



Position paper on

Solvency II

- the Principle of Proportionality and its Application

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1. Introduction

The intention of this paper is to provide a different perspective on the application of the Principle of Proportionality (PoP) and to provide an explanation of why we believe that some of the assumptions made by CEIOPS in the QIS 5 Technical Specifications are incorrect. It is very unclear how the PoP can be used and who will be able to use it and the European Insurance Market is interested to understand more precisely the relevance of the Principle of Proportionality (PoP) and its application. In particular -

- What does the PoP mean?
- How can the PoP be applied by all participants? i.e. the active Insurance/Reinsurance corporations and their local supervisors
- How does the PoP influence and affect the choice of quantification tools (Pillar 1 formula, partial / internal models) and what are the consequences?
- How much flexibility does the PoP allow both Insurers and Supervisors?

2. General “Definition” and Background

In this section we have copied text from the EU treaty and EU web pages referring to the PoP.

The PoP is incorporated in the EU Lisbon Treaty under Article 3 b:

“Under the principle of proportionality, the content and form of Union action shall not exceed what is necessary to achieve the objectives of the Treaties. The institutions of the Union shall apply the principle of proportionality as laid down in the Protocol on the application of the principle of subsidiarity and proportionality.”

In the Protocol on the Application of the Principle of Subsidiarity and Proportionality, Article 5 determines:

“Draft legislative acts shall be justified with regard to the principles of subsidiarity and proportionality. Any draft legislative act should contain a detailed statement making it possible to appraise compliance with the principles of subsidiarity and proportionality. This statement should contain some assessment of the proposal’s financial impact and, in the case of a directive, of its implications for the rules to be put in place by Member States, including, where necessary, the regional legislation. The reasons for concluding that a Union objective can be better achieved at Union level shall be substantiated by qualitative and, wherever possible, quantitative indicators. Draft legislative acts shall take account of the need for any burden, whether financial or administrative, falling upon the Union, national governments, regional or local authorities, economic operators and citizens, to be minimised and commensurate with the objective to be achieved.”

The PoP is derived from German law, and it first affected EU law in the Internationale Handelsgesellschaft case in 1970:

“A public authority may not impose obligations on a citizen except to the extent to which they are strictly necessary in the public interest to attain the purpose of the measure.”

Since then it has become one of the fundamental principles of the jurisprudence developed by the European Court of Justice. It is a safeguard against the unlimited use of legislative and administrative powers and considered to be something of a “rule of common sense”, according to which an administrative authority may only act to exactly the extent that is needed to achieve its objectives.

More specifically, the PoP means that any measure by a public authority that affects a basic human right must be:

- appropriate in order to achieve the objective, which is intended,
- necessary in order to achieve the objective, which is intended, i.e. there are no less severe means of achieving the objective, and
- reasonable, i.e. the person concerned can reasonably be expected to accept the measure in question.

(Source: various EU web pages)

3. Pillars I, II and III

The PoP is a fundamental component of the Solvency II Directive which is deemed to be:

- a principle based risk sensitive quantification approach under Pillar 1, and – again –
- a principle based risk sensitive request under Pillar 2 to self assess and manage prudently in a pre-described format the operations and processes of the insurance undertakings, and – again –
- a principle based requirement to disclose the financial situation at any time for more transparency to increase or stipulate market discipline.

The PoP refers to the nature, scale and complexity of the individual Insurer:

- Nature of the risk sensitive activities means all single risks (per line of insurance, per market risk etc.) following the requirement of Pillar 1 (for bigger insurance undertakings the number of formulas and distribution curves is growing with the size of a corporation or Group).
- Scale is the necessary information on quantity.

- Complexity is the aggregate quantified view of an insurance undertaking once the potential diversification effects and risk mitigation have been offset against the number of individual risks (aggregated in a model). Complexity is the final result of a combination and addition of the variety of risk types weighted differently (based on the inherent risk sensitivity within each and every Insurance Undertaking) to reflect and distinguish its risk profile from competitors.

4. “QIS 5 – Technical Specification”

In this section we have copied extracts from the QIS5 Technical Specifications and have added below our comments.

- V.2.6. Proportionality –

4.1 *TP.7.2. and TP.7.3.*

TP.7.2. The principle of proportionality requires that the (re)insurance undertaking should be allowed to choose and apply a valuation method which is:

- suitable to achieve the objective of deriving a market-consistent valuation according to the Solvency II principles (compatible with the Solvency II valuation principles); but
- not more sophisticated than is needed in order to reach this objective (proportionate to the nature, scale and complexity of the risks).

