakings, subject to conditions laid down in the Solvency II Directive and Regulations.

All other measures are an integral part of the Solvency II framework and hence of mandatory application. In particular, the extrapolation of risk-free interest rates is applicable to all undertakings for the calculation of their technical provisions. The symmetric adjustment mechanism is applicable to all undertakings that use the standard formula to calculate the equity risk sub-module of the SCR, including all undertaking using a partial internal model not covering that sub-module.

Finally, the extension of the recovery period in exceptional adverse situations is only applicable to undertakings breaching the SCR after a declaration of such a situation by EIOPA. So far, EIOPA has not declared an exceptional adverse situation.

All information on the use of the measures set out in this section relates to the situation as known on 31 December 2019. The graphs and tables are predominantly based on QRT data. For a limited number of tables use has also been made of the information in the NSA questionnaires. This applies to the combination of measures and to the use of the symmetric adjustment on equity risk in case of (partial) internal models.

**Use of MA, VA, TRFR, TTP and DBER by solo undertakings**

In the EEA, 651 insurance and reinsurance undertakings in 21 countries are using at least one of the optional LTG measures MA, VA, TRFR, TTP or DBER. The aggregated amount of technical provisions for those undertakings is 80% of the technical provisions in the European market.

Out of the total 2458 undertakings, 1807 undertakings, nearly three out of four are not using any of the LTG measures MA, VA, TRFR, TTP or DBER. The use of the measures differs between types of undertaking, as illustrated below. The undertakings not using any measures represent 20% of the technical provisions in the European market. There are 9 countries where none of these measures are applied by any of the national undertakings (CY, EE, HR, IS, LT, LV, PL, RO and SI – please see section III for further detail).

The overall picture of the use of the measures is thus very similar to that of last year.

Figure 2.1

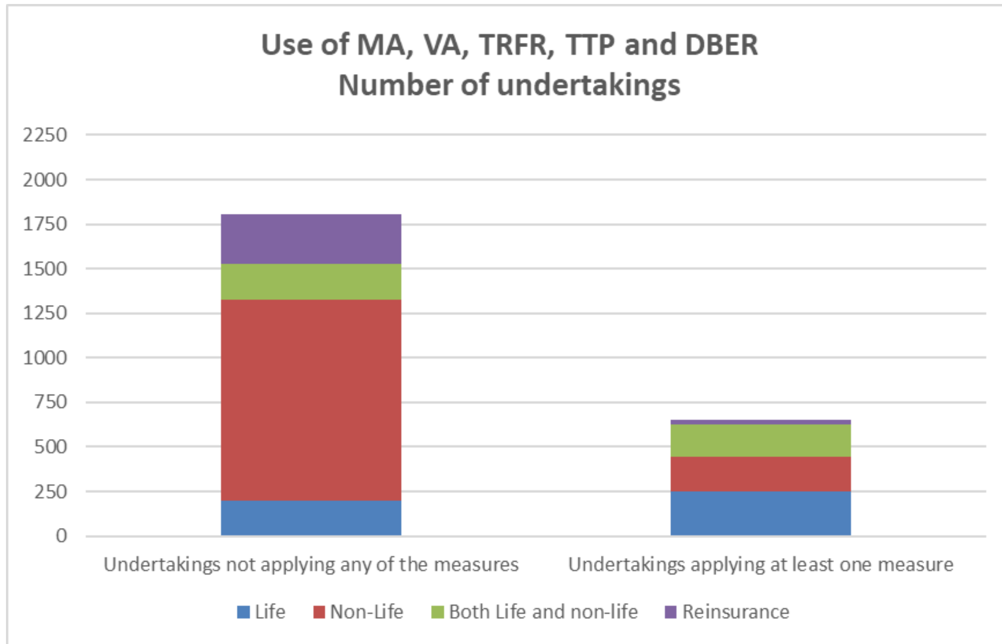



Table 2.1

| Number of undertakings | | | |
|---|---|---|---|
| | **Undertakings not applying any of the measures** | **Undertakings applying at least one measure** | **Total** |
| Life | 196 | 248 | 444 |
| Non-Life | 1127 | 195 | 1322 |
| Both Life and non-life | 203 | 184 | 387 |
| Reinsurance | 281 | 24 | 305 |
| **Total** | **1807** | **651** | **2458** |

Figure 2.2

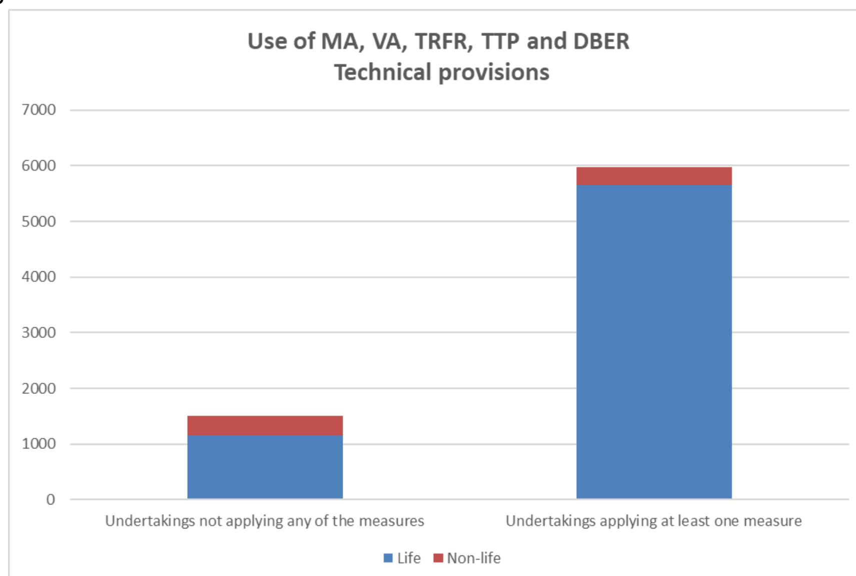


Table 2.2

| Technical provisions in EUR billions | | |
|---|---|---|
| | Undertakings not applying any of the measures | Undertakings applying at least one measure |
| Life | 1157 (17%) | 5652 (83%) |
| Non-life | 358 (53%) | 319 (47%) |
| **Total** | **1515 (20%)** | **5971 (80%)** |

631 undertakings located in 21 countries are using the VA. The TTP is used by 137 undertakings in 11 countries. The MA is used by 14 undertakings in Spain. The TRFR is used by 8 undertakings in 4 countries. The DBER sub-module is only used by one undertaking in France.

Undertakings may, and sometimes do, use more than one of the measures, as is also illustrated in this table: the total of users per measure and the number of undertakings not using any of the measures exceeds the total number of undertakings. The use of a combination of measures is addressed in more detail in a separate section below.

Table 2.3

| Number of undertakings using the measures | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type of undertaking | Total number of undertakings | VA | TTP | MA | TRFR | DBER | No measure |
| Life | 444 | 236 | 84 | 2 | 2 | 0 | 196 |
| Non-life | 1322 | 193 | 10 | 0 | 3 | 1 | 1127 |
| Both life and non-life | 387 | 178 | 42 | 12 | 2 | 0 | 203 |
| Reinsurance | 305 | 24 | 0 | 0 | 1 | 0 | 281 |
| **Total** | **2458** | **631** | **136** | **14** | **8** | **1** | **1807** |

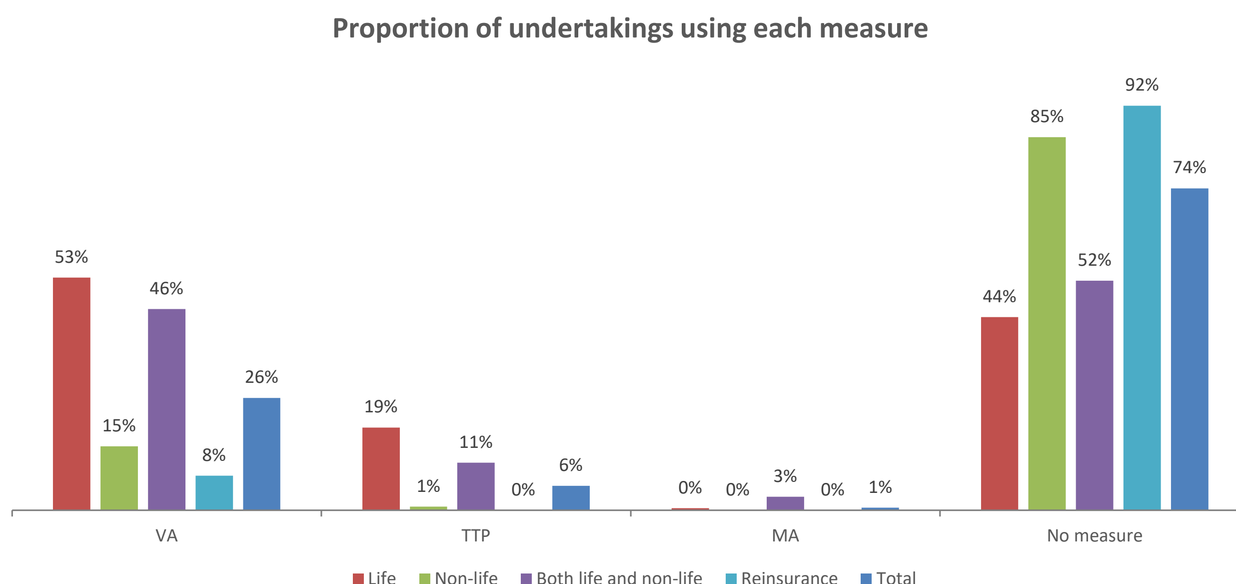
Without consideration of UK,the number of undertakings using the VA decreased by 6 compared with the data as at 31 December 2018. For the other measures, the number of undertakings using the TTP increased by 3, whilst the number of undertakings using the TRFR increased by 1. The number of undertakings applying the MA decreased by 1. Finally, the number of undertakings using the DBER was kept at 1.

The following table and diagram provide an overview, by type of undertaking, of the proportion of undertakings using each measure. The table and diagram show that the use of the measures is in particular relevant for life undertakings, as well as for undertakings pursuing both life and non-life activities. More half of all life insurance undertakings in the EEA (53%) are using the VA.

Table 2.4

| Proportion of undertakings using each measure | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type of undertaking | Total number of undertakings | VA | TTP | MA | TRFR | DBER | No measure |
| Life | 444 | 53% | 19% | 0% | 0% | 0% | 44% |
| Non-life | 1322 | 15% | 1% | 0% | 0% | 0% | 85% |
| Both life and non-life | 387 | 46% | 11% | 3% | 1% | 0% | 52% |
| Reinsurance | 305 | 8% | 0% | 0% | 0% | 0% | 92% |
| **Total** | **2458** | **26%** | **6%** | **1%** | **0%** | **0%** | **74%** |

Figure 2.3




The following diagram shows the market share of technical provisions of undertakings using one of the LTG measures. This further illustrates the widespread use of the VA in the European market (with undertakings using the VA holding 79% of all technical provisions in the EEA), followed by the TTP (market share of 19%) and the MA (market share of 2%). These technical provisions, to a very large extent, relate to life insurance obligations.

Figure 2.4

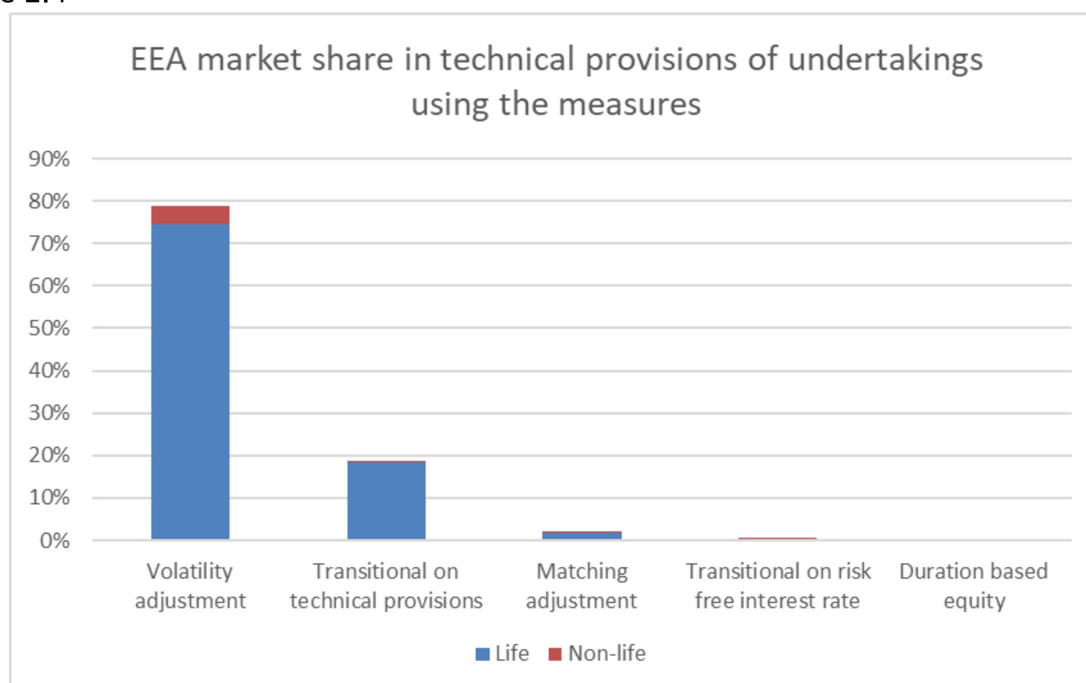



Table 2.5

| EEA market share in technical provisions using the measures | | | | | |
|---|---|---|---|---|---|
| | VA | TTP | MA | TRFR | DBER |
| Life | 75% | 18% | 2% | 0% | 0% |
| Non-life | 3% | 0% | 0% | 0% | 0% |
| **Total** | **79%** | **19%** | **2%** | **0%** | **0%** |

The overall picture of the use of the LTG measures is thus very similar to that of last year. The measures are most important for life undertakings and undertakings with both life and non-life obligations. More than three quarters of the technical provisions in the EEA is calculated using at least one of the measures. This relates nearly exclusively to life obligations. The VA is used most widely, in terms of number of countries, number of undertakings and the amount of technical provisions. The TTP is also quite widely used. The MA is used less, but it is still applied to a substantial part of the technical provisions. The use of the TRFR is limited. However, please note that a measure may nevertheless be of importance in a specific EEA country. Please see chapter III for more detailed information.

Table 2.6

| Proportion of use of at least one measure | | | |
|---|---|---|---|
| | Countries | Undertakings | Technical Provisions |
| VA | 71% | 26% | 79% |
| TTP | 32% | 6% | 19% |
| MA | 6% | 1% | 2% |
| TRFR | 6% | 0% | 0% |

Table 2.7

| Proportion of use of at least one measure (last year's report)[7] | | | |
|---|---|---|---|
| | Countries | Undertakings | Technical Provisions |
| VA | 71% | 24% | 67% |
| TTP | 32% | 6% | 25% |
| MA | 6% | 1% | 15% |
| TRFR | 10% | 0% | 0% |

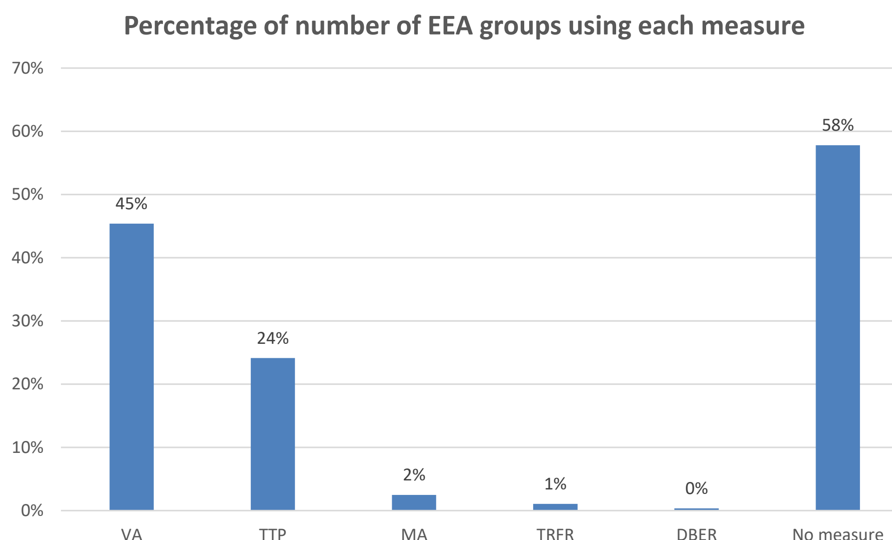
**Use of MA, VA, TRFR, TTP and DBER by insurance groups**[8]

Of the 282 EEA insurance groups subject to Solvency II, 128 groups use the VA, 68 groups use the TTP and 7 groups use the MA. The TRFR is used by 3, and the DBER by 1 insurance group. Note that, within a group, use can be made of more than one of the measures. This explains why the total of number of groups using the measures and the number of groups not using any of the measures, exceeds the total number of groups in the table and graph below.

Table 2.8

| Number of EEA Solvency II groups using the measures | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total Number of EEA groups | VA | TTP | MA | TRFR | DBER | No measure |
| EEA Groups | 282 | 128 | 68 | 7 | 3 | 1 | 163 |

Figure 2.5




[7] It should be noted that last year's report figures include UK, which explains main differences between numbers in table 2.6 and 2.7.

[8] An EEA group using a measure means that at least one solo insurance or reinsurance undertaking part of the group uses the measure.

### Use of a combination of the measures MA, VA, TRFR, TTP and DBER

According to the Solvency II Directive it is admissible for an insurance or reinsurance undertaking to apply several measures at the same time. Certain combinations of measures, however, are explicitly excluded:

- Undertakings that apply the TTP cannot apply the TRFR (see Articles 308c(4)(b) and 308d(5)(a) of the Solvency II Directive).
- Undertakings that apply the TRFR cannot apply the MA to the same insurance and reinsurance obligations (see Article 308c(3) of the Solvency II Directive).
- Undertakings that apply the MA to a portfolio of insurance or reinsurance obligations cannot apply the VA to those obligations (see Articles 77b(3) and 77d(5) of the Solvency II Directive).

The following table shows the simultaneous application of two measures with respect to the same liabilities, with the number and market share of undertakings at EEA level applying such combination:

Table 2.9

| Combination of measures | Number of undertakings | Market share (technical provisions) |
|---|---|---|
| Use of TTP and MA | 8 | 1% |
| Use of TTP and VA | 118 | 21% |
| Use of TRFR and VA | 5 | 0% |

Note that an undertaking may also use other combinations of measures, e.g. it may combine the use of the VA and the MA, but not to the same liabilities.

### Use of Symmetric adjustment to the equity risk charge

The symmetric adjustment mechanism applies to the undertakings that use the standard formula to calculate the equity risk sub-module of the SCR, including all undertakings using a partial internal model not covering that submodule.

Table 2.10

| Type of undertakings | Number of undertakings | Market share (technical provisions) |
|---|---|---|
| Standard formula | 2309 | 68% |
| Partial internal model not covering equity risk | 37 | 4% |
| **Total** | **2346** | **73%** |

## II.2 Impact on the financial position of undertakings

### Background on the impact of the measures MA, VA, TRFR and TTP

The LTG measures MA, VA, TRFR and TTP relate to the calculation of technical provisions. But the impact of these measures on the financial position of insurance and reinsurance undertakings is not restricted to a change in the amount of technical provisions. The change in technical provisions itself can also have an impact on other items of the balance sheet and on the capital requirements and own funds.

This section contains an explanation of how these LTG measures impact the financial position of insurance and reinsurance undertakings. The description is based on the typical effects and may not be applicable to all undertakings.

Impact on technical provisions

Removing MA, VA and TRFR usually decrease the relevant risk-free interest rates used to calculate the technical provisions[9] and consequently in most cases increase the technical provisions[10]. Apart from the discounting effect the measures may also impact some assumptions made in the calculation of technical provisions, for example about the amount of future discretionary benefits of insurance with profit participation.

The TTP directly impacts the amount of technical provisions. Removing it typically increases the amount of technical provisions.

Impact on assets and liabilities other than technical provisions

Where removing the measures increase the amount of technical provisions this increase in liabilities may often be accompanied by a decrease of net deferred tax liabilities.

Impact on SCR and MCR

The measures can impact parts of the SCR and MCR calculation in different directions. Some parts may not at all be affected by the use of the measures, for others an increase or a decrease of the capital requirements can occur. An increase of the capital requirement after removing the measures may in particular happen where the technical provisions are used as measure for the size of risk that the capital requirements aim to capture. The capital requirements may also be increased through a higher loss-absorbing capacity of technical provisions where the removal of the measures decreased the amount of future discretionary benefits in technical provisions. A similar effect is the increase of the capital requirements through a higher loss-absorbing capacity of deferred taxes where deferred taxes are decreased by the removal of the measures.

[9] Removing MA, VA and TRFR will in most instances reduce the relevant risk-free term structures. However, under certain circumstances, the adjustments can turn negative. In that situation, removing the adjustment would increase the relevant risk-free interest rates.

[10] It is possible under Solvency II that the part of technical provisions to which the measures are applied is negative (for example when the value of expected insurance premiums exceeds the value of expected insurance payments). In that specific case, lower discount rates result in lower technical provisions.

Typically removing the measures will increase SCR and MCR[11].

Impact on own funds

The increase in technical provisions leads to a decrease of own funds. A slight relative increase of technical provisions may lead to a significant relative reduction of own funds, in particular for life insurance undertakings. For a typical life insurance undertaking the ratio of own funds and technical provisions is 1/10. Therefore an increase of technical provisions by 1% would lead to a reduction of own funds of 10%. This comparison is only based on the direct impact of changes in technical provisions on the amount of own funds. The impact may be mitigated by indirect effects, for example a reduction in deferred tax liabilities.

Also the changes to the SCR and MCR caused by the removal of the measures can have an impact on the eligible own funds to cover these capital requirements because there are limits to these own funds that depend on the capital requirements.

Typically removing the measures will reduce the amount of own funds.

Summary of the impacts on the financial position

The following table summarises the typical impact on different items of the financial position. The arrows are upward (resp. downward) if it is more likely than unlikely that the items concerned will increase (resp. decrease) when the measures are removed.

Table 2.11

| Items | Typical impact of removing MA, VA, TRFR and TTP |
|---|---|
| Technical provisions | ↗ |
| Net deferred tax liabilities | ↘ |
| Eligible own funds | ↘ |
| SCR and MCR | ↗ |
| Loss-absorbing capacity of future discretionary benefits and deferred tax liabilities | ↘ |

**Data availability and reliability for assessing the impact of the measures in 2019**

Two approaches were used to collect the necessary data in order to produce this report.

EIOPA has collected information about the impact of the measures MA, VA, TRFR and TTP on 31 December 2019 through the dedicated Quantitative Reporting Templates that were sent to NSAs in 2020. The information collected allows a consistent analysis of the

[11] It should be noted that removing the MA can decrease the SCR due to the gain of the diversification effect between portfolios. This is developed in the MA section of this report.

impact of these four measures. For the SA, whose impact is not directly reported by undertakings, an analysis has been made based on data extracted from the Quantitative Reporting Templates.

Concerning the DBER, at 31 December 2019 only 1 insurance undertaking was using this measure. For this reason, the remainder of this section deals only with extrapolation, MA, VA, TRFR and TTP. The presented results relate to the reference date of 31 December 2019.

Finally, the extension of the recovery period has by definition no direct impact on the financial position of undertakings.

**Impact of the measures MA, VA, TRFR and TTP**

The absolute impact of the measures MA, VA, TRFR and TTP on the whole EEA market is set out in the following tables for all the solo undertakings and all the groups separately. For the whole market (all solo undertakings) removing the measures would increase the amount of technical provisions by 107 billion euro. Eligible own funds to cover the SCR would reduce by 76 billion euro. The SCR would increase by 40 billion euro. In comparison with last year, the impacts of removing the measures have decreased. This is especially the case for the VA which is the main contributor to the decrease observed. It should be noted that at 31 December 2019 the VA was 7 bps whereas it was 24 bps at 31 December 2018.

Table 2.12 - **Aggregation of the impact on all the insurance and reinsurance undertakings**

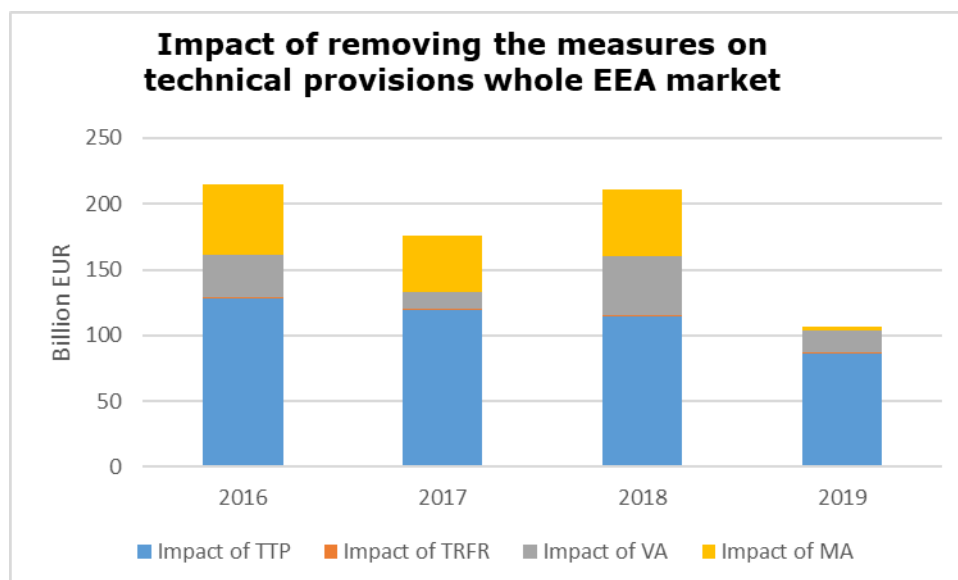
| | Amount with MA, VA, TRFR and TTP (billion euro) | Impact of removing the measures (billion euro) | | | | | Amount without MA, VA, TRFR, and TTP (billion euro) |
|---|---|---|---|---|---|---|---|
| | | Impact of TTP | Impact of TRFR | Impact of VA | Impact of MA | Impact of all measures | |
| **Technical provisions** | 7,485 | 86 | 1 | 17 | 3 | 107 | 7,592 |
| **Basic own Funds** | 1,120 | -60 | 0 | -14 | -2 | -76 | 1,043 |
| Excess of assets over liabilities | 1,062 | -61 | 0 | -13 | -2 | -77 | 984 |
| Restricted own funds due to ring-fencing and matching portfolio | 0 | -1 | 0 | 0 | 0 | -1 | -1 |
| **Eligible own funds to cover the SCR** | 1550 | -60 | 0 | -14 | -2 | -76 | 1474 |
| Tier 1 | 1453 | -62 | 0 | -15 | -2 | -79 | 1374 |
| Tier 2 | 88 | 0 | 0 | 0 | 0 | 1 | 89 |
| Tier 3 | 9 | 1 | 0 | 1 | 0 | 2 | 10 |
| **SCR** | 598 | 5 | 0 | 35 | 0 | 40 | 637 |
| **Eligible own funds to cover the MCR** | 1,068 | -61 | 0 | -14 | -2 | -78 | 990 |
| **MCR** | 147 | 2 | 0 | 9 | 0 | 11 | 159 |

Table 2.13 - **Aggregation of the impact on all groups**

| | Amount with MA, VA, TRFR and TTP (billion euro) | Impact of the measures (billion euro) | | | | | Amount without MA, VA, TRFR, and TTP (billion euro) |
|---|---|---|---|---|---|---|---|
| | | Impact of TTP | Impact of TRFR | Impact of VA | Impact of MA | Impact of all measures | |
| **Technical provisions** | 5,996 | 70 | 0 | 16 | 3 | 89 | 6085 |
| **Basic own Funds** | 709 | -44 | 0 | -5 | -2 | -51 | 658 |
| Excess of assets over liabilities | 715 | -51 | 0 | -12 | -2 | -65 | 650 |
| Restricted own funds due to ring-fencing and matching portfolio | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Eligible own funds to cover the SCR** | 758 | -44 | 0 | -4 | -2 | -51 | 707 |
| Tier 1 | 664 | -45 | 0 | -6 | -2 | -53 | 611 |
| Tier 2 | 87 | 0 | 0 | 0 | 0 | 0 | 87 |
| Tier 3 | 8 | 1 | 0 | 1 | 0 | 2 | 10 |
| **SCR** | 339 | 4 | 0 | 39 | 0 | 42 | 381 |

The following graphs provide an overview of the evolution of the absolute impact of the measures MA, VA, TRFR and TTP since the first year of entry into force of Solvency II on the whole EEA market[12].

Figure 2.6




[12] Data yer-end 2019 exclude UK, which explains the lower absolute impact for 2019 compared with previous years (in particular for MA)

Figure 2.7

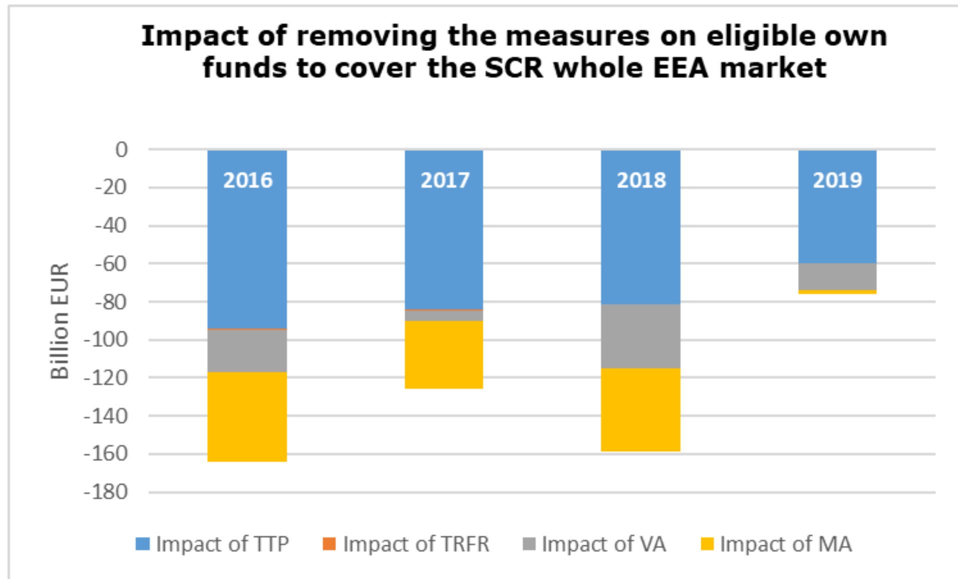
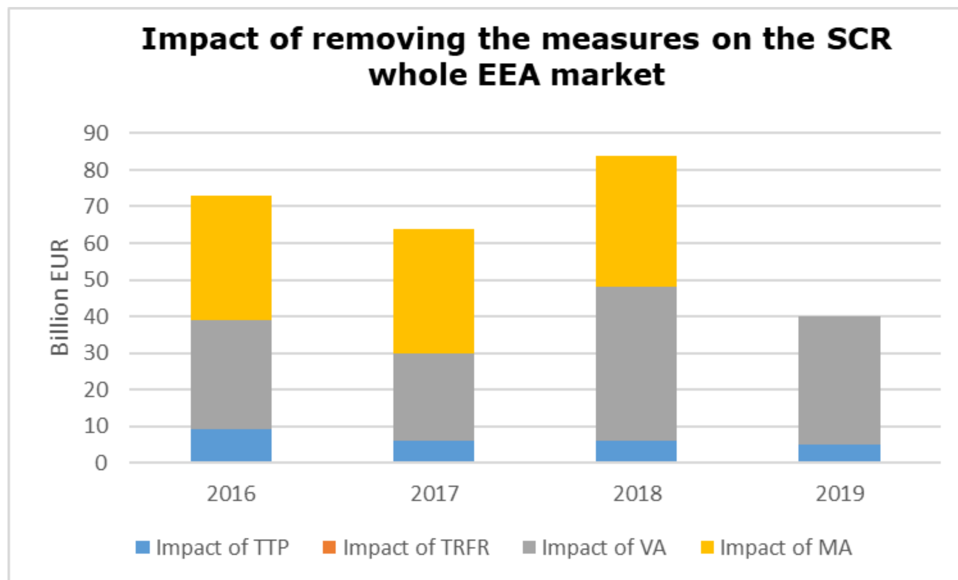



Figure 2.8



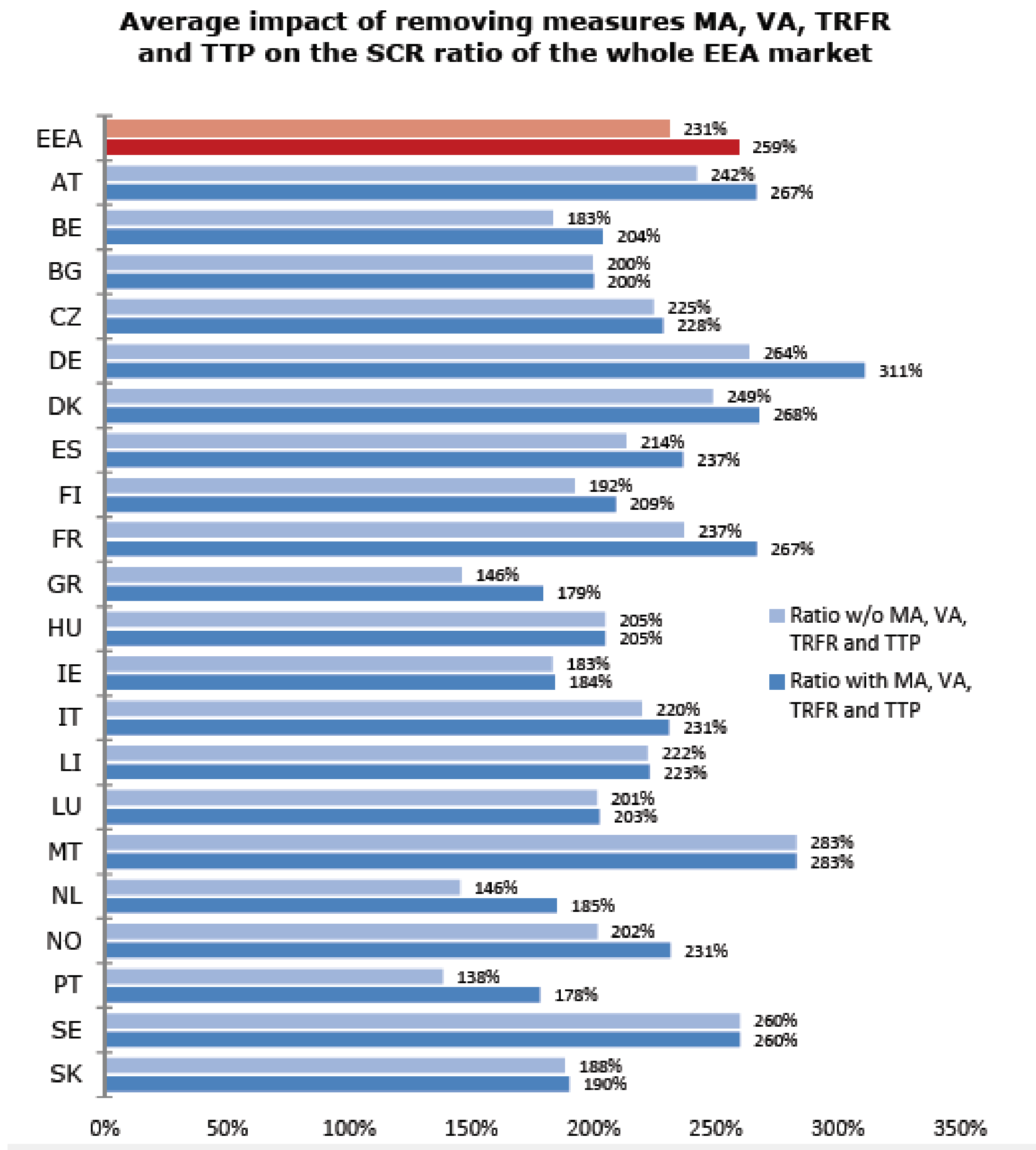

The following graph displays the overall impact of the use of the measures MA, VA, TRFR and TTP on the SCR ratio for the whole EEA market (including both undertakings using and not using the measures). The impact is shown at EEA and at country level. The graph shows the SCR ratio with (dark blue) and without (light blue) these measures. No results at country level are shown for CY, EE, HR, IS, LT, LV, PL, RO and SI because the undertakings from these countries do not apply any of the measures (MA, VA, TRFR and TTP).

At the EEA level, removing the measures would result on average[13] in a decrease of the SCR ratio by 28 percentage points. The largest impact at a country level is 47 percentage points. No country has the average solvency ratios without the use of the measures below 100%. Throughout this report average ratios are weighted averages,

[13] Figures at the EEA level are derived through the sum of eligible own funds and SCR of every country, including the ones where no measures are used.

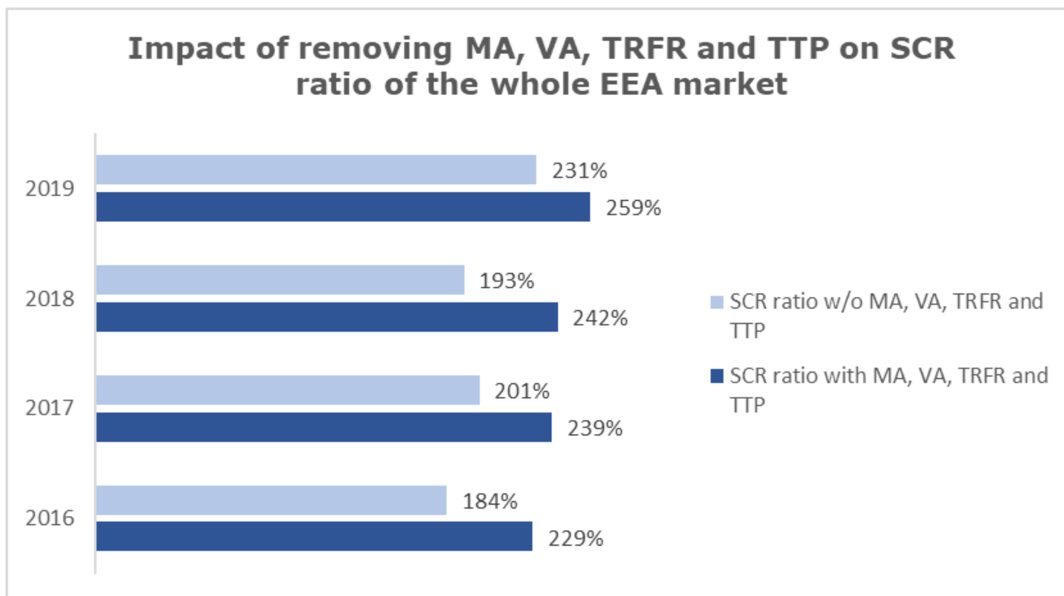
where the denominator of the ratios was used as weights. For example, in the following graph, the average EEA SCR ratio with the measures of 259% is computed as : $\sum_{undertakings\ EEA} \frac{SCR_i}{\sum_{undertakings\ EEA} SCR_i} * \frac{EoF\ SCR_i}{SCR_i}$ where SCR and eligible of own funds to cover the SCR (EoF SCR) take into account the measures at undertaking level and where the sums include all undertakings in the EEA using at least one measure.

Figure 2.9




The following graph shows the overall impact of the use of the measures MA, VA, TRFR and TTP on the SCR ratio for the whole EEA market during the last four years. The highest impact was observed in 2018, where removing the measures would result on average in a decrease of the SCR ratio by 49 percentage points.

Figure 2.10




The following graphs display the overall impact of the use of the measures MA, VA, TRFR and TTP on the SCR ratio for undertakings that apply at least one of the measures. The impact is shown at EEA and at country level. The first graphs shows the SCR ratio with (dark blue) and without (light blue) these measures. The red bars are for the EEA level. The second graph shows the impact in percentage points.

At the EEA level, removing the measures result on average in a decrease of the SCR ratio by 43 percentage points. The largest impact at a country level is 78 percentage points. For all countries, the average solvency ratio without the use of the measures is above 100%. In comparison with last year, average impacts on SCR ratio increased for all countries, except for AT, CZ and LU.

Figure 2.11

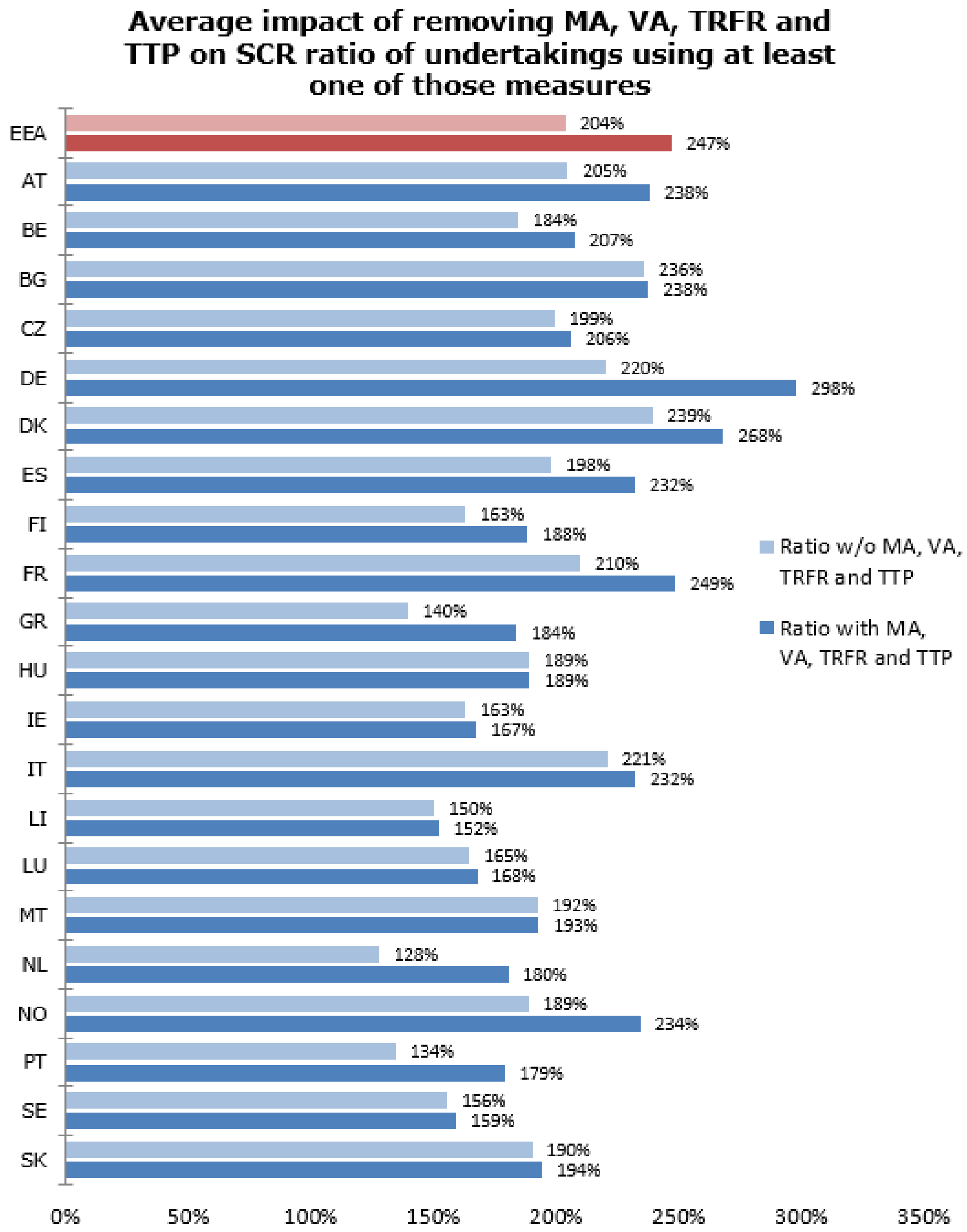
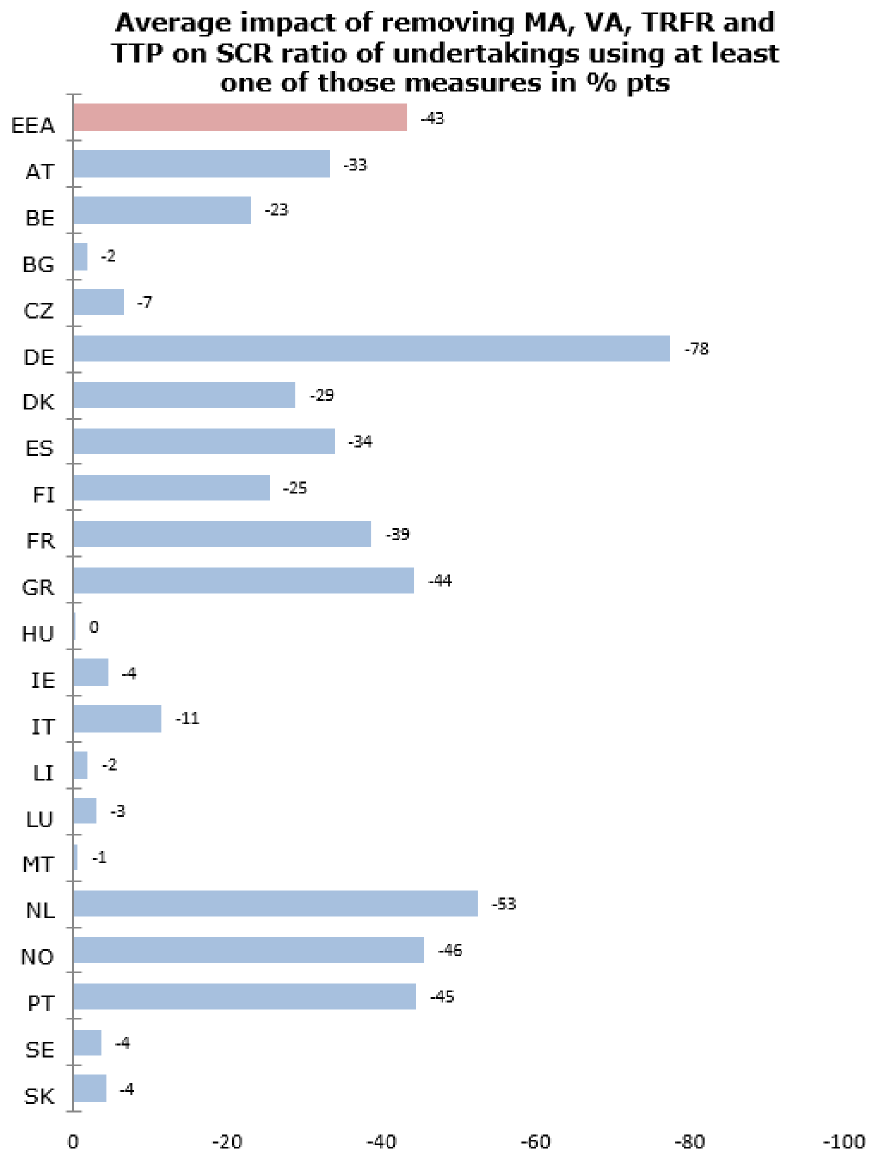
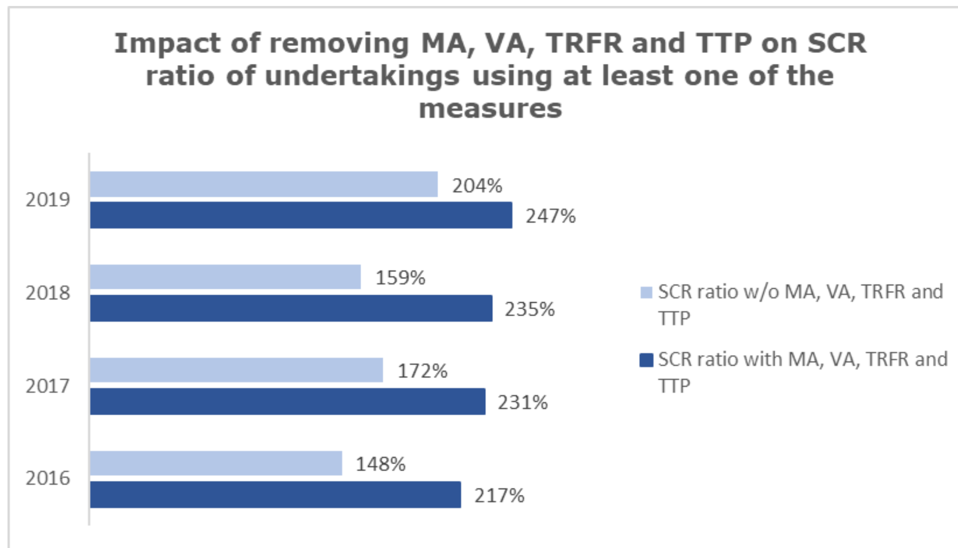


Figure 2.12




The following graph shows the overall impact of the use of the measures MA, VA, TRFR and TTP on the SCR ratio of undertakings using at least one of the measures the last four years. The highest impact was observed in 2018, where removing the measures would result on average in a decrease of the SCR ratio by 76 percentage points.

Figure 2.13




The following graphs display the impact of removing the measures MA, VA, TRFR and TTP on the SCR ratio of every undertaking using at least one of those measures. Each dot in the diagram represents one undertaking. The type of each undertaking is indicated by the colour of the dot.

The horizontal axis relates to the SCR ratio without the measures MA, VA, TRFR and TTP. The solvency ratios allowing for the impact of all measures (current SCR ratio) are shown on the vertical axis. The continuous diagonal line corresponds to undertakings without an impact of the measures. Undertakings located on this line have the same SCR ratios with and without measures. The more an undertaking is located away from the diagonal line, the bigger the impact of the measures. The broken diagonal lines corresponds to an impact of 100, 200 and 400 percentage points on the SCR ratio.

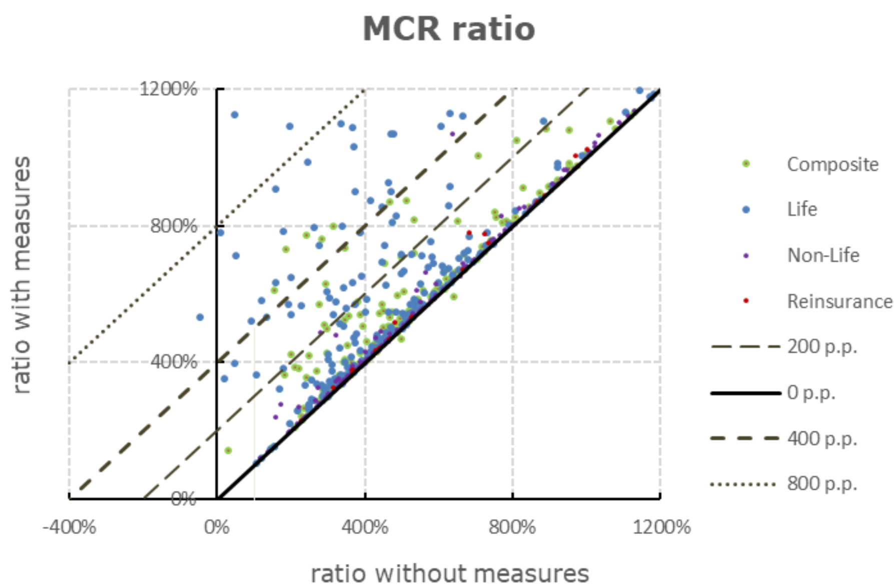
Figure 2.14

In terms of SCR ratio, 88% of undertakings using at least one measure reported an absolute impact of less than 100 percentage points.

4% of the undertakings using at least one measure reported an SCR ratio without measures below 100%. 0,3% of undertakings using at least one measure reported negative eligible own funds to cover the SCR without measures.

The following graphs display the impact of removing the measures MA, VA, TRFR and TTP on the MCR ratio of every undertaking using at least one of those measures.