TP.7.3. This does however not mean that an application of the principle of proportionality is restricted to small and medium-sized undertakings, nor does it mean that size is the only relevant factor when the principle is considered. Instead, the individual risk profile should be the primary guide in assessing the need to apply the proportionality principle.

4.1.2 **Comment on TP.7.2. and TP.7.3.**

“The individual risk profile should be the primary guide in assessing the need to apply the proportionality principle.”

It is extremely important to understand what the actuaries of small, medium-sized, large and mega insurers need to know when they want to integrate the “PoP”.

Insurers (and their actuaries) need to know where, in a holistic view of the insurance market, their corporation is placed to understand what is

- appropriate
- necessary
- and reasonable

to factor in the “proportionality”.

This cannot be done in a mathematical sense because it would assume that it is based upon an average or mean insurance company (as the benchmark for the calibration of the formulas) which would be a linear relation. It is only possible if actuaries and regulators know which insurance company was the initial benchmark for the calibration of all formulas under Pillar 1.

On the contrary, this principle has to be applied as a “rule of common sense”, according to which an administrative authority may only act to exactly the extent that is needed to achieve its objectives. This “rule of common sense” should determine the factors which may be used to adjust the various and different insurance undertakings.

4.2 TP.7.4.

TP.7.4. Due to the uncertainty of future events, any “modelling” of future cash flows (implicitly or explicitly contained in the valuation methodology) will necessarily be imperfect, leading to a certain degree of inaccuracy and imprecision in the measurement. Where simplified approaches are used to value technical provisions, this could potentially introduce additional uncertainty (or model error)¹³. With regard to the principle of proportionality, it is important to assess the model error that results from the use of a given valuation technique.

4.2.1 Comment on TP.7.4.

In a world of actuarial quantification it seems inconsistent when the given formulas, calibrated on a 99,5 % probability, have to be adjusted by an unknown “model error” factor, which again will be unknown or untested. In the end, the security level, on a higher amount of capital, will be higher than the required 99,5%.

Actuarial quantifications will inevitably have some uncertainty - 100 % security cannot be calculated. The misinterpretation of the PoP should not be used to overburden the capital requirement, just based on a “bad feeling”.

Either the quantification can be done on the basis of a documented and validated database, using the Pillar 1 formulas, or based on an internal model, developed by an individual insurer. To adjust the “model error” would also undermine the trust in the Pillar 1 formulas.

If model error can be assessed, that means the “correct” model can be built and then compared with the approximation. In most cases the “correct” model cannot be computed and in any case the purpose of simplification is to avoid building an overly complex (although more accurate) model.

What this requirement could imply is that when companies want to apply simplifications they have to run in parallel the “full” approach to be able to benchmark both. That is duplicating work and is exactly the opposite of a “proportional” approach where the purpose is to avoid over-burdening companies.

4.3 TP.7.5 – TP.7.7

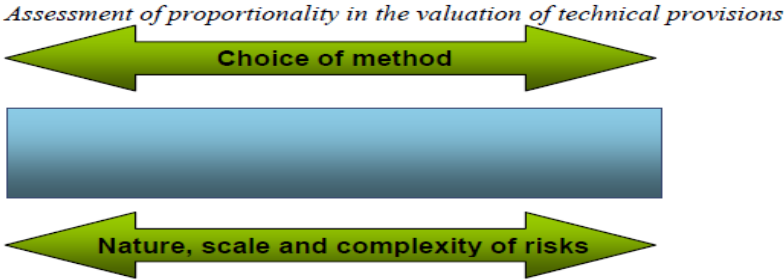
TP.7.5. The term “simplified method” would refer to a situation where a specific valuation technique has been simplified, in line with the proportionality principle. In a loose sense, the term “simplified method” (or “simplification”) could also be used to refer to a valuation method which is considered to be simpler than a “commonly used” benchmark or reference method.

Approximations

TP.7.6. Where approximation techniques are applied, these would typically be based on a fixed set of assumptions and would tend to be less complex than techniques which carry out explicit cash flow projections based on undertaking-specific data. Therefore, approximations may often be regarded as a specific kind of simplified methods (where the simplification is due to a lack of data). The use of expert judgement plays a key role in this context.