Figure 2.15

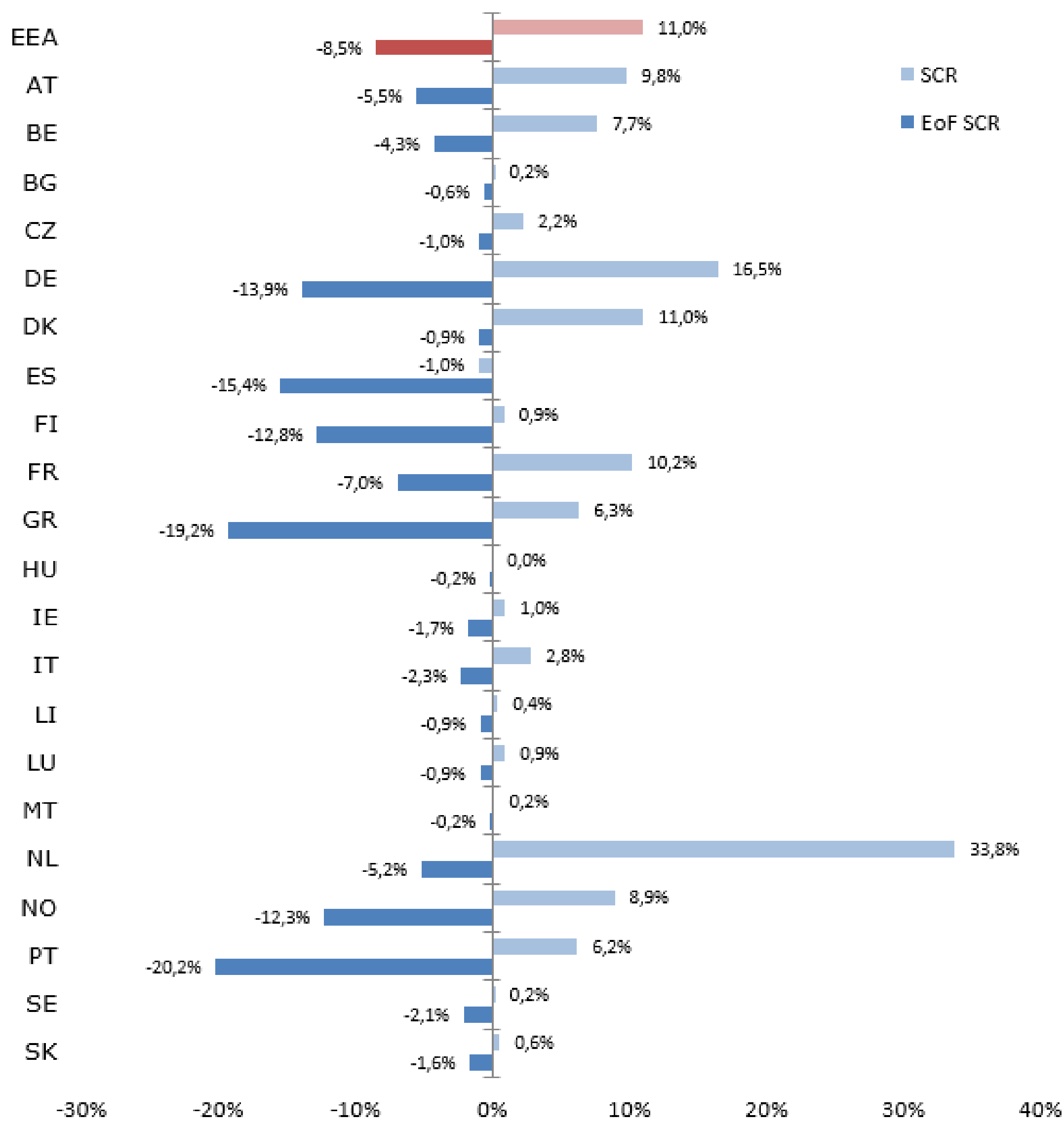



In terms of MCR ratio, 79% of undertakings using at least one measure reported an absolute impact of less than 100 percentage points.

1,4% of undertakings using at least one measure reported an MCR ratio without measures below 100%. 0,3% of undertakings using at least one measure reported negative eligible own funds to cover the MCR without measures.

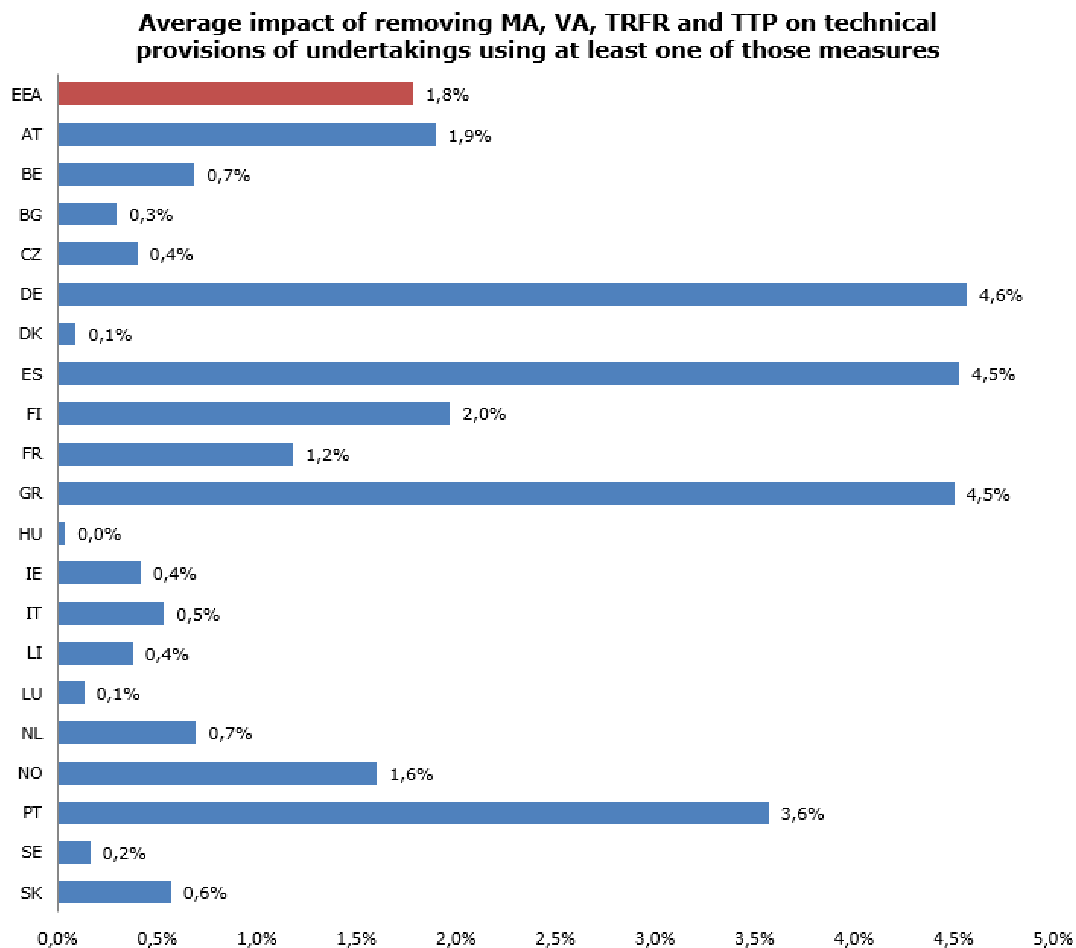
The following graph shows the impact of removing the measures on the SCR (light blue) and on the eligible own funds to cover the SCR (dark blue). The red bars are for the EEA level. On average, eligible own funds to cover the SCR would decrease by 8.5%, while the SCR would increase by almost 11% if the measures were removed.

Figure 2.16




The following graph displays the impact of removing the measures on the value of technical provisions (TP) at EEA and national level. Removing the measures for those undertakings applying the measure would result in an average increase of technical provisions by 1.8% at EEA level. The impact goes up to 4.6% at country level. Overall, unlike last year, average impacts on TP have decreased.

Figure 2.17




The following graphs show the impact on the MCR ratio, the MCR and the eligible own funds to cover the MCR for undertakings using at least one of the measures.

At the EEA level, removing the measures to these undertakings would result in an average loss of 98 percentage points with regard to the MCR ratio. The impact goes up to 221 points at country level.

At the EEA level, removing the measures decreases eligible own funds to cover the MCR by 9%, while the MCR increases by 8%.

Figure 2.18

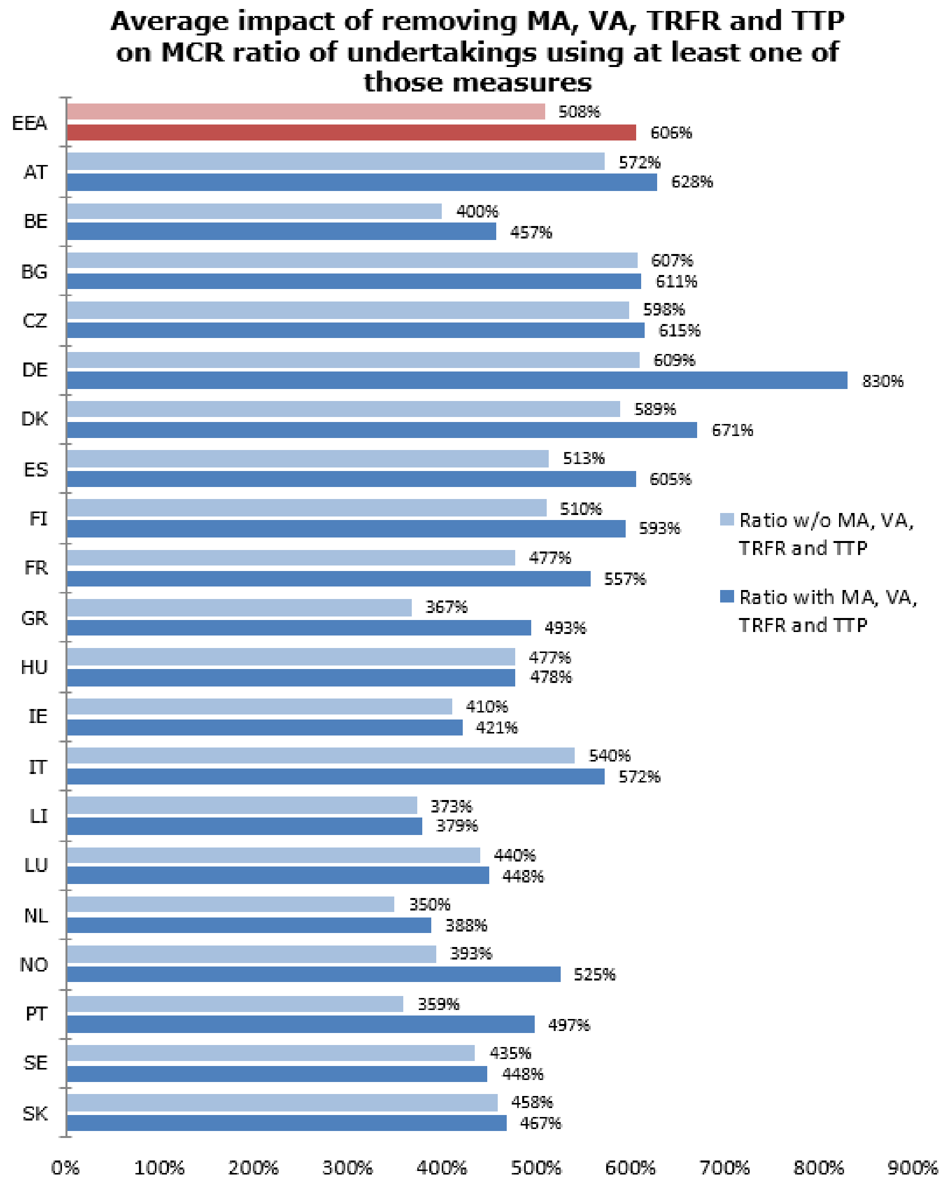
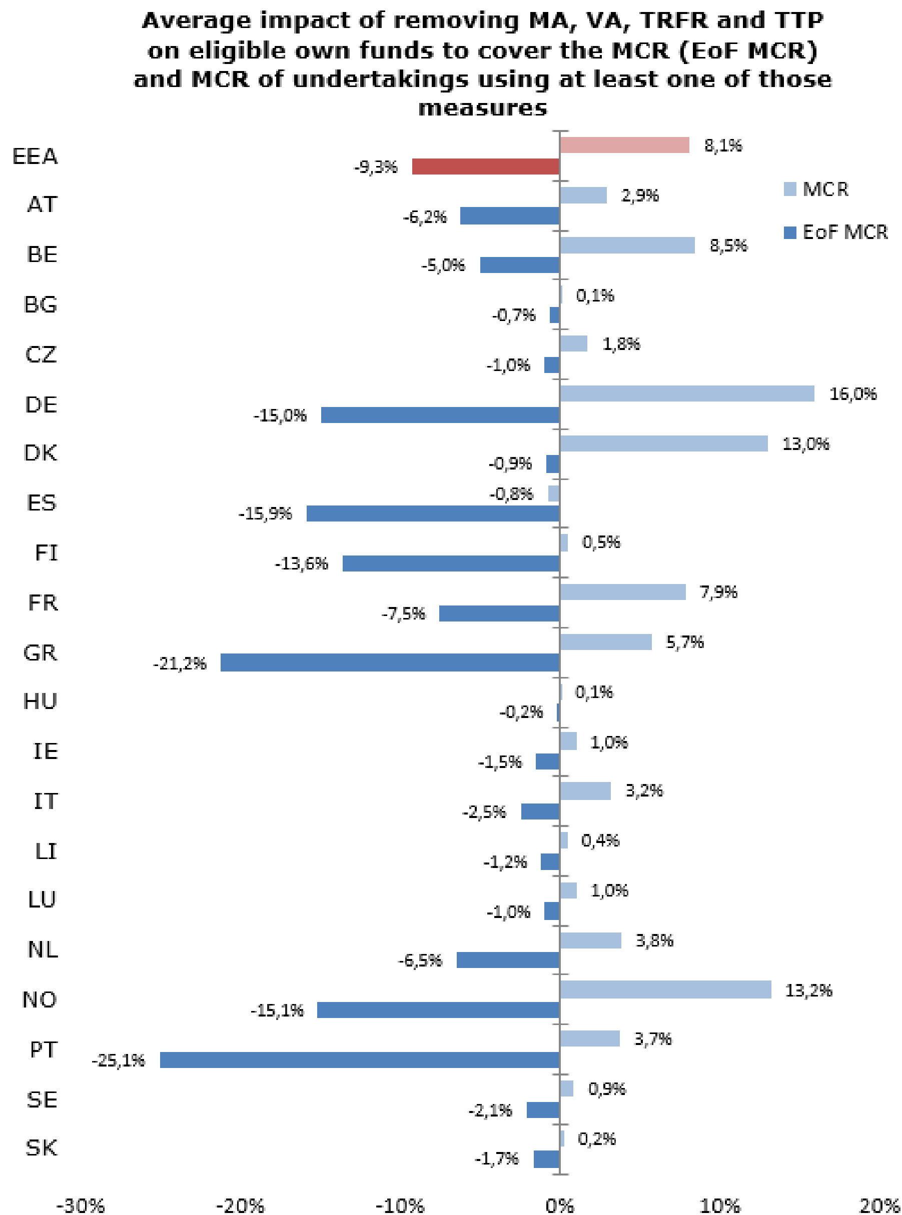
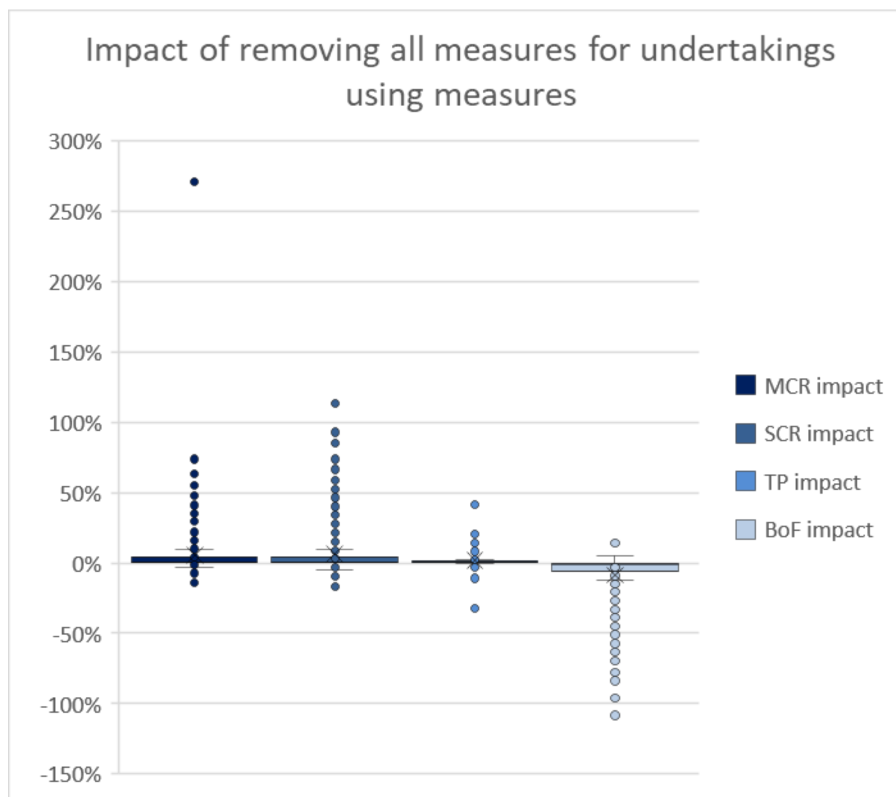


Figure 2.19




The box-plots bellow illustrate how the impact of removing the measures MA, VA, TTP and TRFR is distributed across undertakings. For example, in case the removal of the measures for an individual undertaking would lead to a decrease of basic own funds (BoF) from 100 to 35 units, the relative decrease of -65% is reflected in the box-plot. The bottom of the blue box represents the lower quartile (25$^{th}$ percentile) of the data set. The top of the blue box represents the higher quartile (75$^{th}$ percentile) of the data set. The black band inside the box is always the middle quartile (50$^{th}$ percentile or median). The lines extending from the boxes represent data that lies within 1.5x the interquartile-range (the span of the blue box, covering half of the individual values) from the 25$^{th}$ percentile at the bottom or the 75$^{th}$ percentile at the top. Data points outside of this range are considered outliers and plotted as individual points. Finally, the 'X' marking denotes the mean of the data series. We can observe that, in general, all relevant variables show skewed distributions and a significant number of outliers, which can also be compared against the scatterplots on SCR and MCR impacts displayed above.

Figure 2.20




**Impact of the symmetric adjustment mechanism**

For the EIOPA LTG report 2019, the financial impact of the symmetric adjustment on the SCR was determined using QRT data.

Since the SA at 31 Dec 2019 was -0.08%, setting the SA to zero would have a negligible impact on equity exposures applied to calculate the SCR.

**Impact of extrapolation**

In order to assess the impact of the extrapolation of risk-free interest rates for previous LTG reports, EIOPA carried out ad-hoc information requests to insurance and reinsurance undertakings. Undertakings assessed the impact of different scenarios to change parameters of the extrapolation.

Similar information request has not been done for year-end 2019 taking into account the on-going review of Solvency II. Insurance and reinsurance undertakings have been requested instead to provide information on the combined impact of the draft advice for the 2020 review of Solvency II with a material impact on the solvency position of undertakings, including the impact of possible changes to the current extrapolation method[14].

[14] See EIOPA's website for more detail on the 2020 review of Solvency II: https://www.eiopa.europa.eu/browse/solvency-ii/2020-review-solvency-ii_en

## II.3 Impact on policyholder protection

The review analyses the effect of the LTG measures and measures on equity risk on policyholder protection. For this purpose, EIOPA has asked NSAs to report observations on the impact of the measures on policyholder protection and in particular on cases of revocation of the approval to apply one of the measures and cases of undue capital relief by the LTG measures or measures on equity risk.

Some NSAs commented on general observations but most NSAs did not raise any concrete observations of positive or negative impacts of the LTG measures and equity risk measures on policyholder protection. Though, one NSA noted that it may have been desirable to take supervisory action in respect of one undertaking where the solvency position was close to 100% without application of the VA but still comfortably above with the VA.

As in the previous LTG reports, it was assessed whether cases of undue capital relief have occurred due to the application of the MA, the VA, the DBER or the SA. An undue capital relief would be an unduly low amount of technical provisions or capital requirement negatively impacting policyholder protection.

NSAs typically monitor the impact of the application of the LTG measures and equity risk measures on the undertaking's solvency position.

With respect to the VA, NSAs typically assess the impact of setting the VA to zero. Several NSAs reported that they monitor undertaking's investment portfolio considering the actual investment return, changes to the portfolio's composition and credit quality and their investment strategy. This includes a comparison to the "reference portfolio" used for the determination of the VA and undertaking's ability to maintain its assets (do they face the risk of a forced sale of assets). One NSA outlined that they assess whether undertaking's capital planning depends on the application or design of the VA and that they require undertakings to assess the impact thereof. Some NSAs particularly outline that they focus on the question of whether undertakings are able to earn the VA in practice. For that purpose, a comparison of the rates actually earned by undertakings to the size of the VA or a retrospective check are suggested. These assessments are performed on a case by case basis, but no automatic checks are performed. The processes of NSAs thereby vary, depending on whether an approval process for the VA is foreseen.

With respect to the MA, one NSA assesses whether it is confident with the SCR calculation and own funds determination when assessing whether cases of undue capital relief occur. It is analyzed whether the SCR calculation is adequate considering the risks inherent in undertaking's asset portfolio (either because of non-adequacy of the standard formula or miss-calibration of the internal model) and whether own funds are overestimated due to an incorrect calibration of the fundamental spread (either because of an under-calibration of the floors or incorrect mapping of assets by undertakings).

The feedback from NSAs indicated one case of undue capital relief in relation to the VA and SA in 2019 and beginning of 2020. According to Article 37(1)(d) of the Solvency II Directive a capital-add on can be applied to undertakings applying the MA, the VA or

the transitional measures where the supervisory authority concludes that the risk profile of that undertaking deviates significantly from the assumptions underlying those adjustments and transitional measures. No NSA imposed yet a capital add-on based on observed cases of undue capital relief in respect of the LTG measures and equity risk measures.NSAs were also asked about whether they had considered circumstances where they would deem it appropriate to apply a capital add-on in respect of the use of the MA, VA, TTP or the TRFR. 3 NSAs responded that they had considered the necessity of capital add-ons in relation to the TTP – one of those explained that a capital add-on could be a reasonable option where – taking into account the information in the progress reports provided by the undertaking – the supervisor has considerable concerns that the measures in the phasing-in plan are sufficient to ensure that capital requirements are fulfilled until 01.01.2032. A capital add-on could be a preferable solution – compared to a revocation - where the current measures in the phasing-in plan appear insufficient to ensure that the undertaking is solvent at the end of the transitional period, but where the undertaking still has options to take further measures to strengthen its solvency position so that compliance with capital requirements until 01.01.2032 is realistic.
In 2019, one NSA revoked an approval to use the MA as a result of an on-site inspection where it was revealed that the undertaking had ceased to meet the requirements for using MA.

Also in 2019, one NSA revoked an approval to use the TTP as the undertaking did not comply with the measures included in the PIP for TTP nor with the updates of the plan included in the progress report sent to the supervisor on an annual basis, according to art. 308.d.5 letter b) Directive 2009/138/EC.

During 2019 no undertaking was affected by adoption of reorganisation measures or opening of winding-up proceedings (as defined in Article 268(1) of the Solvency II Directive), though at the beginning of 2020 this was the case for 2 undertakings which did not use any of the LTG measures or measures on equity risk.

Undue capital relief from MA could arise from the use of MA where the liabilities are not sufficiently illiquid and/or where the calibration of the fundamental spread (FS) does not provide adequate buffer against the risk of adverse credit events.

This analysis will focus on whether more adverse credit events are occurring in MA portfolios than has been anticipated by the calibration of FS.

Undertakings with approval to use MA in Spain were asked to provide information about the losses due to default and/or downgrade that had been experienced during 2019, alongside the fundamental spread that had been assumed during 2019. No UK data were collected as this survey was conducted in 2020 (after the so-called Brexit).

14 responses were received (all MA users in Spain). No default was reported. Only one downgrade was reported in one undertaking, with an immaterial cost (the loss was equals to 0.03 basic points and that undertaking had a fundamental spread of 28 bps).

The fundamental spread is designed to absorb the long-term average cost of default and downgrade (see Article 77c (2) of the Solvency II Directive). This is not expected to be directly comparable to a single time period. Continuing this comparison on an

annual basis should help to identify periods where the fundamental spread is insufficient to absorb the costs of adverse credit events.

## II.4 Impact on the investments of undertakings

### Investment portfolios of undertakings using the measures MA, VA, TRFR or TTP

According to Article 77f(1)(a) and (3) of the Solvency II Directive, the review should analyse the effect of the long-term guarantees measures and measures on equity risk on long term investment strategies. To assess the impact of measures MA, VA, TRFR and TTP on the investments of insurance and reinsurance undertakings, EIOPA has analysed the investment allocation of undertakings as reported to NSAs under Solvency II.

The tables and graphs in this general section of the report consider the investments of undertakings from three perspectives:

- The investment allocation

- The credit quality of the bond portfolio, separately for government bonds and corporate bonds

- The duration of the bond portfolio, separately for government bonds and corporate bonds

These perspectives are considered both for the total EEA market and separately for undertakings using the measures MA, VA, TTP, TRFR or no measure, also distinguishing between types of undertaking. Further detail is provided in the separate sections per measure in chapter III.

The following graph describes the investment allocation of insurance and reinsurance undertakings on the end of 2019. The graph shows the allocation to the main asset classes at EEA level and for each country.

With regard to the following tables and graphs on investments, caution should be applied when analysing any correlation between the asset allocation or the characteristics of the bond portfolios and the use of the measures, as it is difficult to draw any conclusion from these graphs on any causal effect of the LTG measures on the investments of undertakings.[15]

[15] For more detail on the asset allocation please see Annex 3 "Assets classes". In particular, please note that a one level of look-through has been applied; consequently the figures in the column 'Collective Investments Undertakings' do not show the total investments in CIUs, but only those cases where the look-through could not be applied.

Table 2.14

| Investment allocation at EEA and country Level | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Unit linked/index linked | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 25% | 24% | 19% | 13% | 7% | 4% | 3% | 4% |
| AT | 21% | 26% | 14% | 18% | 5% | 4% | 3% | 8% |
| BE | 42% | 19% | 13% | 8% | 1% | 12% | 3% | 4% |
| BG | 47% | 16% | 5% | 13% | 1% | 5% | 9% | 4% |
| CY | 10% | 23% | 40% | 8% | 5% | 2% | 8% | 5% |
| CZ | 43% | 15% | 19% | 11% | 1% | 4% | 6% | 1% |
| DE | 19% | 27% | 5% | 20% | 16% | 5% | 4% | 4% |
| DK | 7% | 18% | 43% | 13% | 13% | 2% | 2% | 2% |
| EE | 14% | 36% | 33% | 1% | 3% | 1% | 12% | 0% |
| ES | 54% | 20% | 7% | 7% | 1% | 1% | 6% | 4% |
| FI | 5% | 18% | 54% | 6% | 6% | 3% | 5% | 4% |
| FR | 28% | 32% | 14% | 12% | 3% | 2% | 3% | 5% |
| GR | 53% | 18% | 16% | 5% | 1% | 1% | 5% | 2% |
| HR | 61% | 4% | 6% | 9% | 1% | 6% | 7% | 7% |
| HU | 45% | 2% | 45% | 3% | 2% | 0% | 3% | 0% |
| IE | 8% | 9% | 69% | 2% | 1% | 2% | 6% | 2% |
| IS | 23% | 22% | 5% | 26% | 11% | 2% | 10% | 1% |
| IT | 43% | 18% | 19% | 11% | 2% | 1% | 2% | 5% |
| LI | 4% | 7% | 83% | 1% | 1% | 1% | 4% | 0% |
| LT | 53% | 12% | 26% | 1% | 0% | 1% | 5% | 1% |
| LU | 9% | 14% | 64% | 3% | 0% | 3% | 5% | 1% |
| LV | 41% | 13% | 32% | 2% | 0% | 2% | 8% | 2% |
| MT | 21% | 15% | 5% | 2% | 3% | 6% | 42% | 5% |
| NL | 28% | 13% | 18% | 5% | 4% | 21% | 4% | 7% |
| NO | 9% | 32% | 21% | 18% | 10% | 8% | 2% | 1% |
| PL | 42% | 5% | 25% | 14% | 9% | 2% | 2% | 0% |
| PT | 35% | 23% | 24% | 7% | 5% | 0% | 5% | 1% |
| RO | 53% | 6% | 22% | 5% | 0% | 1% | 11% | 1% |
| SE | 8% | 16% | 45% | 17% | 6% | 2% | 2% | 3% |
| SI | 33% | 25% | 21% | 14% | 0% | 1% | 4% | 2% |
| SK | 37% | 30% | 20% | 6% | 1% | 1% | 5% | 1% |

Table 2.15

| Investment allocation at EEA and country Level (without assets held for IL & UL contracts) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 31% | 30% | 16% | 8% | 5% | 4% | 5% |
| AT | 25% | 31% | 21% | 6% | 5% | 4% | 9% |
| BE | 48% | 21% | 9% | 1% | 13% | 3% | 4% |
| BG | 49% | 17% | 13% | 1% | 6% | 10% | 4% |
| CY | 17% | 38% | 13% | 8% | 3% | 14% | 8% |
| CZ | 54% | 19% | 14% | 1% | 4% | 7% | 1% |
| DE | 20% | 29% | 21% | 17% | 5% | 4% | 4% |
| DK | 13% | 31% | 23% | 23% | 4% | 3% | 3% |
| EE | 21% | 54% | 2% | 4% | 1% | 18% | 0% |
| ES | 59% | 22% | 7% | 1% | 1% | 7% | 4% |
| FI | 11% | 39% | 14% | 13% | 6% | 10% | 9% |
| FR | 33% | 37% | 15% | 4% | 2% | 4% | 6% |
| GR | 63% | 22% | 5% | 1% | 1% | 6% | 2% |
| HR | 65% | 4% | 9% | 1% | 7% | 7% | 7% |
| HU | 80% | 4% | 6% | 4% | 0% | 5% | 1% |
| IE | 27% | 30% | 8% | 4% | 6% | 20% | 5% |
| IS | 24% | 23% | 27% | 12% | 2% | 11% | 1% |
| IT | 53% | 22% | 13% | 2% | 1% | 2% | 6% |
| LI | 24% | 38% | 6% | 5% | 3% | 22% | 2% |
| LT | 71% | 17% | 2% | 0% | 1% | 6% | 2% |
| LU | 26% | 38% | 9% | 1% | 9% | 14% | 2% |
| LV | 60% | 19% | 3% | 0% | 3% | 12% | 2% |
| MT | 22% | 16% | 2% | 3% | 7% | 44% | 6% |
| NL | 35% | 16% | 6% | 5% | 26% | 5% | 8% |
| NO | 11% | 40% | 22% | 13% | 10% | 3% | 1% |
| PL | 56% | 7% | 19% | 12% | 2% | 3% | 0% |
| PT | 47% | 30% | 9% | 6% | 0% | 7% | 2% |
| RO | 68% | 8% | 7% | 1% | 1% | 14% | 2% |
| SE | 14% | 30% | 32% | 12% | 4% | 4% | 5% |
| SI | 41% | 32% | 18% | 0% | 1% | 5% | 2% |
| SK | 46% | 38% | 7% | 1% | 1% | 6% | 1% |

As was noted in previous reports, a diversity of the allocations at country level can be observed. These country specificities should be taken into account when analysing the investments of undertakings that apply the LTG measures and equity risk measures, in particular where the use of a measure is not equally common in all countries[16]. Note

16 Please refer to the section on use of the measures.

that differences in the average asset allocation or in the characteristics of the bond portfolios between the different groups of undertakings as shown in tables and graphs below, are, to some extent, due to the high degree of variety of asset investments by insurers across different countries in the EEA, and the fact that the use of the measures is not evenly spread across different markets. This is in particular relevant for the MA, which is, after Brexit, only used in Spain. Therefore the overall observations relating to firms that apply the measures may simply reflect the specificities of insurance business in any country rather than the use or non-use of LTG-measures. More detailed information on the investments of insurers using the MA, VA, TRFR or TTP at the level of individual countries is provided in the third section of this report.

The following tables illustrate the investment allocation at the end of 2019 of undertakings that apply the MA, VA, TRFR or TTP, or that do not apply one of these measures, in comparison with the investment allocation of all EEA undertakings. In these tables the unit-linked/index-linked investments have been excluded:

Table 2.16

| Total of undertakings | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| Total | 31% | 30% | 16% | 8% | 5% | 4% | 5% |
| VA | 34% | 30% | 13% | 9% | 5% | 3% | 5% |
| MA | 75% | 15% | 2% | 0% | 0% | 6% | 1% |
| TTP & TRFR | 34% | 34% | 8% | 9% | 4% | 4% | 6% |
| No measure | 22% | 30% | 27% | 6% | 4% | 8% | 5% |

Table 2.17

| Life undertakings | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| Total | 31% | 33% | 10% | 11% | 7% | 2% | 6% |
| VA | 31% | 33% | 9% | 11% | 7% | 2% | 6% |
| MA | 66% | 12% | 2% | 0% | 0% | 8% | 12% |
| TTP & TRFR | 29% | 38% | 8% | 10% | 5% | 2% | 5% |
| No measure | 35% | 30% | 14% | 5% | 5% | 4% | 6% |

Table 2.18

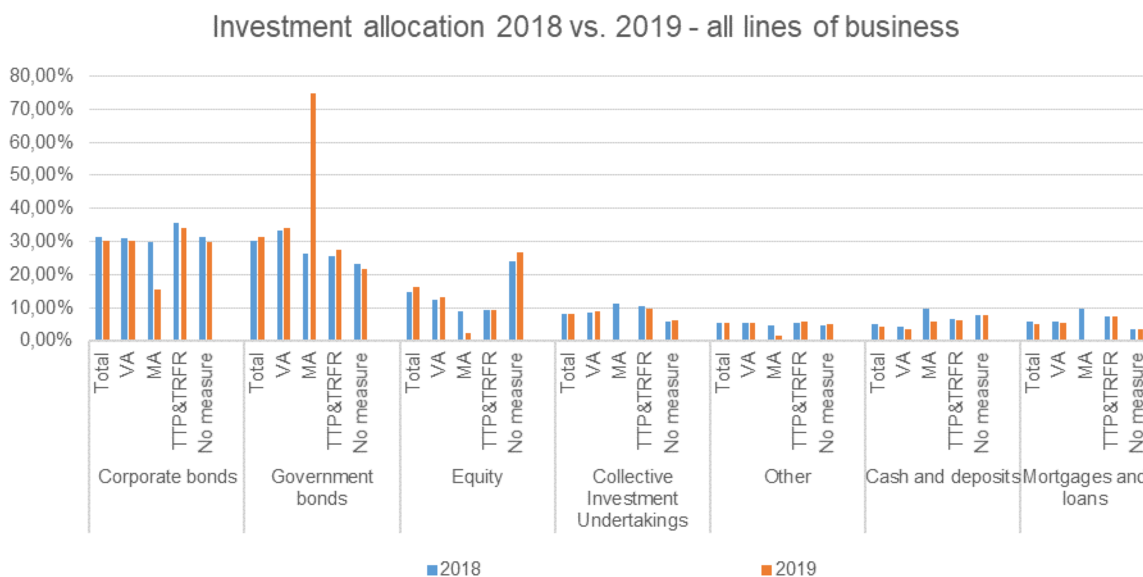
| Undertakings pursuing both Life and non-Life | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| Total | 41% | 28% | 13% | 6% | 3% | 3% | 6% |
| VA | 43% | 28% | 12% | 5% | 3% | 3% | 5% |
| MA | 75% | 15% | 2% | 0% | 0% | 6% | 1% |
| TTP & TRFR | 43% | 27% | 8% | 6% | 3% | 6% | 7% |
| No measure | 22% | 29% | 25% | 8% | 3% | 6% | 7% |

As can be seen, differences between undertakings using at least one LTG measure and those that do not use them, are present in composite as well as pure life insurance to a certain degree. In life insurance, which accounts for a majority of technical provisions, the differences between VA users, with VA being the most widely applied measure and undertakings applying no measure, continues to be small, as also observed in previous years. A substantial difference can be identified with MA users, but this is due to country specific asset allocations in the jurisdiction where the MA is used (see section III.2).

Apart from the question of country-specific impacts it is hard however to resolve the question of causality in these numbers. Rather than LTG-measures being the cause for certain investment allocations, the undertakings that chose to apply certain measures might not be a fully representative sample of insurance companies to begin with.

The final graph of this section compares the investment allocations by LTG measure between 2019 and 2018:

Figure 2.21




As can be seen the only area with significant differences is the investment allocations of MA undertakings. This is due to the departure of the UK, leaving a small number of ES undertakings as the only remaining EEA users of the measure and therefore shifting the average capital allocations. Apart from this, the investment allocations of the insurance undertakings have on average stayed roughly the same from 2018 to 2019.

**Bond portfolio of undertakings using the MA, VA, TRFR or TTP**

The following graphs illustrate the credit quality of the bond portfolio of the undertakings applying the measures MA, VA, TRFR or TTP as at end 2019, separately for government bonds and corporate bonds. The credit quality is measured in credit quality steps (CQS), which vary from 0 to 6, with 0 denoting the highest credit quality and 6 denoting the lowest credit quality. Bonds considered as “investment grade” usually have a CQS between 0 and 3.

Table 2.19

| Credit quality step of investments in government bonds (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| | CQS0 | CQS1 | CQS2 | CQS3 | CQS>3 |
| **All undertakings** | **17%** | **43%** | **15%** | **24%** | **1%** |
| MA | 1% | 0% | 84% | 15% | 0% |
| VA | 15% | 43% | 15% | 27% | 1% |
| TTP&TRFR | 16% | 35% | 18% | 30% | 1% |
| No measure | 30% | 42% | 17% | 11% | 1% |

Table 2.20

| Credit quality step of investments in corporate bonds (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| | CQS0 | CQS1 | CQS2 | CQS3 | CQS>3 |
| **All undertakings** | **22%** | **17%** | **32%** | **28%** | **2%** |
| MA | 1% | 14% | 37% | 46% | 2% |
| VA | 17% | 17% | 33% | 31% | 2% |
| TTP&TRFR | 30% | 19% | 26% | 22% | 3% |
| No measure | 38% | 17% | 26% | 17% | 1% |

As can be seen there is a gap in credit quality ratings between undertakings using the LTG measures and undertakings not using any voluntary measures. This difference is especially pronounced in the subset of MA users however, the differences in the investments for the MA users are explained by country factors since MA is applied only in Spain. The gap is still sizeable in undertakings using the VA, with 15% CQS0 rated government and 16% CQS0 rated corporate bonds. Overall, the vast majority of assets held are rated between CQS0 and CQS3 and therefore investment grade, regardless of the use of LTG measures.

Overall the results presented here for 2019 are well comparable to last years numbers for 2018. On a country-specific basis some shifts in either direction can be observed, but no clear trend emerges. It also seems that, especially in the case of government bonds, most larger changes in average CQS come from adapted ratings rather than a different portfolio composition.

The following graphs illustrate the credit quality of the bond portfolio of the undertakings applying at least one of the measures MA, VA, TRFR or TTP and of undertakings not applying any of these measures, as at end 2019 at EEA and at national level. Separate graphs are provided for government bonds and corporate bonds. Please note that, due to confidentiality reasons, any cells that relate to less than three undertakings are denoted by (*).

Table 2.21

| Credit quality of government bonds for undertakings not using any measure, at EEA level and per country (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| **Country** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **30%** | **42%** | **17%** | **11%** | **1%** |
| AT | 17% | 60% | 13% | 9% | 0% |
| BE | 4% | 69% | 16% | 10% | 1% |
| BG | 1% | 25% | 24% | 50% | 1% |
| CY | 18% | 16% | 21% | 35% | 9% |
| CZ | 2% | 93% | 5% | 0% | 0% |
| DE | 42% | 40% | 13% | 5% | 0% |
| DK | 73% | 19% | 2% | 4% | 2% |
| EE | 20% | 21% | 44% | 13% | 2% |
| ES | 6% | 13% | 56% | 25% | 0% |
| FI | 21% | 67% | 5% | 7% | 0% |
| FR | 7% | 76% | 7% | 9% | 0% |
| GR | 25% | 35% | 9% | 9% | 23% |
| HR | 1% | 2% | 6% | 85% | 6% |
| HU | 0% | 0% | 1% | 96% | 3% |
| IE | 32% | 48% | 12% | 7% | 0% |
| IS | 0% | 0% | 78% | 14% | 8% |
| IT | 2% | 8% | 5% | 84% | 1% |
| LI | 68% | 24% | 5% | 3% | 0% |
| LT | 7% | 12% | 66% | 16% | 0% |
| LU | 43% | 49% | 5% | 3% | 0% |
| LV | 13% | 11% | 72% | 4% | 0% |
| MT | 21% | 58% | 15% | 6% | 0% |
| NL | 55% | 26% | 6% | 9% | 4% |
| NO | 57% | 41% | 2% | 0% | 0% |
| PL | 2% | 0% | 96% | 2% | 0% |
| PT | 3% | 5% | 3% | 88% | 0% |
| RO | 0% | 0% | 1% | 99% | 0% |
| SE | 94% | 5% | 1% | 0% | 0% |
| SI | 18% | 19% | 43% | 17% | 2% |
| SK | 7% | 1% | 83% | 7% | 2% |

Table 2.22

| Credit quality of government bonds for undertakings using at least one of the measures, at EEA level and per country (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| **Country** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **15%** | **43%** | **15%** | **27%** | **1%** |
| AT | 16% | 49% | 27% | 8% | 0% |
| BE | 9% | 72% | 10% | 8% | 0% |
| BG | 3% | 1% | 15% | 81% | 0% |
| CY | (*) | (*) | (*) | (*) | (*) |
| CZ | 5% | 60% | 29% | 5% | 1% |
| DE | 34% | 46% | 14% | 5% | 0% |
| DK | 67% | 16% | 4% | 10% | 3% |
| EE | 0% | 0% | 0% | 0% | 0% |
| ES | 2% | 2% | 74% | 22% | 0% |
| FI | 45% | 49% | 2% | 3% | 1% |
| FR | 8% | 76% | 7% | 9% | 0% |
| GR | 10% | 13% | 8% | 13% | 56% |
| HR | 0% | 0% | 0% | 0% | 0% |
| HU | 1% | 1% | 0% | 99% | 0% |
| IE | 36% | 45% | 13% | 6% | 0% |
| IS | 0% | 0% | 0% | 0% | 0% |
| IT | 2% | 5% | 7% | 85% | 0% |
| LI | (*) | (*) | (*) | (*) | (*) |
| LT | 0% | 0% | 0% | 0% | 0% |
| LU | 26% | 53% | 7% | 14% | 0% |
| LV | 0% | 0% | 0% | 0% | 0% |
| MT | (*) | (*) | (*) | (*) | (*) |
| NL | 55% | 35% | 3% | 6% | 0% |
| NO | 51% | 36% | 12% | 0% | 0% |
| PL | 0% | 0% | 0% | 0% | 0% |
| PT | 4% | 10% | 13% | 72% | 1% |
| RO | 0% | 0% | 0% | 0% | 0% |
| SE | (*) | (*) | (*) | (*) | (*) |
| SI | 0% | 0% | 0% | 0% | 0% |
| SK | 10% | 21% | 64% | 5% | 0% |

Table 2.23

| Credit quality of government bonds for undertakings not using a measure or using at least one measure, at EEA level and per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of measures** | **30%** | **42%** | **17%** | **11%** | **1%** |
| | **Use of at least one measure** | **15%** | **43%** | **15%** | **27%** | **1%** |
| AT | No use of measures | 17% | 60% | 13% | 9% | 0% |
| | Use of at least one measure | 16% | 49% | 27% | 8% | 0% |
| BE | No use of measures | 4% | 69% | 16% | 10% | 1% |
| | Use of at least one measure | 9% | 72% | 10% | 8% | 0% |
| BG | No use of measures | 1% | 25% | 24% | 50% | 1% |
| | Use of at least one measure | 3% | 1% | 15% | 81% | 0% |
| CY | No use of measures | 18% | 16% | 21% | 35% | 9% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| CZ | No use of measures | 2% | 93% | 5% | 0% | 0% |
| | Use of at least one measure | 5% | 60% | 29% | 5% | 1% |
| DE | No use of measures | 42% | 40% | 13% | 5% | 0% |
| | Use of at least one measure | 34% | 46% | 14% | 5% | 0% |
| DK | No use of measures | 73% | 19% | 2% | 4% | 2% |
| | Use of at least one measure | 67% | 16% | 4% | 10% | 3% |
| EE | No use of measures | 20% | 21% | 44% | 13% | 2% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| ES | No use of measures | 6% | 13% | 56% | 25% | 0% |
| | Use of at least one measure | 2% | 2% | 74% | 22% | 0% |
| FI | No use of measures | 21% | 67% | 5% | 7% | 0% |
| | Use of at least one measure | 45% | 49% | 2% | 3% | 1% |
| FR | No use of measures | 7% | 76% | 7% | 9% | 0% |
| | Use of at least one measure | 8% | 76% | 7% | 9% | 0% |
| GR | No use of measures | 25% | 35% | 9% | 9% | 23% |
| | Use of at least one measure | 10% | 13% | 8% | 13% | 56% |
| HR | No use of measures | 1% | 2% | 6% | 85% | 6% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| HU | No use of measures | 0% | 0% | 1% | 96% | 3% |
| | Use of at least one measure | 1% | 1% | 0% | 99% | 0% |
| IE | No use of measures | 32% | 48% | 12% | 7% | 0% |
| | Use of at least one measure | 36% | 45% | 13% | 6% | 0% |
| IS | No use of measures | 0% | 0% | 78% | 14% | 8% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| IT | No use of measures | 2% | 8% | 5% | 84% | 1% |
| | Use of at least one measure | 2% | 5% | 7% | 85% | 0% |
| LI | No use of measures | 68% | 24% | 5% | 3% | 0% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| LT | No use of measures | 7% | 12% | 66% | 16% | 0% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| LU | No use of measures | 43% | 49% | 5% | 3% | 0% |
| | Use of at least one measure | 26% | 53% | 7% | 14% | 0% |
| LV | No use of measures | 13% | 11% | 72% | 4% | 0% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| MT | No use of measures | 21% | 58% | 15% | 6% | 0% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| NL | No use of measures | 55% | 26% | 6% | 9% | 4% |
| | Use of at least one measure | 55% | 35% | 3% | 6% | 0% |
| NO | No use of measures | 57% | 41% | 2% | 0% | 0% |
| | Use of at least one measure | 51% | 36% | 12% | 0% | 0% |
| PL | No use of measures | 2% | 0% | 96% | 2% | 0% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| PT | No use of measures | 3% | 5% | 3% | 88% | 0% |
| | Use of at least one measure | 4% | 10% | 13% | 72% | 1% |
| RO | No use of measures | 0% | 0% | 1% | 99% | 0% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| SE | No use of measures | 94% | 5% | 1% | 0% | 0% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| SI | No use of measures | 18% | 19% | 43% | 17% | 2% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| SK | No use of measures | 7% | 1% | 83% | 7% | 2% |
| | Use of at least one measure | 10% | 21% | 64% | 5% | 0% |

Table 2.24

| Credit quality of corporate bonds for undertakings not using any measure, at EEA level and per country (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| **Country** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **38%** | **17%** | **26%** | **17%** | **1%** |
| AT | 31% | 14% | 32% | 21% | 1% |
| BE | 8% | 21% | 43% | 24% | 4% |
| BG | 6% | 8% | 21% | 58% | 8% |
| CY | 20% | 9% | 29% | 37% | 5% |
| CZ | 2% | 31% | 36% | 31% | 0% |
| DE | 40% | 21% | 24% | 14% | 1% |
| DK | 91% | 2% | 3% | 2% | 2% |
| EE | 13% | 19% | 32% | 34% | 2% |
| ES | 4% | 14% | 36% | 42% | 4% |
| FI | 5% | 8% | 39% | 44% | 5% |
| FR | 9% | 20% | 39% | 29% | 2% |
| GR | 29% | 11% | 30% | 24% | 6% |
| HR | 3% | 3% | 33% | 50% | 11% |
| HU | 1% | 0% | 27% | 52% | 21% |
| IE | 7% | 14% | 46% | 32% | 1% |
| IS | 0% | 0% | 0% | 99% | 1% |
| IT | 14% | 8% | 31% | 45% | 2% |
| LI | 13% | 19% | 47% | 19% | 1% |
| LT | 24% | 16% | 20% | 36% | 4% |
| LU | 12% | 17% | 41% | 29% | 1% |
| LV | 17% | 6% | 38% | 35% | 4% |
| MT | 10% | 13% | 35% | 41% | 2% |
| NL | 8% | 22% | 33% | 31% | 7% |
| NO | 46% | 11% | 29% | 13% | 1% |
| PL | 0% | 7% | 34% | 54% | 5% |
| PT | 1% | 7% | 35% | 54% | 3% |
| RO | 0% | 0% | 57% | 43% | 0% |
| SE | 78% | 6% | 8% | 6% | 2% |
| SI | 8% | 10% | 32% | 45% | 5% |
| SK | 1% | 25% | 22% | 46% | 5% |

Table 2.25

| Credit quality of corporate bonds for undertakings using at least one of the measures, at EEA level and per country (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| **Country** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **17%** | **17%** | **33%** | **31%** | **2%** |
| AT | 20% | 21% | 35% | 23% | 1% |
| BE | 10% | 18% | 34% | 37% | 2% |
| BG | 6% | 3% | 42% | 47% | 3% |
| CY | (*) | (*) | (*) | (*) | (*) |
| CZ | 0% | 3% | 41% | 52% | 4% |
| DE | 37% | 22% | 23% | 17% | 1% |
| DK | 82% | 7% | 5% | 5% | 1% |
| EE | 0% | 0% | 0% | 0% | 0% |
| ES | 2% | 14% | 32% | 49% | 3% |
| FI | 10% | 10% | 27% | 40% | 14% |
| FR | 8% | 19% | 41% | 31% | 1% |
| GR | 1% | 13% | 35% | 42% | 9% |
| HR | 0% | 0% | 0% | 0% | 0% |
| HU | 0% | 4% | 30% | 66% | 0% |
| IE | 21% | 14% | 40% | 24% | 1% |
| IS | 0% | 0% | 0% | 0% | 0% |
| IT | 2% | 7% | 28% | 55% | 8% |
| LI | (*) | (*) | (*) | (*) | (*) |
| LT | 0% | 0% | 0% | 0% | 0% |
| LU | 7% | 12% | 44% | 36% | 2% |
| LV | 0% | 0% | 0% | 0% | 0% |
| MT | (*) | (*) | (*) | (*) | (*) |
| NL | 4% | 12% | 40% | 41% | 3% |
| NO | 33% | 14% | 36% | 17% | 0% |
| PL | 0% | 0% | 0% | 0% | 0% |
| PT | 3% | 8% | 38% | 45% | 7% |
| RO | 0% | 0% | 0% | 0% | 0% |
| SE | (*) | (*) | (*) | (*) | (*) |
| SI | 0% | 0% | 0% | 0% | 0% |
| SK | 7% | 14% | 35% | 44% | 0% |

Table 2.26

| Credit quality of corporate bonds for undertakings not using a measure or using at least one measure, at EEA level and per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of measures** | **38%** | **17%** | **26%** | **17%** | **1%** |
| | **Use of at least one measure** | **17%** | **17%** | **33%** | **31%** | **2%** |
| AT | No use of measures | 31% | 14% | 32% | 21% | 1% |
| | Use of at least one measure | 20% | 21% | 35% | 23% | 1% |
| BE | No use of measures | 8% | 21% | 43% | 24% | 4% |
| | Use of at least one measure | 10% | 18% | 34% | 37% | 2% |
| BG | No use of measures | 6% | 8% | 21% | 58% | 8% |
| | Use of at least one measure | 6% | 3% | 42% | 47% | 3% |
| CY | No use of measures | 20% | 9% | 29% | 37% | 5% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| CZ | No use of measures | 2% | 31% | 36% | 31% | 0% |
| | Use of at least one measure | 0% | 3% | 41% | 52% | 4% |
| DE | No use of measures | 40% | 21% | 24% | 14% | 1% |
| | Use of at least one measure | 37% | 22% | 23% | 17% | 1% |
| DK | No use of measures | 91% | 2% | 3% | 2% | 2% |
| | Use of at least one measure | 82% | 7% | 5% | 5% | 1% |
| EE | No use of measures | 13% | 19% | 32% | 34% | 2% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| ES | No use of measures | 4% | 14% | 36% | 42% | 4% |
| | Use of at least one measure | 2% | 14% | 32% | 49% | 3% |
| FI | No use of measures | 5% | 8% | 39% | 44% | 5% |
| | Use of at least one measure | 10% | 10% | 27% | 40% | 14% |
| FR | No use of measures | 9% | 20% | 39% | 29% | 2% |
| | Use of at least one measure | 8% | 19% | 41% | 31% | 1% |
| GR | No use of measures | 29% | 11% | 30% | 24% | 6% |
| | Use of at least one measure | 1% | 13% | 35% | 42% | 9% |
| HR | No use of measures | 3% | 3% | 33% | 50% | 11% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| HU | No use of measures | 1% | 0% | 27% | 52% | 21% |
| | Use of at least one measure | 0% | 4% | 30% | 66% | 0% |
| IE | No use of measures | 7% | 14% | 46% | 32% | 1% |
| | Use of at least one measure | 21% | 14% | 40% | 24% | 1% |
| IS | No use of measures | 0% | 0% | 0% | 99% | 1% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| IT | No use of measures | 14% | 8% | 31% | 45% | 2% |
| | Use of at least one measure | 2% | 7% | 28% | 55% | 8% |
| LI | No use of measures | 13% | 19% | 47% | 19% | 1% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| LT | No use of measures | 24% | 16% | 20% | 36% | 4% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| LU | No use of measures | 12% | 17% | 41% | 29% | 1% |
| | Use of at least one measure | 7% | 12% | 44% | 36% | 2% |
| LV | No use of measures | 17% | 6% | 38% | 35% | 4% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| MT | No use of measures | 10% | 13% | 35% | 41% | 2% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| NL | No use of measures | 8% | 22% | 33% | 31% | 7% |
| | Use of at least one measure | 4% | 12% | 40% | 41% | 3% |
| NO | No use of measures | 46% | 11% | 29% | 13% | 1% |
| | Use of at least one measure | 33% | 14% | 36% | 17% | 0% |
| PL | No use of measures | 0% | 7% | 34% | 54% | 5% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| PT | No use of measures | 1% | 7% | 35% | 54% | 3% |
| | Use of at least one measure | 3% | 8% | 38% | 45% | 7% |
| RO | No use of measures | 0% | 0% | 57% | 43% | 0% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| SE | No use of measures | 78% | 6% | 8% | 6% | 2% |
| | Use of at least one measure | (*) | (*) | (*) | (*) | (*) |
| SI | No use of measures | 8% | 10% | 32% | 45% | 5% |
| | Use of at least one measure | 0% | 0% | 0% | 0% | 0% |
| SK | No use of measures | 1% | 25% | 22% | 46% | 5% |
| | Use of at least one measure | 7% | 14% | 35% | 44% | 0% |

**Duration of bonds**

The following graphs show, for each of the countries, the average duration of the bond portfolios, separately for government bonds and corporate bonds. A distinction has been made between undertakings using at least one measure and undertakings using no measure. Please note that the graphs on duration do not include unit-linked/index-linked-investments.

Figure 2.22

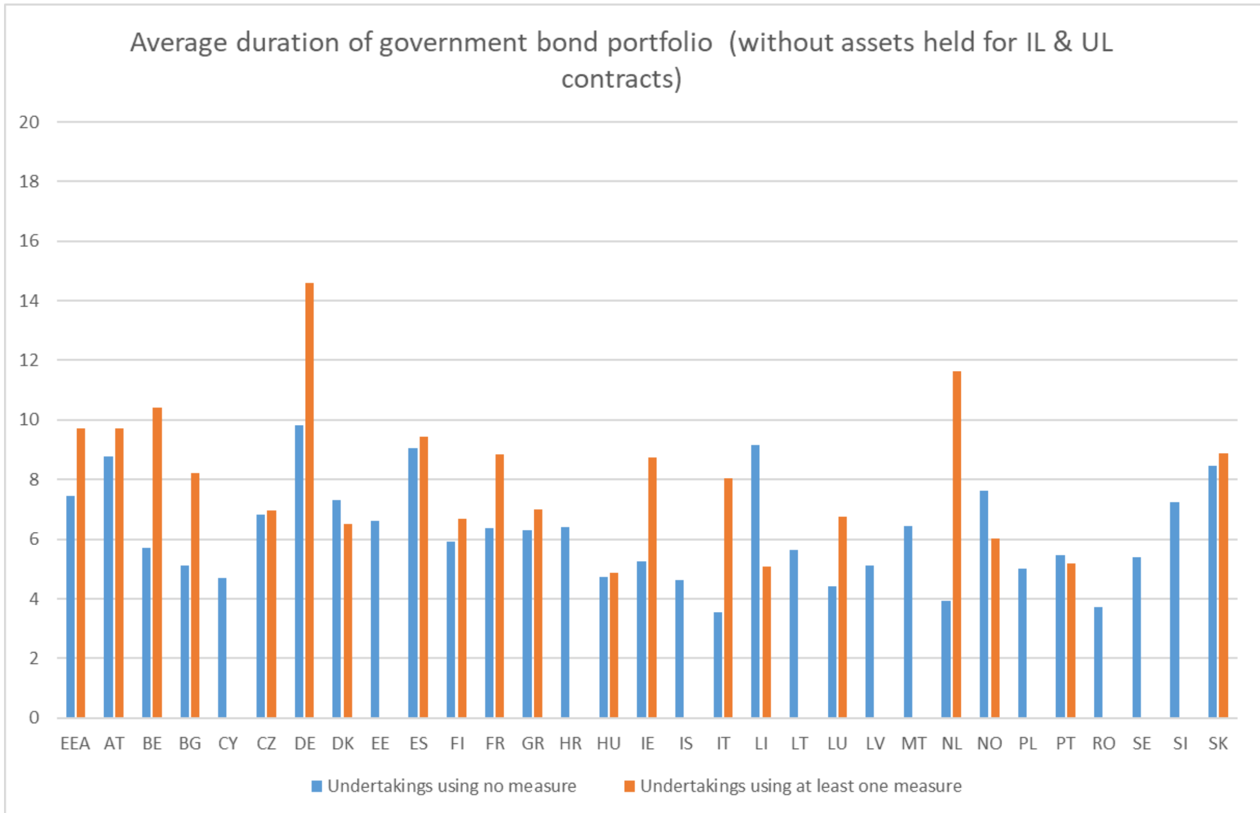
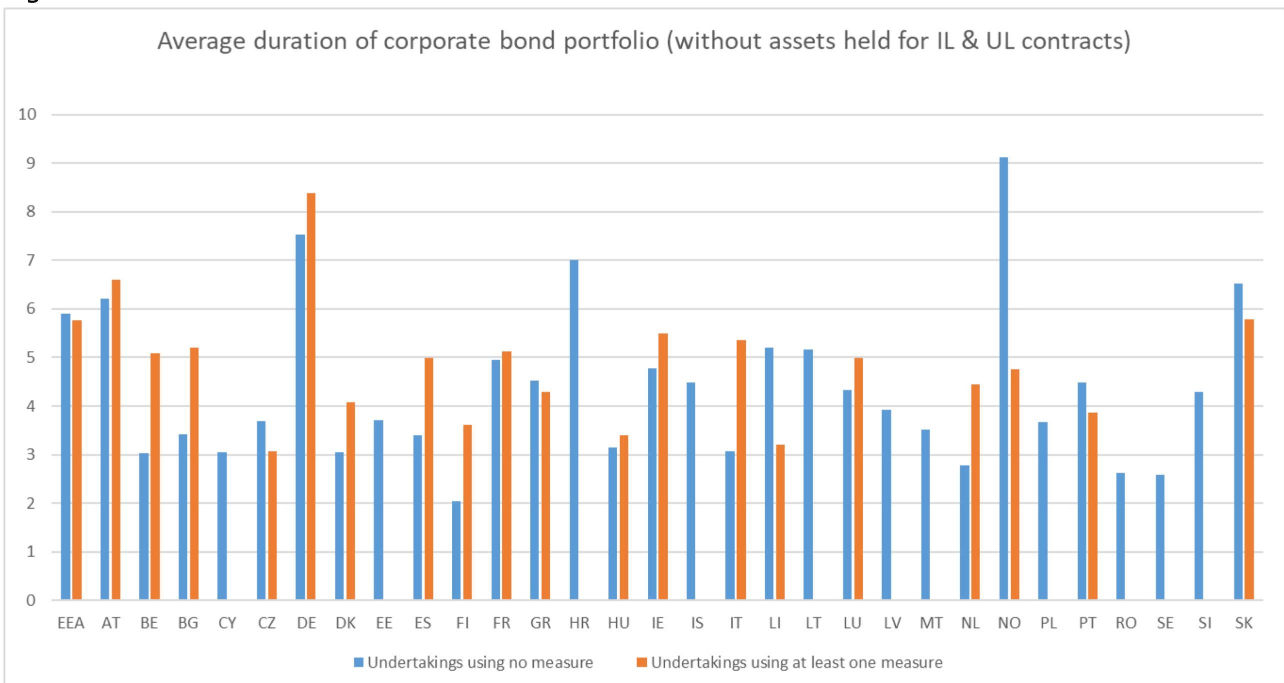



Figure 2.23



These graphs show that on average the duration of bonds is higher in undertakings using at least one LTG measure. This trend is much more apparent in government bonds than in corporate bonds however and strong national differences also play an important role in the durations.

The tables below provide further detail, on a national level, on the duration of bond portfolios of undertakings, distinguishing between the use or omission of any of the LTG measures:

Table 2.27

| **Duration of government bonds per country and per measure (without assets held for IL & UL contracts)** | | | | | |
|---|---|---|---|---|---|
| | Total | VA | MA | TRFR/TTP | No measure |
| **EEA** | **9** | **10** | **10** | **11** | **7** |
| AT | 10 | 10 | | 10 | 9 |
| BE | 10 | 10 | | (*) | 6 |
| BG | 6 | 8 | | | 5 |
| CY | 5 | (*) | | | 5 |
| CZ | 7 | 7 | | | 7 |
| DE | 13 | 15 | | 16 | 10 |
| DK | 7 | 7 | | | 7 |
| EE | 7 | | | | 7 |
| ES | 9 | 9 | 10 | 9 | 9 |
| FI | 7 | 7 | | 6 | 6 |
| FR | 9 | 9 | | 8 | 6 |
| GR | 7 | 7 | | 8 | 6 |
| HR | 6 | | | | 6 |
| HU | 5 | 5 | | | 5 |
| IE | 7 | 9 | | (*) | 5 |
| IS | 5 | | | | 5 |
| IT | 8 | 8 | | | 4 |
| LI | 7 | 5 | | (*) | 9 |
| LT | 6 | | | | 6 |
| LU | 6 | 7 | | | 4 |
| LV | 5 | | | | 5 |
| MT | 6 | | | | 6 |
| NL | 11 | 12 | | | 4 |
| NO | 6 | 6 | | 6 | 8 |
| PL | 5 | | | | 5 |
| PT | 5 | 6 | | 5 | 5 |
| RO | 4 | (*) | | | 4 |
| SE | 5 | (*) | | | 5 |
| SI | 7 | | | | 7 |
| SK | 9 | 9 | | | 8 |

Table 2.28

| Duration of corporate bonds per country and per measure (without assets held for IL & UL contracts) | | | | | |
|---|---|---|---|---|---|
| | Total | VA | MA | TRFR/TTP | No measure |
| **EEA** | **6** | **6** | **5** | **7** | **6** |
| AT | 7 | 7 | | 6 | 6 |
| BE | 5 | 5 | | (*) | 3 |
| BG | 4 | 5 | | | 3 |
| CY | 3 | (*) | | | 3 |
| CZ | 3 | 3 | | | 4 |
| DE | 8 | 8 | | 9 | 8 |
| DK | 4 | 4 | | | 3 |
| EE | 4 | | | | 4 |
| ES | 5 | 5 | 5 | 5 | 3 |
| FI | 3 | 4 | | 4 | 2 |
| FR | 5 | 5 | | 7 | 5 |
| GR | 4 | 4 | | 4 | 5 |
| HR | 7 | | | | 7 |
| HU | 3 | 3 | | | 3 |
| IE | 5 | 6 | | (*) | 5 |
| IS | 4 | | | | 4 |
| IT | 5 | 5 | | | 3 |
| LI | 4 | 3 | | (*) | 5 |
| LT | 5 | | | | 5 |
| LU | 5 | 5 | | | 4 |
| LV | 4 | | | | 4 |
| MT | 4 | | | | 4 |
| NL | 4 | 4 | | | 3 |
| NO | 5 | 5 | | 5 | 9 |
| PL | 4 | | | | 4 |
| PT | 4 | 3 | | 4 | 4 |
| RO | 3 | (*) | | | 3 |
| SE | 3 | (*) | | | 3 |
| SI | 4 | | | | 4 |
| SK | 6 | 6 | | | 7 |

Again, some noticeable differences between the different countries become apparent. Overall, a trend of slightly increasing bond durations from 2018 to 2019 is visible. This trend is stronger in government bonds, where the average duration within the EEA has increased by almost 0,8 years. The durations of corporate bonds have only increased slightly on average and in some countries a decrease was observed. The longer durations can potentially hint at search-for-yield-behaviour in the context of the ongoing low-interest market situation.

### Supervisory observations on the investment behaviour

To collect information about the impact of the LTG measures and measures on equity risk on the investment behaviour of undertakings, as for the precious LTG reports EIOPA asked NSAs about their observations regarding trends in the behaviour of undertakings as long-term investors, the drivers associated with those trends and their view on any connections between the measures and the trends observed. Specific questions were asked on any noticeable trends in the holding of equities as well as the duration of bond portfolios.

Overall, the responses from NSAs were similar compared to the observations for the previous year. Most of the NSAs have identified no relevant and significant trends in the investment behaviour of the insurance undertakings they supervise. Most of the trends that were identified relate to search-for-yield behaviour in the ongoing context of low interest rates. None of the observations could be clearly linked to the use of LTG-measures on the basis of factual evidence, which would however be hard to achieve in any case.

The main trends observed by NSAs during 2019 are similar to last year. A search-for-yield was observed by five NSA, with explicit mention of a switch to alternative investments such as infrastructure, mortgages and loans and other property investments. One NSA commented that there is an increased awareness of ESG criteria in investment decisions. NSAs did not observe any significant change in this trend during the first half of 2020.

Seven NSAs mentioned specific trends regarding the holding of equities. Four of those identified a slight increase of equities, with three a slight decrease. NSAs did not observe any significant change in this trend during the first half of 2020, with one NSA observing an increase in equity investment, and another NSA observing more active buying and selling behaviour. If one also takes the graphs provided in the 'allocation of assets'-section into account, a slight increase of the overall holding of equities has been observed from 2018 to 2019.

Three NSAs identified a trend of increasing bond duration. Two of those NSAs that witnessed an upward trend in durations directly linked this to search-for-yield behaviour.

Two NSAs linked trends in investments to the use of LTG measures. The first of these mentioned that the VA influences the composition of the bond portfolios in their market, due to requirements in the approvals process. The second NSA observed that the LTG measures are a motivation for the increase in longevity reinsurance. They observed that the decrease in longevity risk allows insuers to take on more investment risk..

## II.5 Impact on consumers and products

### Trend regarding availability of products with long-term guarantees

The 2018 LTG report contained an extensive analysis of the product environment. This analysis will not be repeated in the 2020 report, as it was intended as a one off exercise that gave an overall snapshot of the European insurance market and the availability of products with long-term guarantees. For the report this year, similar to the 2019 report,

NSAs have been asked to comment on any new trends they have observed in their market since the previous report.

In the 2018 and 2019 reports, approximately half of the jurisdictions observed a reduction in the availability of traditional life insurance products with long-term guarantees and an increase in the availability of unit-linked business. All jurisdictions that observed this trend last year, have responded that the trend has continued this year. One NSA (LT) commented that this transition increased during 2019, due to ongoing pension reform. A second NSA (DK) commented that a large insurer stopped selling products with minimum guarantee and profit participation during 2019.

One NSA (IT) reported a significant decrease in the volume of new pure unit-linked business (excluding hybrid products) written in 2019. A second NSA (BG) observed that insurers in their market have either reduced the guarantees to 0 – 0.5% and therefore the selling of products with guarantees decreased or in some cases have ceased selling products with guarantees.

Over the first half of 2020, the majority of NSAs did not observe any new trends in relation to the availability of products with long-term guarantees. One NSA (LT) reported a decrease in the volume of new contracts, both traditional life insurance and unit-linked, due to the uncertainty brought on by Covid-19

**Trend in size of guarantee**
In relation to the size of guarantees, the trend appears to have continued from last year, where the majority of jurisdictions observed a reduction in the size and duration of guarantees. The main drivers observed for this are the low interest rate environment, in particular the increase in the cost of guarantees driven by the decrease in interest rates, which is also reflected under Solvency II in technical provisions as well as the SCR. In some countries the trend started already before Solvency II became into effect and the long-term guarantee products have been in run-off.

**Customer Detriment**
Similar to last year, the majority of NSAs observed that the current trends in the availability of products with long-term guarantees had not raised consumer protection issues. However, one specific case of consumer detriment has been observed, this was in relation to undertakings encouraging policyholders to transfer away from traditional products with high guaranteed interest rates (CZ).

During 2020, one NSA (MT) observed a case where there was a significant fall in the with profit fund value, due to risky investment strategy and annual management charges. A number of NSAs indicated that they have taken or plannedactivities and measures over the year, this includes:

- Thematic reviews of certain products, with a focus on consumer aspects.
- Focus on conduct of insurance brokers, intermediaries and financial advisors.
- Market surveys, so that trends can be identified faster.
- Implementation of a consumer protection risk based system of early warning.

During the first half of 2020, a number of NSAs commented that they have increased monitoring activities, but no specific new cases of consumer detriment have been observed.

## II.6 Impact on competition and level playing field in the EU insurance market

The topic on competition and level playing field is included in the list of relevant items for the review of the LTG measures and measures on equity risk in Article 77f(3)(c) of the Solvency II Directive. It has been covered since the report 2017 (it was not included in the first report because of the scarcity of data and limited experience on the topic at that time).

In response to the question of whether they had observed any impact of the LTG measures and measures on equity risk on competition, the vast majority of NSAs did not report any such observations. However the same issues than in 2019 were raised in respect of over- and undershooting effects created by the VA creating advantages, e.g. for undertakings that use a VA which expresses a level of spread volatility much higher than the one experienced by their portfolios, and disadvantages, e.g. because of the difficulties on the activation of the national component of VA. Also comparability of solvency ratios was identified as being negatively influenced,because, in some contexts and publications, the differentiation between SCR with or without LTG measures is not sufficiently transparent[17].No specific observations were made with respect to the first half of 2020.

With regard to the internal models to calculate the SCR, **two different treatments of the VA** can be observed, the modelling of a constant VA and the modelling of a dynamic VA. The approaches are further explained in section III.3. Switching on the dynamic VA typically significantly reduces SCR for spread risk, compared to switching on a constant VA[18]. 16 NSAs commented that they would allow undertakings using internal models to apply the dynamic VA. The table below shows the number of undertakings and groups using dynamic VA as at year-end 2019:

Table 2.29

| Member State | Solo | Groups |
|---|---|---|
| AT | 6 | 1 |
| BE | 3 | |
| CZ | 1 | |
| FR | 13 | 1 |
| DE | 26 | 2 |
| IE | 3 | |
| IT | 2 | 1 |
| NL | 9 | 3 |
| **Total** | **63** | **8** |

[17] A similar issue was also addressed by IMF - see LTG report 2018 p.81

[18] Note that dynamic VA approaches were only approved, if all credit risks are modelled including sovereign risk.

With respect to VA, the questionnaire investigated if NSAs require undertakings in their market to perform (regular) specific additional analysis as a consequence of applying the VA in addition to what is already foreseen by the regulation. Only three NSAs provided comments of additional analyses requested.

In one case  the NSA provided a detailed description of the approach applied that requests to undertakings experiencing material effects due to the use of VA (scenario with VA equal to zero) to evaluate also the impact of a forced sale of assets under specific conditions. If any of the two previous scenarios would result in non-compliance SCR/MCR undertakings are requested to consider effects of the investment policy, consistency of the average duration of assets vs liabilities vs the duration of the representative portfolios considered by EIOPA to calculate VA. The entity should establish criteria to evaluate the results and, where appropriate, the measures to be adopted. Undertakings are also recommended to consider possible substantial differences with the representative portfolios and the concrete possibility to earn the VA 'without assuming credit risk'.

The majority of NSAs did not identify undertakings where the risk profile of the undertaking deviates significantly from the assumptions underlying the VA. In one country, deviations in investments from undertakings compared to the reference portfolio have been identified. Another NSA referred to deviations which led to change in DVA models. No capital add on was considered by NSAs so far.

The MA is a measure applied currently only in Spain, where governance rules are established to ensure that the assigned portfolio of assets cannot be used to cover losses arising from other activities of the undertaking. In this country, undertakings are requested to identify in the investments book the assets assigned to the MA. Undertakings are then required to appoint someone responsible for the Asset and Liability management policy of the MA portfolio. Every change in the assets of the MA portfolio must be approved by the responsible persons (Actuarial function and Risk Management function) and be documented in a report which is raised to the Board.

Investments are assessed asset by asset. These assets have to be fixed income assets and nominated in the currency of liabilities. These features can be intrinsic to the assets or be obtained through other assets (for instance, a suitable derivative which transforms the cashflows of the asset into fixed cash flows). Undertakings are expected to determine, for each asset, whether the issuer or a third party are permitted to change the cash flows. Where cash flows may be changed at the unfettered discretion by the issuer, there should be sufficient compensation paid such that reinvestment is possible to replicate the cashflows.

The assessment to identify any mismatch refers to cash flows and is requested to be run monthly. If the risk profile of an undertaking deviates significantly from the assumptions underlying the MA, the authorisation to use it is withdrawn. That was the case for one undertaking in 2019.

**With respect to the TTP**

In 2019, 4 recalculations in respect of the TTP were initiated by the NSAs, none in the first half of 2020. In addition, undertakings applied for a recalculation of the transitional amount, 7 cases in 2019 and 18 cases in the first half of 2020. Only 1 of the 7 cases in 2019 was based on an identified material change of the risk profile (a merge of two undertakings). In the first half of 2020, 11 recalculations were applied due to the material market distortions during the Covid pandemic which caused material changes in the risk profile.

Practices for recalculations differ. In the case of 5 NSAs, a fixed term for recalculations (e.g. every 24 months) is specified where undertakings need to recalculate the adjustment (independent on whether a change in risk profile occurred).

Also, NSA practices differ in respect of  identifying changes in risk profiles. 5 NSAs outline, that they have processes in place to systematically monitor material changes in risk profile, e.g. by using internal tools assessing changes in the SCR, MCR or balance sheet or explicitly recognizing this as part of regular prudential supervision. One NSA provided guidance to the market.

As for last year, different supervisory practices were observed concerning the possibility to apply a lower amount of transitional deduction to technical provisions than the maximum amount that has been approved by the NSA.

Again, responses show a mixed picture:

- 17 NSAs indicated that undertakings in their jurisdiction always have to apply the maximum amount.
- 9 NSAs allow the application of a lower amount, but reductions were actually applied only by 3 undertakings in two countries. In one country the reduction is subject to the NSA's approval. The NSAs generally do not apply any limits to such reductions.
- 13 NSAs allow undertakings to exit the measure early. In most cases, NSAs require to be informed on the reasons of the exit and on the undertaking's solvency position without the measure to ensure it has successfully transferred to the new regulatory system.

Another aspect that was assessed was if NSAs considered in their approval of the transitionals whether these were necessary to ensure a smooth transition to SII.

Similar to last year, varying approaches were observed. 7 NSAs stated that during the approval process they explicitly considered or intend to consider whether the transitional was necessary for the undertaking applying.

Other NSAs also assessed how necessary the use of the transitionals was for undertakings. Two NSA mentioned an increased resilience against potentially adverse future situations as a motivation to apply the transitionals. Another NSA considers the measure to be a relevant and necessary tool to ensure a successful transition to Solvency II. Prior to the introduction of Solvency II, during the approval process, this jurisdiction did not focus on the solvency position of undertakings under the Solvency

II regime.  The NSA also observed a high number of undertakings who did not meet the solvency capital requirement without the transitional measures.

NSAs were also asked on whether they identified cases where the risk profile of the undertaking deviates significantly from the assumptions underlying the TTP or TRFR. Two NSAs indicated such cases, one of which related to the change in business which is subject to the TTP. AS a response to this, a capital add-on was investigated and a recalculation required.

An unlevel playing field can stem from different application of the LTG measures and measures of equity risk as observed above. An unlevel playing field can also result where the measures themselves differentiate between national markets. That is naturally the case for transitionals from a minimum harmonisation system like Solvency I to a maximum harmonisation system like Solvency II. The transitional adjustments for the TTP and the TRFR are calculated with reference to the valuation rules of Solvency I. These rules were not harmonised and hence they may be different across Member States and result in different amounts of technical provisions and different discount rates across national markets. Two undertakings with the same liabilities and risks but located in different Member States may therefore have different technical provisions when they both apply the TTP or the TRFR.

Similar than last year, the majority of NSAs did not identify any impact of the VA, MA, DBER, TRFR or TTP on the number of transfers of portfolio, mergers, and acquisitions in 2019. One NSA outlined  that LTG measures, may have an impact on portfolio transfers, mergers and acquisitions. In negotiations between buyers and sellers, buyers are willing to pay more for the shares of an insurance undertaking, i.e. require less funds for the transfer of the liabilities, if the undertaking can apply a measure that allows for a reduction of the liabilities. When applying the VA, there could also be a rise of the risk profile of the assets to increase alignment with the reference portfolio; increasing alignment with the reference portfolio reduces own fund volatility and this is also considered to create value from a shareholder perspective, while the increased asset risks are not beneficial from a policyholder perspective. Another NSA outlined that in case of transfer, merger or acquisition of an undertaking applying TTP it does not allow a transfer of the deduction in view of negative implications for the policyholders of the target undertaking.

## II.7 Impact on financial stability

EIOPA has asked NSAs about their experience with the LTG measures in relation to financial stability.

**VA and MA**

4 NSAs stated that there was no impact of the MA and VA on financial stability in 2019, as expected, because of the still stable market circumstances in which credit spreads did not significantly change with relatively low overall credit spreads. As such the MA and VA also did not change a lot in 2019 and had not a lot of impact.

In contrast, this picture changed during the first months of 2020. 8 NSAs outline that the VA had a relevant impact on financial stability in the first half of 2020. 1 NSA identified a positive impact of the MA on financial stability.

**Overshooting VA**
One NSA commented that applying the VA has led to overshooting effects on own funds in the first half of 2020 for undertakings with relatively long-term liabilities and relatively little and relatively less risky fixed income investments. In case spreads increase, the application of the VA by those undertakings implies a larger decrease in the valuation of the technical provisions than the decrease of value in their investments; as such the own funds of those undertakings increase when credit spreads increase.

**Behaviour of euro VA in case of a spread widening affecting a single Eurozone country**
With regard to the VA of the Eurozone another NSA commented that, in case of a spread widening affecting a single country of the area, some undesirable effects could be observed in terms of volatility of technical provisions, own funds and solvency ratio affecting all Eurozone countries. These effects, described already in last year's Report, were driven by the widening of the spreads of Italian government bonds and persisted in the first half of 2019.

**TTP**
2 NSAs replied to the questionnaire regarding the impact of the TTP on financial stability that it has helped a smooth transition to Solvency II and strengthened the perceived resilience of the insurance market.

**Symmetric Adjustment for equity risk**
One NSA responded that the symmetric adjustment for equity risk has positive implications on financial stability, even though in 2019 it was negligible in size. Another NSA outlined the positive implications of the the symmetric adjustment in the first half of 2020.

**Extrapolation**
One NSA replied that the current parametrization of the extrapolation for the euro currency stabilizes the value of the technical provisions. Another NSA commented that whereas the valuation of technical provisions may be stabilized, the amount of own funds may become less stable because of the current parametrization. Whether or not the amounts of own funds are stabilized depends on the extent of interest rate hedging and cash flow matching. [19] This NSA also outlined that the term structure was not sufficiently realistic and would lead to too low technical provisions enabling undertaking

[19] Undertakings that match their cash flows beyond the LLP to a large extent experience more volatility in own funds than undertakings that match the cash flows of their liabilities beyond the LLP to a lesser extent. This can be explained by the fact that current parametrization decreases the volatility of the rates beyond the LLP only for the purpose of the valuation of the technical provisions, while the value of the assets for which the market values are available remains fully sensitive to the volatility of market rates beyond the LLP. The amount of cash flow matching that would minimize the own fund volatility depends, among other aspects, on the relative amount of cash flows beyond the LLP and the level and shape of the risk-free interest rate term structure. Those undertaking that match to a large extent would have a lower volatility of own funds with a different parametrization, for example a 'later' LLP. Undertakings that match relatively less would experience more volatility in own funds in case of a 'later' LLP.

to increase risks due to higher regulatory own funds thus negatively impacting financial stability.

# III. Specific analysis for each of the measures

## III.1 Matching adjustment

According to Recital 31 of the Omnibus Directive, where insurance and reinsurance undertakings hold bonds or other assets with similar cash-flow characteristics to maturity, they are not exposed to the risk of changing spreads on those assets. In order to avoid changes of asset spreads from impacting on the amount of own funds of those undertakings, they should be allowed to adjust the relevant risk-free interest rate term structure in line with the spread movements of their assets.

Insurance and reinsurance undertakings may therefore apply a matching adjustment (MA) to the relevant risk-free interest rate term structure when they value their life insurance or reinsurance obligations, including annuities stemming from non-life insurance.

The MA can only be applied where specific requirements on the insurance and reinsurance obligations, the assets covering the obligations and the management of these obligations and assets are met (Article 77c of the Solvency II Directive). In particular, the expected asset cash flows must replicate each of the expected cash flows of the insurance or reinsurance obligations (cash-flow matching, Article 77c(1)(c) of that Directive).

The use of the matching adjustment under the Solvency II regime is subject to prior supervisory approval.

The matching adjustment is derived from the spreads between the interest rate that could be earned from the undertaking's assets and the basic risk-free interest rates. The matching adjustment is reduced by a fundamental spread that allows for expected loss from default and downgrade of the undertaking's assets.

Undertakings calculate the MA themselves, based on their own portfolios of assets. The fundamental spreads are specified in implementing acts.

The MA is applied in the same two European countries as at the implementation date of Solvency II. The 2016 EIOPA LTG report investigated the reasons why this was the case, at the time e.g. the majority of NSAs reported that no products matched the legal requirements for MA set out in Article 77b of the Solvency II Directive.

**Use of the matching adjustment**

14 insurance undertakings from Spain apply the MA. Undertakings are permitted to have more than one matching adjustment portfolio and each portfolio needs separate approval. The number of undertakings using the MA decreased by 1 compared to the data as at 31 December 2018.

Figure 3.1

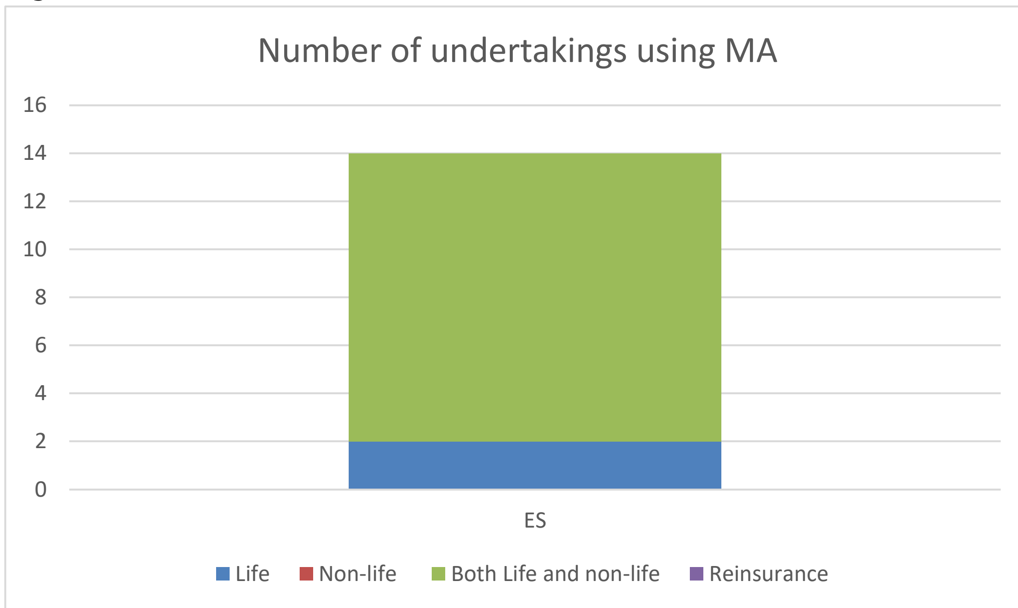
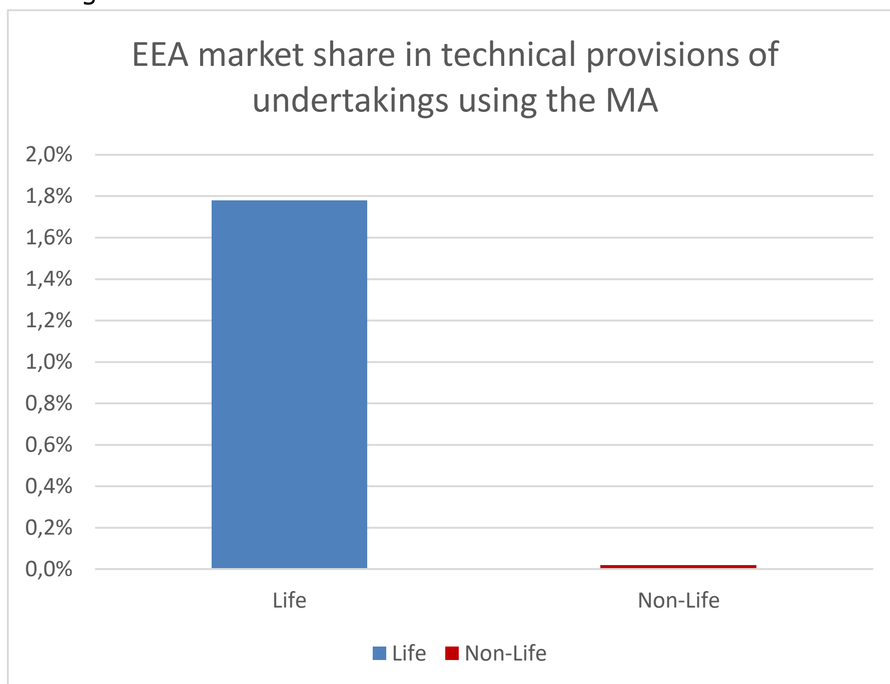



Table 3.1

| Number of undertakings using MA | | | | | |
|---|---|---|---|---|---|
| Country | Life | Non-life | Both Life and non-life | Reinsurance | Total |
| ES/EEA | 2 | 0 | 12 | 0 | 14 |

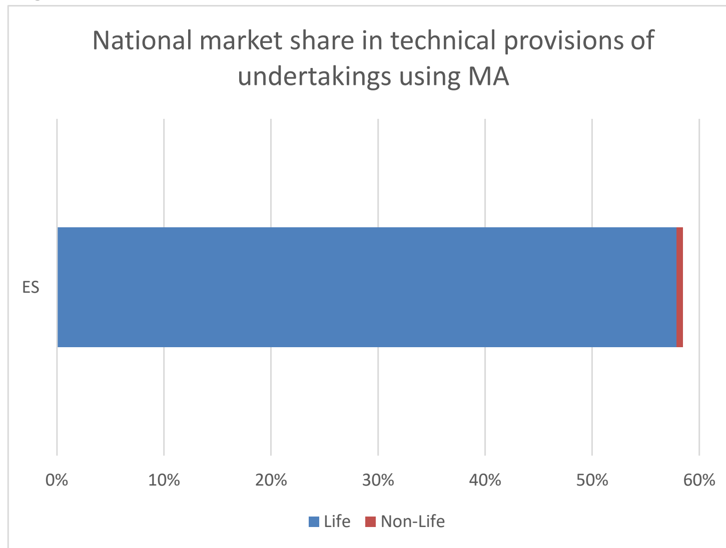
The technical provisions of undertakings applying the MA represent 1,8% of the total amount of technical provisions in the EEA.

Figure 3.2



The following graph displays the market share in terms of technical provisions at national level for undertakings using the MA. In Spain, undertakings representing 59% of the national market are using the MA.

Figure 3.3



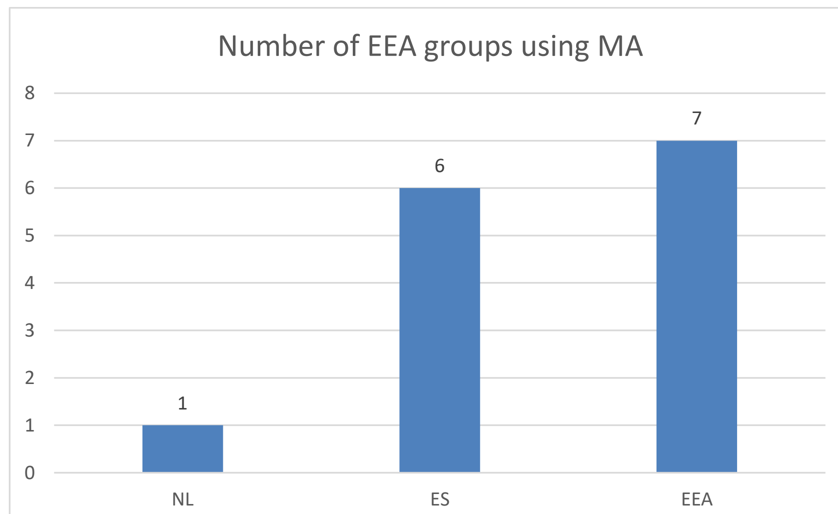

According to the Solvency II Directive it is possible to apply the TTP and the MA to the same liabilities simultaneously. 8 of the 14 undertakings in Spain are applying the TTP and the MA to the same liabilities simultaneously, which is 1 less undertaking than in the previous year.

Table 3.2

| Undertakings applying the TTP and MA to the same liabilities simultaneously | | | |
|---|---|---|---|
| Country | Number of undertakings | % EEA market share in TP | % National market share in TP |
| ES/EEA | 8 | 0% | 10% |

The following diagram provides a summary of the number of EEA groups using the matching adjustment.

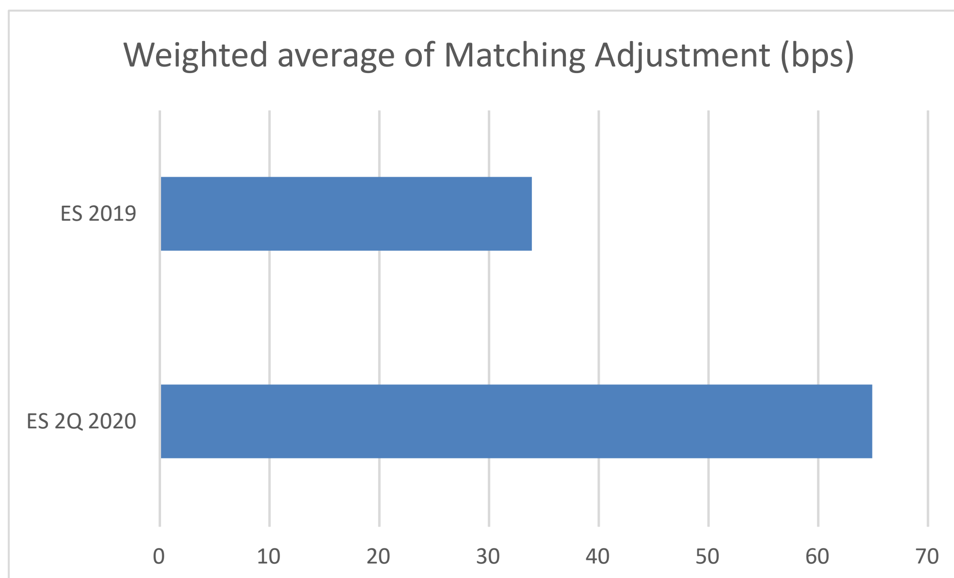
Figure 3.4



**Impact on the financial position of undertakings**

The results presented in this section are based on data from 2019 and 2Q 2020.The following graph displays the average size of the MA for undertakings in Spain.

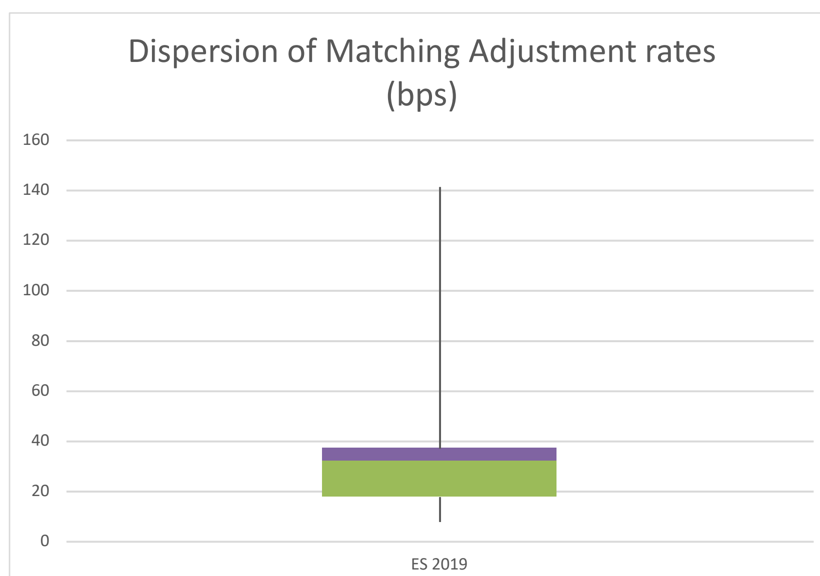
Figure 3.5




This shows that on a weighted average basis, the MA amounted to 34bps at the end of 2019 and 65bps at the end of the second quarter of 2020 in Spain. The weighted average MA in 2018 was 70bps for Spain. The movement in the MA was consistent with movement in credit spreads over the period.

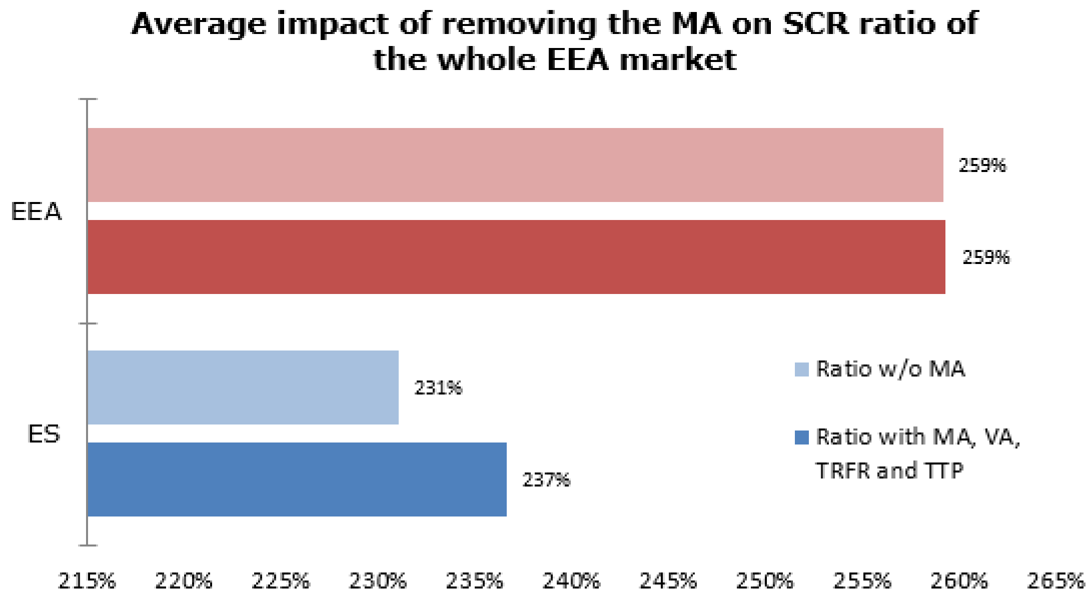
The following graph illustrates the dispersion of individual values for the MA in the Spain at the end of year 2019. The whiskers show the lowest and highest values recorded. The box shows the 25th to 75th percentile with the change in colour representing the 50th percentile (or the median).

Figure 3.6



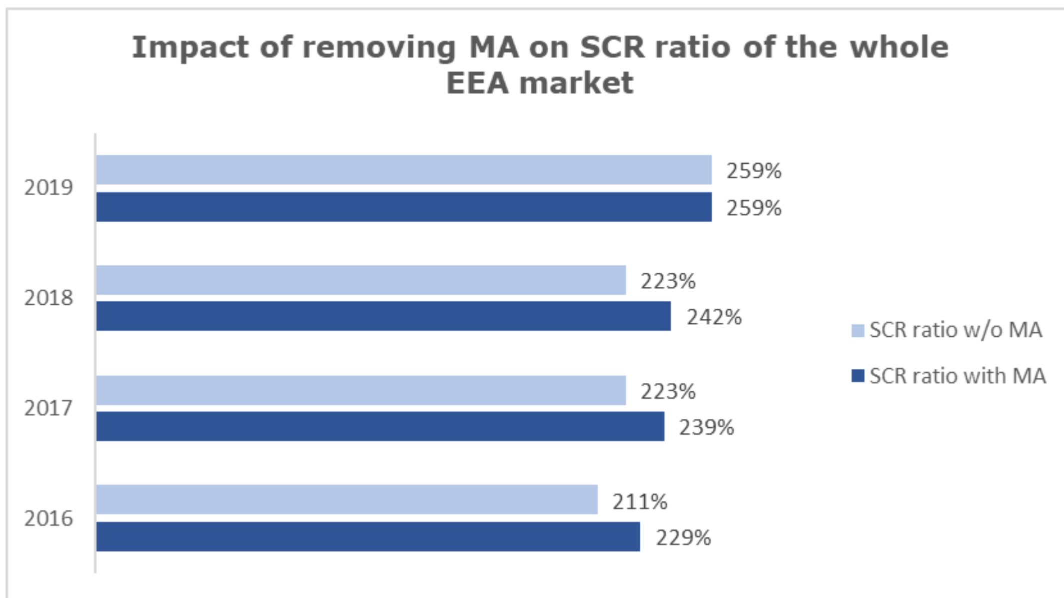

The following graph shows the overall impact of the use of the MA on the SCR ratio for the whole market of the countries where the MA is used.

Figure 3.7




The following graph shows the overall impact of the use of the MA on the SCR ratio for the whole EEA market during the last four years. The highest impact was observed in 2018, where removing the MA would result on average in a decrease of the SCR ratio by 19 percentage points. The lowest impact observed in 2019 is due to the exclusion of UK undertakings compared to the previous years.

Figure 3.8




The following graphs display the overall impact of the use of the MA on the SCR ratio for undertakings that apply this measure. The impact is shown at EEA and at country level. The first graphs shows the SCR ratio with (dark blue) and without (light blue) the MA. The red bars are for the EEA level. The second graph shows the impact in percentage points.

At the EEA level, removing the MA result on average in a decrease of the SCR ratio by 19 percentage points. In the jurisdiction, the average impact has decreased in comparison with last year, explained by the decrease of the government bond spreads.

Figure 3.9

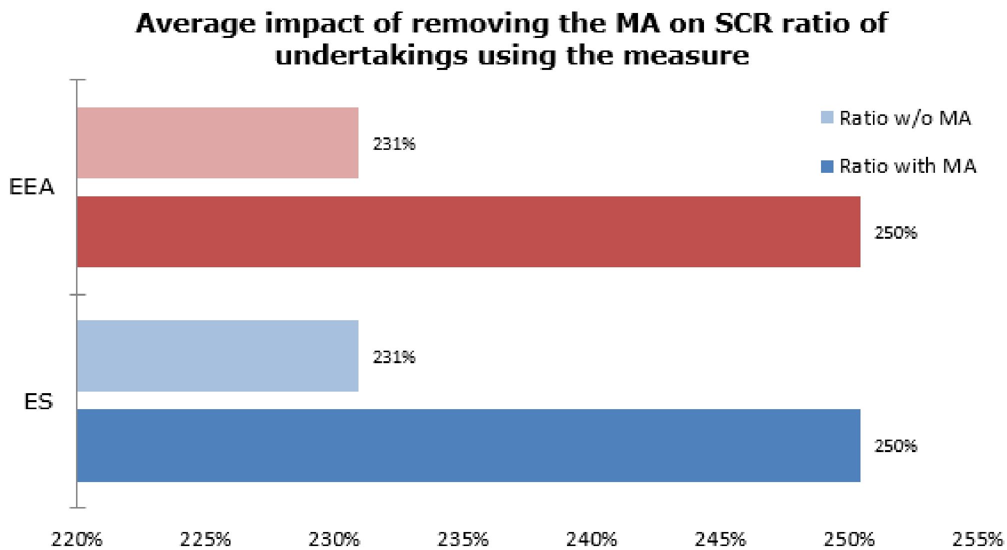
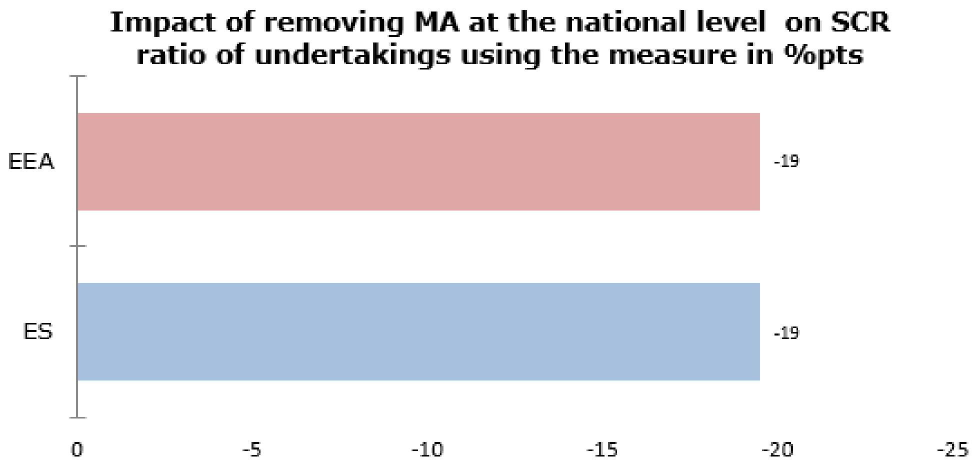
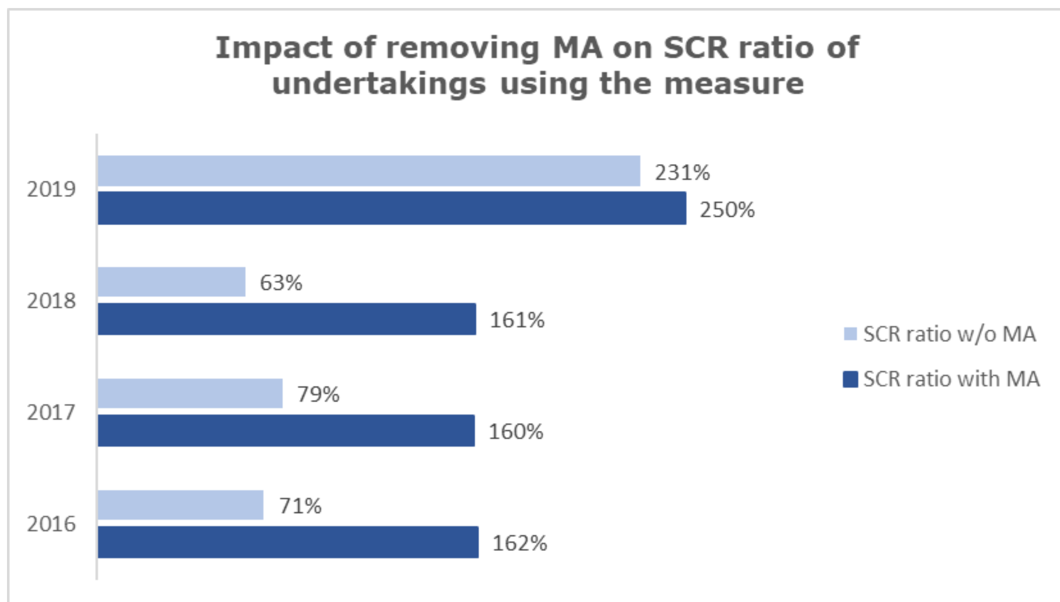



Figure 3.10




The following graph shows the overall impact of the use of the MA on the SCR ratio for undertakings using the measure during the last four years. The highest impact was observed in 2018, where removing the MA would result on average in a decrease of the SCR ratio by 98 percentage points. The lowest impact observed in 2019 is due to the exclusion of UK undertakings compared to the previous years.

Figure 3.11

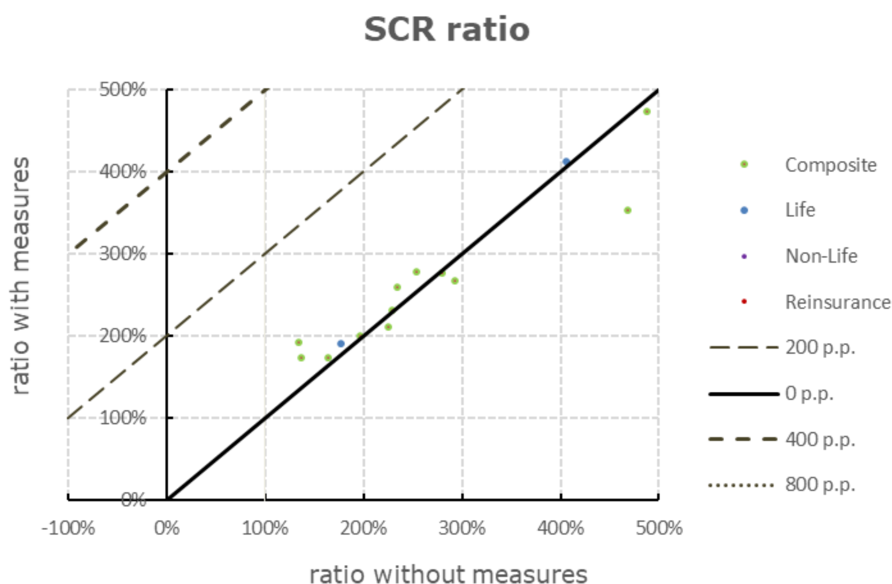



The following graph displays the impact of removing the MA on the SCR ratio of every undertaking using this measures. Each dot in the diagram represents one undertaking, comparing the individual SCR ratio against the estimated SCR ratio without the MA. The type of each undertaking is indicated by the colour of the dot.

In terms of SCR ratio, all undertakings reported an absolute impact of less than 100 percentage points.

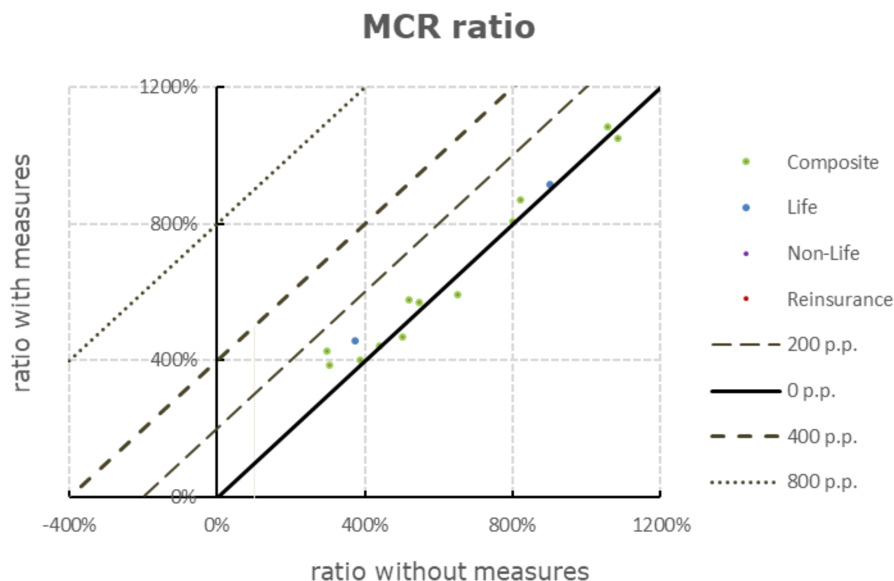
None of the undertakings using the measure reported an SCR ratio without MA below 100%. These numbers differ significantly from those of previous years. This is mostly due to UK undertakings not being included in the statistics any more, leaving just the Spanish insurers which are significantly less dependent on the MA for fulfilling their SCR.