Role of simplified methods in the valuation framework

TP.7.7. The principle of proportionality applies generally when a valuation methodology is chosen, allowing (re)insurance undertakings the flexibility to select a technique which is proportionate to the nature, scale and complexity of the underlying risks:



4.3.1 Comment on TP.7.5. –TP.7.7

Could the word order of the last paragraph in TP.7.7 be changed to “Insurance Undertakings are allowed to select a technique which is proportionate to the nature, scale and complexity of the underlying risks, (new) allowing flexibility to the Insurance Undertaking in relation to the chosen valuation methodology, which has been diligently well documented and validated.”

The Insurance Undertakings should have the option to use simplification and it is then their role to explain why it is appropriate and to convince their local regulator on a “common sense” approach, not on a “model error” approach.

This application of the PoP is valid for all insurers because the “mean” benchmark to calibrate the pillar 1 formulas is not fully transparent and well documented.

4.4 TP.7.8. – 7.9.

TP.7.8. It would be appropriate for such an assessment to include the following three steps:

Step 1: Assess the nature, scale and complexity of underlying risks;

Step 2: Check whether valuation methodology is proportionate to risks as assessed in step 1, having regard to the degree of model error resulting from its application;

Step 3: Back test and validate the assessments carried out in steps 1 and 2.

TP.7.9. However – due to the restricted time frame – Step 3 is omitted for the purpose of the QIS 5 exercise.

4.4.1 Comment on TP.7.8.

“Having regard to the degree of model error resulting from its application” – Isn’t it correct to say that when the degree of the model error is quantifiable it should be integrated into the model? Or the underlying formulas should be adjusted?

Again quantifying model error or doing back testing is overly complex and time consuming (back testing against what by the way?). Either there is merit in developing a “full” model or it makes common sense to use simplified approaches but Insurance Undertakings should not be required to apply both to do benchmarking. That would be twice the work (assuming it is even feasible!).

4.5 TP.7.10. – TP.7.23

TP.7.10. In this step, (re)insurance undertakings should assess the nature, scale and complexity of the risks underlying the insurance obligations. This is intended to provide a basis for checking the appropriateness of specific valuation methods

carried out in step two and should serve as a guide to identify where simplified methods are likely to be appropriate.

Which risks?

TP.7.11. The scope of risks which should be included in the analysis will depend on the purpose and context of the assessment. For the purpose of calculating technical provisions, the assessment should include all risks which materially affect (directly or indirectly) the amount or timing of cash flows required to settle the insurance and reinsurance obligations arising from the insurance contracts in the portfolio to be valued. Whereas this will generally include all insured risks, it may also include others such as inflation.

Nature and complexity

TP.7.12. Nature and complexity of risks are closely related and, for the purposes of an assessment of proportionality, could best be characterised together. Indeed, complexity could be seen as an integral part of the nature of risks, which is a broader concept.¹⁴

TP.7.13. In mathematical terms, the nature of the risks underlying the insurance contracts could be described by the probability distribution of the future cash flows arising from the contracts. This encompasses the following characteristics:

- the degree of homogeneity of the risks;
- the variety of different sub-risks or risk components of which the risk is comprised;
- the way in which these sub-risks are interrelated with one another;
- the level of certainty, i.e. the extent to which future cash flows can be predicted;¹⁵
- the nature of the occurrence or crystallisation of the risk in terms of frequency and severity;
- the type of the development of claims payments over time;
- the extent of potential policyholder loss, especially in the tail of the claims distribution.

TP.7.14. The first three bullet points in the previous paragraph are in particular related to the complexity of risks generated by the contracts, which in general terms can be described as the quality of being intricate (i.e. of being “entwined” in such a way that it is difficult to separate them) and compounded (i.e. comprising a number of different sub-risks or characteristics).

TP.7.15. For example, in non-life insurance travel insurance business typically has relatively stable and narrow ranges for expected future claims, so would tend to be rather predictable. In contrast, credit insurance business would often be “fat tailed”, i.e. there would be the risk of occasional large (outlier) losses occurring, leading to a

higher degree of complexity and uncertainty of the risks. Another example in non-life insurance is catastrophe (re)insurance covering losses from hurricanes where there is very considerable uncertainty over expected losses, i.e. how many hurricanes occur, how severe they are and whether they hit heavily insured areas.