Figure 3.12



The following graph displays the impact of removing the MA on the MCR ratio of every undertaking using the MA, comparing the individual MCR ratio against the estimated MCR ratio without the MA.

Figure 3.13



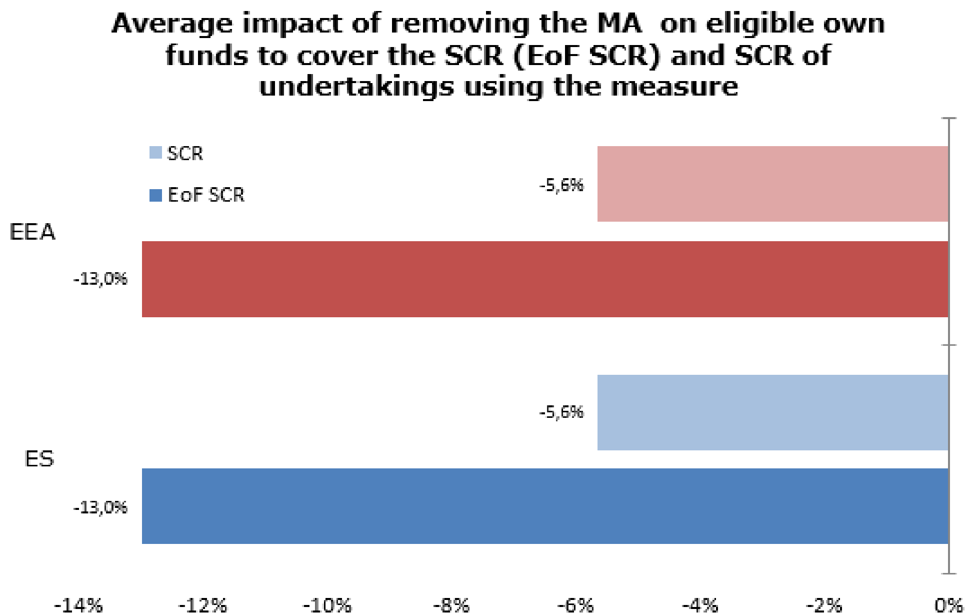

In terms of MCR ratio, 93% reported an absolute impact of less than 100 percentage points.

None of undertakings using the measure reported an MCR ratio without MA below 100%.

The following graph shows the impact of removing the MA on the SCR (light blue) and on the eligible own funds to cover the SCR (dark blue). The red bars are for the EEA level. On average, eligible own funds to cover the SCR would decrease by 13%, while the SCR would decrease by 6% if the MA were removed.

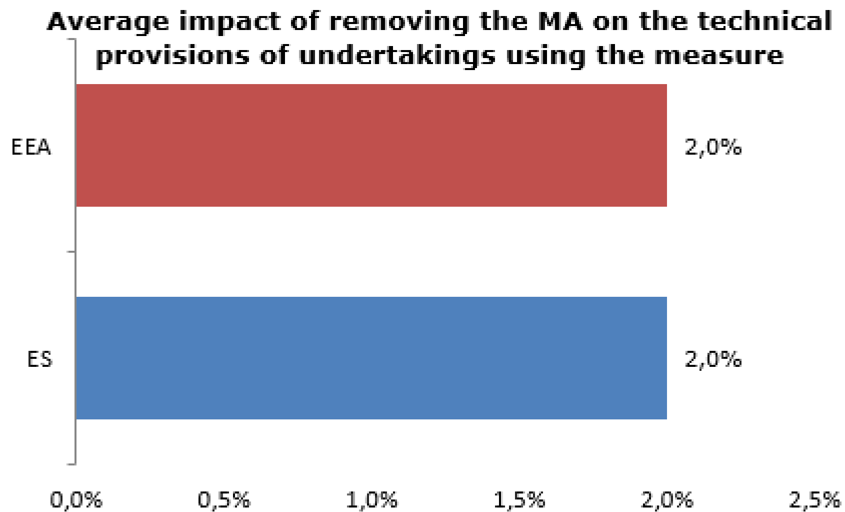
Regarding the impact of the MA on the SCR shown in the graph below, note that removing the MA typically increases the capital requirement for spread risk which leads to an increase in the SCR. At the same time, where the MA is applied, no diversification between the MA portfolio and the remaining part of the portfolio can be recognized according to articles 216 and 217 of the Solvency II Delegated Regulation. With the removal of the MA, such diversification effect can be taken into account which leads to a decrease in the SCR. For the Spanish undertakings the latter effect overweighs and thus the effect observed when removing this measure is a reduction of the SCR due to the recognition of diversification between the matching adjustment portfolio and the remaining part of the undertaking.

Figure 3.14




The following graph displays the impact of removing the MA on the value of technical provisions (TP) at EEA and national level. The average increase in technical provisions without the MA for those undertakings applying the measure would be around 2% at EEA level.

Figure 3.15




The following graph shows the impact of the MA on the MCR ratio at country and at EEA level for undertakings using that measure. Without the MA the MCR ratio would decrease on average by 47 percentage points.

Figure 3.16

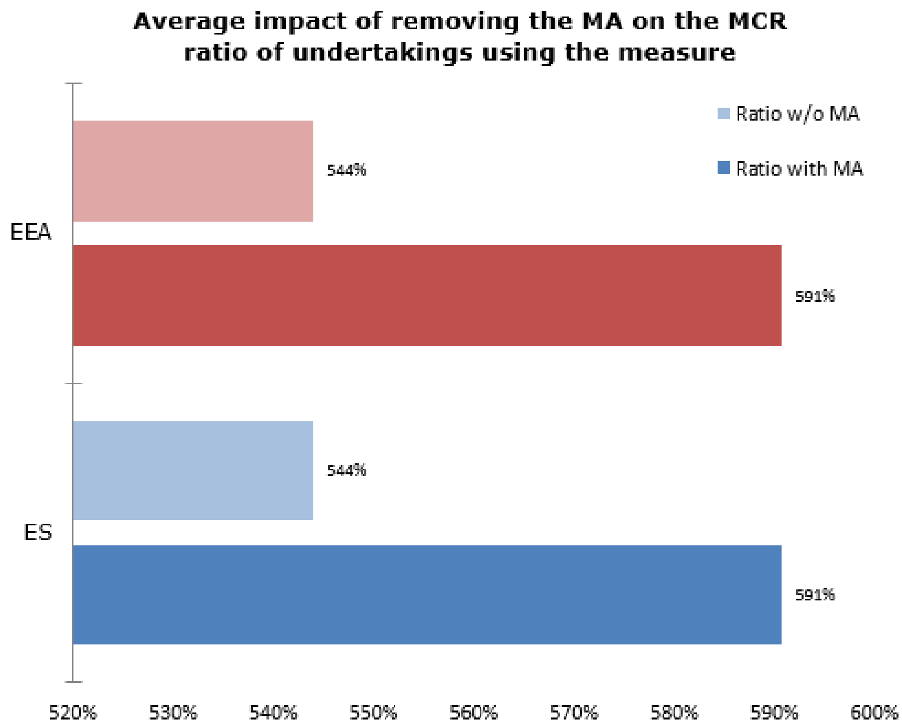
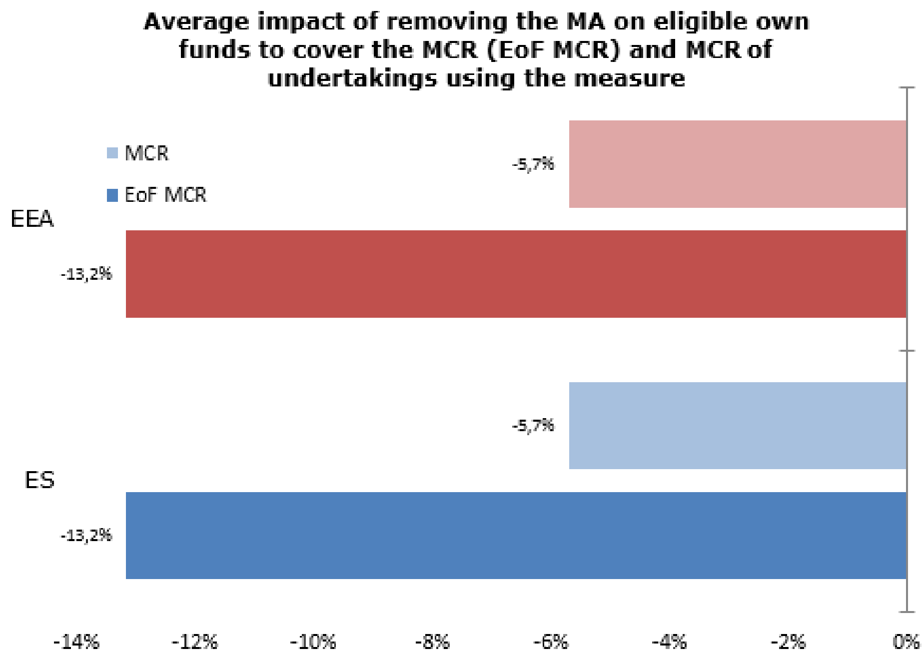


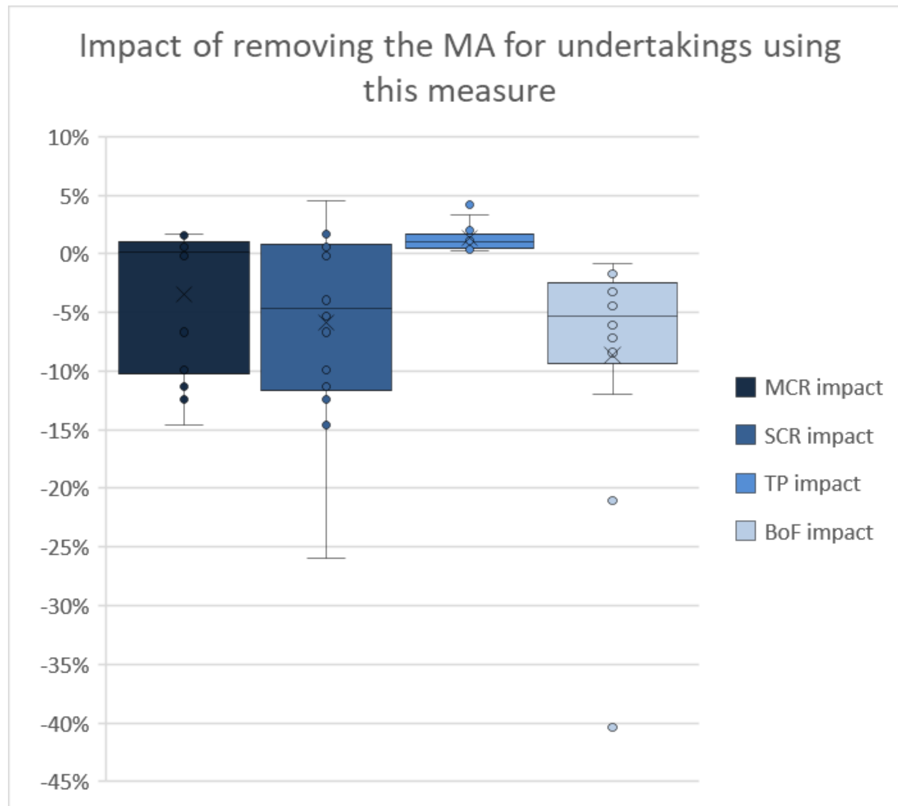

Figure 3.17




The box-plots below illustrate how the impact of removing the MA is distributed across undertakings.[20]

[20] The bottom (respectively, top) of the blue box represents the lower quartile (respectively, higher quartile) of the data set. The black band inside the box is always the middle quartile (50th percentile or median). The end of the lines extending from the boxes (called whiskers) represent the upper and lower boundaries of 1,5 interquartile-ranges. Outliers are plotted as individual points.

Figure 3.18




**Impact on the investments of undertakings**

The following graphs compare the average asset portfolio of undertakings applying the MA. Please note that the information in this section does not address specific consequences for the investments resulting from the matching requirements when applying the MA.

The tables below show the average investment allocation of undertakings using the MA in ES.

Table 3.3

| Investment allocation at EEA and country level of undertakings applying the MA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Unit linked/index linked | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| ES | 68% | 14% | 9% | 2% | 0% | 0% | 5% | 1% |

Table 3.4

| Investment allocation at EEA and country level (without assets held for IL & UL contracts) of undertakings applying the MA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| ES | 75% | 15% | 2% | 0% | 0% | 6% | 1% |

The tables below show the credit quality of the portfolio of government and corporate bonds. This is shown separately for undertakings applying the MA and the undertakings not applying the MA respectively. These tables indicate that there are some differences in credit quality of bonds, between undertakings applying the MA or not applying the MA. However, when comparing these data with the differences in the credit quality of bonds between countries, as presented in section II.4 of the report, the differences between undertakings applying the MA or not applying the MA are relatively limited. In other words, the "country effect" is considerably larger than the effect of using the MA

or not using the MA. Furthermore it is not possible to prove a causality in this difference, as the subset of undertakings applying the MA in ES might allocate assets differently from the other insurers independent of the MA. Also, the number of undertakings applying the MA is quite small, so any attempts to identify clear trends need to bear this in mind.

Table 3.5

| Credit quality of government bonds for undertakings not using the MA or using the MA, for ES (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| ES | No use of MA | 4% | 7% | 50% | 38% | 1% |
| | Use of the MA | 1% | 0% | 84% | 15% | 0% |

Table 3.6

| Credit quality of corporate bonds for undertakings not using the MA or using the MA, for ES (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| ES | No use of MA | 3% | 14% | 29% | 50% | 4% |
| | Use of the MA | 1% | 14% | 37% | 46% | 2% |

The graphs below show the duration of investments in government bonds and corporate bonds for undertakings using the MA and undertakings not using the MA in ES.

Figure 3.19

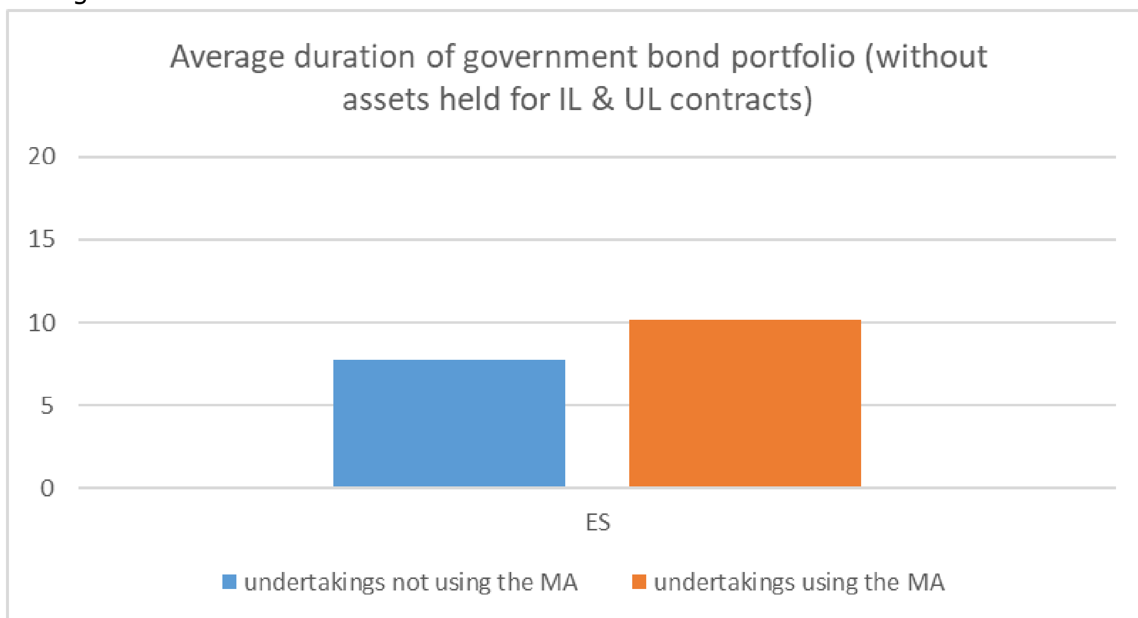
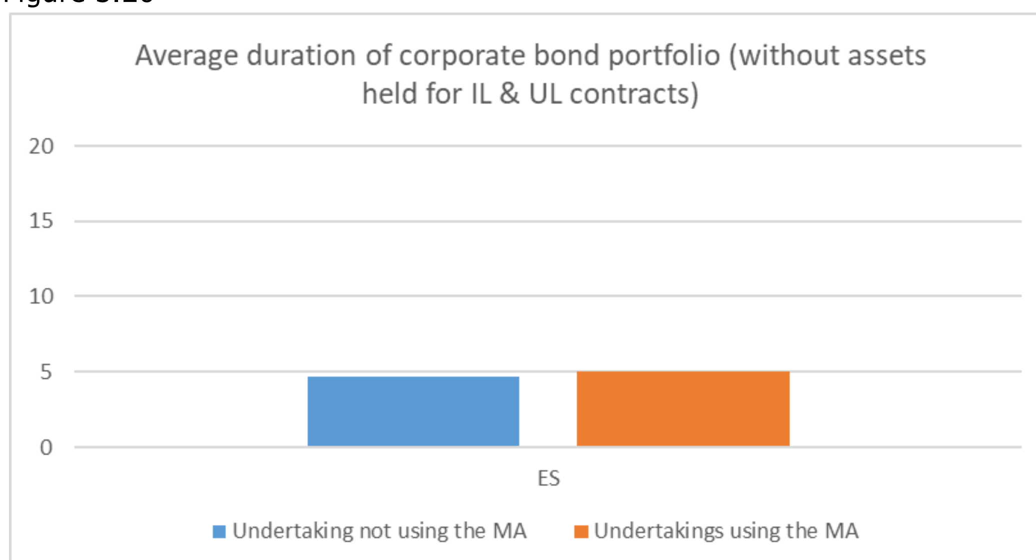


Figure 3.20




## Impact on consumers and products

The following table sets out the share of gross written premiums of undertakings using the MA compared to the total gross premiums written by all undertakings, for each line of business (columns 1 to 6) the total life insurance and life reinsurance business (column 7), and the total for non-life insurance and reinsurance business (column 8). The table is based on data reported by undertakings in the annual QRTs for 2019.

Table 3.7

| Country | 1. Health insurance | 2. Insurance with profit participation | 3. Index-linked and unit-linked insurance | 4. Other life insurance | 5. Health reinsurance | 6. Life reinsurance | 7. Total life insurance and reinsurance | 8. Total non-life insurance and reinsurance |
|---|---|---|---|---|---|---|---|---|
| ES | 0.0% | 30.1% | 65.3% | 66.5% | 0.0% | 1.8% | 55.8% | 6.3% |
| EEA | **0.0%** | **0.7%** | **1.9%** | **18.4%** | **0.0%** | **0.0%** | **0.0%** | **0.5%** |

With respect to the insurance products offered by insurance undertakings applying the MA in Spain, the following characteristics have been reported by the NSA:

- the purpose of the products is saving for retirement,
- the insurance obligations for the products fall in the Solvency II line of business "other life insurance",
- the products guarantee life annuities or a lump sum payment,
- the products offer a guaranteed interest rate.

## III.2 Volatility adjustment

Recital 32 of the Omnibus II Directive states that in order to prevent pro-cyclical investment behaviour, insurance and reinsurance undertakings should be allowed to

adjust the relevant risk-free interest rate term structure to mitigate the effect of exaggerations of bond spreads.

For that purpose insurance and reinsurance undertakings can apply a volatility adjustment (VA) to the risk-free interest rate term structure. The VA is based on 65% of the risk-corrected spread between the interest rate that could be earned from a reference portfolio of assets and the risk-free interest rates without any adjustment. The reference portfolio is representative for the assets which insurance and reinsurance undertakings are invested in to cover their insurance and reinsurance obligations.

Member States may require prior approval by supervisory authorities for insurance and reinsurance undertakings to apply a VA.

The VA is derived per currency. It is the same for all insurance and reinsurance obligations of a currency unless a country specific increase applies.

Undertakings that apply a VA to a portfolio of insurance or reinsurance obligations shall not apply a MA to those obligations.

Article 77d(6) of the Solvency Directive states that by way of derogation from Article 101, the SCR shall not cover the risk of loss of basic own funds resulting from changes of the VA.

**Use of the volatility adjustment**

The VA is used by 631 undertakings in 21 countries.

Figure 3.21

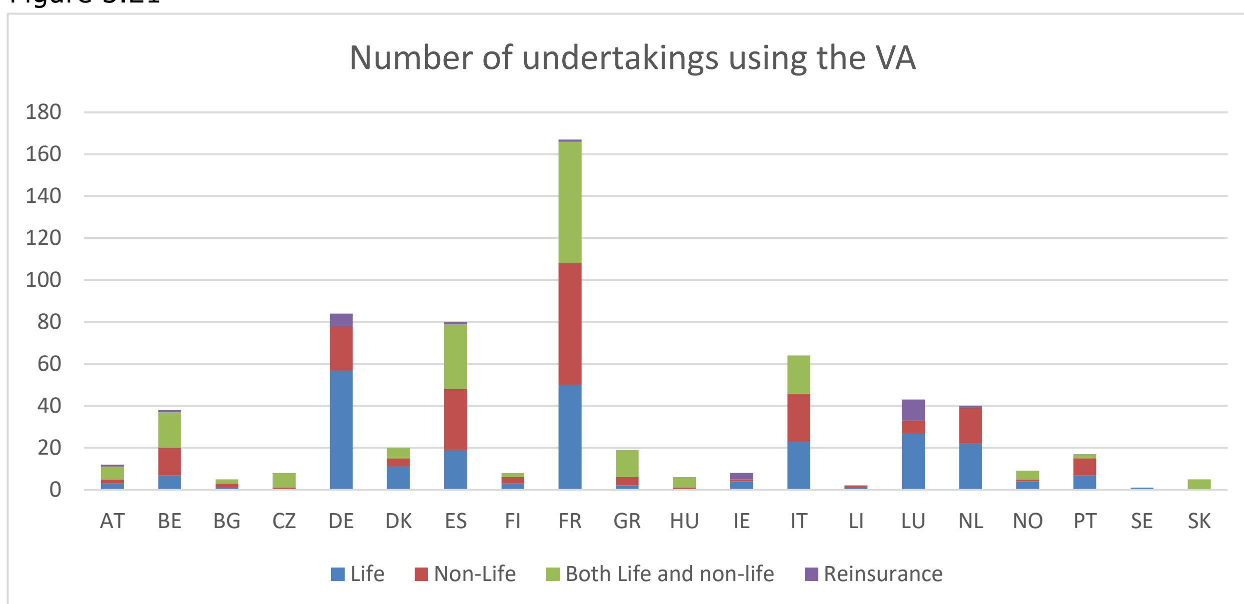
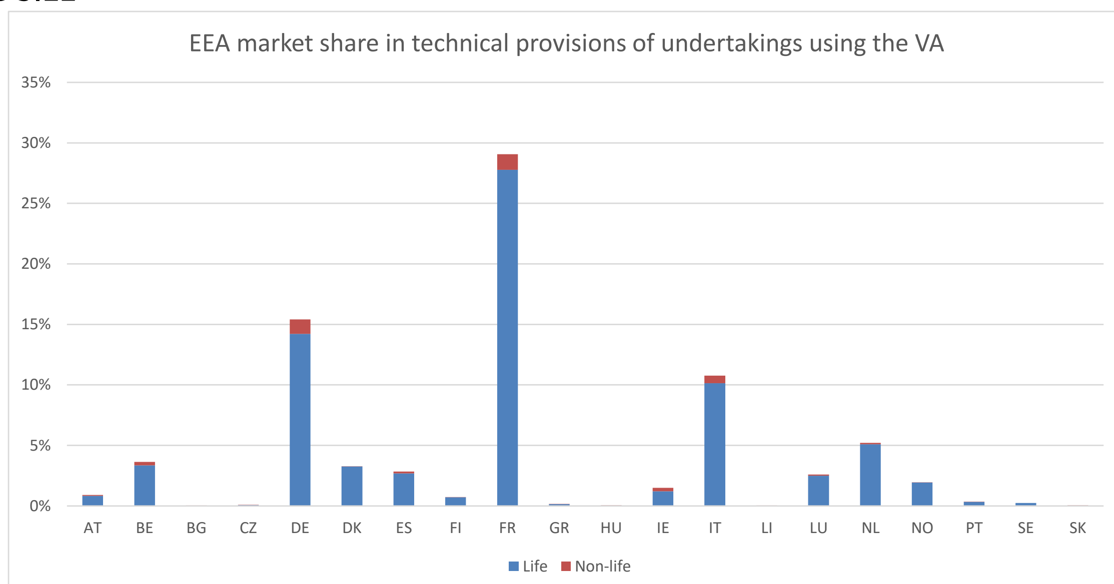


Table 3.8

| Number of undertakings using the VA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Life | Non-Life | Both Life and non-life | Reinsurance | Total | Last year | Variation from last year |
| AT | 3 | 2 | 6 | 1 | 12 | 12 | 0 |
| BE | 7 | 14 | 17 | 1 | 39 | 38 | 1 |
| BG | 1 | 1 | 2 | 0 | 4 | 5 | -1 |
| CZ | 0 | 1 | 6 | 0 | 7 | 8 | -1 |
| DE | 58 | 21 | 0 | 5 | 86 | 84 | 2 |
| DK | 9 | 4 | 6 | 0 | 19 | 20 | -1 |
| ES | 15 | 26 | 38 | 1 | 80 | 80 | 0 |
| FI | 5 | 2 | 2 | 0 | 9 | 8 | 1 |
| FR | 47 | 58 | 54 | 1 | 160 | 167 | -7 |
| GR | 2 | 4 | 13 | 0 | 19 | 19 | 0 |
| HU | 0 | 1 | 5 | 0 | 6 | 6 | 0 |
| IE | 3 | 2 | 0 | 4 | 9 | 8 | 1 |
| IT | 25 | 24 | 18 | 0 | 67 | 64 | 3 |
| LI | 2 | 1 | 0 | 0 | 3 | 2 | 1 |
| LU | 25 | 7 | 0 | 9 | 41 | 43 | -2 |
| NL | 20 | 15 | 0 | 1 | 36 | 40 | -4 |
| NO | 4 | 1 | 4 | 0 | 9 | 9 | 0 |
| PT | 8 | 8 | 2 | 0 | 18 | 17 | 1 |
| RO | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| SK | 0 | 0 | 5 | 0 | 5 | 5 | 0 |
| **EEA** | **236** | **193** | **178** | **24** | **631** | **636** | **-6** |

The total number of undertakings using the VA in the EEA decreased by 6 in comparison to last year's report (excluding the effect of UK in this analysis).

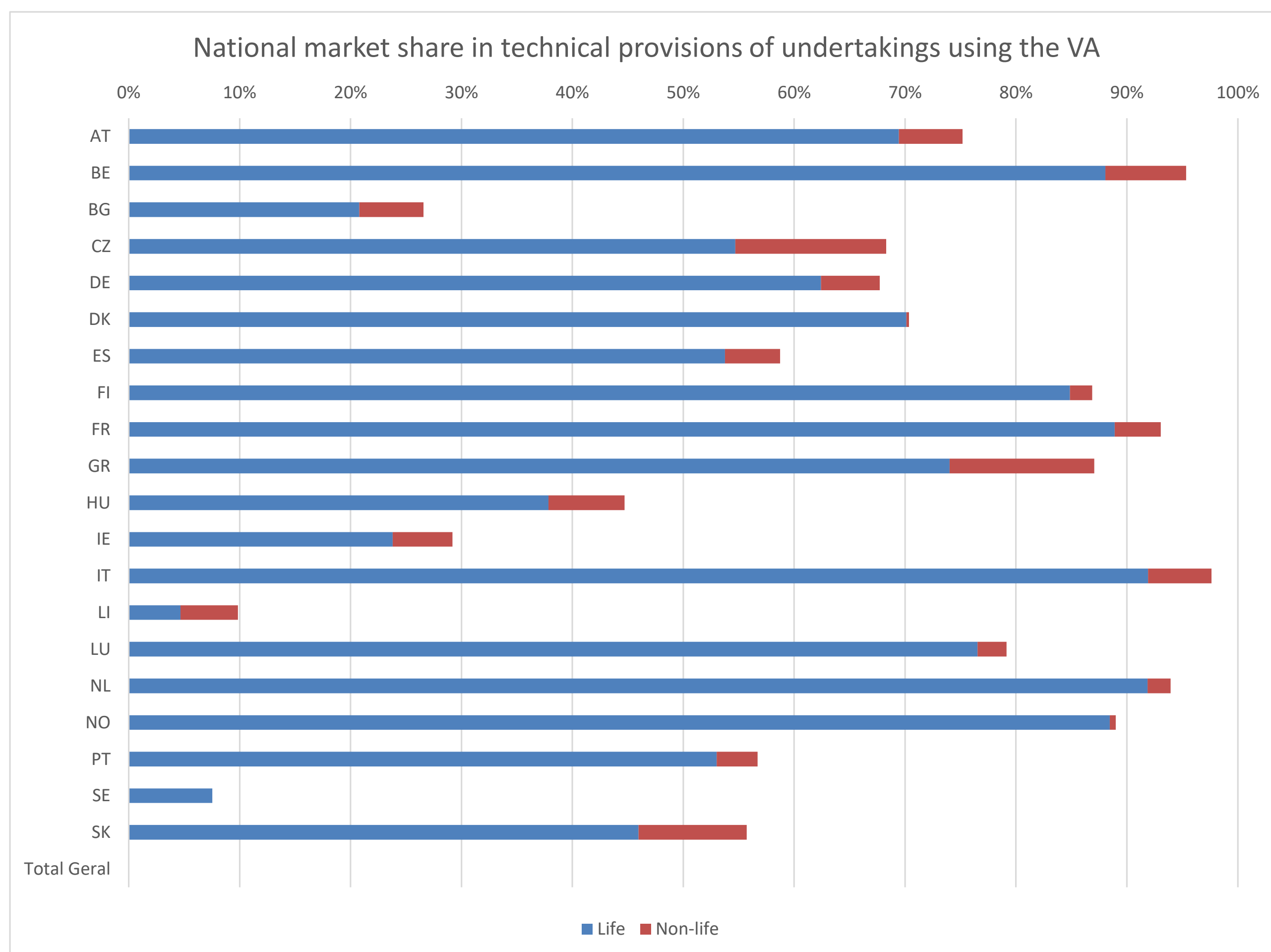
Figure 3.22



Insurance and reinsurance undertakings using the VA represent 79% of the overall amount of technical provisions at EEA level.

The following graph shows how widespread the use of the VA is for each country. It gives the technical provisions of undertakings that use the VA as a percentage of their market share. The graph clearly shows the importance of the VA in many countries, where undertakings using the VA together hold more than 75% of the national amount of technical provisions. Most of the technical provisions for life insurance liabilities are held by undertakings using the VA.

Figure 3.23




According to the Solvency II Directive it is possible to apply simultaneously the TTP or the TRFR and the VA to the same liabilities. At EEA level, undertakings with 21% of the overall amount of technical provisions are applying the VA and the TTP to the same liabilities.

Table 3.9

| Undertakings applying simultaneously TTP and VA to the same liabilities | | | |
|---|---|---|---|
| Country | Number of undertakings | % EEA market share in TP | % National market share in TP |
| AT | 2 | (*) | (*) |
| BE | 1 | (*) | (*) |

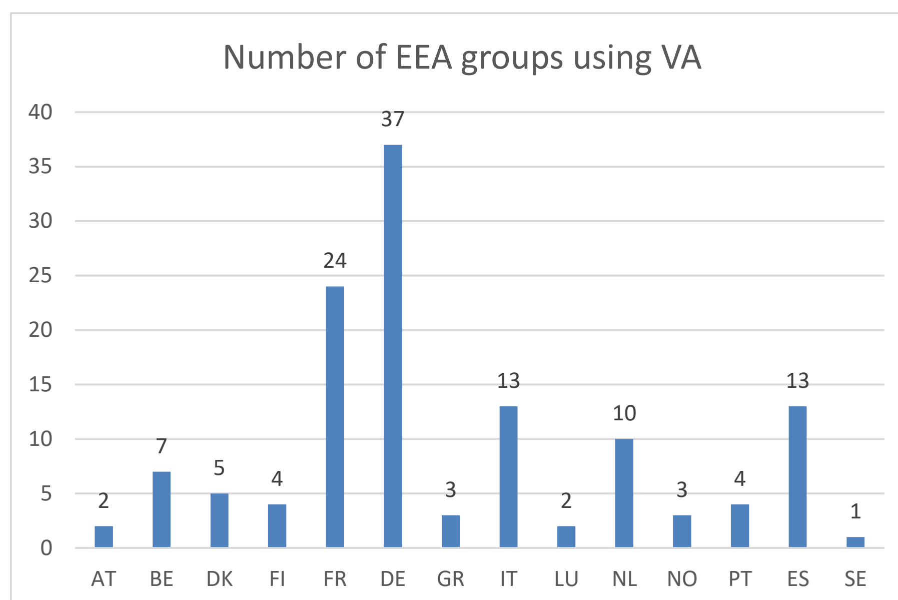
| DE | 51 | 4% | 21% |
|---|---|---|---|
| ES | 19 | 1% | 32% |
| FI | 7 | 0% | 54% |
| FR | 20 | 3% | 11% |
| GR | 1 | (*) | (*) |
| IT | 2 | (*) | (*) |
| LI | 1 | (*) | (*) |
| NO | 4 | 0% | 74% |
| PT | 10 | 7% | 41% |
| **EEA** | **118** | **21%** | **-** |

(*) Data from these countries are not disclosed for confidentiality reasons because the number of undertakings concerned is lower than 3.

It may be insightful to compare the table above with the tables on undertakings and the market share of their technical provisions with the tables on the use of only the VA or only the TTP. A comparison shows that for some jurisdictions, e.g. NO and FI, there is a large overlap between the use of the TTP and the use of the VA.

The following diagram shows the number of EEA groups using VA.

Figure 3.24



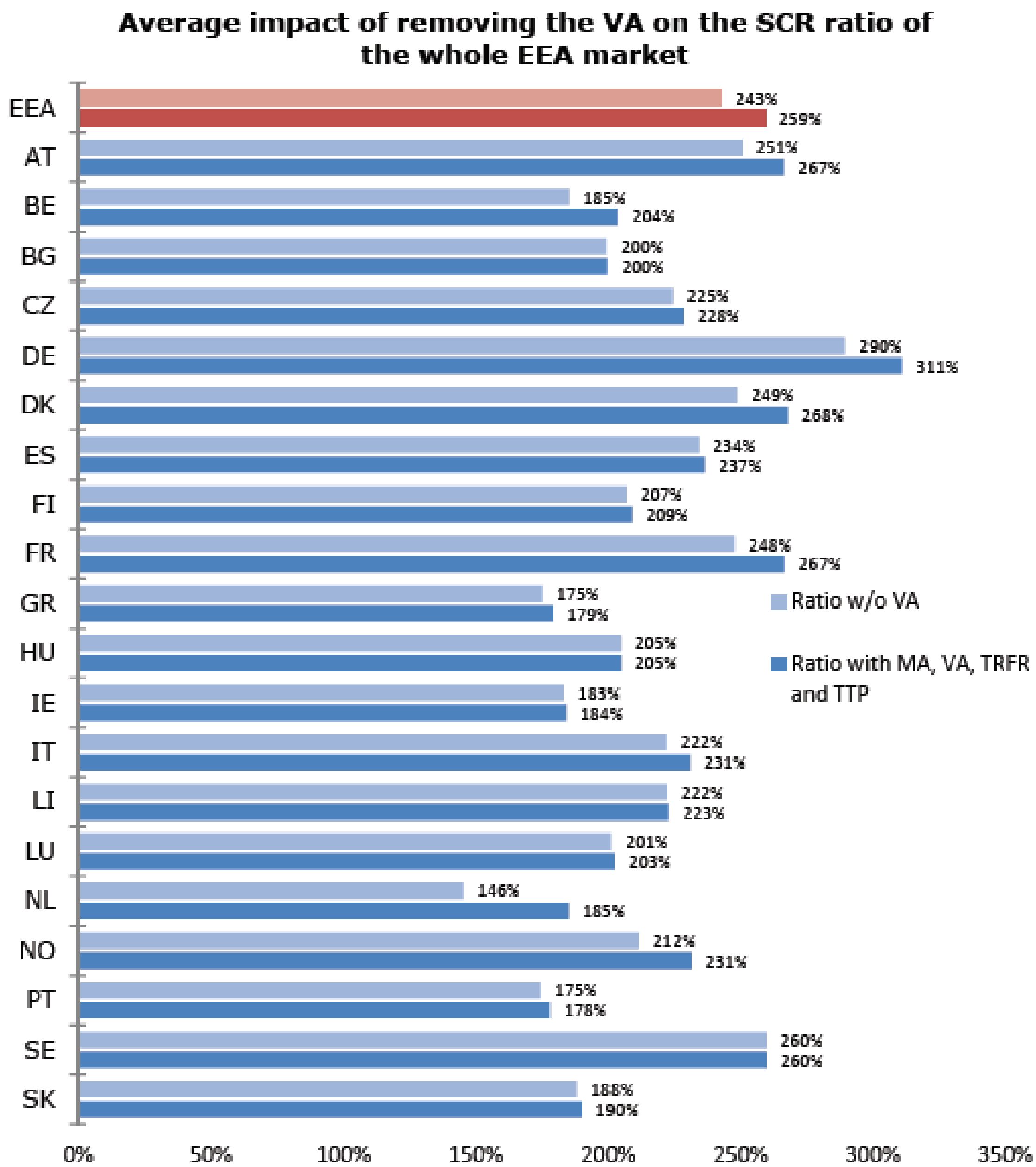

**Impact on the financial position of undertakings**

The impact results presented in this section are based on data from 2019 QRTs.

The impact of the VA should be interpreted in the light of the level of the observed spreads in the financial markets.

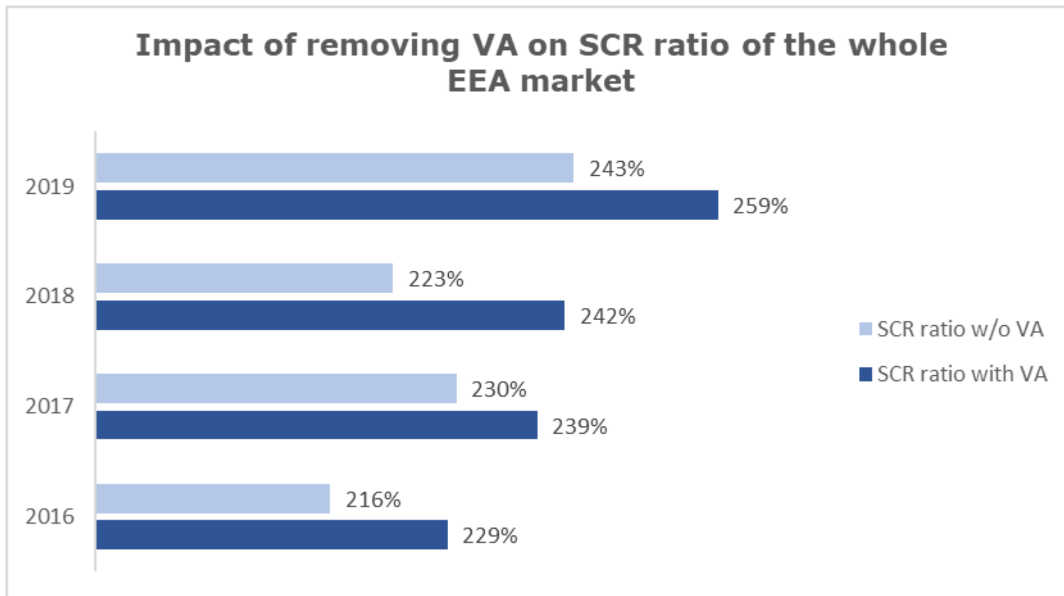
The following graph display the overall impact of the use of the VA on the SCR ratio for the whole EEA market (including both undertakings using or not using the measure). At the EEA level, the removal of the VA would result on average in a reduction of the SCR ratio by 16 percentage points.

Figure 3.25



The following graph shows the overall impact of the use of the VA on the SCR ratio for the whole EEA market during the last four years. The highest impact was observed in 2018, where removing the VA would result on average in a decrease of the SCR ratio by 19 percentage points; the VA for the Euro was 24 bp at the end of that year. The lowest impact observed in 2017 is due to the size of the VA, which was only 4 bp for the Euro at the end of that year.

Figure 3.26




The following graphs show the average impact at EEA level and per country of the VA on the SCR ratio. The graphs are based on impact of the VA for the undertakings that apply the VA.

At EEA level removing the VA results in an average reduction of the SCR ratio of 25 percentage points. The average change in SCR ratios is the highest for undertakings in Netherlands, Germany and Norway. This comes from the fact that the impacts on SCR are significantly higher for those countries.

In comparison with last year, the average impact of removing the VA has overall decreased.

Figure 3.27

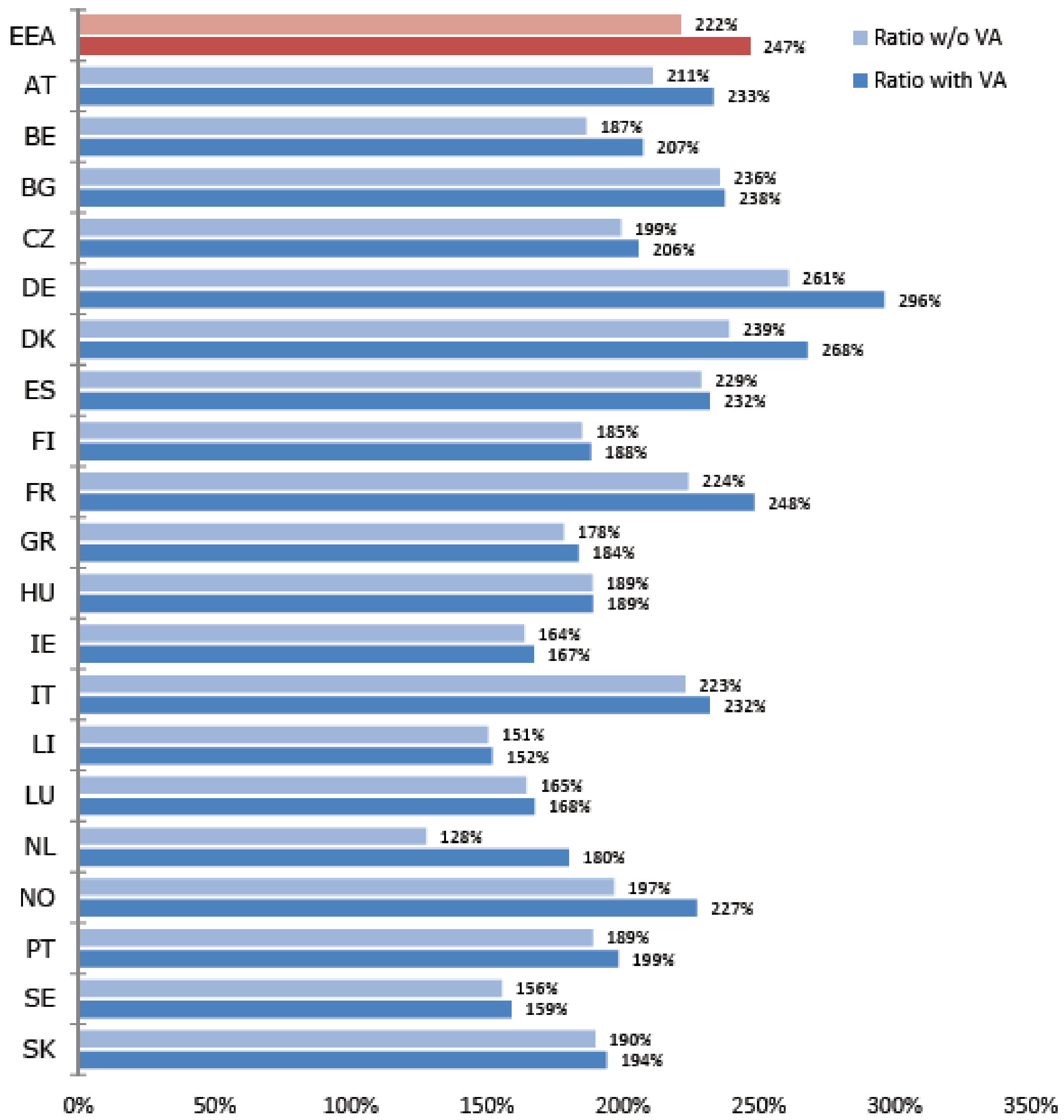
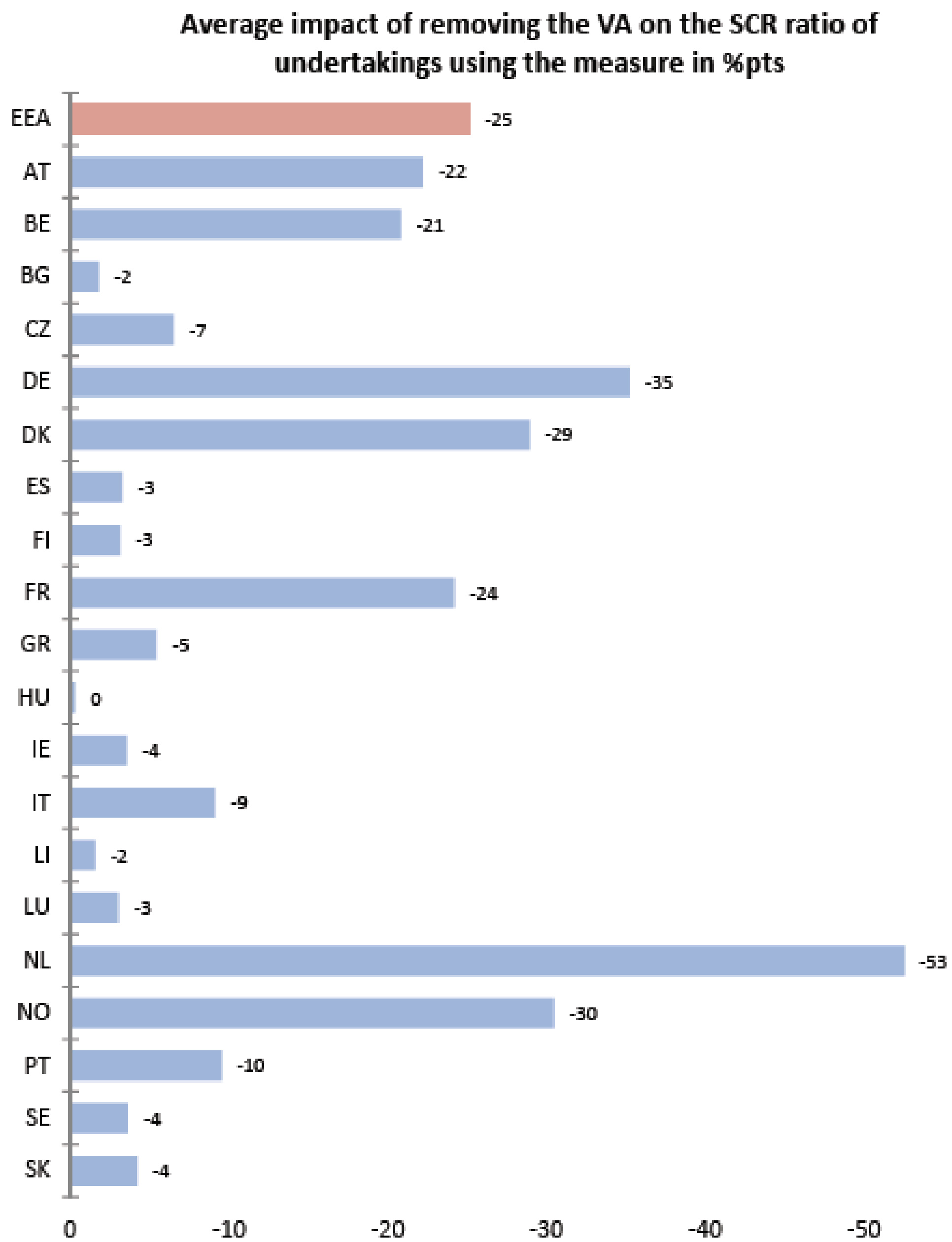
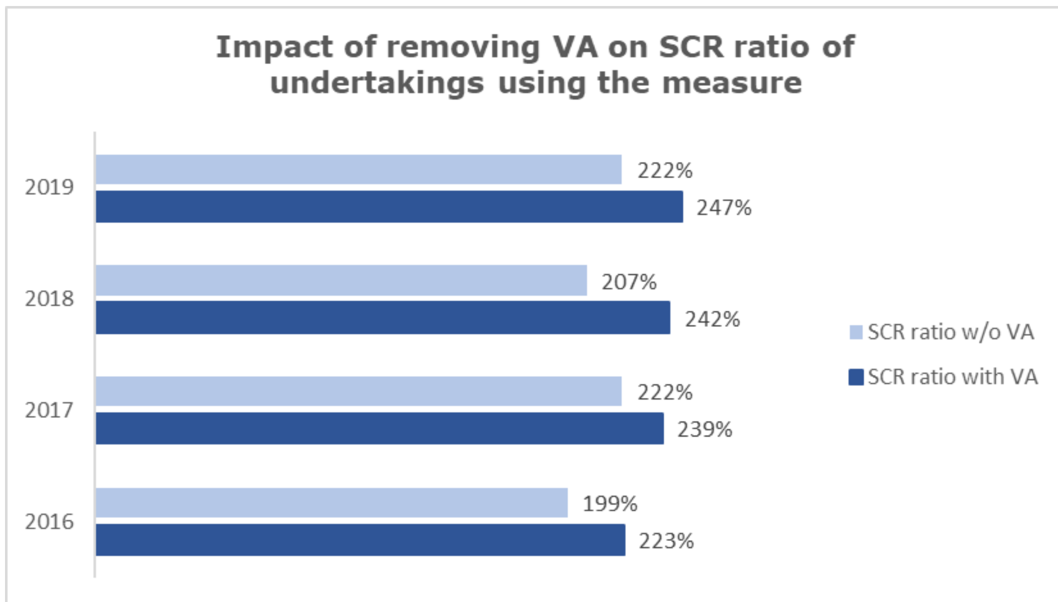



Figure 3.28




The following graph shows the overall impact of the use of the VA on the SCR ratio for for undertakings using the measure during the last four years. The highest impact was observed in 2018, where removing the VA would result on average in a decrease of the SCR ratio by 35 percentage points.

Figure 3.29



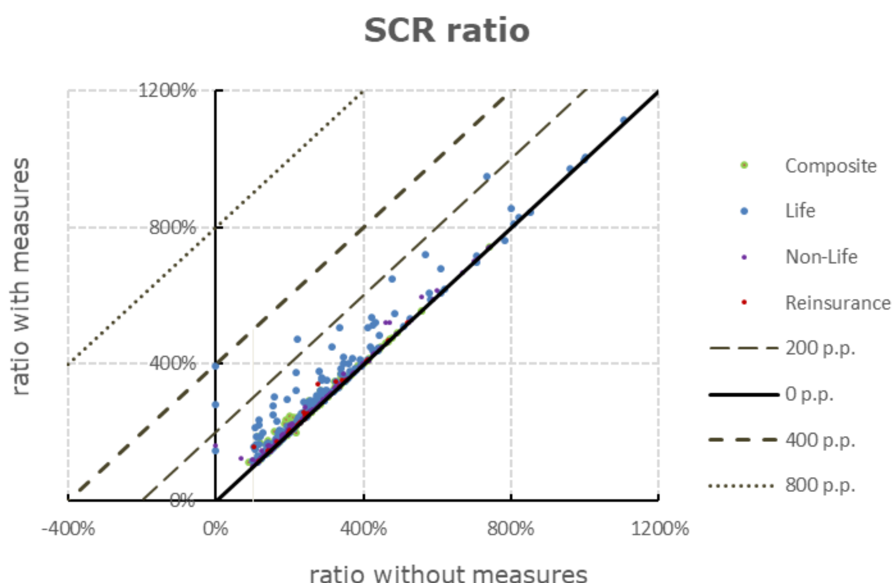

The following graph displays the impact of removing the VA on the SCR ratio of every undertaking using this measures. Each dot in the diagram represents one undertaking, comparing the individual SCR ratio against the estimated SCR ratio without the VA. The type of each undertaking is indicated by the colour of the dot.

In terms of SCR ratio, 97% of undertakings that use the VA reported an absolute impact of less than 100 percentage points.

0,8% of undertakings using the measure reported an SCR ratio without VA below 100%. 0,16% of undertakings using the measure reported negative eligible own funds to cover the SCR without VA.

Also note that the Life and Composite undertakings show, in general, slightly higher impacts on this level than Non-life undertakings.

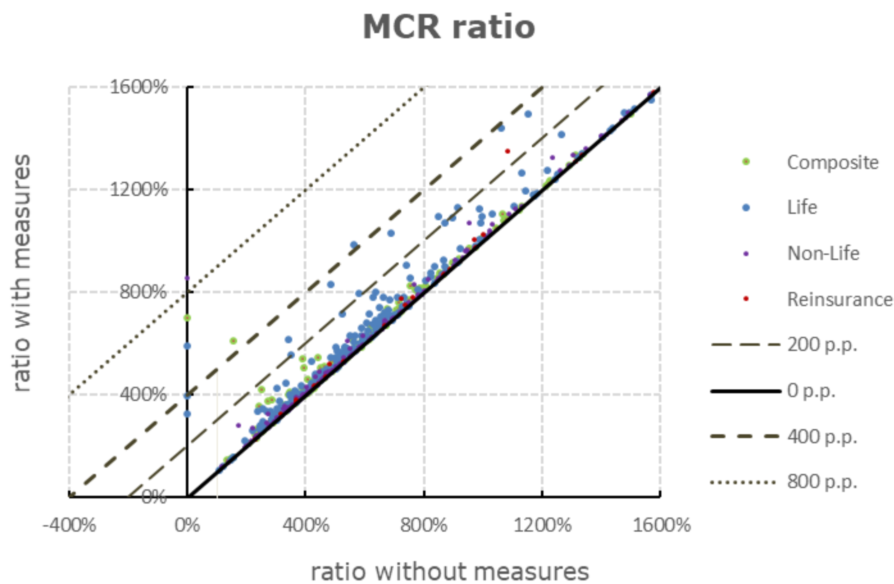
Figure 3.30



The following graph displays the impact of removing the VA on the MCR ratio of every undertaking using the VA, comparing the individual MCR ratio against the estimated MCR ratio without the VA. In terms of MCR ratio, 94% of undertakings that use the VA reported an absolute of less than 100 percentage points.

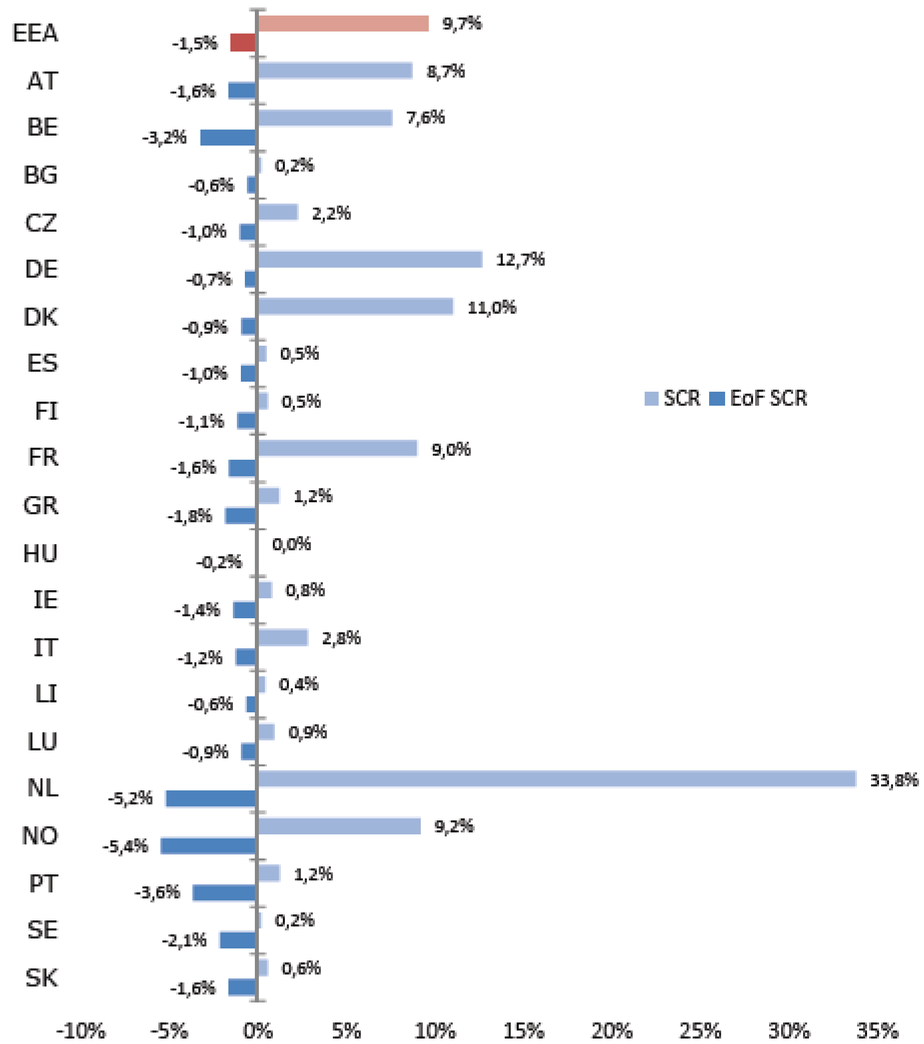
0,16% of undertakings using the measure reported an MCR ratio without VA below 100%. The same 0,16% of undertakings reported negative eligible own funds to cover the MCR without VA.

Figure 3.31



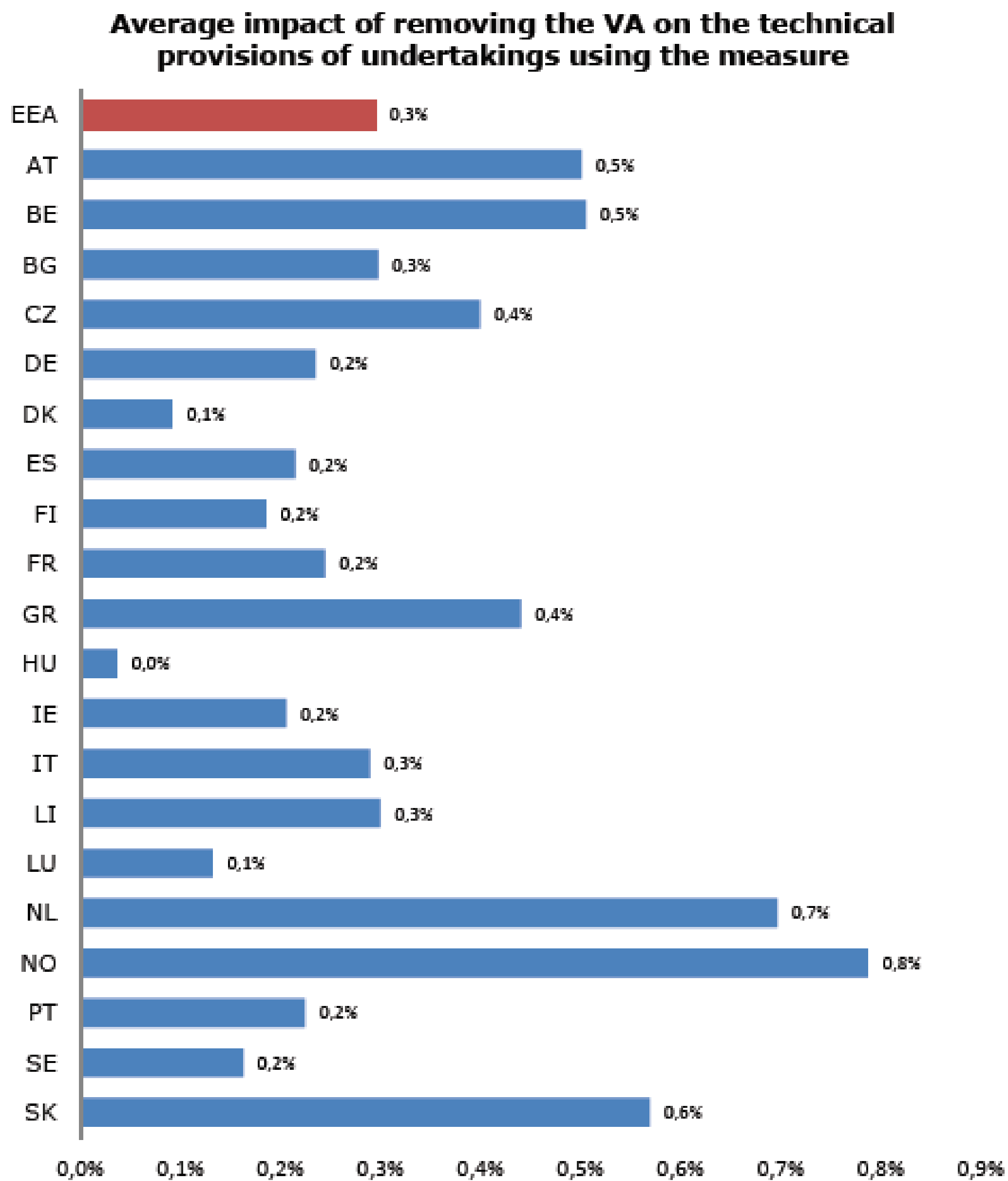

The following graph shows the impact of removing the VA on the SCR (light blue) and on the eligible own funds to cover the SCR (dark blue). The red bars are for the EEA level. On average, eligible own funds to cover the SCR would decrease by 1.5%, while the SCR would increase by 10% if the VA were removed. In comparison with last year, impacts have overall decreased for both SCR and eligible own funds to cover the SCR.

Figure 3.32


Average impact of removing the VA
on eligible own funds to cover the SCR (EoF SCR)
and SCR of undertakings using the measure
EEA
AT
BE
BG
CZ
DE
DK
ES
FI
FR
GR
HU
IE
IT
LI
LU
NL
NO
PT
SE
SK
9,7%
-1,5%
8,7%
-1,6%
7,6%
-3,2%
0,2%
-0,6%
2,2%
-1,0%
12,7%
-0,7%
11,0%
-0,9%
0,5%
-1,0%
0,5%
-1,1%
9,0%
-1,6%
1,2%
-1,8%
0,0%
-0,2%
0,8%
-1,4%
2,8%
-1,2%
0,4%
-0,6%
0,9%
-0,9%
33,8%
-5,2%
9,2%
-5,4%
1,2%
-3,6%
0,2%
-2,1%
0,6%
-1,6%
SCR
EoF SCR
-10%
-5%
0%
5%
10%
15%
20%
25%
30%
35%

The following graph displays the impact of removing the VA on the value of technical provisions (TP) at EEA and national level. Removing the VA for those undertakings applying the measure would result in an average increase of technical provisions by 0.3% at EEA level.

Figure 3.33



The following graphs show the average impact of the VA on the MCR ratio, the MCR and the eligible own funds to cover the MCR, at country and at EEA level for undertakings using that measure. At the EEA level, the removal of the VA would result on average in a reduction of the MCR ratio by 48 percentage points.

Figure 3.34

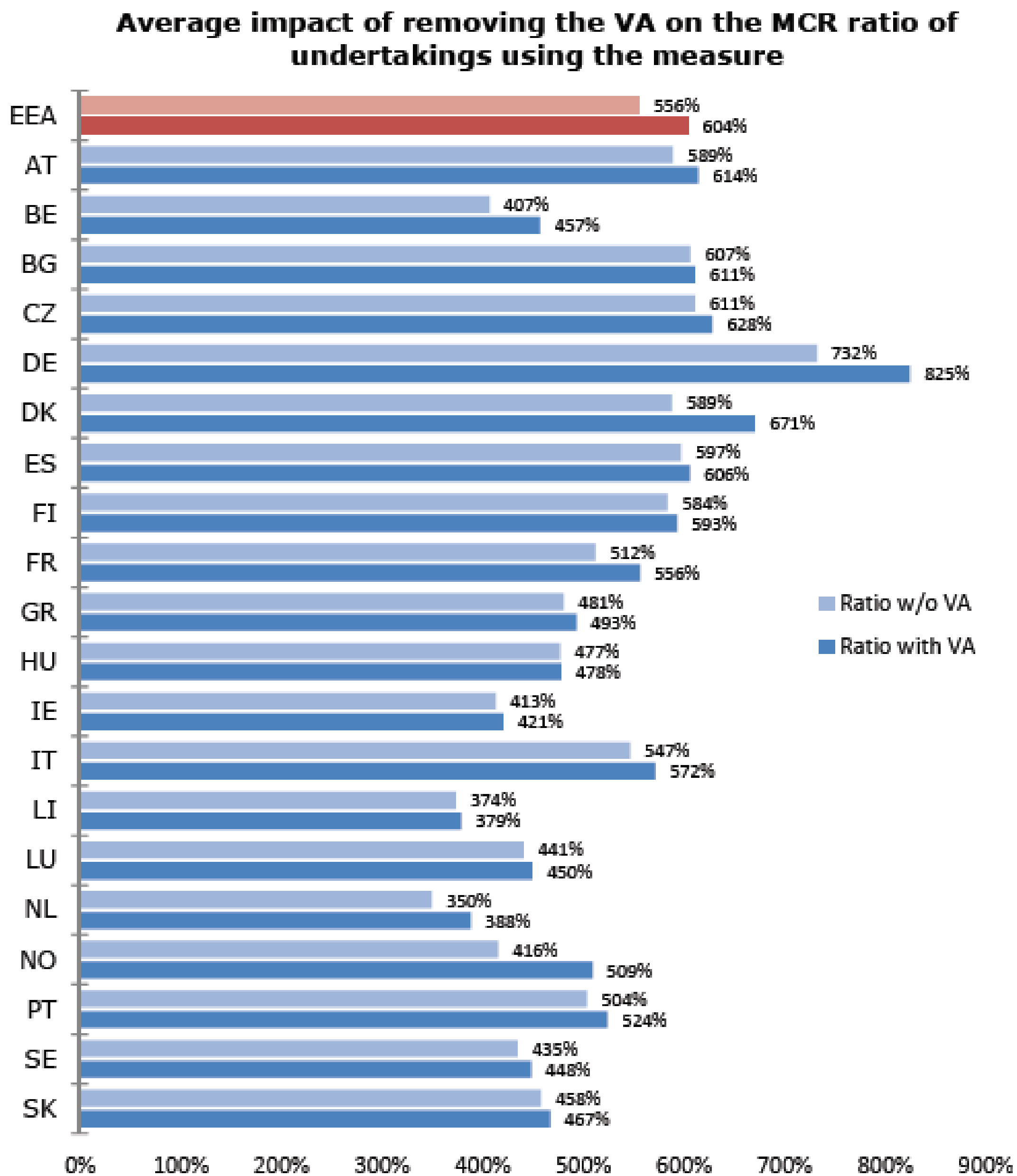
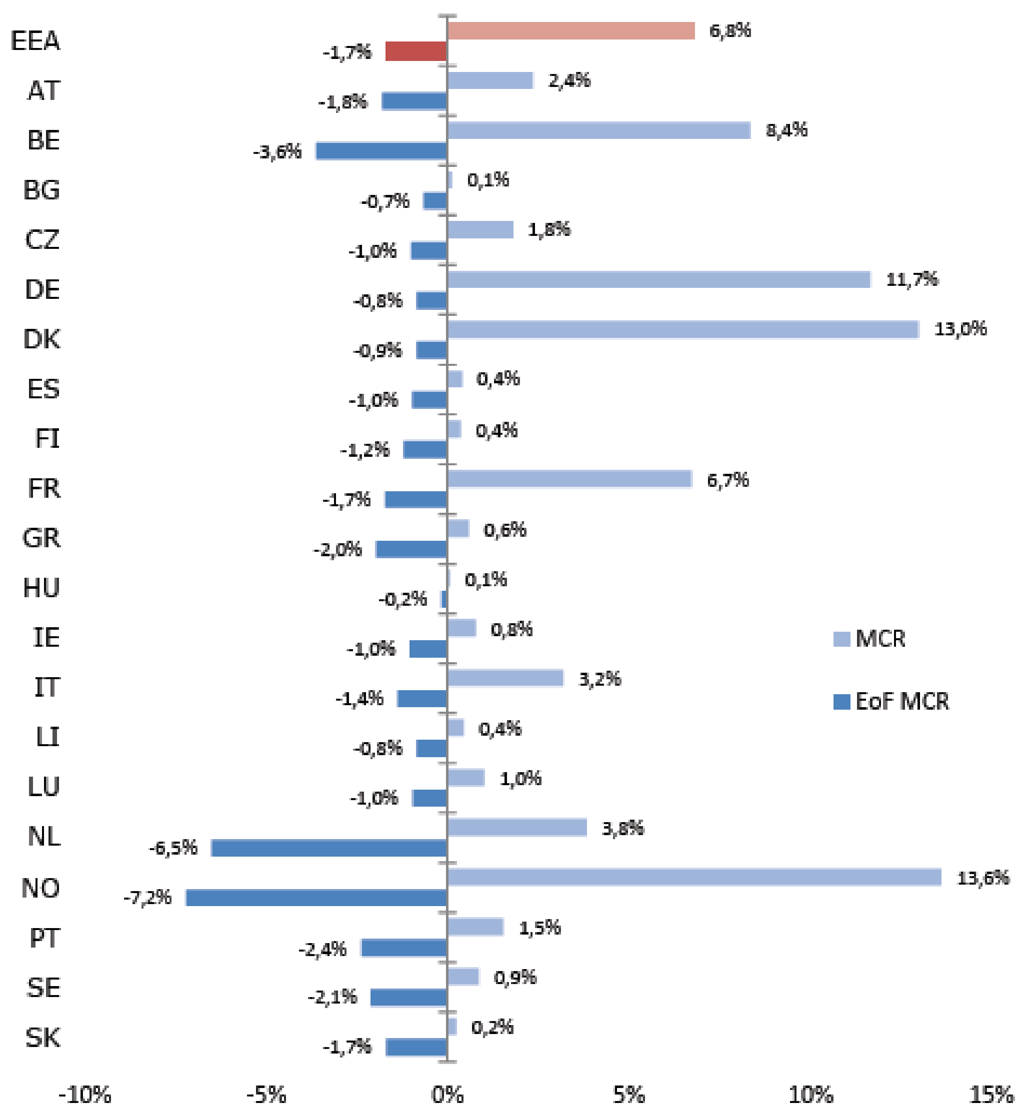
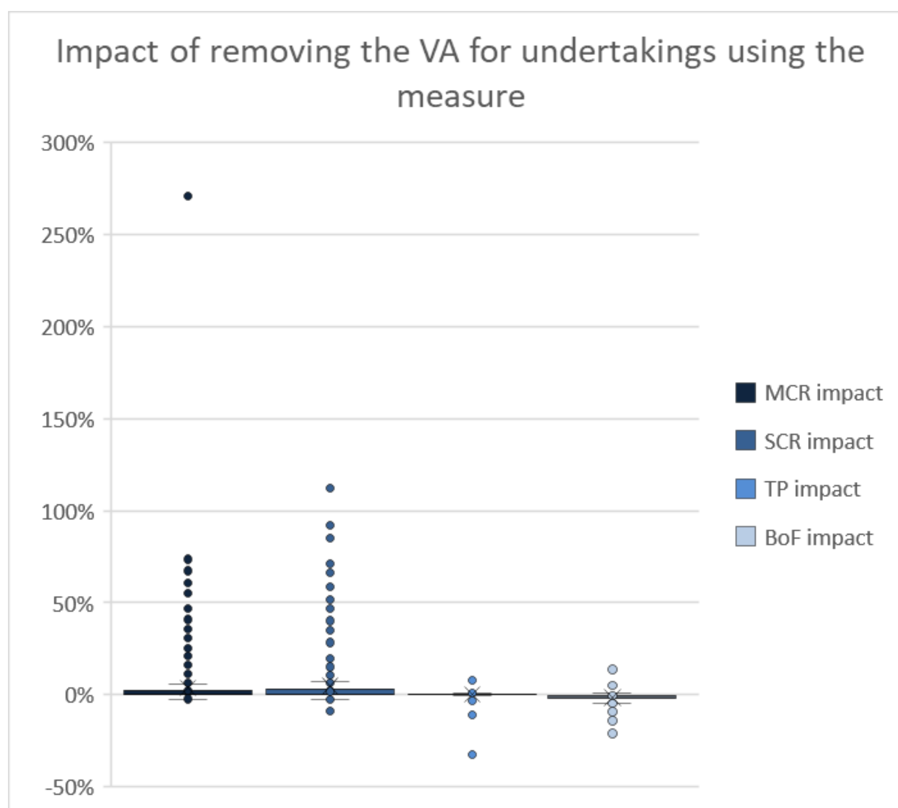


Figure 3.35



The box-plots below illustrate how the impact of removing the VA is distributed across undertakings.[21]

Figure 3.36




The size of the VA as at year end 2019 for the Euro is 7 bps and has thus decreased from year end 2018 where it was 24bps. The graphs presented in this section show that the impact of a removal of the VA on the solvency position is considerable for a number of countries. This was already observed in the previous LTG reports. With the decrease in the size of the VA, the financial impact of the VA on the solvency positions of undertakings has decreased as well.In any case, the magnitude of the impact differs from one country to another. One should keep in mind that the comparisons of the figures are affected by the dynamic modelling of the VA of some internal model users that are embedded in the analysis.

**Treatment of the VA in internal models**

Two different treatments of the VA can be observed where internal models are used to calculate the SCR. In some internal models the VA is considered to remain unchanged during the 1-year forecast (constant VA). This approach is the same as the treatment of the VA in the standard formula for the calculation of the SCR. Other internal models take account of the possible change of the VA during the 1-year forecast (dynamic VA). The VA can change over time because the spreads of the market indices that the VA calculation is based on change or because the risk correction to the VA changes. Another reason for change to the VA can be changes in the investment behaviour of insurance

[21] The bottom (respectively, top) of the blue box represents the lower quartile (respectively, higher quartile) of the data set. The black band inside the box is always the middle quartile (50th percentile or median). The end of the lines extending from the boxes (called whiskers) represent the upper and lower boundaries of 1,5 interquartile-ranges. Outliers are plotted as individual points.

and reinsurance undertakings as reflected in the annual updates of the representative portfolio of assets that are applied in the VA calculation.

Where the VA moves in line with the spreads on the assets of the undertaking, the modelling of a dynamic VA reduces the effect of spread widening and spread narrowing on the own funds of the insurer: decreases in asset value caused by the spread widening are partially or fully compensated by decreases of technical provisions caused by the change of the VA. In the same way increases in asset values caused by narrower spreads are compensated. As a result the capital requirements for the risk of spread widening are usually lower if a dynamic VA is modelled than if a constant VA is being used by those undertakings[22].

The table below displays the number of undertakings using a dynamic modelling of the VA per country and type of undertakings.

Table 3.10

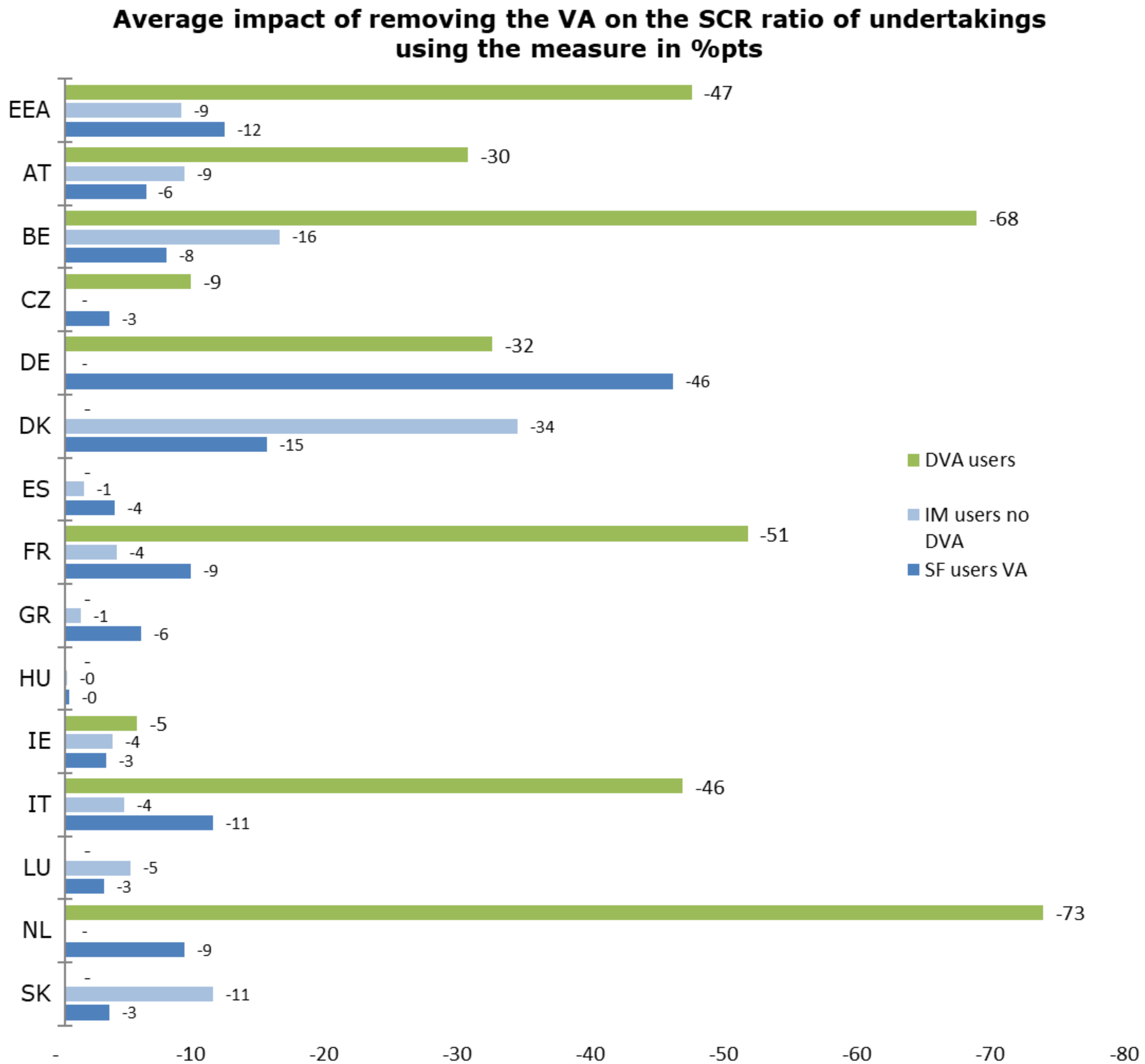
| Number of undertakings using the Dynamic VA | | | | | |
|---|---|---|---|---|---|
| Country | Life | Non-Life | Both Life and non-life | Reinsurance | Total |
| AT | 2 | 1 | 2 | 1 | 6 |
| BE | 0 | 2 | 1 | 0 | 3 |
| CZ | 0 | 0 | 1 | 0 | 1 |
| DE | 10 | 12 | 0 | 4 | 26 |
| FR | 6 | 5 | 1 | 1 | 13 |
| IE | 0 | 1 | 0 | 2 | 3 |
| IT | 1 | 0 | 1 | 0 | 2 |
| NL | 4 | 4 | 0 | 1 | 9 |
| **EEA** | **23** | **25** | **6** | **9** | **63** |

The following graphs display the impacts of removing the VA on SCR ratio and the SCR of undertakings using the measure. They are broken down between undertakings using the standard formula; undertakings using an internal model with a constant VA; and undertakings using an internal model and using a dynamic VA. These impacts are displayed at EEA level and country level for countries where there are internal model users. Impacts on SCR ratio are shown in percentage points.

The graph shows that the use of dynamic VA has a considerable effect on the SCR ratio of undertakings using it. It should be noted that the size of the three samples (standard formula users, undertakings using an internal model using a constant VA and undertakings using an Internal model and using a dynamic VA) varies from one country to another. For example, undertakings using an internal model and using a dynamic VA represents 3% to 64% of the technical provisions in the concerned jurisdictions.

[22] Note that dynamic VA approaches were only approved, if all credit risks are modelled including sovereign risk.

Figure 3.37




The graph provides for the weighted average results per market for the standard formula users compared to IM users that apply the VA. These results are reflective of the composition of these samples in the different markets.

The following graphs therefore provide for a more detailed split differentiating by life and composite undertakings compared to non-life and reinsurance undertakings.

Figure 3.38

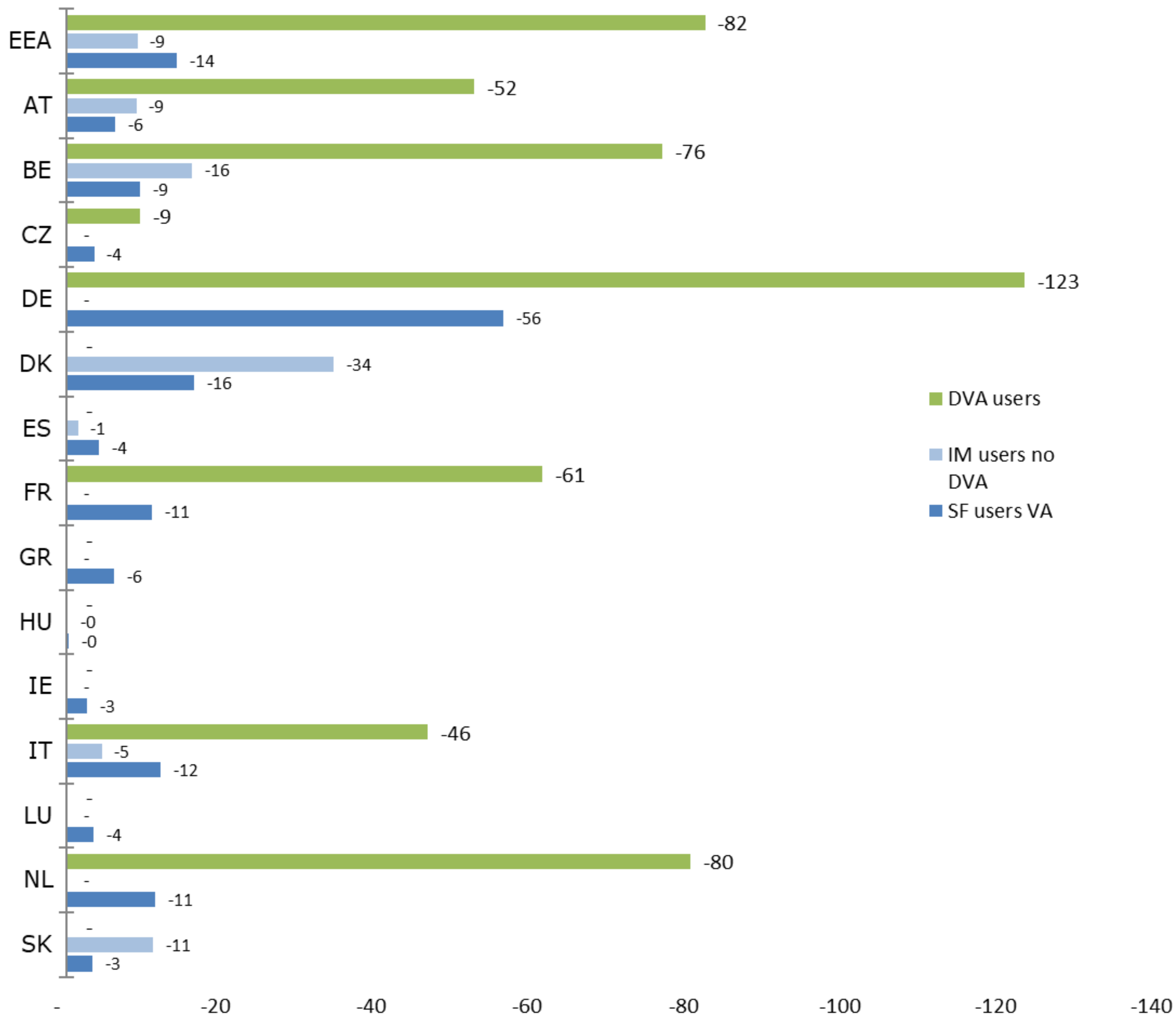
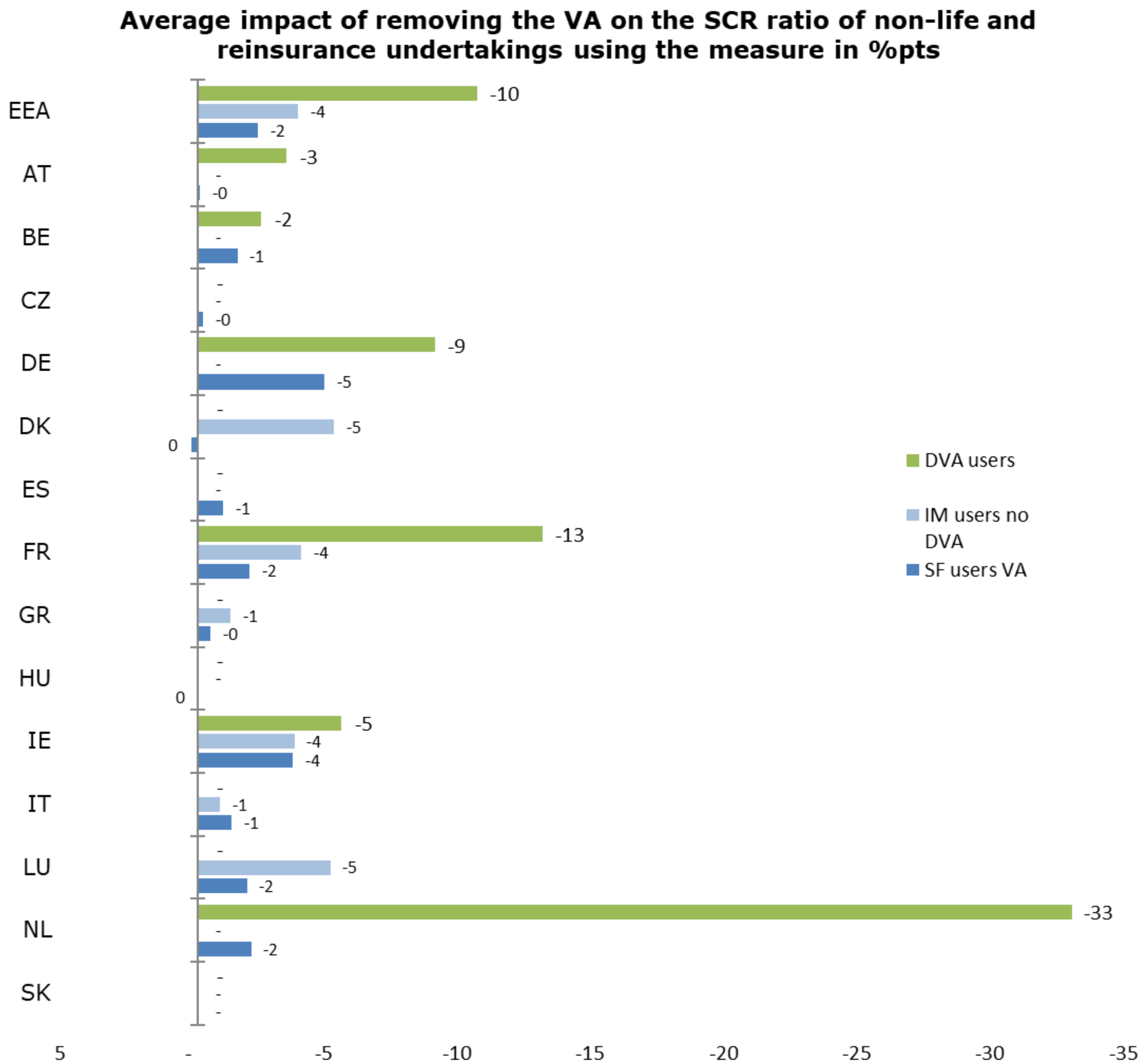


Figure 3.39

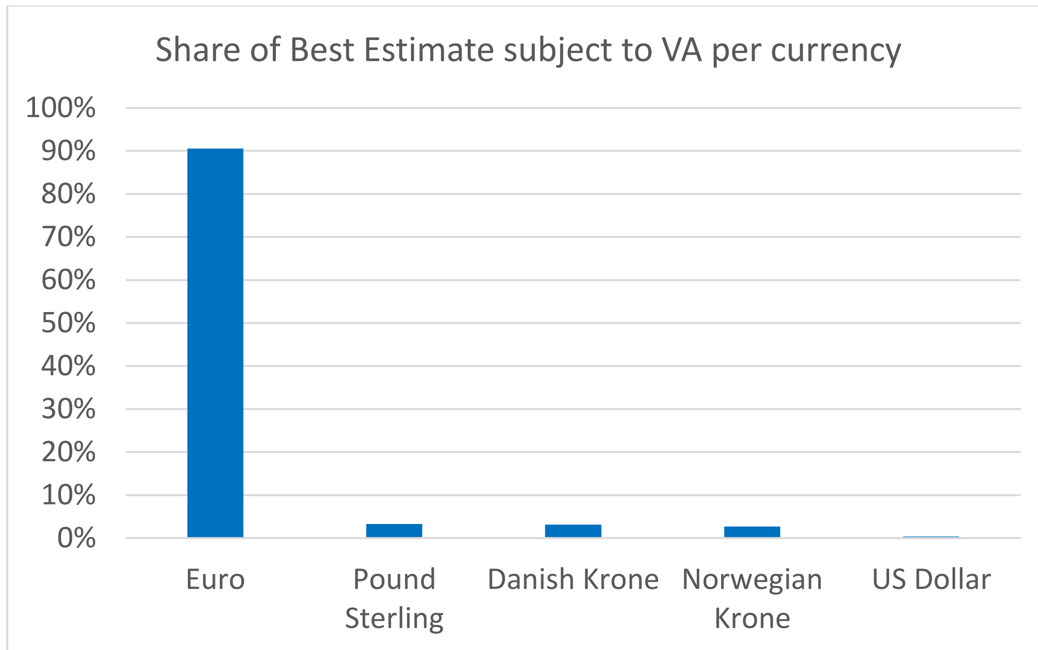



## Additional information on the VA based on the QRT information

Based on the quantitative information that undertakings regularly provide to supervisory authorities further analysis was performed.

The following graph outlines the split of Best Estimate subject to VA that is written in different currencies as at year end 2019. Only the most material currencies are considered in this graph.

Figure 3.40




## Application of a country-specific increase to the VA

***Background information on the calculation of the VA***

*For each currency the VA is calculated as 65% of a risk-corrected spread ($S_RC_{currency}$). The relevant spread is the difference between the interest rate that could be earned from assets included in a reference portfolio for assets in that currency and the basic risk-free interest rates for that currency.*

*A country-specific increase to the VA may apply, depending on the spread on the assets of a country-specific reference portfolio. That increase is calculated as 65% of the difference between the risk-corrected spread of that country reference portfolio ($S_RC_{country}$) and twice the risk-corrected currency spread $S_RC_{currency}$. The country-specific increase applies whenever that difference is positive (i.e. when $S_RC_{country} > 2 * S_RC_{currency}$) and the risk-corrected country spread is higher than 85 basis points[23]. This implies that the country-specific increase cannot be negative while the VA before increase can assume both positive and negative values.*

*The VA with country-specific increase is given by the following equation:*

$$VA = 65\% * [S_RC_{currency} + \max(S_RC_{country} - 2 * S_RC_{currency}, 0)],$$

where $S_RC_{country} > 85$ bps.

*$S_RC_{currency}$ and $S_RC_{country}$ are calculated as the difference between the spread at portfolio level ($S_{currency}$ and $S_{country}$) and the related risk correction ($RC_{currency}$ and $RC_{country}$):*

$$S_RC_{currency} = S_{currency} - RC_{currency} \quad \text{and} \quad S_RC_{country} = S_{country} - RC_{country}$$

23 The threshold has been lowered from 100 bps to 85 bps by the Directive 2019/2177 of 18 December 2019 (art. 2).

*The reference portfolio comprises two asset classes that contribute to the spread: government bonds and corporate bonds. For each class the average spreads ($S_{gov}$ and $S_{corp}$) and the risk corrections ($RC_{gov}$ and $RC_{corp}$) are derived.*

*The portfolio spreads ($S_{currency}$ and $S_{country}$) and portfolio risk corrections ($RC_{currency}$ and $RC_{country}$) are calculated by applying portfolio weights ($w_{gov}$, $w_{corp}$) to the government and corporate components:*

$S_{currency} = w_{gov} * max(S_{gov};0) + w_{corp} * max(S_{corp}; 0)$

$RC_{currency} = w_{gov} * max(RC_{gov};0) + w_{corp} * max(0;RC_{corp})$

*$S_{country}$ and $RC_{country}$ are calculated in the same way, but based on the reference portfolio per country.*

*The **reference portfolios** are representative of assets held by European insurance and reinsurance undertakings to cover:*

*- the best estimate for (re)insurance obligations denominated in that currency (reference portfolio per currency)*

*- the best estimate for (re)insurance obligations of products sold in the insurance market of that country and denominated in the currency of that country (reference portfolio per country).*

*In particular the reference portfolios considers:*

*a. Data from the relevant government bonds yield market indices, required to determine the interest rates of government bonds including in the representative portfolio, by duration and country of issuance (those interest rates are then used to compute the spread S and the risk correction RC for those government bonds).*

*For countries of the euro area not having a government yield curve, there is no country-specific increase and the spread of government bond is approximated considering a peer country[24].*

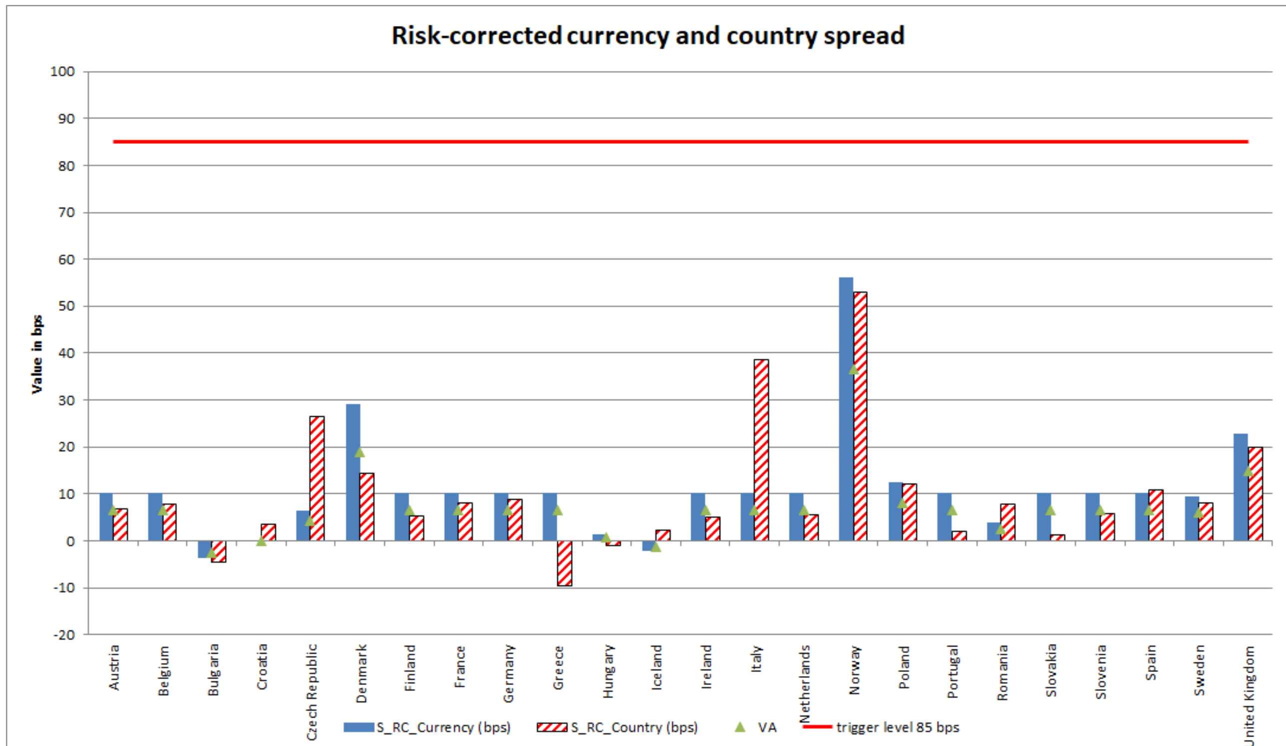
*b. Data from the relevant corporate bonds yield market indices, required to determine the interest rates of corporate bonds including in the representative portfolio, by duration, sector and credit quality step (those interest rates are then used to compute the spread S and the risk correction RC for corporate bonds).*

*The reference portfolios are updated on an annual basis.*

1) Analysis of the amount of the currency and country risk-corrected spread for the calculation of the VA ($S_RC_{country}$ and $S_RC_{currency}$)

[24] Countries without government yield curves are Cyprus, Estonia, Latvia, Liechtenstein, Lithuania and Malta.

Figure 3.41




The graph shows the *risk-corrected currency spread* (blue bar), the *risk-corrected country spread* (red bar) and the final value of the VA (green triangle), for each country relevant in reference portfolios. It also shows the trigger level of the country-specific increase of 85 bps (red line). When applying 65% to the blue bar, the final value of the VA (represented by the green triangle) results. The reference date for the data is the 31 December 2019.

It can be observed that the *risk-corrected currency spreads* are considerably lower than at 2018 year-end, with the exception of Norway, whose currency spread decreased only by a relatively small amount.

Heterogeneity among countries with regard to the *risk-corrected country spread* persists, although it decreased considerably among the countries of the euro area that apply the same amount of VA due to the compression of spreads occurred at the end of 2019. Outside the euro area a risk corrected country spread higher than the currency one can be observed in the Czech Republic, Croatia, Romania and Iceland, whereas in the euro area this happens only in Italy (about four times higher) and Spain (but only by one basis point). Italian spreads, although decreased at the end of the year from the highs of the period May 2018 – September 2019, remained higher than the Eurozone spreads. It is interesting to note that the Greek risk corrected country spread became negative (-10 bps) at year end 2019, even though the level of spreads in Greece was still high. This heterogeneity means that, at country level, the spread deriving from assets held by the national undertakings can be significantly different (higher or lower) than the level of spread of the assets included in the representative portfolio defined at currency level, leading to a potentially high balance sheet volatility.

2) Analysis of the amount of the government and corporate risk-corrected spread for the calculation of the country VA (S_RC_gov_country, S_RC_corp_country and S_RC_country)

| ***Background information on the calculation of the risk correction*** |
| --- |
| *The **risk correction** is intended to account for expected losses, unexpected credit risk, and any other relevant risks of the assets. It is calculated as follows:*<br><br>☐ *For the spread on government bonds:*<br><br>*RC= 30% LTAS for exposures to governments of EEA countries*<br><br>*RC= 35% LTAS for exposures to other governments*<br><br>*where LTAS is the long-term average of the spread over the risk-free interest rate of assets of the same duration, credit quality and asset class. The average relates to the last 30 years.*<br><br>☐ *For the spread on corporate bonds:*<br><br>*RC = MAX ( PD + CoD, 35% LTAS ), where*<br><br>*PD = the credit spread corresponding to the probability of default on the assets;*<br><br>*CoD = the credit spread corresponding to the expected loss resulting from downgrading of the assets;*<br><br>*LTAS = as above*<br><br>*Where no reliable credit spreads can be derived from long-term default statistics, the risk correction can be expressed as:*<br><br>*RC= 35% LTAS.* |

Figure 3.42

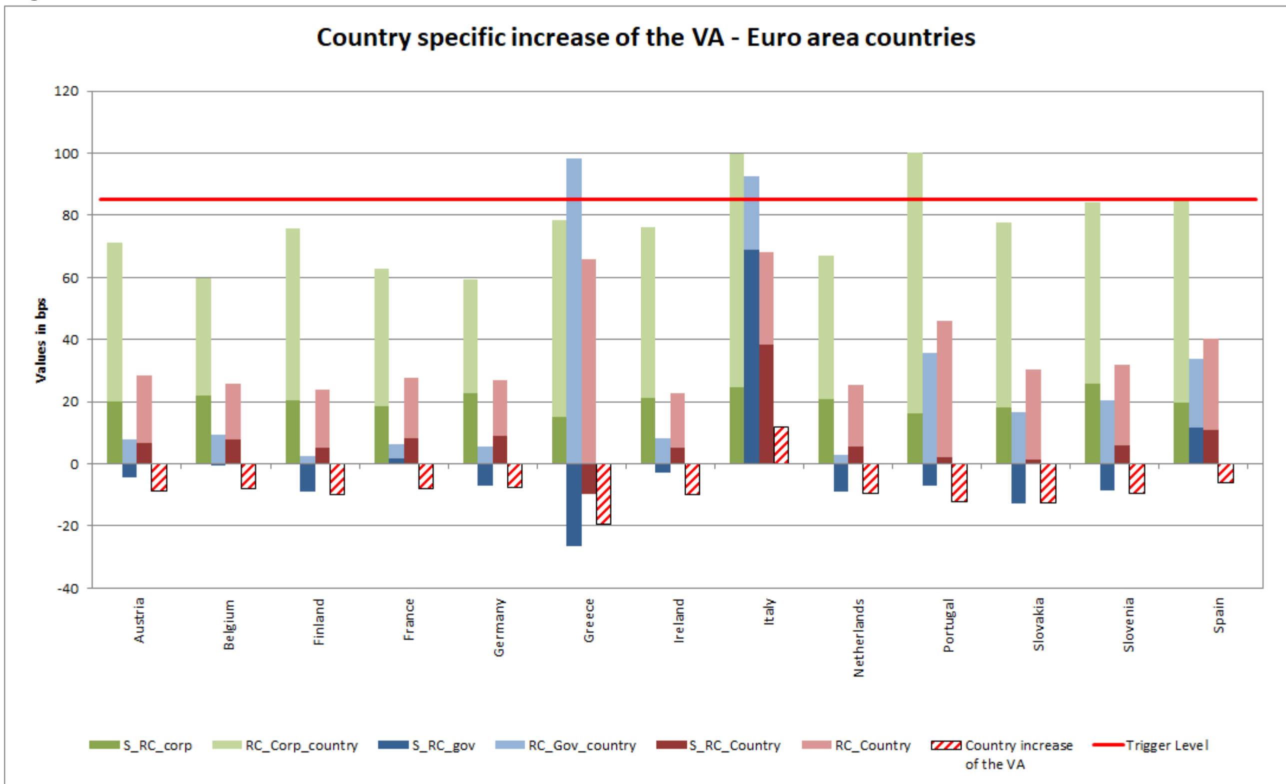
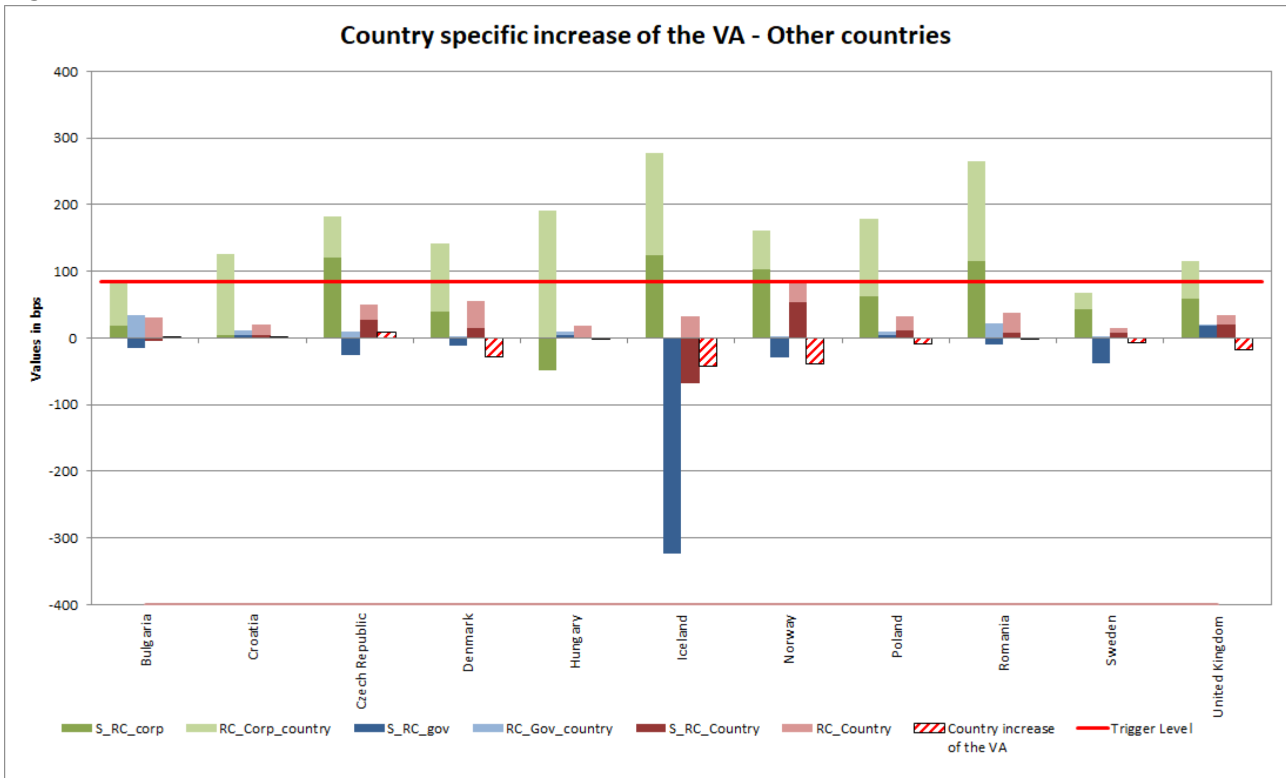



Figure 3.43




These graphs look at the national component of the VA only (the first graph relates to the countries of the euro area, and the second graph relates to the countries with other currencies). The reference date for the data is the 31 December 2019.

With respect to the national representative portfolio, the graphs show a comparison between the level of the market spreads for corporate bonds ($S_{corp}$ – green bar), for government bonds ($S_{gov}$ – blue bar) and the corresponding level of the spread at country portfolio level ($S_{country}$ - burgundy bar): for each category of spread, the total value is decomposed into the amount attributed to the risk-correction (in lighter colour) and the risk-corrected spread (in darker colour).

Also the level of the potential country-specific increase of the VA is shown (red bar), irrespectively of whether it is triggered or not. This level represents 65% of the difference between the risk-corrected country spread and twice the risk-corrected currency spread.

The triggering of the national component of the VA requires that two conditions occur: the above mentioned difference is positive (this condition is met only in Italy, Bulgaria, Croatia and the Czech Republic, as can be seen in the graphs above) and the risk-corrected country spread (dark burgundy bar) is higher than 85 basis points. Given that such two conditions are not simultaneously met for any of the countries in the graphs (in particular no cases of risk-corrected country spread higher than 85 bps occurred), no country-specific increase of the VA is applied.

For most countries, corporate spreads are largely higher than government ones (with the only exception of Greece). The spread at portfolio level, due to the weighting, is, for most of the countries, significantly lower than the one related to the two components but for no country the total spread at portfolio level is higher than the threshold of 85 bps (red line), even before the risk correction is applied.