- TP.7.16. In life insurance, the nature and complexity of the risks would for example be impacted by the financial options and guarantees embedded into the contracts (such as surrender or other take-up options), particularly those with profit participation features.
- TP.7.17. When assessing the nature and complexity of the insured risks, additional information in relation to the circumstances of the particular portfolio should be taken into account. This could include:
- the type of business from which the risks originate (e.g. direct business or reinsurance business);
 - the degree of correlation between different risk types, especially in the tail of the risk distribution;
 - any risk mitigation instruments (such as reinsurance or derivatives) applied, and their impact on the underlying risk profile.
- TP.7.18. Undertakings should also seek to identify factors which would indicate the presence of more complex and/or less predictable risks. This would be the case, for example, where:
- the cash-flows are highly path dependent; or
 - there are significant non-linear inter-dependencies between several drivers of uncertainty; or
 - the cash-flows are materially affected by the potential future management actions; or
 - risks have a significant asymmetric impact on the value of the cash-flows, in particular if contracts include material embedded options and guarantees; or
 - the value of options and guarantees is affected by the policyholder behaviour assumed in the model; or
 - undertakings use a complex risk mitigation instrument, for example a complex non-proportional reinsurance structure; or
 - a variety of covers of different nature are bundled in the contracts; or
 - the terms of the contracts are complex (e.g. in terms of franchises, participations, or the in- and exclusion criteria of cover).
- TP.7.19. The degree of complexity and/or uncertainty of the risks are/is associated with the level of calculation sophistication and/or level of expertise needed to carry out the valuation. In general, the more complex the risk, the more difficult it will be to model and predict the future cash flows required to settle the obligations arising from the insured portfolio. For example, where losses are the result of interaction of a larger number of different factors, the degree of complexity of the modelling would also be expected to increase.

Scale

- TP.7.20. Assigning a scale introduces a distinction between “small” and “large” risks. Undertakings may use a measurement of scale to identify sub-risks where the use of simplified methods would likely be appropriate, provided this is also commensurate with the nature and complexity of the risks.
- TP.7.21. For example, where undertakings assess that the impact of inflation risk on the overall risk profile of the portfolio is small, they may consider that an explicit recognition of inflation scenarios would not be necessary. A scale criterion may also be used, for example, where the portfolio to be measured is segmented into different sub-portfolios. In such a case, the relative scale of the individual sub-portfolios in relation to the overall portfolio could be considered.
- TP.7.22. Related to this, a measurement of scale may also be used to introduce a distinction between material and non-material risks. Introducing materiality in this context would provide a threshold or cut-off point below which it would be regarded as justifiable to omit (or not explicitly recognise) certain risks.
- TP.7.23. To measure the scale of risks, further than introducing an absolute quantification of the risks, undertakings will also need to establish a benchmark or reference volume which leads to a relative rather than an absolute assessment. In this way, risks may be considered “small” or “large” relative to the established benchmark. Such a benchmark may be defined, for example, in terms of a volume measure such as premiums or technical provisions that serves as an approximation for the risk exposure.

4.5.1 Comment on TP.7.10. – TP.7.23.

The reference to “Which risks?” in T.P.7.11. obviously refers only to underwriting risks, and does not refer to the other risks (e.g. market, credit etc.) which have to be quantified under Pillar 1. These other risks will have a major impact on the assessment of complexity.

There is a mix between nature, complexity, and uncertainty which is totally misleading. Insured risks taken individually can be simple in nature but the way they are aggregated in portfolio, embedded in insurance products with option or multiple triggers, structured in transactions such as CatBond, or covered by risk mitigation techniques can make it complex. Uncertainty relates to nature of the risk but does not necessarily imply complexity. A single policy of pharmaceutical liability risk or product recall is a very “uncertain” risk by nature but it’s not a “complex” risk structure.

At this point we need to draw attention to and to alter a conceptual error, misunderstanding or mistake regarding nature, scale and complexity:

Nature means the type of risk i.e.

- Underwriting risk in all lines of business. The same line may differ in various jurisdictions e.g. Third Party Liability in US, France, Egypt or Philippines;
- Market risk - different asset classes in different countries are differently exposed.

The characteristics under TP.7.13. are not in a logical order which is understandable in view of the huge number of facets to each and every one of the risks.. A list of different “natures” of

risk types would also be huge; hence not described. For example, the sensitivity of the risks in an insurance group will differ due to the different environments per country.

“One size fits all!” is not a reasonable and justifiable approach.

Scale is the “easiest” criteria in the quantification process, because the size of risks are quantifiable, based on the experience of all the specialists in the various functions of the Insurance Undertakings. This data basis is “correct” – either linked to or as a consequence of a conservative or an aggressive policy of the undertaking. Macro economic factors such as inflation rates (or scenarios), development of interest etc. have to be documented, validated and, where necessary, discussed and agreed with the local regulator. A single distinction between “small” and “large” risks does not reflect the need to use data collections, past experience, worst case scenarios and future “change of risk” considerations.