At the end of 2019 the risk correction represents a larger portion of the total spread if compared to 2018 but lower when compared to 2017 figures (60% on average for the corporate bonds, 68% for government, 68% at country-portfolio level, in 2018 correponding figures were 47% , 49,5% and 45% and in 2017 84%, 85% and 81% respectively). This is in line with the observation that the risk correction as a percentage of the spread is negatively correlated with the level of the spread itself (i.e. as the risk correction changes very slowly through time, when spreads are high the risk correction measured as a percentage is low, and viceversa). However it also persists the observation made last years that, for government bonds, the size of the weight of the risk correction, defined as the 30% of the long-term average spread (over the last 30 years), is due to the higher level of spreads observed in the past years (that contributes to the LTAS), compared to the current level of the spreads. This is particularly true for Greece at year end 2019. Although the Greek government spread is still high compared to other countries (72 bps), it is significantly lower than that observed in recent years and, as a consequence, it is much lower than the corresponding risk correction (which incorporates past data and was equal to 98 bps at year end 2019). This drives high the risk correction of the whole country portfolio: as a result, despite the high level of spreads, the risk corrected country spread for Greece was negative (-10 bps) on 31 December 2019.

### Impact on investments of undertakings

The following tables and graphs illustrate some characteristics of the investments held by undertakings using the VA.

Similar to the tables and graphs in the general section II.4 of the report, the tables and graphs below consider the investments of undertakings from three perspectives:

- The investment allocation
- The credit quality of the bond portfolio, separately for government bonds and corporate bonds
- The duration of the bond portfolio, separately for government bonds and corporate bonds

The following tables show the investment allocation of undertakings applying the VA. Please note that, due to confidentiality reasons, any cells that relate to less than three undertakings are denoted by (*).

Table 3.11

| Investment allocation at EEA and country level of undertakings applying the VA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Unit linked/index linked | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 28% | 25% | 18% | 11% | 7% | 4% | 3% | 4% |
| AT | 22% | 28% | 16% | 14% | 7% | 5% | 2% | 6% |
| BE | 43% | 18% | 12% | 8% | 1% | 12% | 3% | 4% |
| BG | 54% | 9% | 17% | 10% | 0% | 1% | 5% | 3% |
| CY | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| CZ | 37% | 18% | 25% | 11% | 0% | 5% | 3% | 1% |
| DE | 19% | 25% | 6% | 16% | 21% | 6% | 3% | 4% |
| DK | 8% | 18% | 37% | 15% | 17% | 3% | 2% | 1% |
| ES | 58% | 20% | 8% | 5% | 0% | 1% | 5% | 3% |
| FI | 5% | 16% | 61% | 4% | 5% | 1% | 5% | 3% |
| FR | 28% | 33% | 16% | 10% | 3% | 2% | 2% | 5% |
| GR | 55% | 15% | 18% | 5% | 1% | 0% | 4% | 1% |
| HU | 42% | 1% | 51% | 1% | 3% | 0% | 2% | 0% |
| IE | 11% | 11% | 65% | 1% | 1% | 1% | 10% | 1% |
| IT | 43% | 18% | 18% | 11% | 2% | 1% | 2% | 5% |
| LI | 20% | 38% | 25% | 4% | 0% | 2% | 11% | 0% |
| LU | 7% | 10% | 79% | 2% | 0% | 0% | 2% | 1% |
| NL | 29% | 12% | 20% | 3% | 4% | 22% | 3% | 7% |
| NO | 8% | 31% | 24% | 17% | 9% | 8% | 2% | 0% |
| PT | 40% | 20% | 31% | 1% | 4% | 1% | 2% | 1% |
| RO | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SE | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SK | 42% | 27% | 20% | 5% | 1% | 0% | 4% | 1% |

Table 3.12

| Investment allocation at EEA and country Level (without assets held for IL & UL contracts) of undertakings applying the VA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 34% | 30% | 13% | 9% | 5% | 3% | 5% |
| AT | 27% | 34% | 17% | 8% | 6% | 3% | 7% |
| BE | 49% | 21% | 9% | 1% | 13% | 3% | 4% |
| BG | 65% | 11% | 12% | 1% | 1% | 6% | 4% |
| CY | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| CZ | 49% | 24% | 15% | 0% | 7% | 4% | 1% |
| DE | 21% | 26% | 17% | 22% | 6% | 3% | 4% |
| DK | 13% | 28% | 23% | 26% | 5% | 3% | 2% |
| ES | 63% | 21% | 5% | 0% | 1% | 6% | 4% |
| FI | 13% | 41% | 10% | 14% | 3% | 12% | 7% |
| FR | 34% | 39% | 12% | 4% | 2% | 3% | 6% |
| GR | 68% | 19% | 6% | 1% | 1% | 5% | 2% |
| HU | 86% | 1% | 2% | 5% | 1% | 5% | 0% |
| IE | 31% | 31% | 2% | 3% | 3% | 28% | 2% |
| IT | 53% | 22% | 14% | 2% | 1% | 2% | 6% |
| LI | 27% | 51% | 5% | 0% | 2% | 14% | 0% |
| LU | 32% | 48% | 7% | 1% | 2% | 7% | 3% |
| NL | 37% | 15% | 4% | 4% | 28% | 4% | 9% |
| NO | 10% | 41% | 23% | 12% | 11% | 3% | 0% |
| PT | 58% | 29% | 2% | 6% | 1% | 3% | 1% |
| RO | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SE | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SK | 52% | 34% | 7% | 1% | 0% | 5% | 1% |

The following table shows the credit quality of government bonds. Please note that the data at EEA level for undertakings not using the VA includes data from countries where the VA is not used at all.

Table 3.13

| Credit quality of government bonds for undertakings not using the VA or using the VA, per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of VA** | **30%** | **41%** | **16%** | **12%** | **1%** |
| | **Use of the VA** | **14%** | **44%** | **15%** | **27%** | **1%** |
| AT | No use of VA | 15% | 59% | 18% | 8% | 0% |
| | Use of the VA | 0% | 58% | 32% | 10% | 1% |
| BE | No use of VA | 4% | 69% | 16% | 10% | 1% |
| | Use of the VA | 9% | 72% | 10% | 8% | 0% |
| BG | No use of VA | 1% | 25% | 24% | 50% | 1% |
| | Use of the VA | 3% | 1% | 15% | 81% | 0% |
| CY | No use of VA | 18% | 16% | 21% | 35% | 9% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| CZ | No use of VA | 2% | 93% | 5% | 0% | 0% |
| | Use of the VA | 5% | 60% | 29% | 5% | 1% |
| DE | No use of VA | 42% | 40% | 12% | 6% | 1% |
| | Use of the VA | 34% | 47% | 15% | 5% | 0% |
| DK | No use of VA | 73% | 19% | 2% | 4% | 2% |
| | Use of the VA | 67% | 16% | 4% | 10% | 3% |
| EE | No use of VA | 20% | 21% | 44% | 13% | 2% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| ES | No use of VA | 6% | 12% | 57% | 24% | 0% |
| | Use of the VA | 2% | 2% | 74% | 22% | 0% |
| FI | No use of VA | 21% | 67% | 5% | 7% | 0% |
| | Use of the VA | 45% | 49% | 2% | 3% | 1% |
| FR | No use of VA | 8% | 76% | 7% | 9% | 0% |
| | Use of the VA | 8% | 76% | 7% | 9% | 0% |
| GR | No use of VA | 25% | 35% | 9% | 9% | 23% |
| | Use of the VA | 10% | 13% | 8% | 13% | 56% |
| HR | No use of VA | 1% | 2% | 6% | 85% | 6% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| HU | No use of VA | 0% | 0% | 1% | 96% | 3% |
| | Use of the VA | 1% | 1% | 0% | 99% | 0% |
| IE | No use of VA | 32% | 48% | 12% | 7% | 0% |
| | Use of the VA | 36% | 45% | 13% | 6% | 0% |
| IS | No use of VA | 0% | 0% | 78% | 14% | 8% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| IT | No use of VA | 2% | 8% | 5% | 84% | 1% |
| | Use of the VA | 2% | 5% | 7% | 85% | 0% |
| LI | No use of VA | 68% | 24% | 5% | 3% | 0% |
| | Use of the VA | 49% | 28% | 16% | 7% | 0% |
| LU | No use of VA | 43% | 49% | 5% | 3% | 0% |
| | Use of the VA | 26% | 53% | 7% | 14% | 0% |
| NL | No use of VA | 55% | 26% | 6% | 9% | 4% |
| | Use of the VA | 55% | 35% | 3% | 6% | 0% |
| NO | No use of VA | 60% | 34% | 5% | 1% | 0% |
| | Use of the VA | 50% | 37% | 12% | 0% | 0% |
| PT | No use of VA | 1% | 2% | 1% | 95% | 0% |
| | Use of the VA | 6% | 14% | 18% | 61% | 1% |
| RO | No use of VA | 0% | 0% | 1% | 99% | 0% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| SE | No use of VA | 94% | 5% | 1% | 0% | 0% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| SK | No use of VA | 7% | 1% | 83% | 7% | 2% |
| | Use of the VA | 10% | 21% | 64% | 5% | 0% |

The following table shows the credit quality of corporate bonds. Please note that the data at EEA level for undertakings not using the VA includes data from countries where the VA is not used at all.

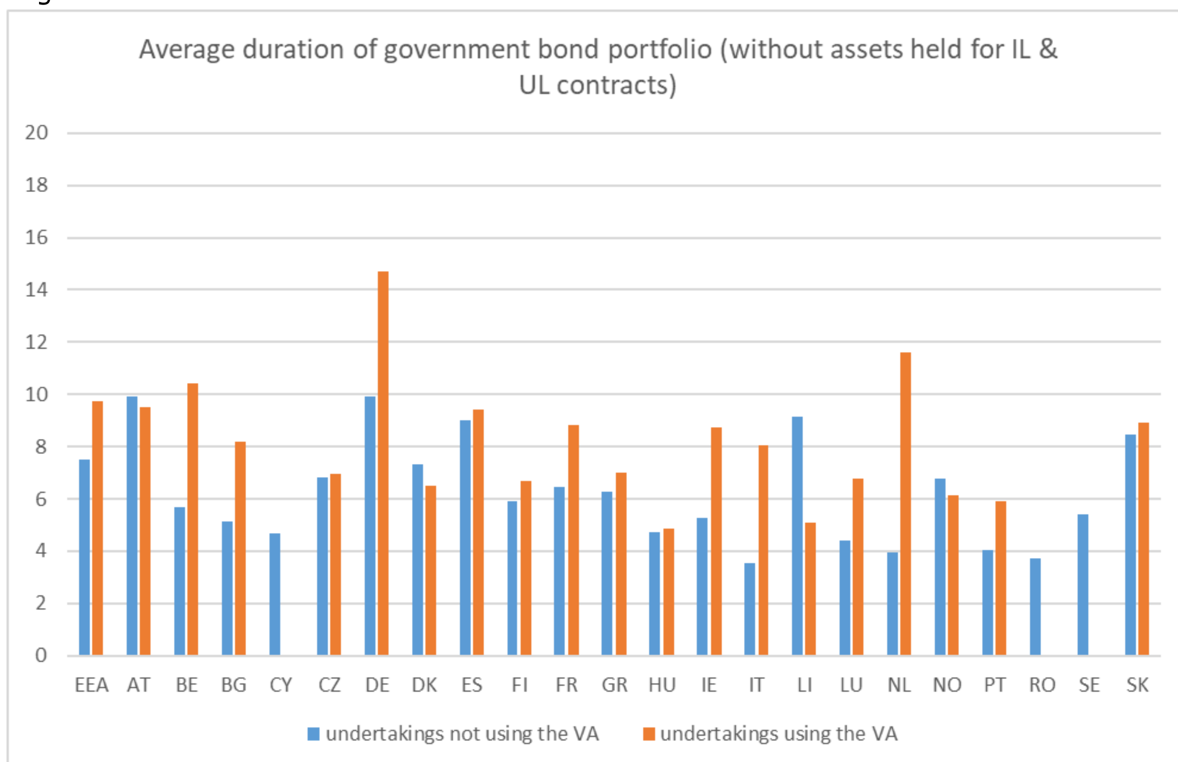
Table 3.14

| Credit quality of corporate bonds for undertakings not using the VA or using the VA per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of VA** | **37%** | **17%** | **26%** | **18%** | **2%** |
| | **Use of the VA** | **17%** | **17%** | **33%** | **31%** | **2%** |
| AT | No use of VA | 32% | 16% | 29% | 22% | 1% |
| | Use of the VA | 19% | 21% | 36% | 23% | 1% |
| BE | No use of VA | 8% | 21% | 43% | 24% | 4% |
| | Use of the VA | 10% | 18% | 34% | 37% | 2% |
| BG | No use of VA | 6% | 8% | 21% | 58% | 8% |
| | Use of the VA | 6% | 3% | 42% | 47% | 3% |
| CY | No use of VA | 20% | 9% | 29% | 37% | 5% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| CZ | No use of VA | 2% | 31% | 36% | 31% | 0% |
| | Use of the VA | 0% | 3% | 41% | 52% | 4% |
| DE | No use of VA | 40% | 21% | 24% | 14% | 1% |
| | Use of the VA | 37% | 22% | 23% | 17% | 1% |
| DK | No use of VA | 91% | 2% | 3% | 2% | 2% |
| | Use of the VA | 82% | 7% | 5% | 5% | 1% |
| EE | No use of VA | 13% | 19% | 32% | 34% | 2% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| ES | No use of VA | 4% | 14% | 35% | 43% | 4% |
| | Use of the VA | 2% | 14% | 32% | 49% | 3% |
| FI | No use of VA | 5% | 8% | 39% | 44% | 5% |
| | Use of the VA | 10% | 10% | 27% | 40% | 14% |
| FR | No use of VA | 9% | 20% | 40% | 29% | 2% |
| | Use of the VA | 8% | 19% | 41% | 31% | 1% |
| GR | No use of VA | 29% | 11% | 30% | 24% | 6% |
| | Use of the VA | 1% | 13% | 35% | 42% | 9% |
| HR | No use of VA | 3% | 3% | 33% | 50% | 11% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| HU | No use of VA | 1% | 0% | 27% | 52% | 21% |
| | Use of the VA | 0% | 4% | 30% | 66% | 0% |
| IE | No use of VA | 7% | 14% | 46% | 32% | 1% |
| | Use of the VA | 21% | 14% | 40% | 24% | 1% |
| IS | No use of VA | 0% | 0% | 0% | 99% | 1% |
| | Use of the VA | 0% | 0% | 0% | 0% | 0% |
| IT | No use of VA | 14% | 8% | 31% | 45% | 2% |
| | Use of the VA | 2% | 7% | 28% | 55% | 8% |
| LI | No use of VA | 13% | 19% | 47% | 19% | 1% |
| | Use of the VA | 38% | 16% | 25% | 21% | 0% |
| LU | No use of VA | 12% | 17% | 41% | 29% | 1% |
| | Use of the VA | 7% | 12% | 44% | 36% | 2% |
| NL | No use of VA | 8% | 22% | 33% | 31% | 7% |
| | Use of the VA | 4% | 12% | 40% | 41% | 3% |
| NO | No use of VA | 40% | 10% | 31% | 19% | 1% |
| | Use of the VA | 34% | 14% | 36% | 16% | 0% |
| PT | No use of VA | 0% | 3% | 43% | 44% | 10% |
| | Use of the VA | 5% | 14% | 33% | 46% | 3% |
| RO | No use of VA | 0% | 0% | 57% | 43% | 0% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| SE | No use of VA | 78% | 6% | 8% | 6% | 2% |
| | Use of the VA | (*) | (*) | (*) | (*) | (*) |
| SK | No use of VA | 1% | 25% | 22% | 46% | 5% |
| | Use of the VA | 7% | 14% | 35% | 44% | 0% |

The following graph shows the average duration of government bonds and corporate bonds for undertakings using the VA and not using the VA. Please note that the data at EEA level for undertakings not using the VA includes data from countries where the VA is not used at all. When considering these graphs, it may be worthwhile also referring to the earlier section on the use of the VA at the beginning of this chapter. The VA is used relatively more often by life undertakings than by non-life undertakings.

The differences between undertakings using the VA and those that do not use it are comparatively small overall. There have been no significant changes between 2018 and 2019, with the exception of some minor shifts in some countries, which as in preceding years most likely represent bond rating changes rather than changed investment behaviour.

Figure 3.44




**Impact on consumers and products**

The following table sets out the share of gross written premiums of undertakings using the VA compared to the total gross written premiums by all undertakings in that country, for each line of business (columns 1 to 6) the total life insurance and life reinsurance business (column 7), and the total for non-life insurance and reinsurance business (column 8). The table is based on data reported by undertakings in the annual QRTs for 2019.

For instance, in Austria 75.8% of the total life insurance and life reinsurance premiums and 83% of health insurance premiums are written by undertakings applying the VA.

Table 3.15

| Country | 1. Health insurance | 2. Insurance with profit participation | 3. Index-linked and unit-linked insurance | 4. Other life insurance | 5. Health reinsurance | 6. Life reinsurance | 7. Total life insurance and reinsurance | 8. Total non-life insurance and reinsurance |
|---|---|---|---|---|---|---|---|---|
| AT | 81.2% | 75.8% | 74.4% | 85.5% | 23.4% | 83.0% | 77.4% | 67.8% |
| BE | 95.7% | 96.0% | 92.2% | 89.3% | -0.2% | 29.0% | 94.5% | 72.1% |
| BG | 87.9% | 65.2% | 88.6% | 39.8% | 0.0% | 0.0% | 56.1% | 15.0% |
| CY | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| CZ | 31.8% | 52.6% | 94.0% | 85.7% | 0.0% | 1.8% | 68.9% | 46.8% |
| DE | 32.8% | 83.8% | 84.1% | 90.9% | 31.9% | 45.2% | 63.5% | 32.8% |
| DK | 56.9% | 81.6% | 81.1% | 57.4% | 0.0% | 0.0% | 80.2% | 11.9% |
| ES | 97.3% | 97.2% | 98.7% | 94.2% | 0.0% | 9.7% | 93.5% | 44.6% |
| FI | 100.0% | 96.1% | 91.3% | 70.5% | 0.0% | 100.0% | 91.4% | 41.2% |
| FR | 96.6% | 96.0% | 97.7% | 88.7% | 54.8% | 85.1% | 93.8% | 55.5% |
| GR | 99.8% | 93.1% | 97.5% | 99.4% | 0.0% | 100.0% | 97.7% | 63.3% |
| HU | 78.4% | 21.2% | 46.3% | 36.1% | 0.0% | 0.0% | 36.7% | 40.7% |
| IE | 18.3% | 0.3% | 28.7% | 28.3% | 34.1% | 10.1% | 24.4% | 15.0% |
| IT | 100.0% | 98.9% | 92.9% | 94.9% | 100.0% | 100.0% | 97.1% | 87.7% |
| LE | 0.0% | 2.3% | 4.0% | 0.0% | 0.0% | 0.0% | 2.9% | 9.7% |
| LU | 0.0% | 97.0% | 92.4% | 38.3% | 0.0% | 1.3% | 81.1% | 18.5% |
| MT | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| NL | 93.3% | 80.4% | 100.0% | 98.8% | 53.9% | 90.7% | 94.9% | 16.2% |
| NO | 52.9% | 90.6% | 96.6% | 99.0% | 0.0% | 0.0% | 91.2% | 17.3% |
| PT | 0.0% | 56.9% | 59.8% | 31.2% | 0.0% | 74.4% | 48.3% | 57.9% |
| RO | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SE | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| SK | 21.4% | 23.2% | 47.3% | 49.1% | 0.0% | 0.0% | 33.3% | 53.4% |
| EEA | **45.0%** | **89.8%** | **74.1%** | **78.5%** | **35.6%** | **55.7%** | **76.6%** | **40.1%** |

## III.3 Transitional measure on the risk-free interest rates

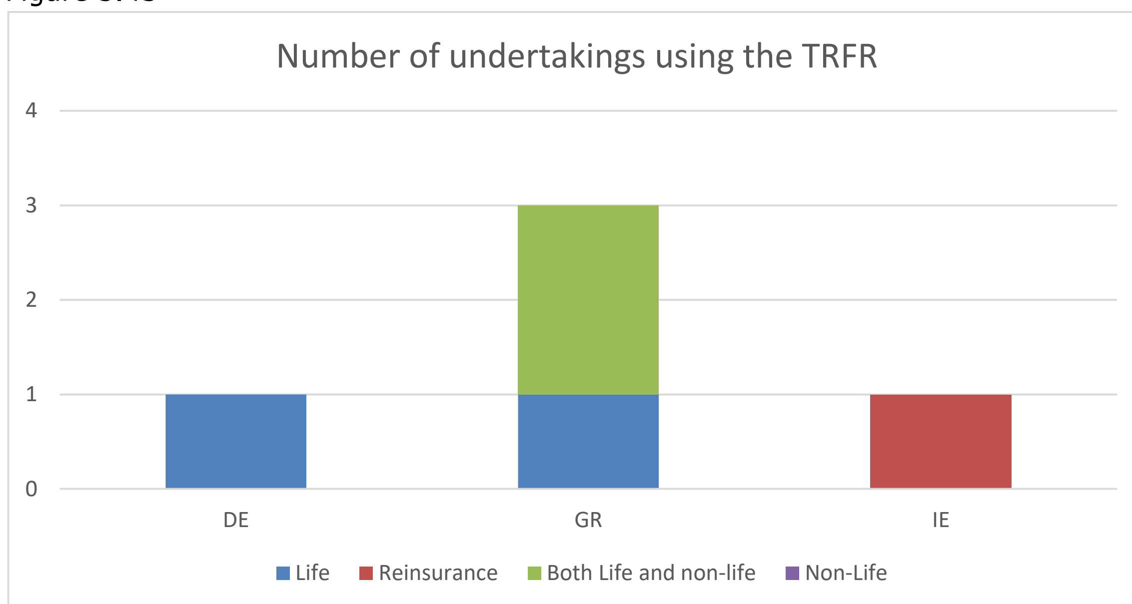
For a period of 16 years after the start of Solvency II, insurance and reinsurance undertakings may apply the transitional measure on the risk-free interest rate. Under the transitional measure undertakings apply a transitional adjustment to the risk-free interest rate for the valuation of insurance and reinsurance obligations. The transitional adjustment is based on the difference between the discount rates of Solvency I and the risk-free interest rates. At the beginning of Solvency II, the transitional adjustment is 100% of that difference. Over the transition period of 16 years, the transitional adjustment is linearly reduced to zero. The transitional measure applies only to insurance and reinsurance obligations from contracts in force before the start of Solvency II.

The use of the transitional measure is subject to supervisory approval.

**Use of the transitional measure on the risk-free interest rates**

Only 5 undertakings, in 3 countries, are using the TRFR.

Figure 3.45

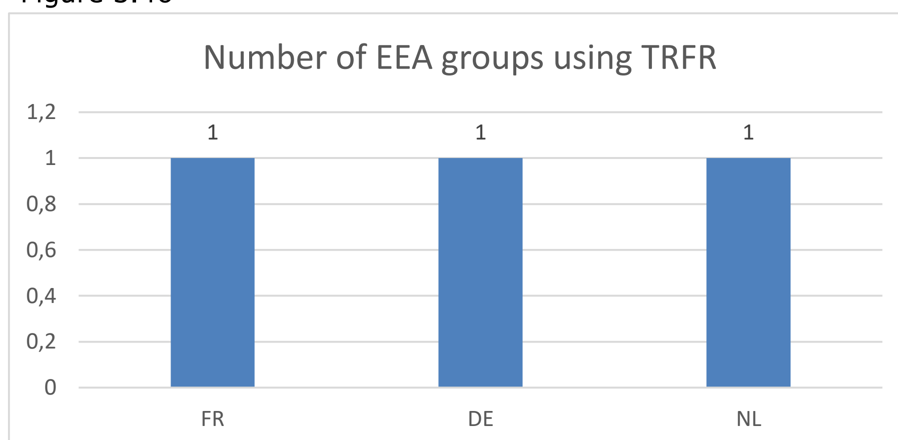



The market share in technical provisions of undertakings using the TRFR is negligible at both EEA and national level, except in Greece where the aggregated market share of the three undertakings using the TRFR is 24% of the national market.

According to the Solvency II Directive, it is possible to apply simultaneously the TRFR and the VA to the same liabilities. All 5 European undertakings applying TRFR also apply the VA.

Three EEA groups are using the TRFR.

Figure 3.46



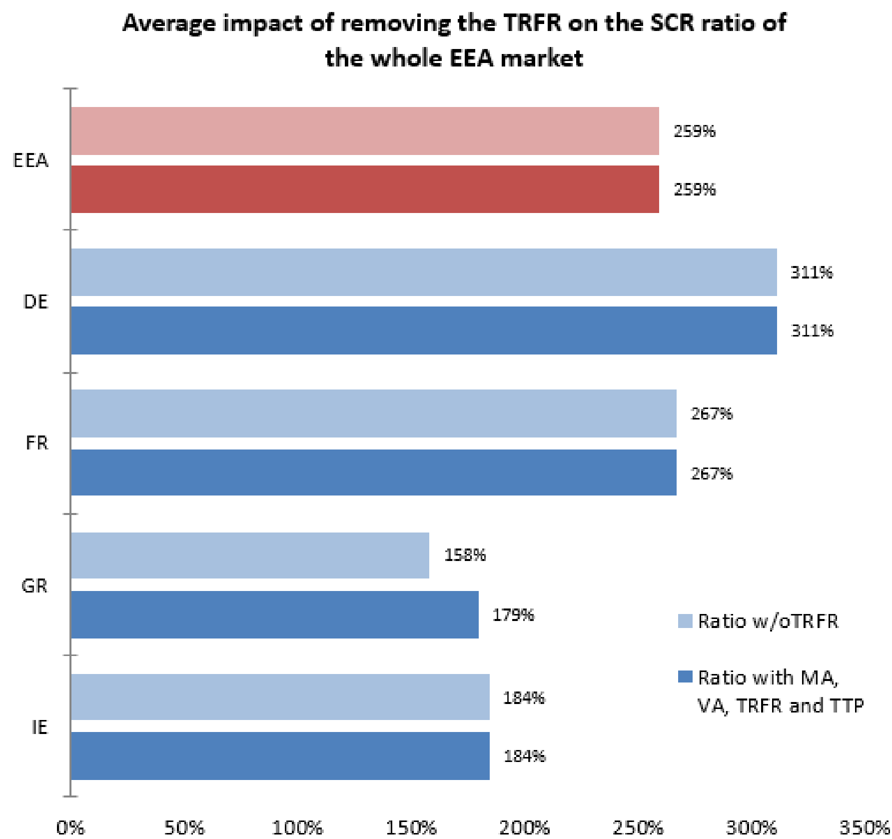

**Impact on the financial position of undertakings**

The impact results presented in this section are based on data from 2019 Quantitative Reporting Templates.

The number of TRFR users is limited (only 5 undertakings). In each country, the average impact of the TRFR mirrors, to a large extent, the specifics of the individual undertakings in that market, rather than the countries' specificities.

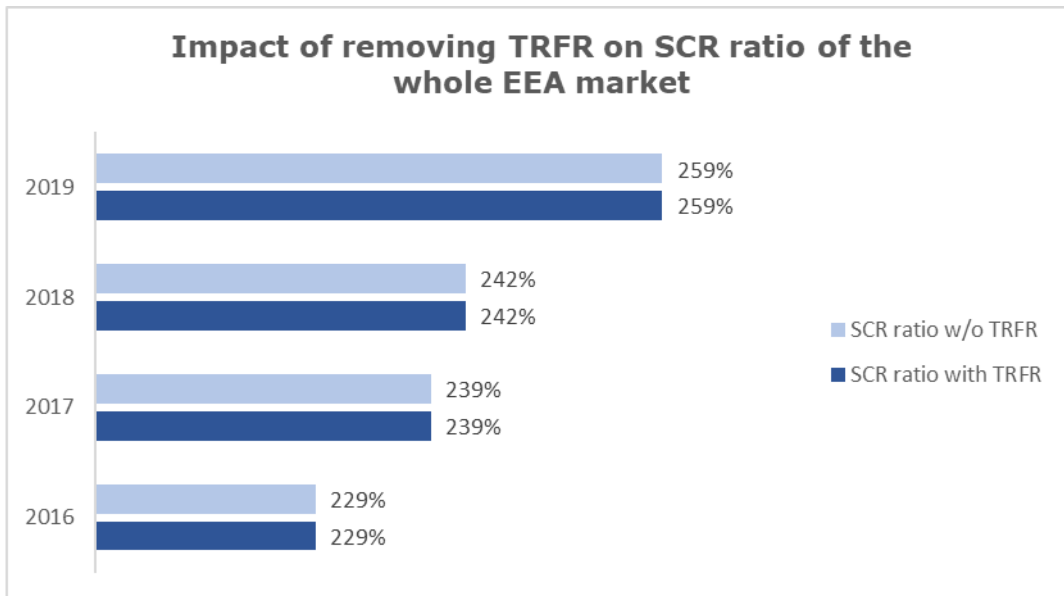
The following graph shows the overall impact of the use of the TRFR on the SCR ratio for the whole market of the countries where the TRFR is used. For those countries, it includes both undertakings using and not using the TRFR. This shows that removing the TRFR has merely no impact on the average SCR ratio for the whole market, except for Greece.

Figure 3.47




The following graph shows the overall impact of the use of the TRFR on the SCR ratio for the whole EEA market during the last four years. The impact was always closed to zero due to the small market share at EEA level of those undertakings using the TRFR.

Figure 3.48




The following graphs display the overall impact of the use of the TRFR on the SCR ratio for undertakings that apply this measure. The impact is shown at EEA and at country level. The first graphs shows the SCR ratio with (dark blue) and without (light blue) the TRFR. The red bars are for the EEA level. The second graph shows the impact in percentage points.

The impact of the TRFR on the SCR ratio for undertakings applying the measure is 48 percentage points. The average SCR ratio with the TRFR is 2129% and 181% without the measure.

Figure 3.49

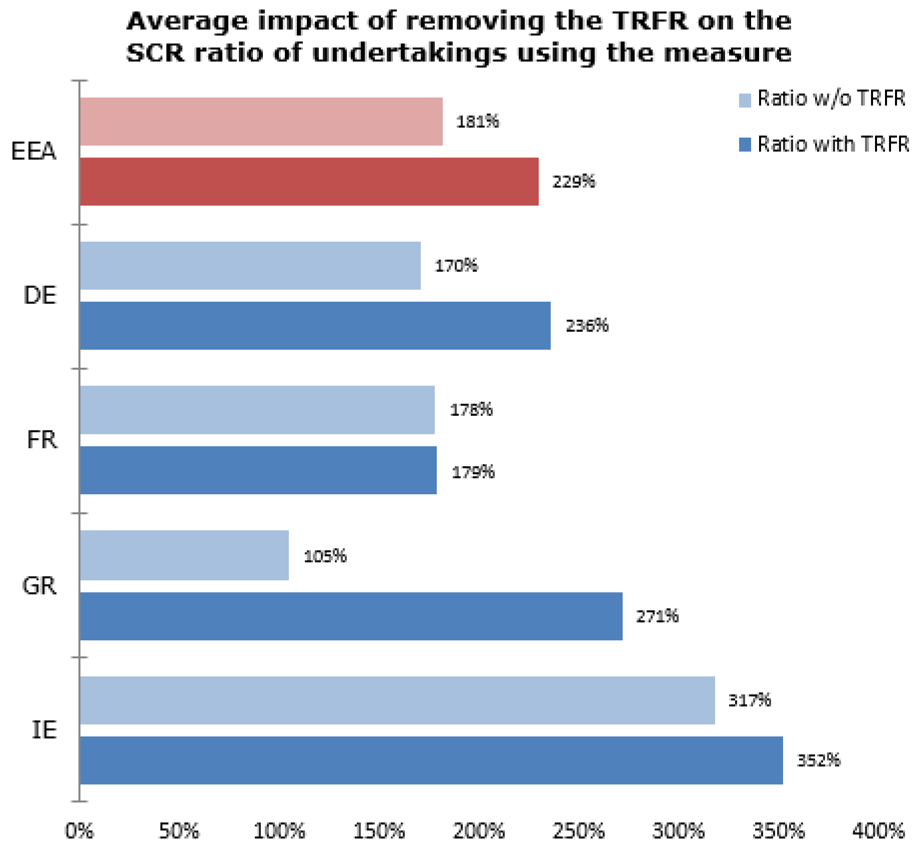
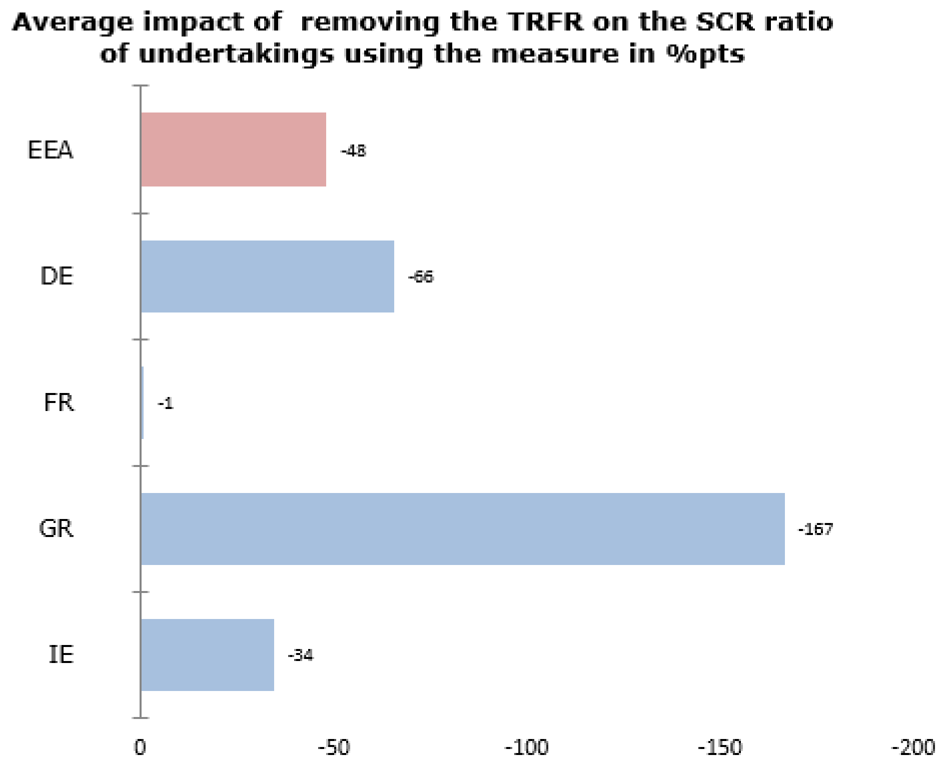
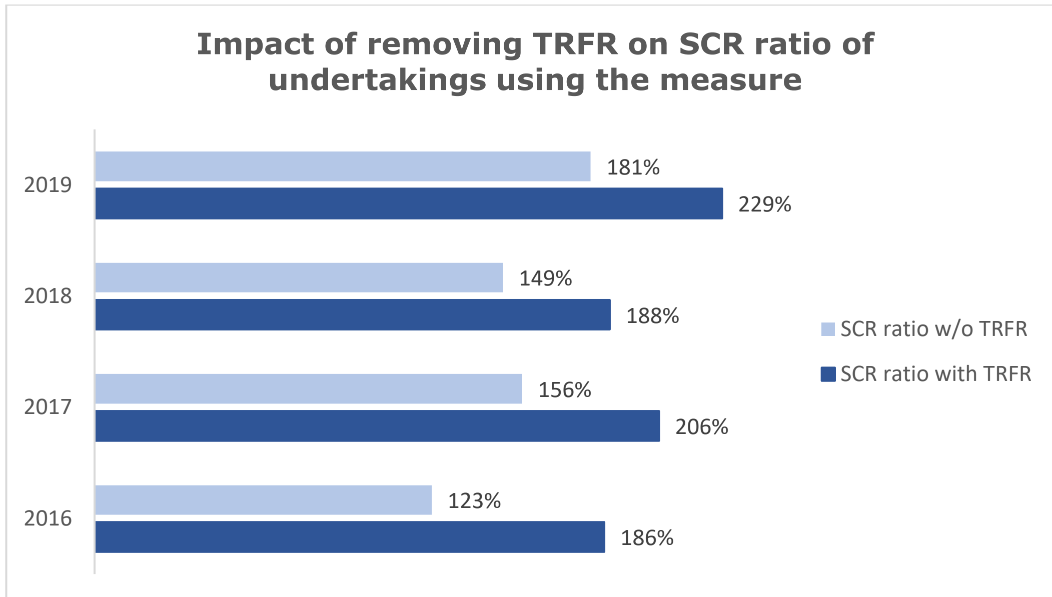



Figure 3.50



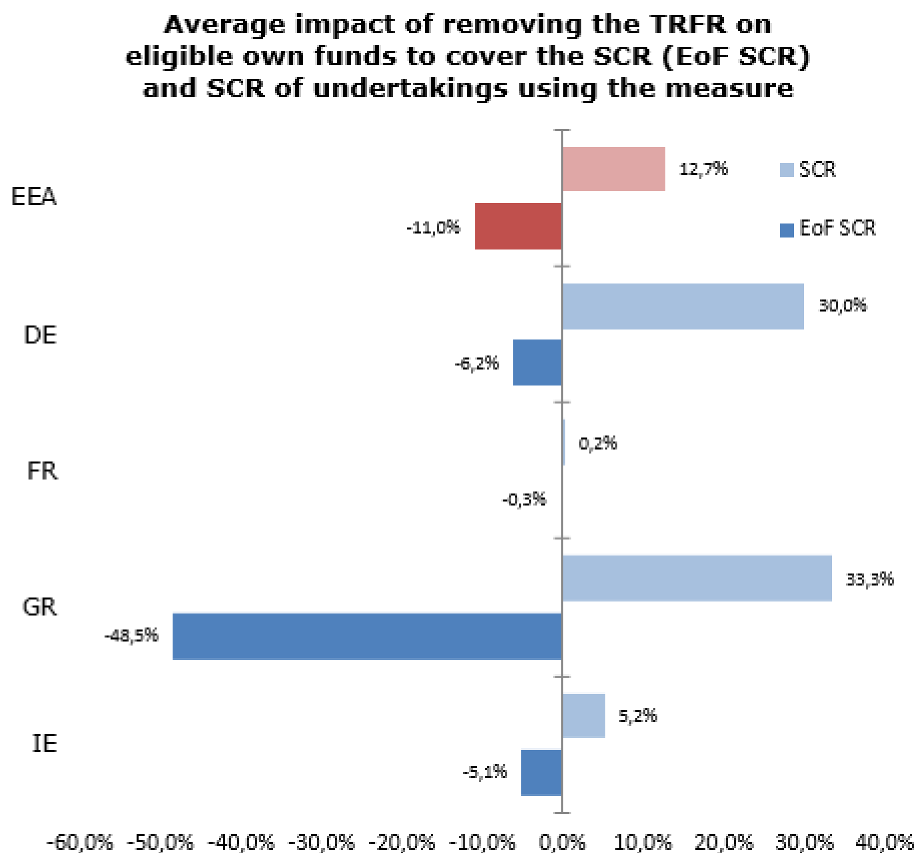

The following graph shows the overall impact of the use of the TRFR on the SCR ratio for undertakings using the measure during the last four years.

Figure 3.51



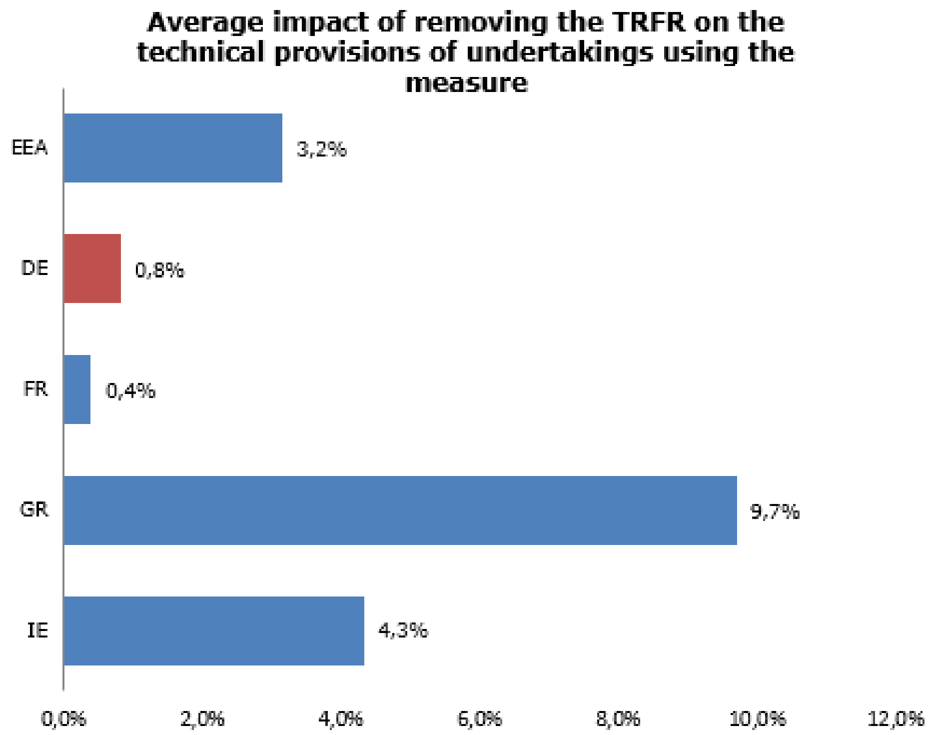

The following graph shows the impact of removing the TRFR on the SCR (light blue) and on the eligible own funds to cover the SCR (dark blue). The red bars are for the EEA level. On average, eligible own funds to cover the SCR would decrease by 11%, while the SCR would increase by 12.7% if the TRFR were removed.

Figure 3.52



The following graph displays the impact of removing the TRFR on the value of technical provisions (TPs) at EEA and national level. The average impact of the TRFR on the technical provisions for undertakings applying the measure is an increase of 3.2% when the measure is removed.

Figure 3.53




The impact of removing the TRFR on the MCR ratio for undertakings applying the measure is 131 percentage points. The average MCR ratio with the TRFR is 660% and 529% without the measure.

Figure 3.54

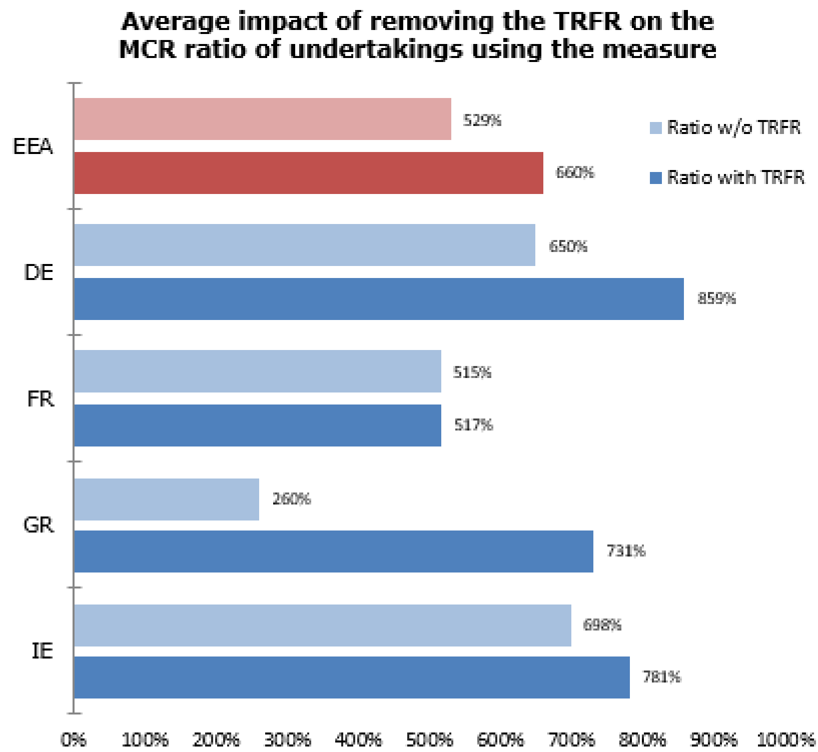
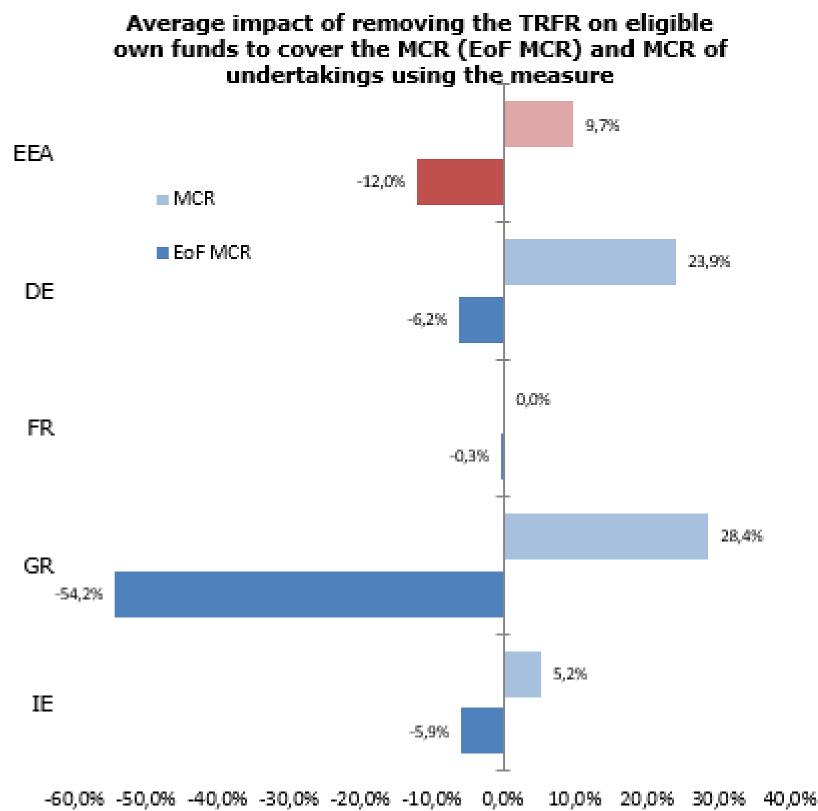



Figure 3.55



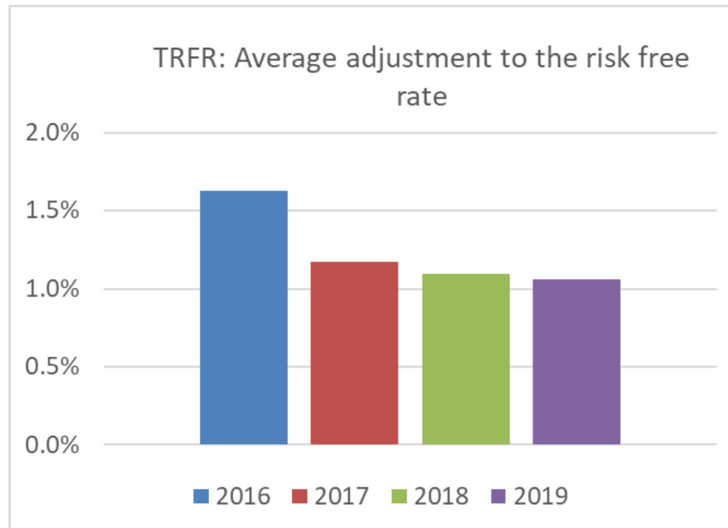

Information on the phasing-in plans for the TRFR and the prospects for a reduced dependency on the measures can be found in Section III.5.

**Additional information on the TRFR based on the QRT information**

Based on the quantitative information that undertaking regularly provide to supervisory authorities further analysis could be performed for this year's report.

The following graph outlines the average adjustment to the risk free rate for year-end for year end 2016 to 2019:

Figure 3.56




The information provided in the regular quantitative reporting also allows NSAs to assess the share of best estimate in bands of guarantee level. The following graph provides an overview based on all undertakings applying the TRFR:[25]

Figure 3.57

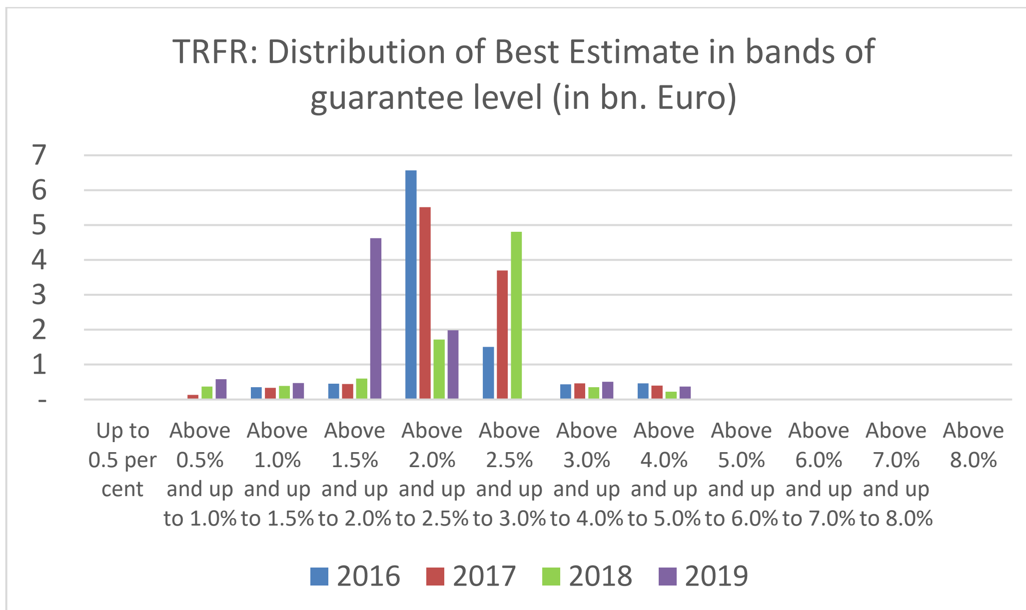
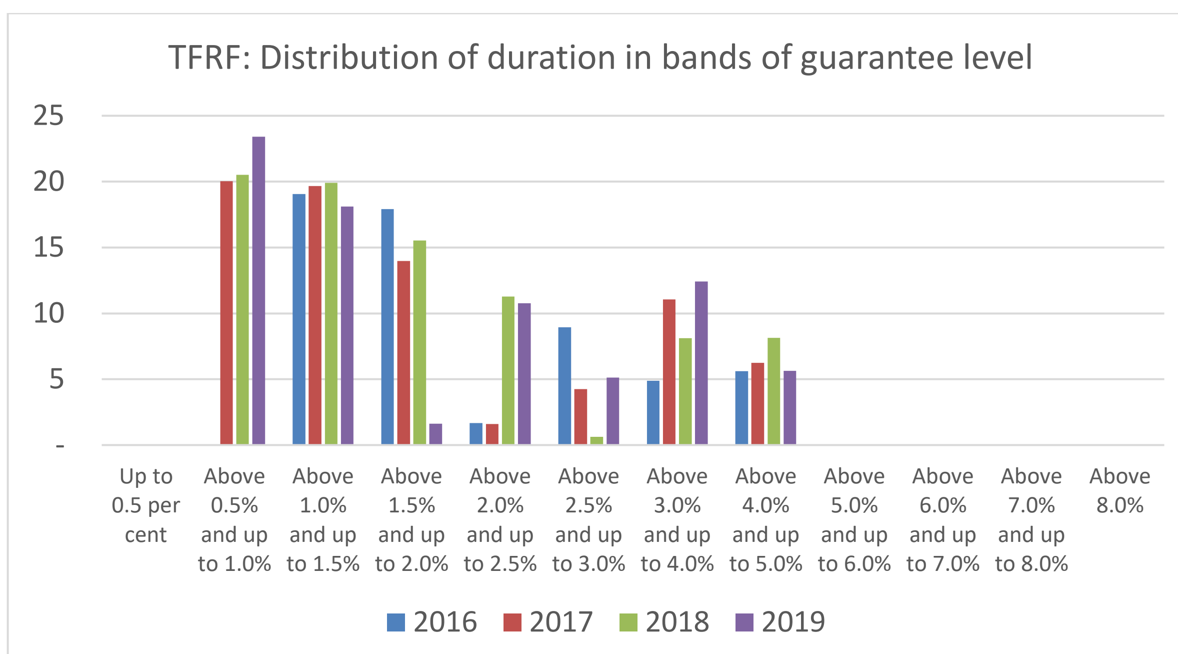



Figure 3.58

[25] Note that changes between 2016 and 2017 are mainly due to changes in the set of undertakings using the TRFR, which can have a material effect on the average since the overall number of undertakings using the TRFR is small.




**Impact on investments of undertakings, consumers and products**

As only 6 insurers are applying the TRFR, it is not possible to disclose more detailed data on the impact of this measure on investments of undertakings, consumers and products per country. This data has been combined with the data for the TTPs and is presented in subsection III.5.

The following table sets out the share of gross written premiums for undertakings using the TRFR compared to the total gross premiums written by all undertakings. It also shows each line of business (columns 1 to 6), the total life insurance and life reinsurance business (column 7) and the total for non-life insurance and reinsurance business (column 8). The table is based on data reported by undertakings in the annual QRTs for 2019. Please note that due to the small number of undertakings in individual markets using this transitional measure, results have been presented at EEA level, and not been split by individual country.

Table 3.16

| Country | 1. Health insurance | 2. Insurance with profit participation | 3. Index-linked and unit-linked insurance | 4. Other life insurance | 5. Health reinsurance | 6. Life reinsurance | 7. Total life insurance and reinsurance | 8. Total non-life insurance and reinsurance |
|---|---|---|---|---|---|---|---|---|
| EEA | 0.5% | 0.2% | 0.4% | 0.2% | 0.0% | 0.5% | 0.3% | 0.1% |

## III.4 Transitional measure on technical provisions

For a period of 16 years after the start of Solvency II, insurance and reinsurance undertakings may apply the transitional measure on technical provisions (TTP). Under the transitional measure, undertakings apply a transitional deduction to the technical provisions for their insurance and reinsurance obligations.

The transitional deduction is based on the difference between the technical provisions under Solvency I and the technical provisions under Solvency II. At the beginning of Solvency II the transitional adjustment is 100% of that difference, i.e. the technical provisions are equal to the technical provisions under Solvency I. Over the transitional period of 16 years the transitional deduction is reduced to zero. The transitional measure applies only to insurance and reinsurance obligations from contracts concluded before the start of Solvency II.

The use of the transitional measure is subject to supervisory approval.

**Use of the transitional measure on technical provisions**

The TTP is applied by 159 undertakings from 11 countries.

The technical provisions of undertakings applying the TTP represent 25% of the total amount of technical provisions in the EEA.

Figure 3.59

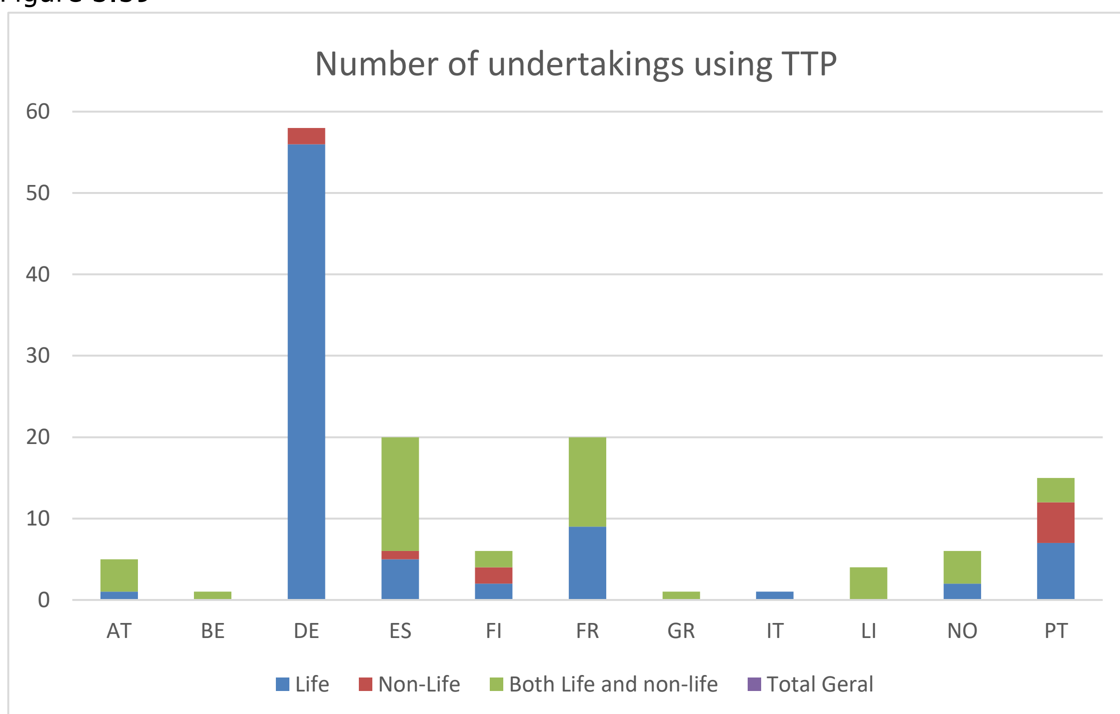



Table 3.17

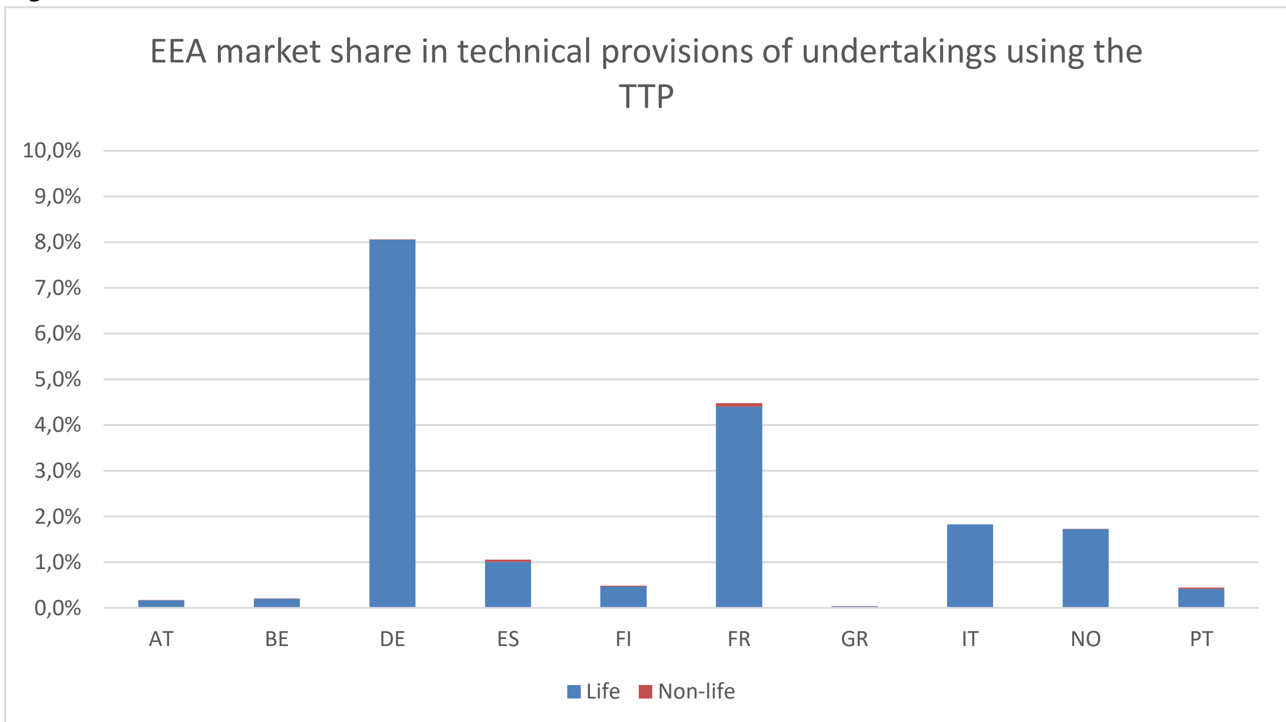
| Number of undertakings using TTP | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Life | Non-Life | Both Life and non-life | Reinsurance | Total | Last year | Variation from last year |
| AT | 1 | 0 | 4 | 0 | 5 | 5 | 0 |
| BE | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| DE | 57 | 2 | 0 | 0 | 59 | 58 | 1 |
| ES | 3 | 1 | 15 | 0 | 19 | 20 | -1 |
| FI | 3 | 2 | 2 | 0 | 7 | 6 | 1 |

| FR | 9 | 0 | 12 | 0 | 21 | 20 | 1 |
|---|---|---|---|---|---|---|---|
| GR | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| IT | 1 | 0 | 1 | 0 | 2 | 1 | 1 |
| LI | 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| NO | 2 | 0 | 3 | 0 | 5 | 6 | -1 |
| PT | 7 | 5 | 3 | 0 | 15 | 15 | 0 |
| **EEA** | **84** | **10** | **42** | **0** | **136** | **133** | **3** |

The total number of undertakings using the TTP in the EEA increased by 3 since last year's report.

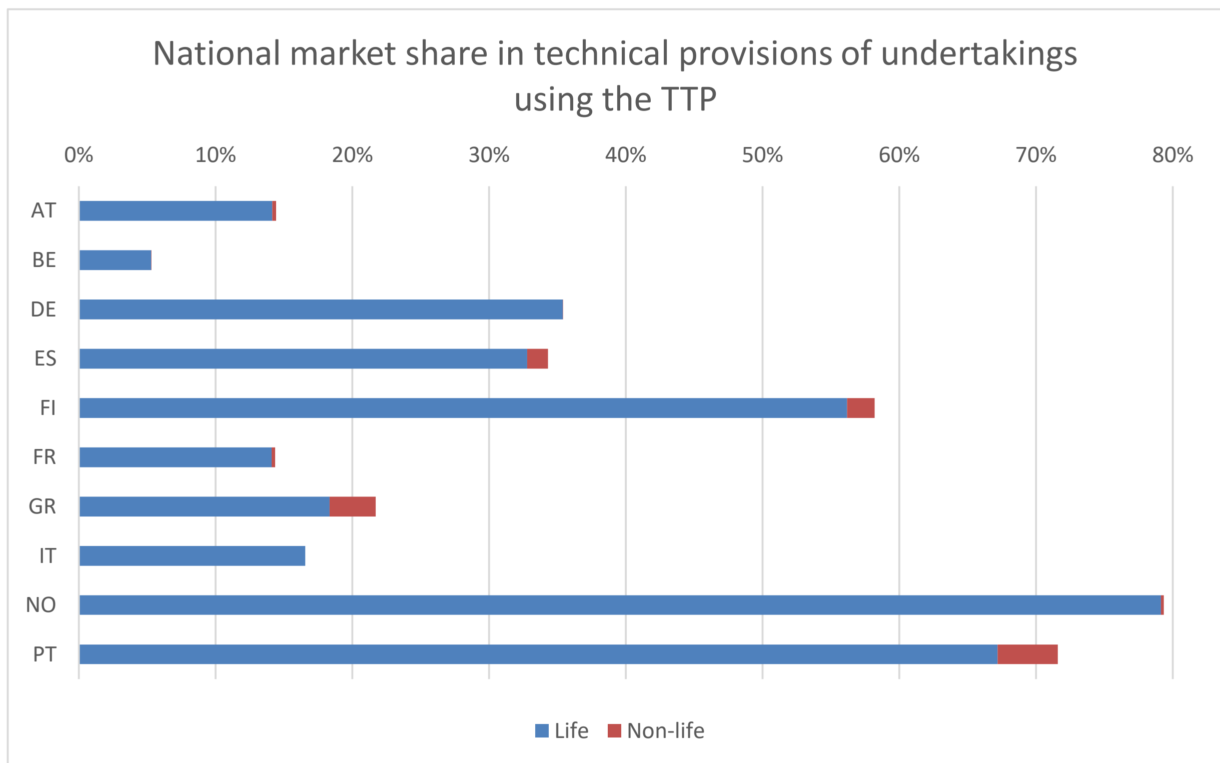
The market share in technical provisions of undertakings using the TTP is shown in the graph below. This illustrates that among undertakings using the TTP, undertakings in the DE have the highest EEA market share, followed by undertakings in FR.

Figure 3.60




The following graph displays the market share in terms of technical provisions at national level for undertakings using the TTP. In Norway, undertakings representing 79% of the national market share use the TTP. In Portugal and Finland, undertakings representing more than 50% of the national market are using TTP.

Figure 3.61




According to the Solvency II Directive it is possible to apply simultaneously the TTP and the MA or the VA to the same liabilities.

Table 3.18

| Undertakings applying simultaneously TTP and VA to the same liabilities | | | |
|---|---|---|---|
| Country | Number of undertakings | % EEA market share in TP | % National market share in TP |
| AT | 2 | (*) | (*) |
| BE | 1 | (*) | (*) |
| DE | 51 | 4% | 21% |
| ES | 19 | 1% | 32% |
| FI | 7 | 0% | 54% |
| FR | 20 | 3% | 11% |
| GR | 1 | (*) | (*) |
| IT | 2 | (*) | (*) |
| LI | 1 | (*) | (*) |
| NO | 4 | 0% | 74% |
| PT | 10 | 7% | 41% |
| **EEA** | **118** | **21%** | - |

(*)Data from these countries are not disclosed for confidentiality reasons because the number of undertakings concerned is lower than 3.

It may be insightful to compare the table above with the table on undertakings and the market share of their technical provisions and the tables on the use of only the VA or only the TTP. A comparison shows that for some jurisdictions, e.g. NO and FI, there is a large overlap between the use of the TTP and the use of the VA.

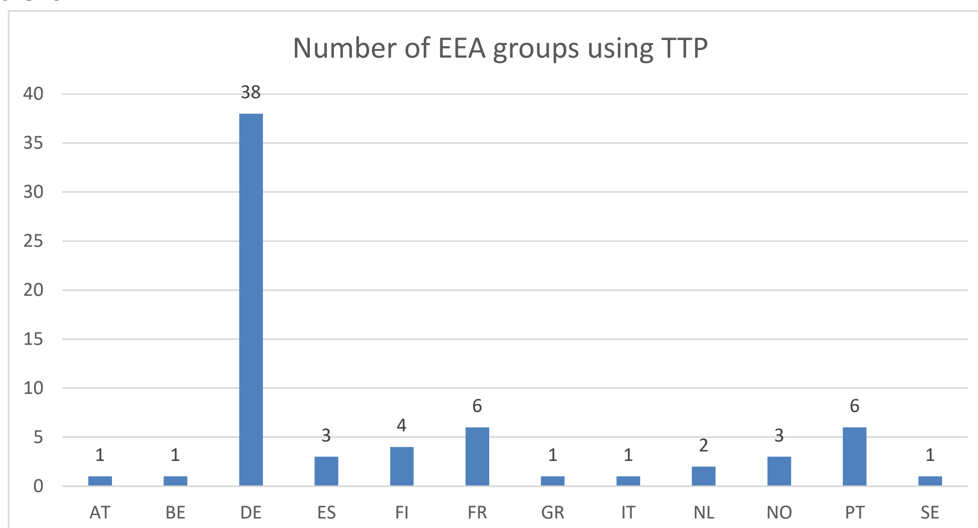
Table 3.19

| Undertakings applying the TTP and MA to the same liabilities simultaneously | | | |
|---|---|---|---|
| | Number of undertakings | % EEA market share in TP | % National market share in TP |
| ES/EEA | 8 | 0% | 10% |

Similarly, it may be insightful to compare the table above with the table on undertakings and the market share of their technical provisions and the tables on the use of only the MA or only the TTP.

The following diagram shows the number of EEA groups using the TTP.

Figure 3.62

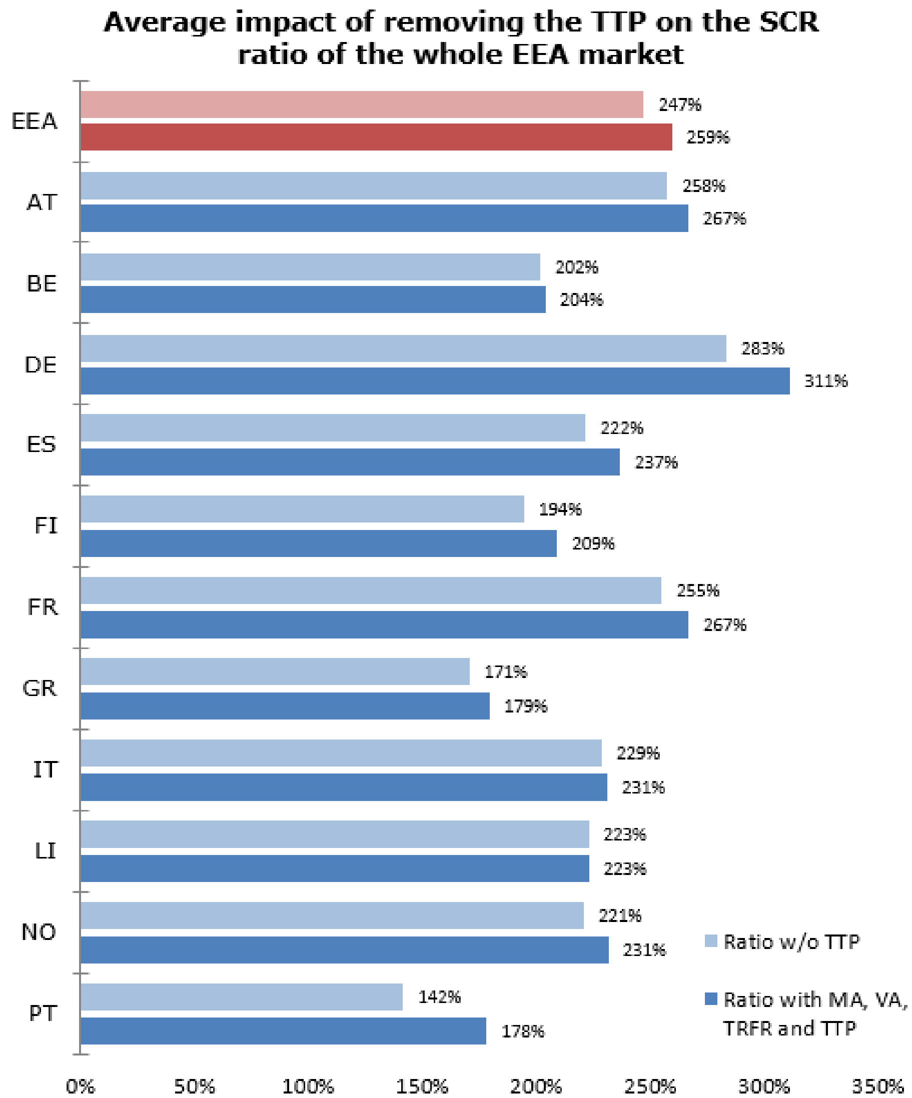



**Impact on the financial position of undertakings**

The impact results presented in this section are based on data from 2019 Quantitative Reporting Templates.

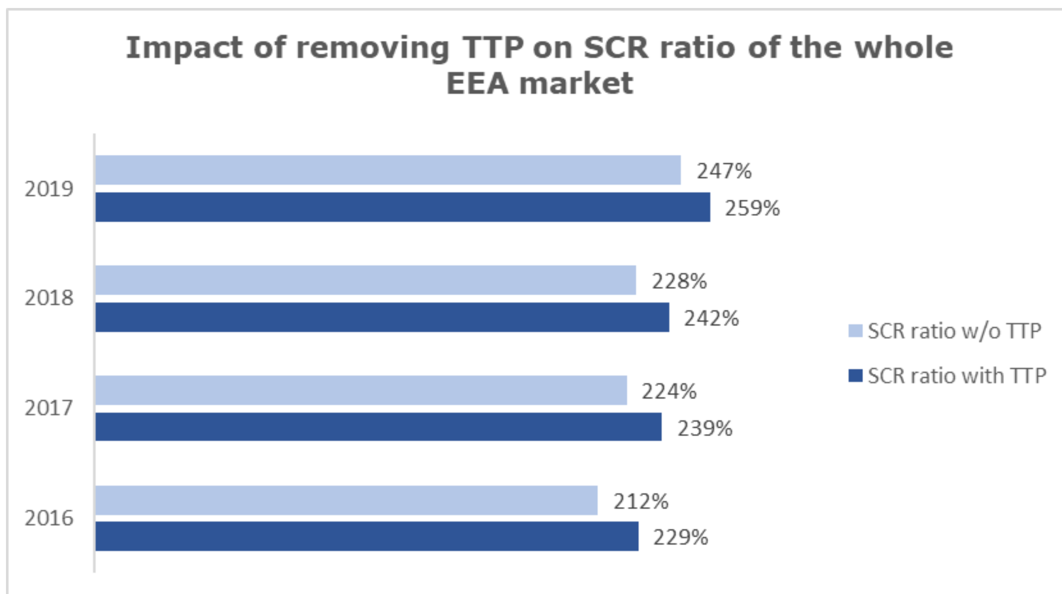
The following graph displays the overall impact of the TTP on the SCR ratio for the whole EEA sample (including both undertakings using or not using the measure). At the EEA level, removing the TTP would result, on average, in a decrease of the SCR ratio by 12 percentage points.

Figure 3.63




The following graph shows the overall impact of the use of the TTP on the SCR ratio for the whole EEA market during the last four years. The highest impact was observed in 2016, where removing the TTP would result on average in a decrease of the SCR ratio by 17 percentage points; since then, the impact has decreased until 12 percentage points at the end of 2019.

Figure 3.64




The following graphs show the overall impact of TTP on the SCR ratio for undertakings that apply the measure. At EEA level, by removing the TTP the financial position of the insurance and reinsurance undertakings using that measure would decrease the SCR ratio from 318% to 196%.

The average change in SCR ratios is the highest for undertakings in Germany, Austria, and France. Usually both components of the SCR ratio (SCR and eligible own funds) are affected by the use of the TTP, but in opposite direction. Typically eligible own funds decrease when the TTP is removed whereas the SCR increases. Germany has the largest decrease of eligible own funds and the largest increase in the SCR.

Figure 3.65

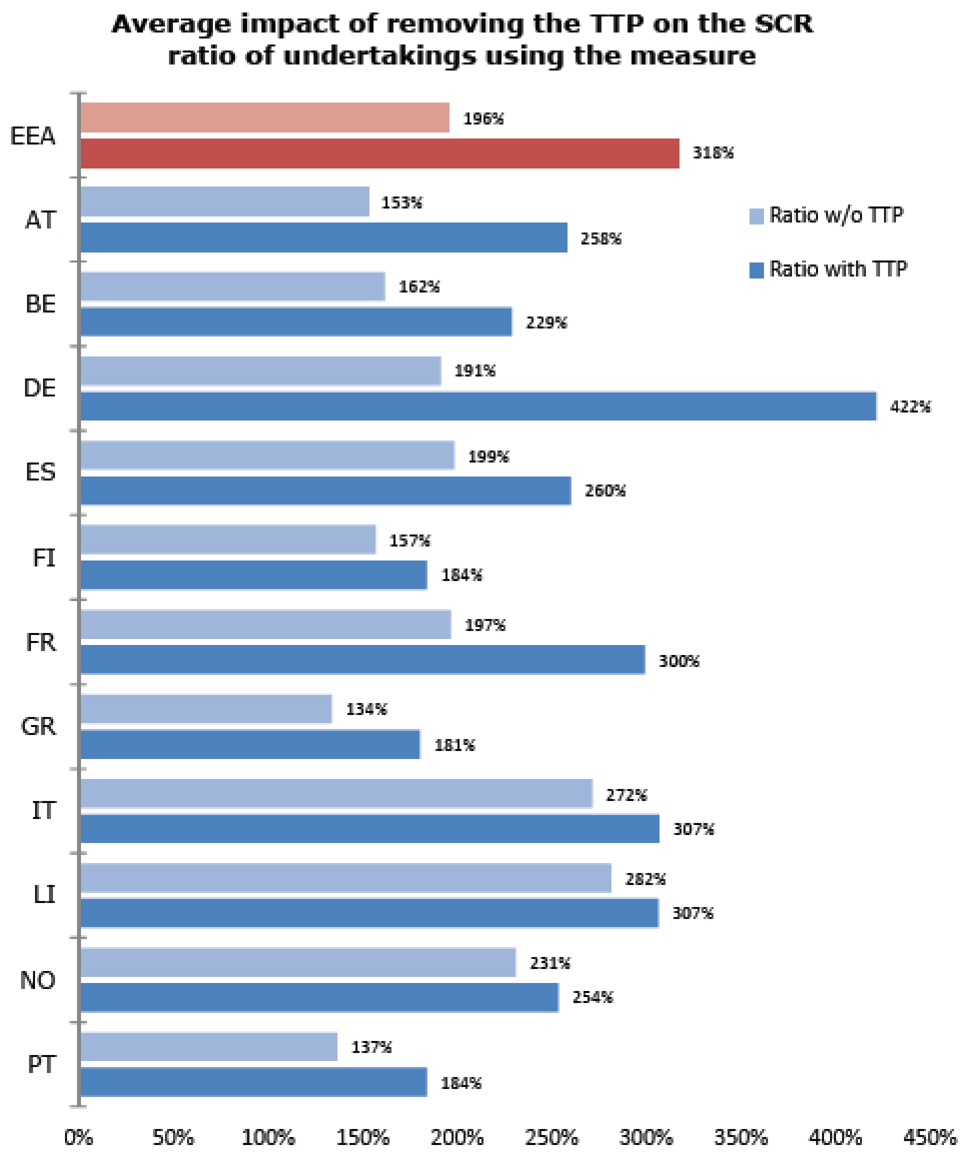
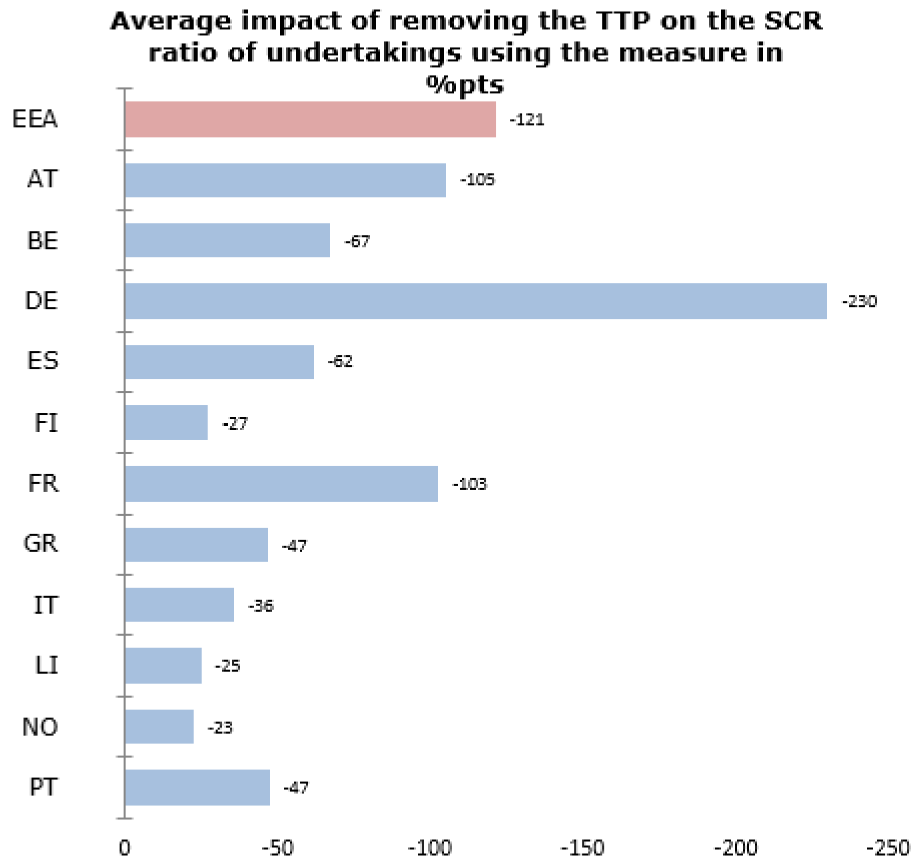
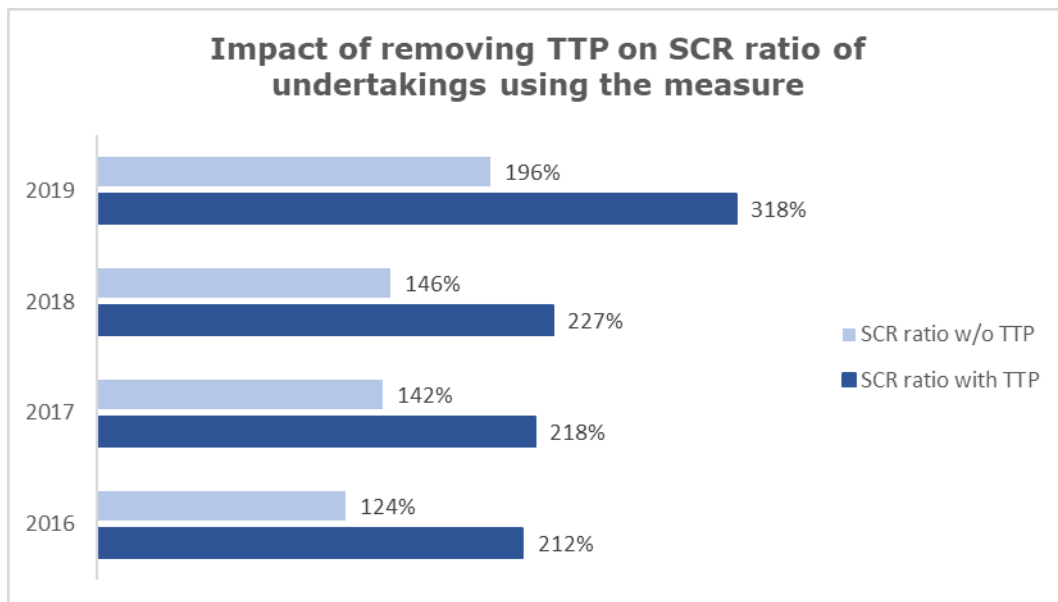


Figure 3.66




The following graph shows the overall impact of the use of the TTP on the SCR ratio for undertakings using the measure during the last four years.

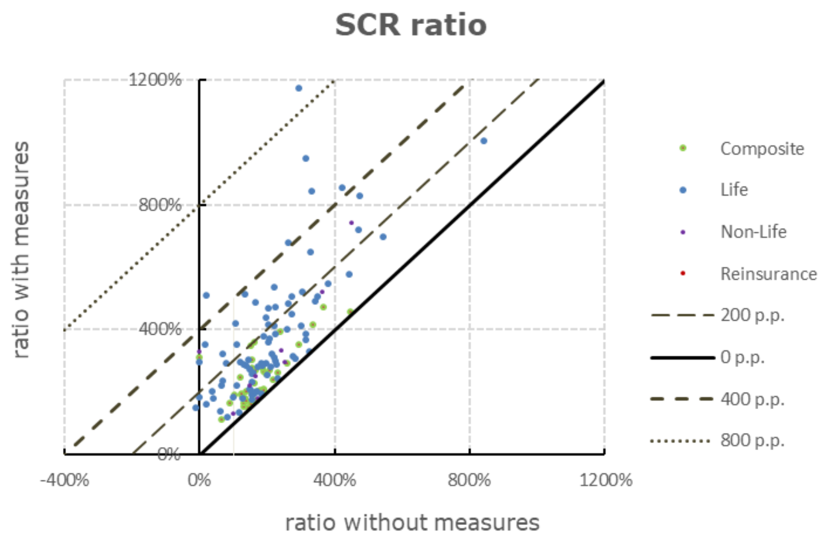
Figure 3.67




The following graph displays the impact of removing the TTP on the SCR ratio of every undertaking using the measure. Each dot in the diagram represents one undertaking, comparing the individual SCR ratio against the estimated SCR ratio without the TTP. The type of each undertaking is indicated by the colour of the dot. In terms of SCR ratio, 51% reported an absolute impact of less than 100 percentage points.

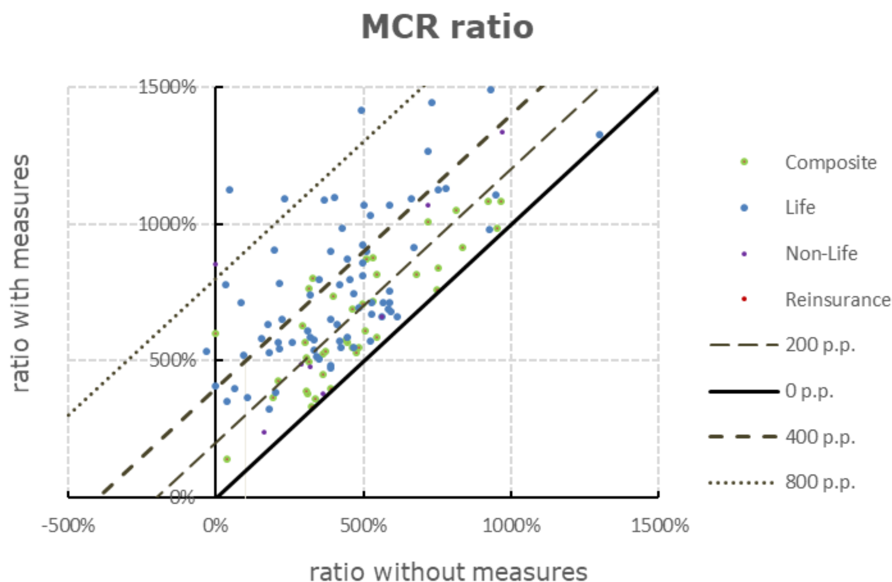
11% of undertakings using the TTP reported an SCR ratio without the measure below 100%. 0,75% of the undertakings using the measure reported negative eligible own funds to cover the SCR without TTP.

Figure 3.68




The following graph displays the impact of removing the TTP on the MCR ratio of every undertaking using TTP, comparing the individual MCR ratio against the estimated MCR ratio without TTP.

Figure 3.69

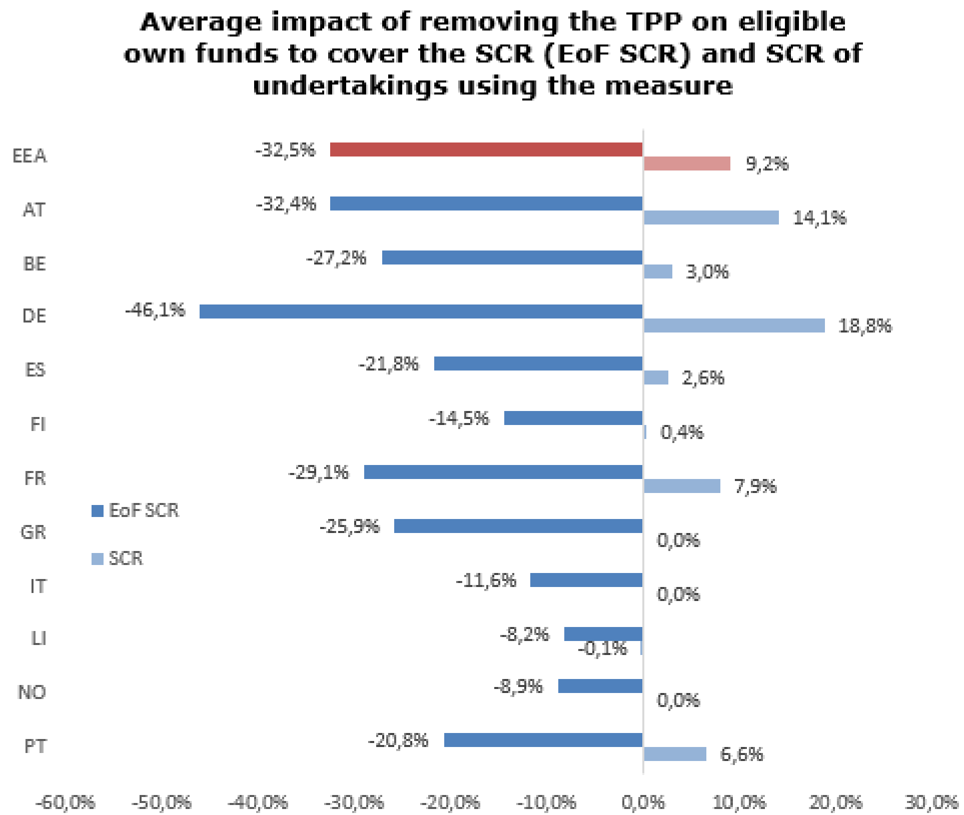



In terms of the MCR ratio, 21% reported an absolute impact of less than 100 percentage points.

6% of undertakings using the TTP reported an MCR ratio without the measure below 100%. 0,75% of the undertakings using the measure reported negative eligible own funds to cover the MCR without TTP.

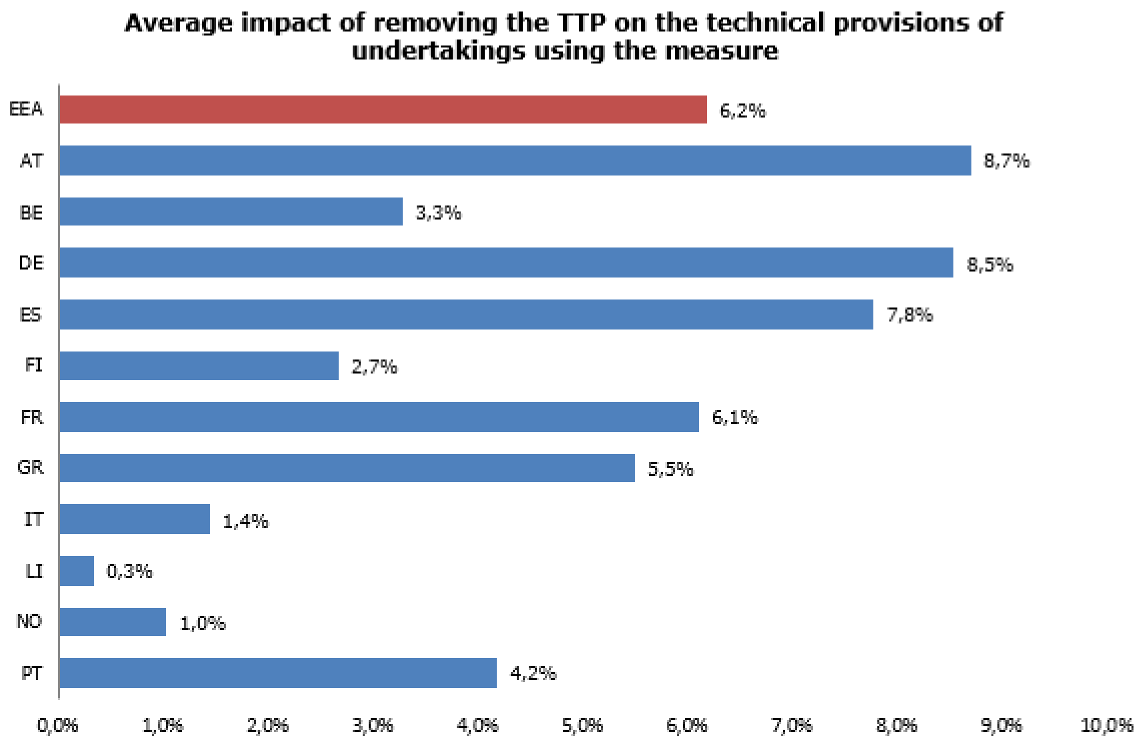
The following graph shows the impact of removing the TTP on the SCR (light blue) and on the eligible own funds to cover the SCR (dark blue). The red bars are for the EEA level. On average, eligible own funds to cover the SCR would decrease by 32.5%, while the SCR would increase by 9.2% if the TTP were removed.

Figure 3.70




The following graph displays the impact of removing the TTP on the value of the technical provisions (TPs) at EEA and national level. The average increase in technical provisions without the TTP would be around 6.2% at EEA level. At country level, undertakings from Austria would have the highest average increase due of the application of the TTP.

Figure 3.71




The following graph shows the impact of the TTP on the MCR ratio at country and EEA level for undertakings using that measure. Without TTP, the MCR ratio decreases on average by 299 percentage points.

At country level, average MCR solvency ratios are not below 100% without applying the TTP. The effects noted on the SCR are similar to the MCR and the analysis shows that undertakings from Germany, Austria and France have the highest average impact.

Figure 3.72

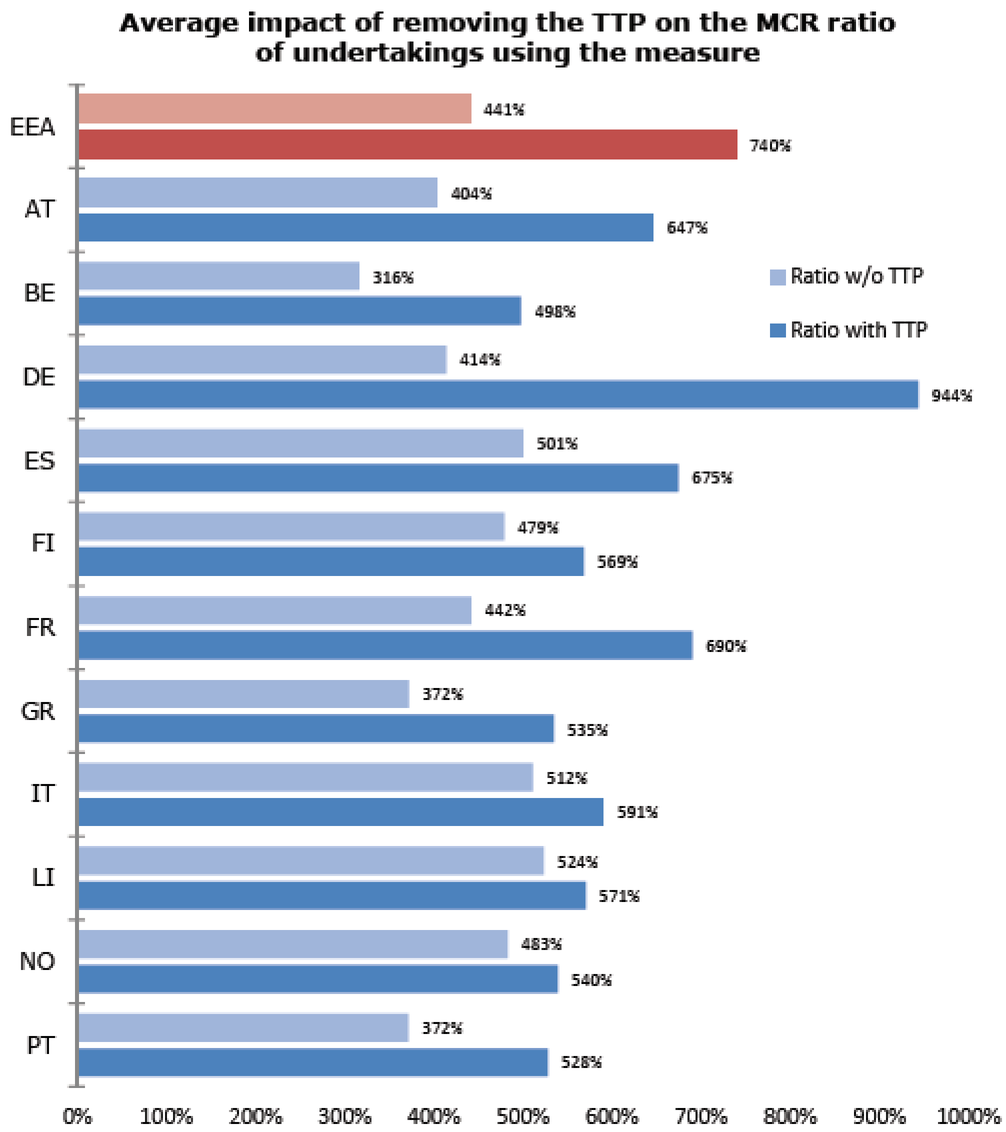
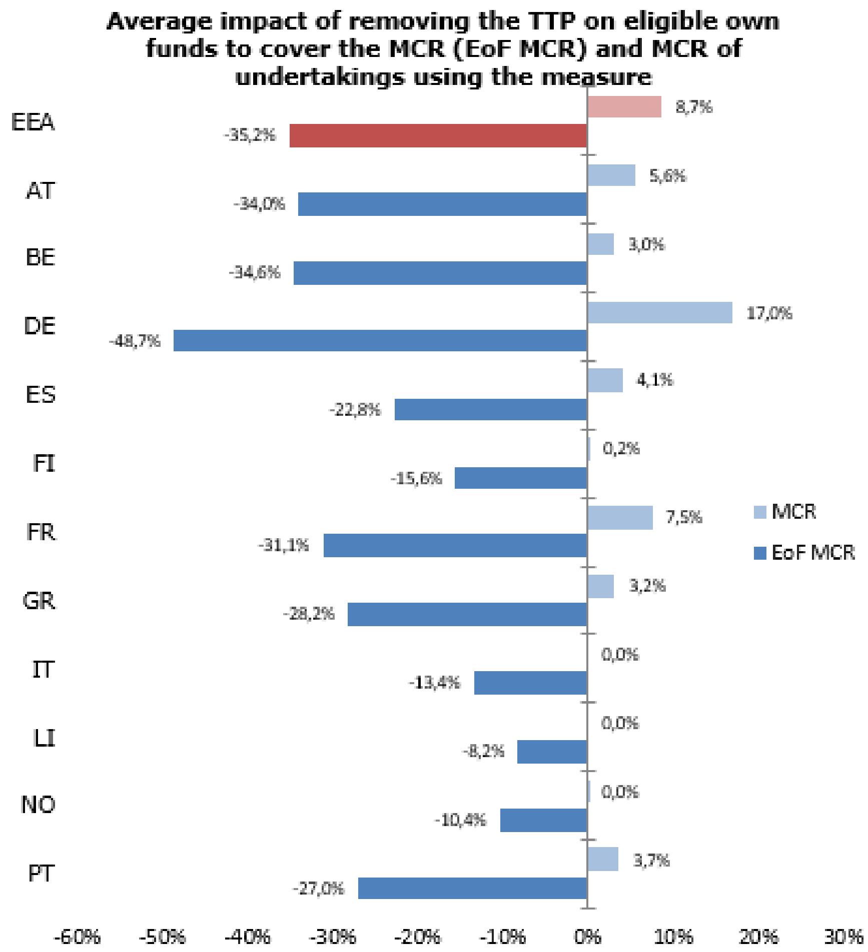
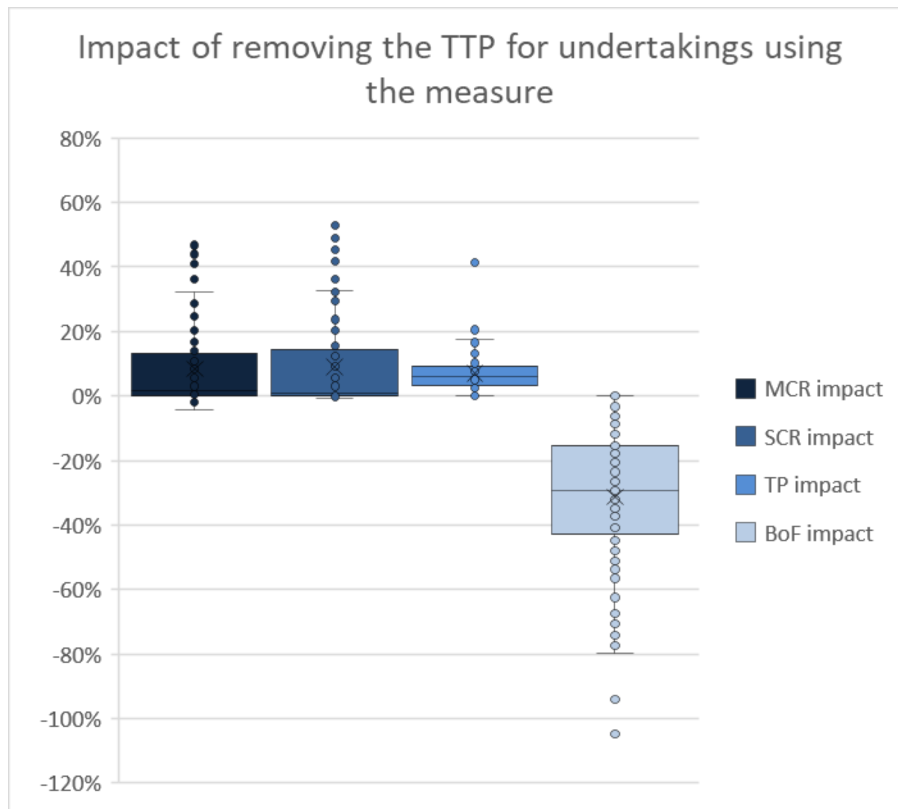


Figure 3.73



The box-plots below illustrate how the impact of removing the TTP is distributed across undertakings.[26]

Figure 3.74




### Additional information on the TTP based on the QRT information

Based on the quantitative information that undertakings regularly provide to supervisory authorities, further analysis could be performed for this year's report.The quantitative information identifies the number of limitations applied by NSAs. The following table outlines the number of limitations applied:

Table 3.20

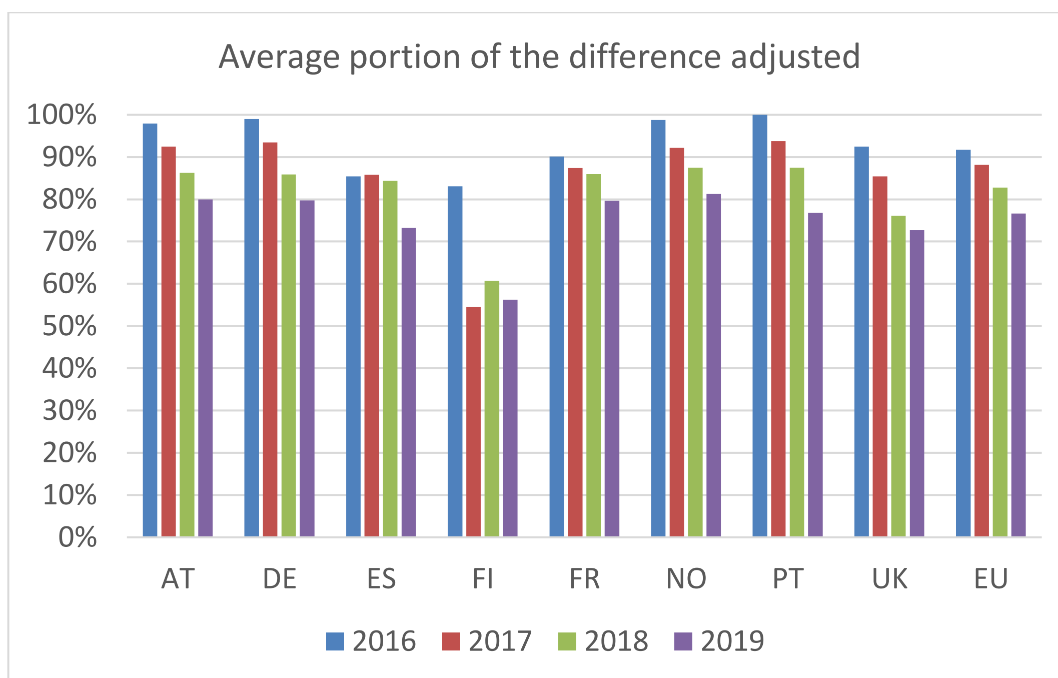
| Country | 2019 |
|---|---|
| AT | 5 |
| DE | 55 |
| ES | 10 |
| FI | 5 |
| FR | 18 |
| NO | 4 |
| PT | 15 |
| Others | 5 |
| **Total EEA** | **117** |

[26] The bottom (respectively, top) of the blue box represents the lower quartile (respectively, higher quartile) of the data set. The black band inside the box is always the middle quartile (50th percentile or median). The end of the lines extending from the boxes (called whiskers) represent the upper and lower boundaries of 1,5 interquartile-ranges. Outliers are plotted as individual points.

The maximum portion of the adjustment that can be applied is decreasing linearly during the 16 years of the transitional period. At year end 2017 the maximum portion that could be applied was 93.75% whereas at year end 2018 the maximum portion amounts to 87.50% and for year end 2019 to 81,25%. At year end 2019, the average portion applied (across all undertakings appliying the TTP) amounted to 77%.

The following graph outlines the differences across countries in the portion of the adjustment that is applied to SII technical provisions:[27]

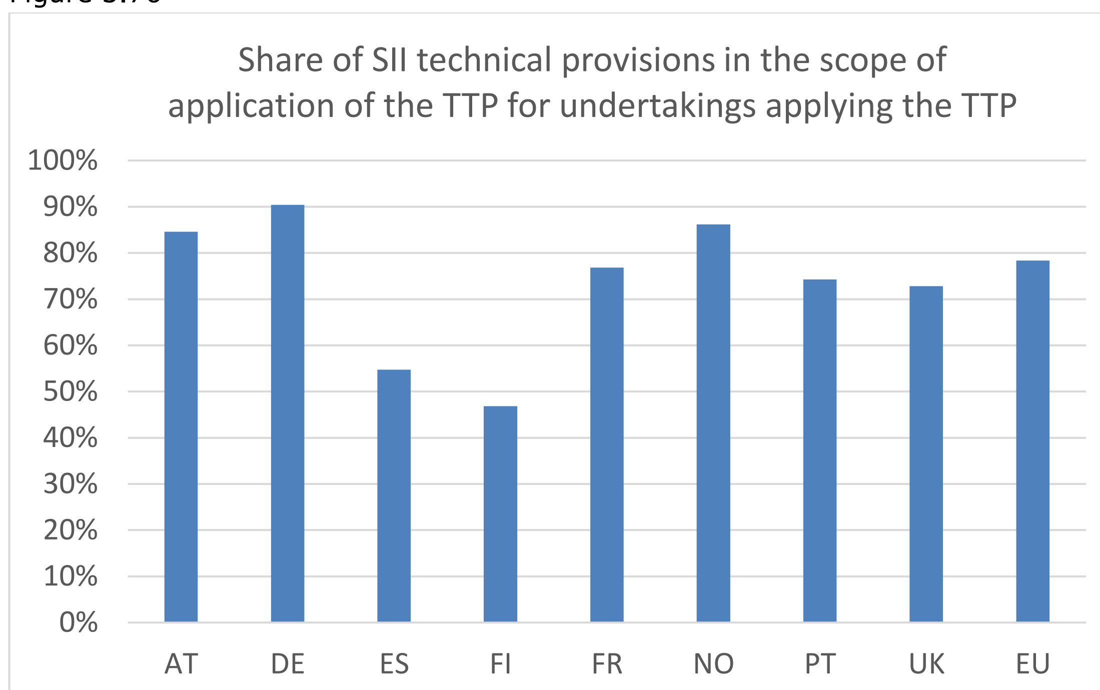
Figure 3.75




The figures provided by undertakings also allow assessment of the portion of SII technical provisions that is in the scope of the TTP. For that purpose, the SII technical provisions to which the adjustment is applied to can be compared to the total technical provisions for each undertaking. For 2019 in the EU, 78% of the technical provisions of undertakings applying the TTP are in scope for application of the transitional. However, the results vary by country:

[27] Data for 2016 and 2017 has been updated since data quality has improved. Therefore figures are not identical to those presented in last year's report.

Figure 3.76




**Reliance on transitional measures (TTP and TRFR)**

The table below shows the overall number of undertakings using either the TTP or TRFR and for these undertakings the table also show the number required to submit a phasing-in plan ("PIP") in 2018 and 2019.