Complexity has to be distinguished from “nature of risk”. Complexity is the result of the quantification and interdependence of “nature” of risk types and “scale”. Insurance undertakings run all types of risks (nature):-

- They can be specialist, mono-liners, niche-minded, Captives, mutuals or composites;
- Their activity can be local, regional, national or multinational.
- The volume of underwriting and their risk appetite varies based on their capital (and / or balance sheet).
- Their influence on a market-participant is either minor (or zero) or, on a worldwide scale of financial asset managers / investors important.

In the best interest of all participants under Solvency II, it may be necessary to recognize that the huge diversity in the Insurance Market is a result of the above (incomplete) description of their varied activities, which leads to a broad differentiation of complexity per insurance undertaking.

The link between “complexity” or “nature” of single risks proposed by CEIOPS does not reflect the situation in the market and is obviously not aligned with the “rule of common sense”, which is one of the fundamental principles of the jurisprudence developed by the European Court of Justice when it comes to an interpretation of the PoP. The link between complexity and nature is suppressing and undermining the need for evidence of clear structures of a partial / internal model which discloses in figures and in a transparent format the “real” risk sensitive profile of an insurance undertaking.

4.5.2 Comment on TP.7.12. – TP.7.19.

In paragraph 19, complexity is described as a mixture of risk (and its uncertainty), various levels of calculation sophistication, expertise in valuation, and losses as a result of a large number of different factors etc.

But, “the degree of complexity of the modelling would also be expected to increase” - which is well understood.

Shouldn't Solvency II and the quantification provide more transparency of the risk sensitivity of an Insurance Undertaking? Mixing nature with complexity, and uncertainty (or predictability) does not provide a higher level of transparency. Insurance Undertakings will probably provide more clarity, distinction, structure and transparency in their models than is expected by the regulator.

Proposed Approach

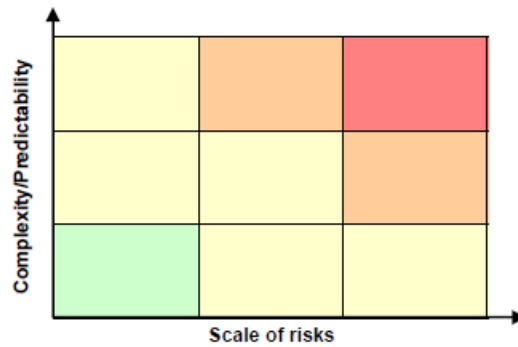
- (a) Distinguish and describe the various natures of all types of risk,
- (b) Quantify the different risks by assigning the various data bases (past, future, scenarios) to the individual risk, and then
- (c) Determine and quantify the complexity of an Insurance Undertaking based on the interdependence of the various risk types, the use of mitigation / hedges, the diversification effects and so on.

4.6 TP.7.24. – TP.7.26

Combination of the three indicators and overall assessment

TP.7.24. The three indicators - nature, scale and complexity - are strongly interrelated, and in assessing the risks the focus should be on the combination of all three factors. This overall assessment of proportionality would ideally be more qualitative than quantitative, and cannot be reduced to a simple formulaic aggregation of isolated assessments of each of the indicators.

TP.7.25. In terms of nature and complexity, the assessment should seek to identify the main qualities and characteristics of the risks, and should lead to an evaluation of the degree of their complexity and predictability. In combination with the “scale” criterion, undertakings may use such an assessment as a “filter” to decide whether the use of simplified methods would be likely to be appropriate. For this purpose, it may be helpful to broadly categorise the risks according to the two dimensions “scale” and “complexity/predictability”:



TP.7.26. An assessment of nature, scale and complexity may thus provide a useful basis for the second step of the proportionality process where it is decided whether a specific valuation methodology would be proportionate to the underlying risks.

4.6.1 Comments on TP.7.24. – TP.7.26.

TP.7.26 should be the only basis for selection of simplified method in a “common sense” approach and again that does not imply the need for error modelling.

The combination of the three indicators (or criteria) and the overall assessment is again described in such a way that complexity (and predictability), nature (?) and scale – strongly interrelated – should be assessed for PoP-reasons from a qualitative aspect rather than from a quantitative one. Isn't it correct to say that the mixture of nature (risk types) and complexity is leading to a situation where a comparison between the various Insurers becomes impossible?

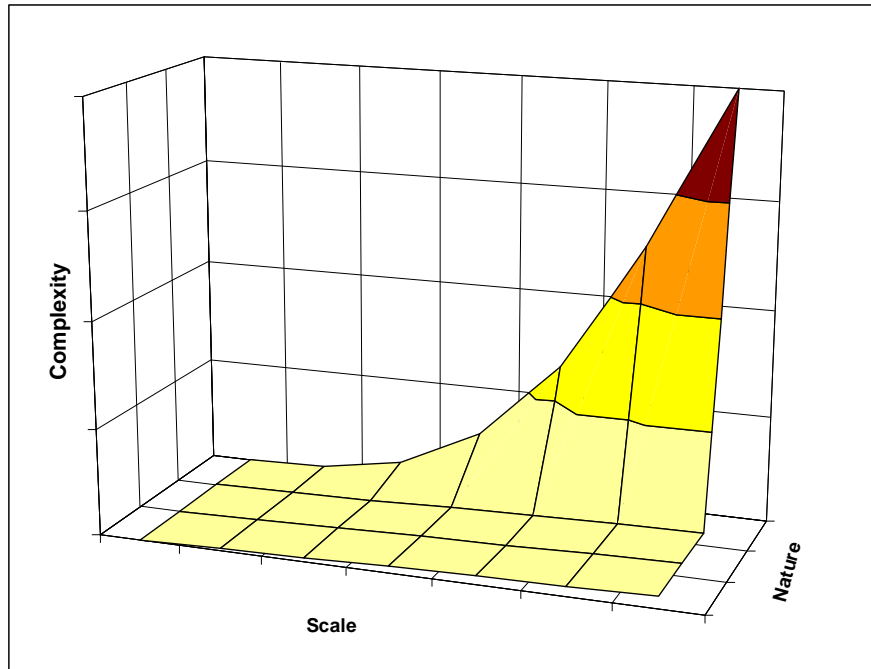
This leads to the conclusion that there must be some misperception of

- how complexly structured and opaque insurers may be, and
- of how well they are managing their risks

Pillar 1 formulas, as the initial component with a clear structure as the basis, using nature (risk types) and scale for the first step of quantification should not be confused with a mix of nature and complexity.

Complexity is a function of nature, scale and the interdependence of these (which can not be quantified in a perfect or complete formula).

To avoid aggregating some dimensions and keeping the three principles separate we propose the following graph for illustration:



The light yellow area represents a “simplified approach”; yellow - a “standard approach”; orange - would require “partial or full internal models” and brown - would clearly be the area where “full internal models” are required.

This highlights that very simple risks, even if very large, can be approached by simplified models and that more complex but immaterial risks can also be approached by simplified models as the effort of building a more accurate approach is not worth it in view of the objectives and proportionality. All others will progressively move towards more complex approaches.

The more risks and the higher the risk profile, the greater will be the complexity of an insurance company and the need for a higher SCR and MCR. Diversification effects can be taken into account in the aggregation of a huge variety of single risks as well as highly sophisticated risk mitigation instruments.

Highly sophisticated internal models will integrate qualitative criteria and tools (which come from Pillar 2 organisational, protection and security measures, key risk indicators, score card systems etc.) to provide arguments for the chosen risk appetite policy and as factors to adjust, correct and refine (improve) rather simple value-at-risk considerations.

5. Conclusion

The alignment of international insurance supervision by Solvency II has been accepted by insurance companies and their representatives.

Despite some initial disappointments, complaints and issues yet to be clarified, in principle the whole market understands and appreciates this common approach (even with the pressure on NON-EU Community countries by the required equivalency).

A 'proper' understanding and application of the PoP is a vital part of the implementation of the Solvency II Directive.

The PoP allows the European Community, all European Citizens and market participants to be respected without any limitations in such a way that "legislative acts shall take account of the need for any burden, to be minimised and commensurate with the objective to be achieved." (European Community Treaty)

In this paper we have outlined how the PoP can be used in an abstract format by all Insurers / Reinsurers and Regulators and we have explained that individual assessments and approaches are necessary to follow Solvency II as a principle based Directive, which must be flexible to adjust the necessary and inevitable future workload and cost.

In short, by this document we are making a proposal to:

- redefine nature, scale and complexity,
- delete assessment of "model error" and "benchmarking" or "back testing",
- require justification by Insurance Undertakings for the use of simplified approaches, and
- require judgement by Regulators on appropriateness on a case by case basis.