Table 3.21

| Country | Number of undertakings using TTP/TRFR | Number of undertakings for which a PIP was requested (2019) | Number of undertakings for which a PIP was requested (2018) |
|---|---|---|---|
| AT | 5 | 1 | 0 |
| BE | 1 | 0 | 0 |
| DE | 61 | 27 | 26 |
| ES | 19 | 6 | 7 |
| FI | 7 | 1 | 0 |
| FR | 21 | 2 | 1 |
| GR | 4 | 1 | 1 |
| IT | 2 | 2 | 0 |
| LI | 1 | 0 | / |
| NO | 5 | 0 | 0 |
| PT | 15 | 5 | 5 |
| IE | 1 | 0 | 0 |
| EEA | **142** | **45** | **39** |

There are 142 undertakings that use the TTP or TRFR and of these, 45 were required to submit a phasing-in plan in 2019. This is because they were reliant on the TTP or the TRFR to have full SCR coverage at some point. In 2018, 39 undertakings were required to submit a phasing-in plan.

Review of phasing-in plans

In comparison with 2018 where no undertaking was required to submit a phasing-in plan for the first time, in 2019, 6 undertakings where required to submit one.

6 undertakings in 5 juridictions, that met 100% SCR coverage in 2018 were required to submit a phasing-in plan in 2019. Among these 6 undertakings, 1 failed to submit the phasing-in plan.

Update of phasing-in plans

Firms have revised existing plans in 2 jurisdictions, either upon supervisor's request or at the undertaking's own initiative. Amendments are mostly the result of updates in phasing-in or business projections.

One undertaking introduced future cash flows arising from liabilities and backing assets in its phasing-in plan at the supervisory request, in order to better monitor the estimated runoff of the portfolio under the transitional measure.

Review of progress reports

Undertakings that are reliant on transitional measures to fully cover the SCR are expected to submit progress reports on an annual basis. NSAs generally reported that the progress reports are considered sufficient and illustrate the progress of undertakings in complying with the SCR without the transitional measures.

It was noted in most cases that undertakings showed continuous progress in complying with the solvency capital requirement without transitional measures. However, there is still a high dependency on the interest rate environment.

Views of NSAs

As in 2018, NSAs are generally confident that undertakings will be able to reduce the dependency on transitional measures, to the point of no dependency by 1 January 2032. This is confidence has been strengthened this year with progress made. It was reported that the measures planned by undertakings in their PIP have already provided an effective contribution to strengthening undertaking's solvency position under the low-rate environment. However, two NSAs has noticed that dependency of undertakings to the transitional measures has been increased due to low interest rate environment.

The following table provides an overview of the number of undertakings who do not comply with the SCR without the transitional measures at the entry into force of Solvency II and at year end until 31 December 2019[28]. It also shows the missing amount of eligible own funds to comply with the SCR without the transitional measures

[28] The table does note include UK data at 1 january 2016 since this were not available at the time of the LTG report 2016; UK data are also not considered for year end 2019 due to the Brexit.

on 1st January 2016, 31 December 2016, 31st December 2017, on 31st December 2018 and on 31st December 2019.

Table 3.22

| | Undertakings not complying with the SCR without the transitional measures | | | | |
|---|---|---|---|---|---|
| Country | 1 January 2016 | Year end 2016 | Year end 2017 | Year end 2018 | Year end 2019 |
| FR | 0 | 1 | 1 | 0 | 0 |
| DE | 16 | 13 | 8 | 6 | 10 |
| ES | 4 | 3 | 2 | 2 | 1 |
| GR | 3 | 2 | 1 | 1 | 2 |
| NO | 0 | 1 | 0 | 0 | 0 |
| PT | 12 | 10 | 6 | 4 | 3 |
| UK | **-** | **13** | **9** | **8** | **-** |
| **Total** | **32** | **43** | **27** | **21** | **16** |
| | Missing amount of eligible own funds to comply with the SCR without the transitional measures (billion euro) | | | | |
| Country | 1 January 2016 | Year end 2016 | Year end 2017 | Year end 2018 | Year end 2019 |
| FR | 0 | 0.13 | 0.06 | 0 | 0 |
| DE | 3.46 | 1.59 | 0.53 | 0.39 | 1.74 |
| ES | 0.14 | 0.23 | 0.14 | 0.13 | 0.01 |
| GR | 0.27 | 0.06 | 0.04 | 0.06 | 0.10 |
| NO | 0 | 0.01 | 0 | 0 | 0 |
| PT | 1.39 | 0.76 | 0.25 | 0.03 | 0.10 |
| UK | - | 6.12 | 5.71 | 3.71 | - |
| **Total** | **5.26** | **8.9** | 6.82 | 4.32 | 1.95 |

In comparison with last year (without considering UK), the total number of undertakings who do not comply with the SCR without the transitional measures at EEA level increased by 3.This went from 13 undertakings at year end 2018, to 16 undertakings at the end of 2019. The missing amount of eligible own funds to comply with the SCR without the transitional measures increased by 1.34 billion euro, from 0.61 billion euro at year end 2018 to 1.95 billion euro at the end of year[29].

Supervisory measures taken or expected to be taken by NSAs

[29] It should be noted that during the observed time period (i.e. between 1st January 2017 and year end 2019), the set of undertakings not complying with the SCR without the transitionals might have changed

NSAs were asked to report about the measures that they have taken or that they expect to take with respect to undertakings depending on these transitional measures to comply with the SCR. NSAs reported a variety of approaches.

One NSA noted that they consider the solvency position of undertakings both with TTP and without TTP when assessing the riskiness of undertakings.

Two NSAs measure the riskiness of undertakings without the effect of transitional measures when constructing a work plan, and will prioritise reviews of undertakings using TTP or TRFR – particularly if they are reliant on transitional measures to fully cover the SCR. The NSAs expect companies to use appropriate metrics to measure their risks, define their risk appetite (i.e. without transitional measures), take into account in their strategies the fact that they comply with their SCR only through the use of transitional measures, present clear and relevant information to their AMSB regarding solvency issues and provide the relevant information in their SFCR.

One NSA explicitly informs the market on a regular basis about the number of undertakings depending on transitional measures and the extent to which transitional measures are necessary to comply with the SCR.

One NSA noted that through an "early warning" with an additional quaterly reporting, they identify the undertakings that they deem risky and would disagree to dividend payments if those payments were considered likely to endanger the future solvency situation.

One NSA reported that on-site inspections have been made with respect to undertakings depending on transitional measures on technical provisions to comply with their SCR. As a result of these on-site inspection, the supervisory measures taken have been to modify PIPs if the measures adopted have not been effective and require recalculation

NSAs generally reported that they expect companies to implement the measures they have committed to in phasing-in plans, and intend to monitor the progress made during the transitional period by reviewing the progress reports. Where necessary, a regulatory meeting for an in-depth discussion with the undertaking's representatives is arranged. NSAs reported that in the event that the phasing-in plans or progress reports are inadequate and this inadequacy is not remediated by an amended plan, revocation of the transitional measure will be considered.

**Impact on the investments of undertakings**

The following tables and graphs illustrate some characteristics of the investments held by undertakings using the TTP or the TRFR. In total this relates to 11 countries[30].

Similar to the tables and graphs in the general section II.4 of the report, the tables and graphs below consider the investments of undertakings from three perspectives:

- The investment allocation

[30] The TTP is used by undertakings in 11 countries; the TRFR is used in 4 countries. In IE the TRFR is used, but not TTP. In the other 3 countries where TRFR is used, the TTP is also used. Due to lack of data, LI is not included in the tables on investments in this section, the UK is excluded and separately

- The credit quality of the bond portfolio, separately for government bonds and corporate bonds
- The duration of the bond portfolio, separately for government bonds and corporate bonds

The following tables show the investment allocation of undertakings applying the TTP or the TRFR. Please note that, due to confidentiality reasons, any cells that relate to less than three undertakings are denoted by (*).

Table 3.23

| Investment allocation at EEA and country Level of undertakings applying the TTP or the TRFR | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Unit linked/index linked | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 30% | 29% | 13% | 7% | 8% | 4% | 3% | 5% |
| AT | 30% | 29% | 15% | 6% | 1% | 5% | 3% | 11% |
| BE | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| DE | 26% | 33% | 10% | 5% | 13% | 5% | 1% | 6% |
| ES | 53% | 19% | 9% | 6% | 0% | 0% | 9% | 3% |
| FI | 6% | 21% | 52% | 5% | 5% | 2% | 6% | 3% |
| FR | 27% | 32% | 17% | 8% | 5% | 1% | 5% | 6% |
| GR | 49% | 18% | 27% | 2% | 0% | 1% | 2% | 1% |
| IE | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| NO | 8% | 33% | 15% | 21% | 10% | 10% | 2% | 0% |
| PT | 36% | 26% | 17% | 9% | 6% | 0% | 5% | 1% |

Table 3.24

| Investment allocation at EEA and country Level (without assets held for IL & UL contracts) of undertakings applying the TTP or the TRFR | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | Government bonds | Corporate bonds | Equity | Collective Investment Undertakings | Mortgages and loans | Cash and deposits | Other |
| EEA | 34% | 34% | 8% | 9% | 4% | 4% | 6% |
| AT | 35% | 35% | 7% | 2% | 5% | 3% | 13% |
| BE | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| DE | 29% | 37% | 6% | 14% | 6% | 2% | 6% |
| ES | 58% | 21% | 7% | 0% | 0% | 10% | 3% |
| FI | 12% | 44% | 10% | 11% | 4% | 13% | 7% |
| FR | 32% | 38% | 10% | 6% | 1% | 7% | 7% |
| GR | 67% | 24% | 3% | 0% | 1% | 3% | 2% |
| IE | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| NO | 10% | 39% | 25% | 12% | 12% | 2% | 0% |
| PT | 43% | 31% | 10% | 7% | 0% | 6% | 1% |

The following table shows the credit quality of government bonds. Please note that the data at EEA level for undertakings not using the TTP or TRFR includes data from countries where the TTP or TRFR is not used at all.

Table 3.25

| Credit quality of government bonds for undertakings not using the TTP or TRFR or using the TTP or TRFR, per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of TTP and TRFR** | **17%** | **45%** | **14%** | **23%** | **1%** |
| | **Use of the TTP or TRFR** | **16%** | **35%** | **18%** | **30%** | **1%** |
| AT | No use of TTP and TRFR | 16% | 50% | 25% | 9% | 0% |
| | Use of the TTP or TRFR | 0% | 64% | 30% | 6% | 0% |
| BE | No use of TTP and TRFR | 9% | 73% | 11% | 8% | 0% |
| | Use of the TTP or TRFR | (*) | (*) | (*) | (*) | (*) |
| DE | No use of TTP and TRFR | 39% | 40% | 15% | 5% | 0% |
| | Use of the TTP or TRFR | 34% | 49% | 12% | 5% | 0% |
| ES | No use of TTP and TRFR | 2% | 3% | 69% | 26% | 0% |
| | Use of the TTP or TRFR | 1% | 2% | 81% | 15% | 0% |
| FI | No use of TTP and TRFR | 37% | 60% | 1% | 2% | 0% |
| | Use of the TTP or TRFR | 46% | 46% | 3% | 4% | 2% |
| FR | No use of TTP and TRFR | 8% | 77% | 7% | 8% | 0% |
| | Use of the TTP or TRFR | 5% | 71% | 8% | 16% | 0% |
| GR | No use of TTP and TRFR | 15% | 15% | 6% | 8% | 56% |
| | Use of the TTP or TRFR | 6% | 16% | 11% | 22% | 45% |
| NO | No use of TTP and TRFR | 63% | 35% | 2% | 0% | 0% |
| | Use of the TTP or TRFR | 49% | 37% | 14% | 0% | 0% |
| PT | No use of TTP and TRFR | 4% | 9% | 28% | 59% | 0% |
| | Use of the TTP or TRFR | 4% | 10% | 5% | 80% | 1% |

The following table shows the credit quality of corporate bonds. Please note that the data at EEA level for undertakings not using the TTP or TRFR includes data from countries where the TTP or TRFR is not used at all.

Table 3.26

| Credit quality of corporate bonds for undertakings not using the TTP or TRFR or using the TTP or TRFR, per country (without assets held for IL & UL contracts) | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **Use of the measures** | **CQS0** | **CQS1** | **CQS2** | **CQS3** | **CQS>3** |
| **EEA** | **No use of TTP and TRFR** | **19%** | **17%** | **33%** | **29%** | **2%** |
| | **Use of the TTP or TRFR** | **30%** | **19%** | **26%** | **22%** | **3%** |
| AT | No use of TTP and TRFR | 20% | 20% | 35% | 23% | 1% |
| | Use of the TTP or TRFR | 29% | 18% | 28% | 23% | 1% |
| BE | No use of TTP and TRFR | 10% | 18% | 34% | 36% | 2% |
| | Use of the TTP or TRFR | (*) | (*) | (*) | (*) | (*) |
| DE | No use of TTP and TRFR | 34% | 20% | 27% | 18% | 1% |
| | Use of the TTP or TRFR | 45% | 24% | 19% | 12% | 1% |
| ES | No use of TTP and TRFR | 3% | 13% | 29% | 51% | 4% |
| | Use of the TTP or TRFR | 2% | 14% | 39% | 43% | 2% |
| FI | No use of TTP and TRFR | 11% | 7% | 32% | 41% | 9% |
| | Use of the TTP or TRFR | 9% | 10% | 27% | 41% | 13% |
| FR | No use of TTP and TRFR | 8% | 19% | 41% | 30% | 1% |
| | Use of the TTP or TRFR | 6% | 13% | 39% | 38% | 4% |
| GR | No use of TTP and TRFR | 15% | 13% | 37% | 29% | 6% |
| | Use of the TTP or TRFR | 1% | 12% | 31% | 46% | 10% |
| NO | No use of TTP and TRFR | 53% | 12% | 23% | 11% | 0% |
| | Use of the TTP or TRFR | 30% | 14% | 38% | 18% | 0% |
| PT | No use of TTP and TRFR | 3% | 13% | 26% | 57% | 1% |
| | Use of the TTP or TRFR | 2% | 7% | 40% | 43% | 7% |

The following graph shows the average duration of investments in government bonds and corporate bonds of undertakings using the TTP or TRFR and of undertakings not using the TTP and TRFR.

Figure 3.77

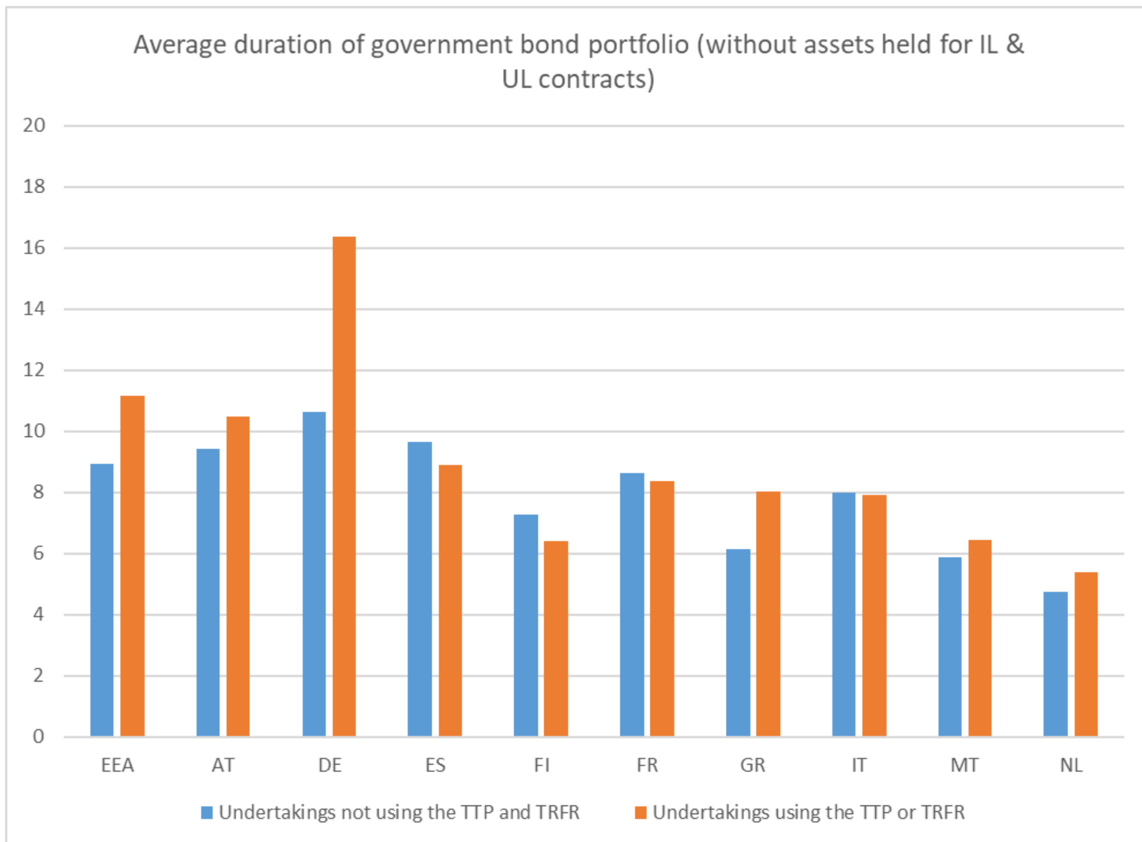
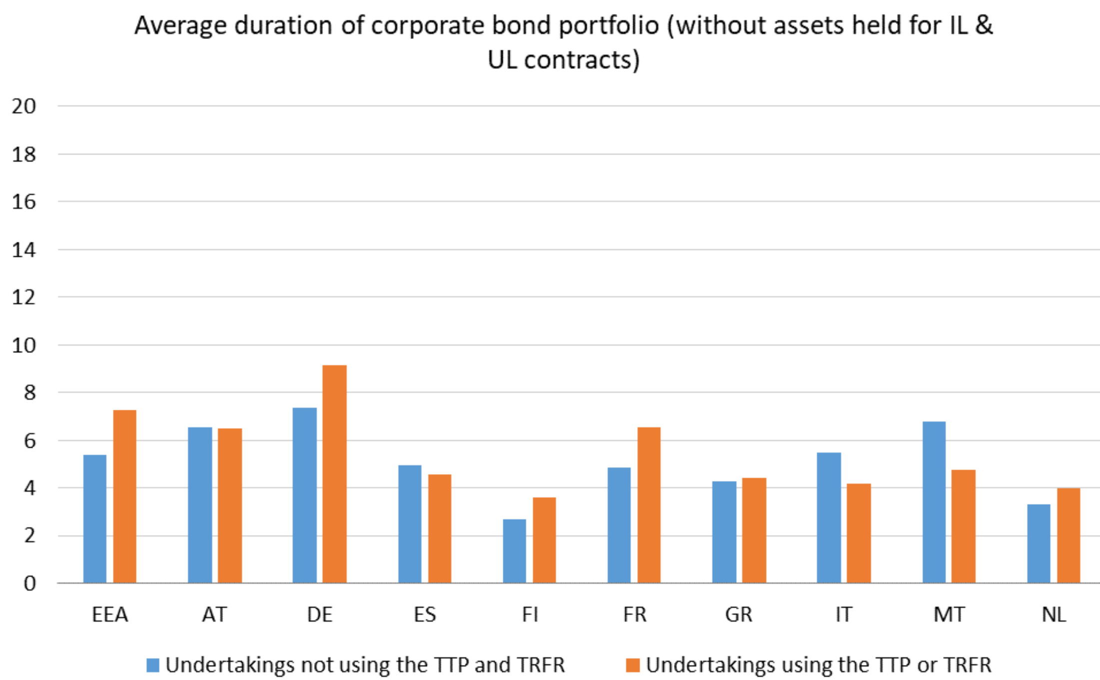



Figure 3.78



**Impact on consumers and products**

The following table sets out the share of gross written premiums of undertakings using the TTP compared to the total gross premiums written by all undertakings in that country. It also shows each line of business (columns 1 to 6), the total life insurance and life reinsurance business (column 7) and the total for non-life insurance and reinsurance business (column 8). The table is based on data reported by undertakings in the annual QRTs for 2019.

For instance in Austria, 12.4% of the total life insurance and life reinsurance premiums and 12.6% of premiums for index-linked and unit-linked business are written by undertakings applying the TTP.

Table 3.27

| Country | 1. Health insurance | 2. Insurance with profit participation | 3. Index-linked and unit-linked insurance | 4. Other life insurance | 5. Health reinsurance | 6. Life reinsurance | 7. Total life insurance and reinsurance | 8. Total non-life insurance and reinsurance |
|---|---|---|---|---|---|---|---|---|
| AT | 0.2% | 19.4% | 12.6% | 19.1% | 0.0% | 3.4% | 12.4% | 4.5% |
| BE | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| DE | 13.0% | 42.6% | 50.9% | 16.0% | 0.2% | 0.9% | 28.9% | 0.0% |
| ES | 8.2% | 42.1% | 38.0% | 24.2% | 0.0% | 1.5% | 30.6% | 12.8% |
| FI | 100.0% | 82.9% | 53.3% | 37.5% | 0.0% | 100.0% | 56.3% | 41.2% |
| FR | 5.0% | 15.6% | 16.7% | 15.1% | 1.9% | 22.0% | 15.6% | 5.8% |
| GR | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) |
| IT | 12.7% | 22.5% | 6.7% | 4.4% | 0.0% | 0.0% | 17.3% | 0.0% |
| NO | 24.6% | 96.2% | 49.0% | 44.6% | 0.0% | 0.0% | 69.6% | 2.9% |
| PT | 100.0% | 72.3% | 34.1% | 74.9% | 0.0% | 100.0% | 64.0% | 67.0% |
| EEA | **10.6%** | **24.5%** | **13.2%** | **16.6%** | **0.6%** | **9.7%** | **17.7%** | **3.5%** |

(*) Data from this country is not disclosed for confidentiality reasons because the number of undertakings applying the measure is lower than 3.

## III.5 Duration-based equity risk sub-module

The standard formula for the SCR includes an equity risk sub-module that captures the risk stemming from changes in the level of equity market prices. The equity risk sub-module is based on risk scenarios that envisage a fall in equity market prices of 39% or 49%, depending on the type of equity.

Instead of that equity risk sub-module, undertakings can use a duration-based equity risk sub-module that is, with regard to certain equity investments, based on a risk scenario that envisages a fall in equity market prices of 22%. The duration-based equity risk sub-module can only be applied by life insurance undertakings that provide certain occupational retirement provisions, or retirement benefits, and meet further requirements – in particular that the average duration of the undertaking's liabilities exceeds an average of 12 years and that the undertaking is able to hold equity investments at least for 12 years.

The possibility to apply the DBER is a Member State option of the Solvency II Directive (Article 304(1)). The application of the DBER by an insurance undertaking is subject to supervisory approval.

Similarly to the scenario in the end of 2018, only one undertaking in France was using the DBER as at 31 December 2019.

According to the information disclosed by the undertaking in its Solvency and Financial Condition Report, removing the DBER would reduce the SCR ratio by 24 points from a ratio of 156% with the DBER (but without TTP and VA) to a ratio of 132% without the DBER. Removing the measure would reduce the MCR ratio by 46 points from a ratio of 323% with the DBER (but without TTP and VA) to a ratio of 277% without the measure.

As only one undertaking in France was using the DBER as at 31 December 2019, no impact on investments and consumers and products is shown for the DBER due to confidentiality reasons.

## III.6 Symmetric adjustment to the equity risk charge

Recital 61 of the Solvency II Directive states that in order to mitigate undue potential pro-cyclical effects of the financial system and to avoid a situation in which insurance and reinsurance undertakings are unduly forced to raise additional capital or sell their investments as a result of unsustained adverse movements in financial markets, the market risk module of the standard formula for the SCR should include a symmetric adjustment mechanism with respect to changes in the level of equity prices.

The symmetric adjustment is expected to be positive (i.e. the capital requirement is higher) when markets have risen recently, and negative (i.e. the capital requirement is lower) when equity markets have dropped in the previous months.

### Impact on the financial position of undertaking

For the 2019 report, there were no information requests to undertakings concerning the impact of the symmetric adjustment on their financial position.

Instead, the financial impact of the symmetric adjustment on the SCR was determined using QRT data[31]. Specifically, the impact on the equity risk charge has been produced using the exposures per equity class (type 1 equity, type 2 equity…) and the overall SCR has then been aggregated based on underlying assumptions[32]. For instance, the impact of risk mitigation techniques has not been considered when removing the symmetric adjustment.

Since the SA at 31 Dec 2019 was -0.08%, setting the SA to zero would have a negligible impact on equity exposures applied to calculate the SCR. Removing the measure at EEA and national level has practically no effect on the SCR.

[31] Note that the QRT data does not allow for a distinction between undertakings which apply the transitional measure on equity risk according to Article 308b (13) of the Solvency II Directive and undertakings which do not apply that measure.
[32] In particular, the operational risk charge has been kept constant. Similarly, the LAC DT has been kept as a percentage of the BSCR, and the LAC TP as a percentage of the sum of BSCR, operational risk and LAC DT.

## III.7 Extension of the recovery period

Under Solvency II, insurance and reinsurance undertakings are required to hold eligible own funds that cover their SCR. When an undertaking is not covering its SCR, the national supervisory authority shall require it to take the necessary measures to achieve, within six months from the observation of non-compliance with the SCR, the re-establishment of the level of eligible own funds covering the SCR or the reduction of its risk profile to ensure compliance with the SCR. The supervisor may, if appropriate, extend that period by three months.

Article 138(4) of the Solvency II Directive states that supervisory authorities may, under certain circumstances, further extend the recovery period for the re-establishment of compliance with the SCR as set out in Article 138(2) of that Directive by a maximum period of 7 years.

This power applies in the event of exceptional adverse situations affecting insurance and reinsurance undertakings that represent a significant share of the market or of the affected lines of business. The condition for an exceptional adverse situation are one or more of the following:

- A sharp, steep and unforeseen fall in financial markets;
- A persistent low interest rate environment;
- A high-impact catastrophic event.

This extension of the recovery period can only be granted after EIOPA has declared the existence of an exceptional adverse situation. A necessary condition for the declaration is a request by a national supervisory authority. Article 288 of the Solvency II Delegated Regulation further states several factors and criteria that EIOPA shall take into account when assessing the existence of an exceptional adverse situation. Where appropriate, EIOPA could consult the European Systemic Risk Board (ESRB) before deciding on the existence of an exceptional adverse situation.

Once EIOPA has declared the existence of an exceptional adverse situation, the national supervisory authorities can decide on an extension of the period and determine its length for individual insurance and reinsurance undertakings. For that purpose, the supervisors shall take into account the factors and criteria set out in Article 289 of the Solvency II Delegated Regulation. To ensure a consistent approach in the extension of the recovery period, on 14 September 2015 EIOPA issued Guidelines on the extension of the recovery period in exceptional adverse situations. In particular the guidelines relate to the decision to grant an extension, the duration of the extension and the withdrawal and revocation of the extension.

During the extended recovery period, the undertakings affected are required to submit a progress report every three months to their NSA setting out the measures taken and the progress made to meet the SCR. In case of no significant progress, the extension of the recovery period will be withdrawn.

To date EIOPA has not received a request to declare an exceptional adverse situation.

The following table shows the number of undertakings breaching the SCR (taking into account all LTG measures and equity measures applied) on 31 December 2019 and their market share (national market share for undertakings in each country and EEA market share for all undertakings). For countries not listed in the table all undertakings meet the SCR.

Table 3.28

| Country | Undertakings breaching the SCR | Market share in non-life gross written premiums | Market share in life technical provisions |
|---|---|---|---|
| CY | 1 | 7.91% | 2.24% |
| DE | 1 | 0.00% | 0.00% |
| DK | 1 | 0.00% | 0.00% |
| FR | 1 | 0.02% | 0.00% |
| HR | 1 | 0.00% | 0.00% |
| HU | 1 | 1.49% | 0.00% |
| LU | 4 | 0.00% | 0.00% |
| NL | 1 | 0.00% | 0.20% |
| SE | 1 | 0.00% | 0.00% |
| **Total EEA** | **12** | **0.01%** | **0.01%** |

Without consideration of UK, the total number of undertakings breaching the SCR has increased by 3 during the last year – from 9 on 31 December 2018 to 12 on 31 December 2019. The total number of undertakings breaching the SCR can be split according to their type as follows: 5 non-life insurance undertakings, 1 life insurance undertakings, 2 undertaking pursuing both life and non-life insurance activity and 4 reinsurance undertakings.

# Annexes

## Annex 1: Overview of the European insurance market

The following charts show for each EEA country the number of insurance and reinsurance undertakings and their share of the EEA insurance market expressed as percentage of technical provisions and of gross written premiums.

Figure 4.1

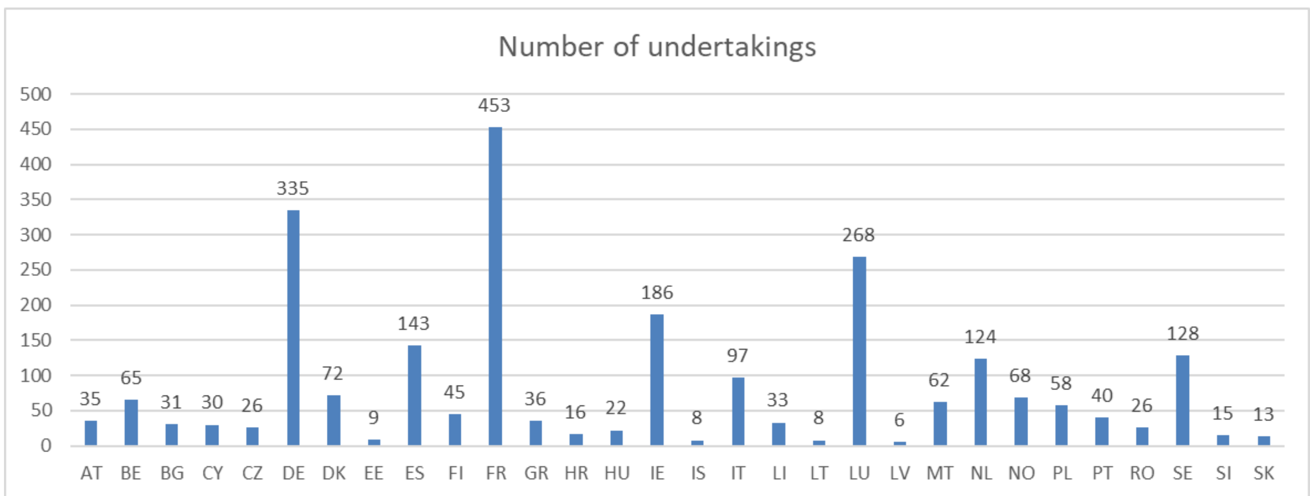
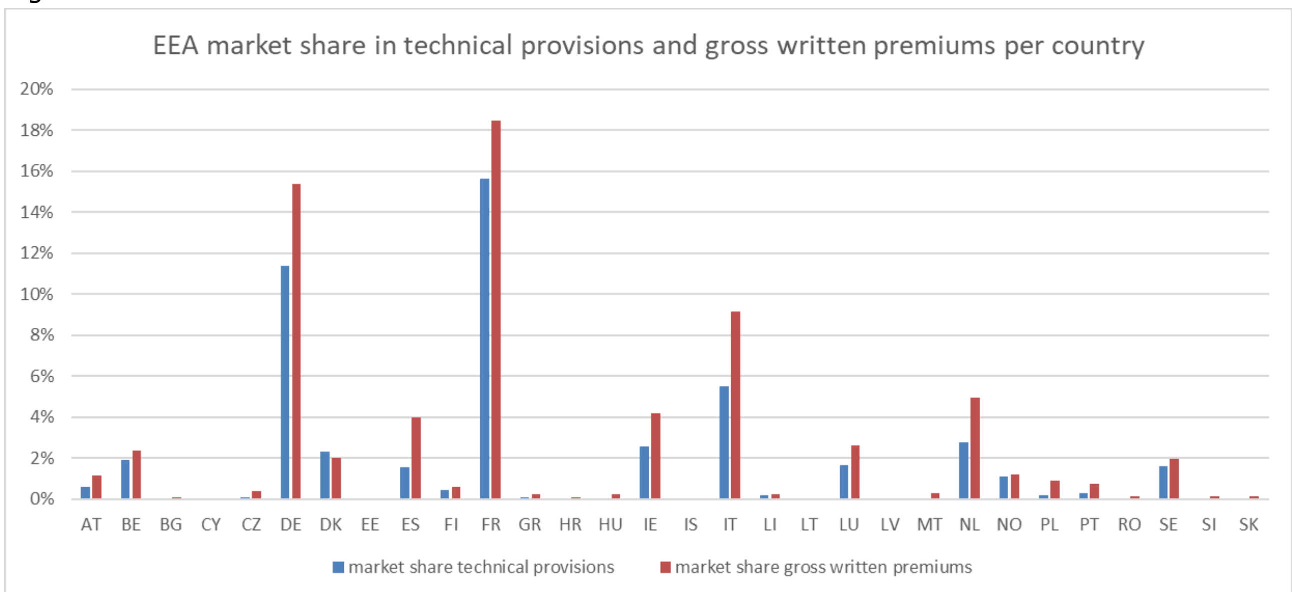



Figure 4.2



## Annex 2: Impact of the measures on the financial position of undertakings

The following graphs show the impact of removing the measures MA, VA and TTP on technical provisions, eligible own funds to cover the SCR and the SCR per undertaking. The impact is measured relative to the amount with the measures. Each bar corresponds to one undertaking. The bars are ordered by size in each graph. The graphs demonstrate that there is a wide disparity of the impact.

Figure 4.3

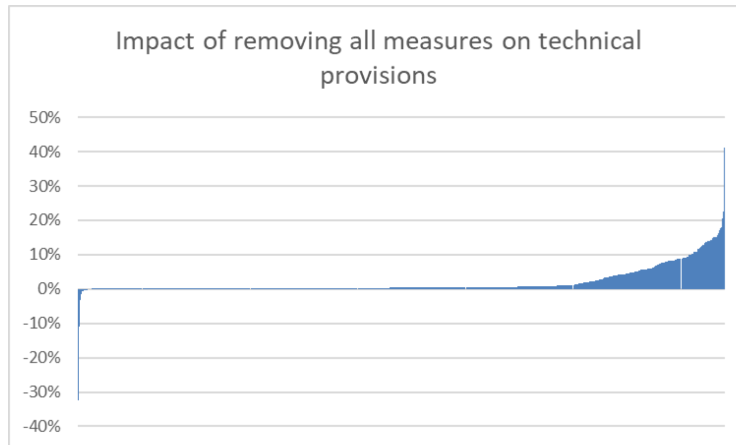



Figure 4.4

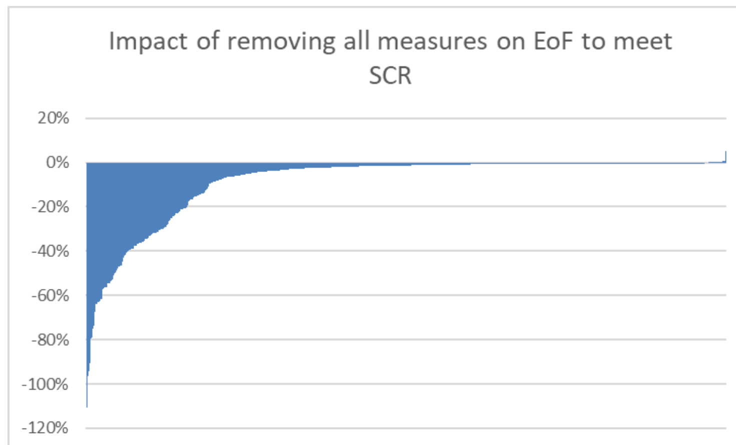



Figure 4.5

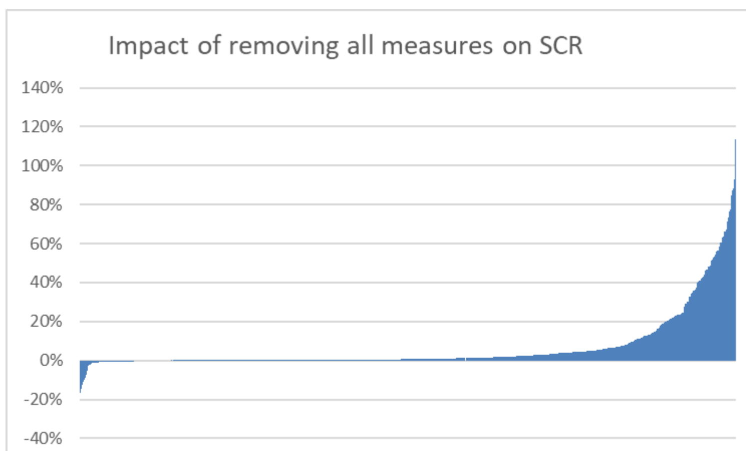


Figure 4.6

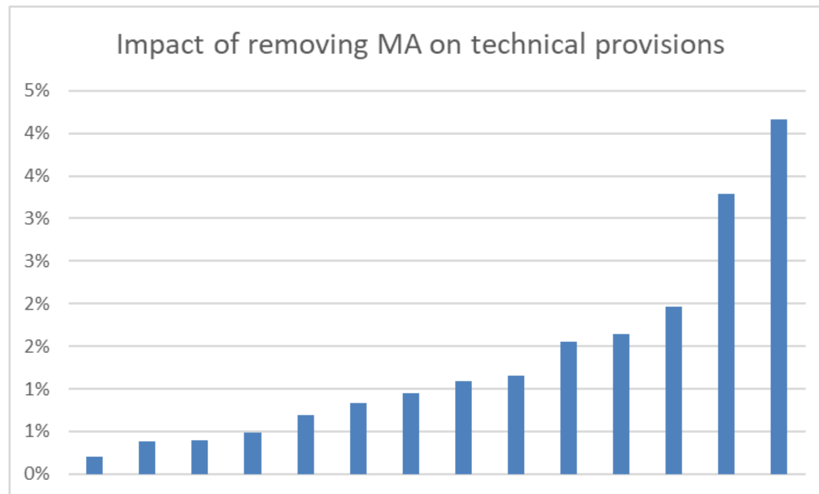



Figure 4.7

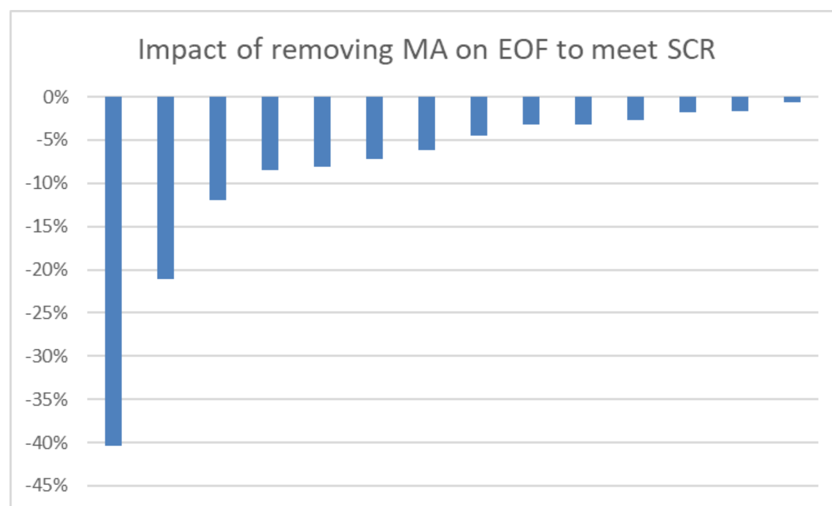



Figure 4.8

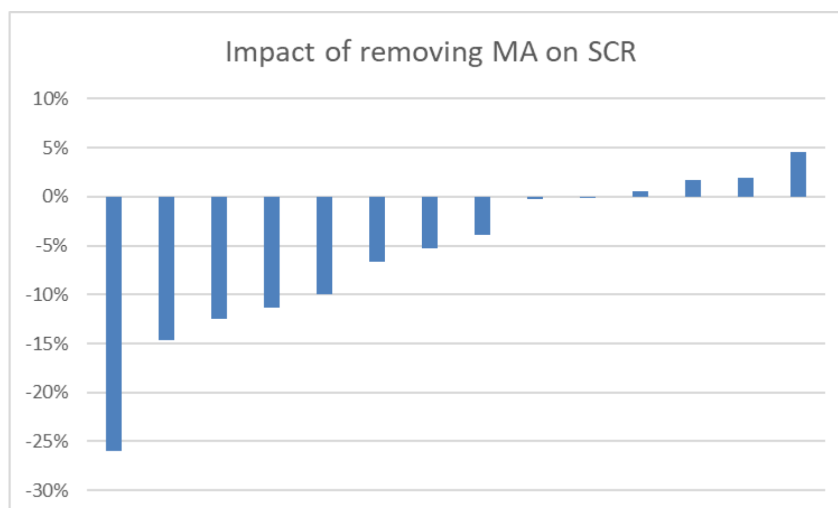


Figure 4.9

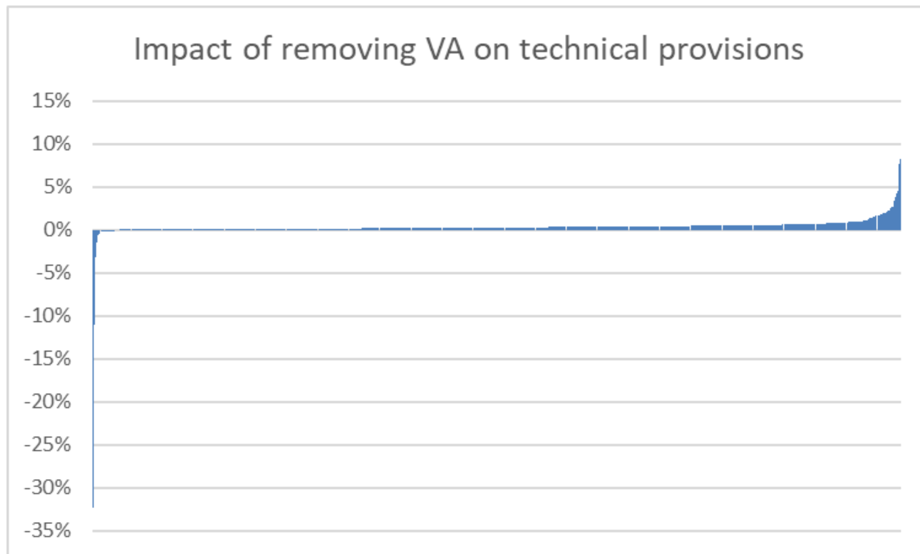



Figure 4.10

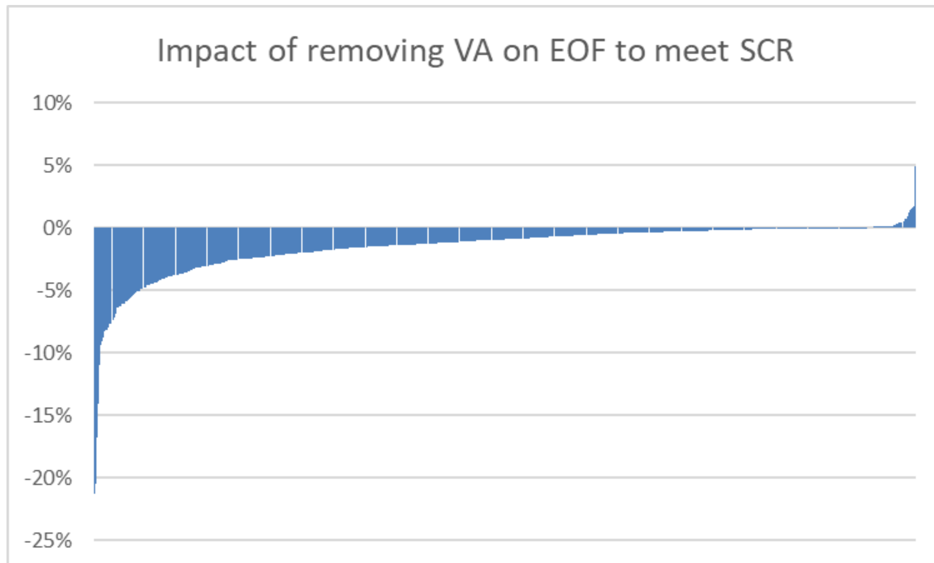



Figure 4.11

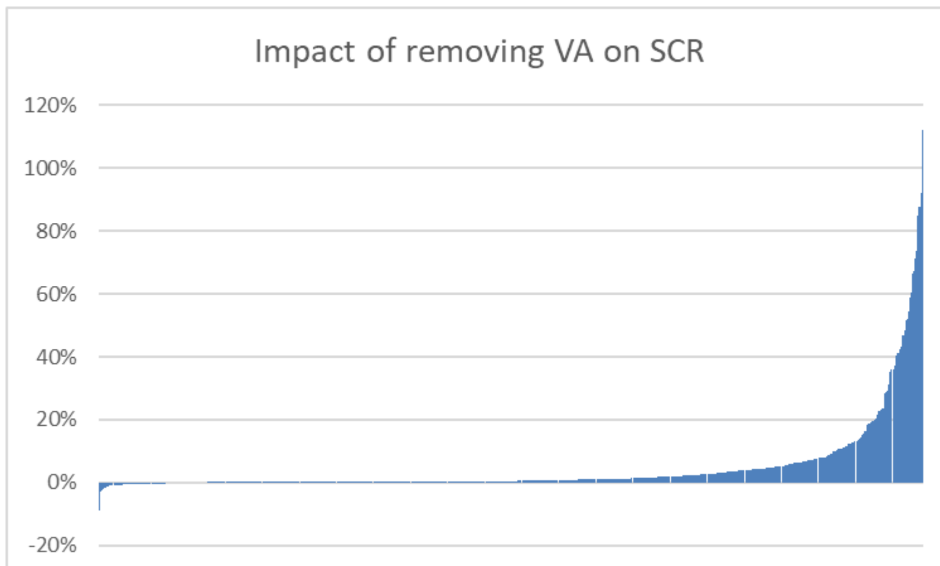


Figure 4.12

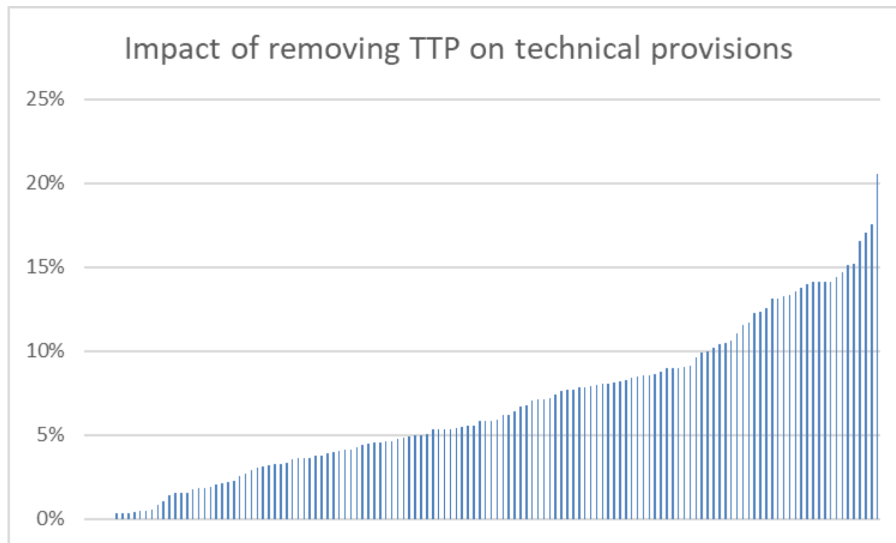



Figure 4.13

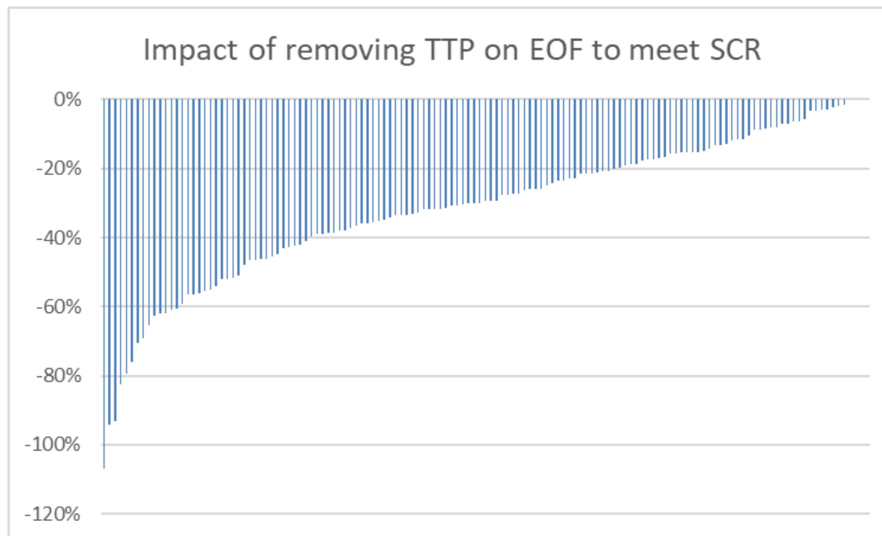
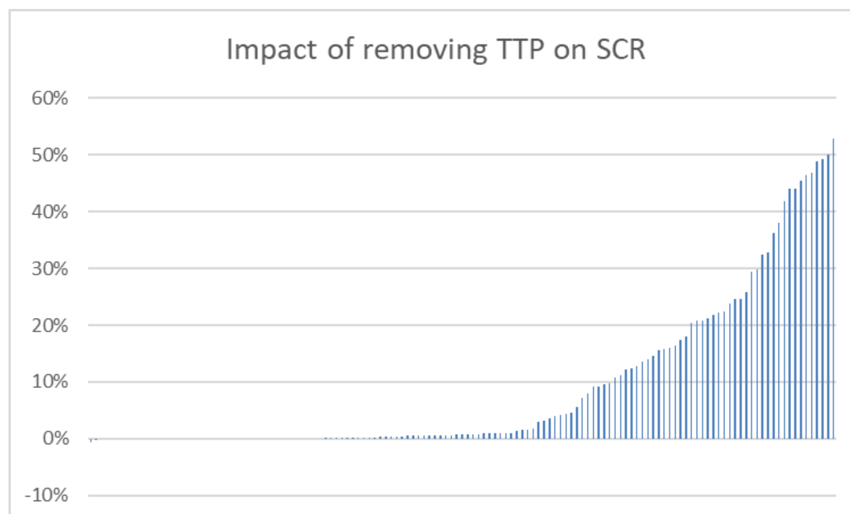



Figure 4.14



## Annex 3: Asset classes

The statistics on investments of insurance and reinsurance undertakings presented in this report are based on the following asset classification. Please also note that for this year's report, a look-through has been applied to the data on collective investment undertaking, albeit limited to one level of look-through (i.e. if the collective investment undertaking itself holds another collective investment undertaking no further look-through has been applied).

Table 4.1

| Asset category | Grouping |
|---|---|
| Government bonds | Government bonds |
| Corporate bonds | Corporate bonds |
| Unlisted equity | Equity |
| Listed equity | Equity |
| Collective Investment Undertakings | Collective Investment Undertakings |
| Mortgages and loans | Mortgages and loans |
| Cash and deposits | Cash and deposits |
| Blank | Other |
| Call Options | Other |
| Collateralised securities | Other |
| Credit derivatives | Other |
| Forwards | Other |
| Futures | Other |
| Liabilities | Other |
| Other investments | Other |
| Property | Other |
| Put Options | Other |
| Structured notes | Other |
| Swaps | Other |

## Annex 4: Use and impact of the measures in UK

### Use of the measures by UK undertakings

In total 38 undertakings in the UK apply LTG measures (one or more) at the end of 2019. The following table provides an overview of the number of undertakings using each measure and the national market share they represent in term of technical provisions.

| | Number of undertkaings using the measure | National market share in technical provisions (life) | National market share in technical provisions (non-life) |
|---|---|---|---|
| MA | 18 | 53% | 0% |
| VA | 22 | 27% | 1% |
| TRFR | 1 | 0% | 0% |
| TTP | 25 | 55% | 0% |

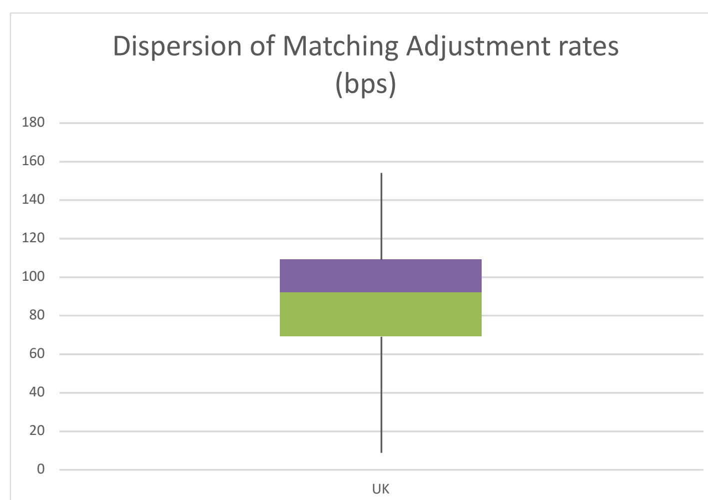
### Impact of the measures for UK undertakings

For the undertakings using these measures, removing the measures would result, on average, in a reduction to the SCR ratio of 109 percentage points; the weighted average ratio with the measures is 157% while the same ratio without the measures would be 48%.The following table summarise the average impact of removing each of the measures.

| | Average SCR ratio with the measure | SCR ratio without the measure | Impact of removing the measure on SCR ratio in %pt |
|---|---|---|---|
| MA users | 157% | 65% | -92 |
| VA users | 154% | 152% | -2 |
| TTP users | 156% | 120% | -36 |

### Matching Adjustment

On a weighted average basis, the MA amounted to 90 bps at the end of 2019 in UK. The weighted average MA in 2018 was 116 bps.The following graph illustrates the dispersion of individual values for the MA in UK at the end of year 2019 The whiskers show the lowest and highest values recorded. The box shows the 25th to 75th percentile with the change in colour representing the 50th percentile (or the median).



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