



Global treatment of ENID for non-life insurers

To ensure best estimate liabilities of non-life insurers represent a true best estimate, insurance professionals have debated if and how reserves should allow for Events Not in Data ('ENID'). Different Solvency II interpretations across Europe lead to varied methodologies. Most UK insurers explicitly allow for ENID following regulator guidance, while other countries have differing regulations and approaches. This article reviews global treatments of ENID and related regulatory requirements.

LEGISLATIVE BACKGROUND IN EUROPE

Before Solvency II, CEIOPS hinted at the need to account for ENID. In their 2009 paper¹ they advised: 'Regardless of whether a deterministic or simulation model is used, the resulting mean estimates will therefore be based on development similar to that seen in the history and not contain 'all possible future outcomes'. [...] Regardless of the technique, judgement is required in making additions or adjustments to the estimates to allow for circumstances not included in the history that need to be incorporated into best estimates.'

Later, the Solvency II Directive implicitly took over this advice in Article 77, stating that the technical provisions should correspond to the probability-weighted average of future cashflows, without directly referring to an ENID loading being required. However, the UK insurance industry and regulators have still interpreted the text to imply the existence of ENID. The Institute and Faculty of Actuaries ('IFoA') coined the term ENID in the context of insurance reserving² and the Prudential Regulation Authority ('PRA') explicitly required ENID to be included when calculating technical provisions³.

Currently, most insurers in the UK allow for ENID, with loadings generally ranging between 1% and 3% of the net best estimate

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liabilities. In other European countries, the practice is not as established due to the lack of similar explicit interpretation by the actuarial societies and regulators. We elaborate on this later in the article.

DEFINITION AND EXAMPLES OF ENID

The ENID concept has also been referred to as 'binary events' given that it often concerns low frequency, high severity events. Lloyd's guidance⁴ lists meteor strikes, tsunamis, and volcanic eruptions as examples, all fitting that profile. However, that terminology is nowadays discouraged because ENID don't have to be extreme or rare, but can also be legislative, political, or economic changes.

Furthermore, it should be noted that ENID don't have to be one-sided. ENID should not only allow for negative events, but also potential positive outcomes, such as the successful implementation of a new claims process or beneficial legislative changes. In practice however, the total resulting ENID is generally a loading that increases the reserves.

During the high inflation in 2022, many Dutch non-life insurers expected the inflation to remain high in the following years, which was not reflected in the claim triangles. Therefore, they constructed separate excess inflation reserves. Although this was not called an ENID due to that term not being standard practice in the Netherlands, this can be interpreted as a type of ENID loading.

CALCULATION OF ENID LOADINGS

Following IFoA and Lloyd's publications, as well as the results of our analysis, we explain the most commonly applied approaches. Firstly, in a distribution-based approach, it is assumed that the insurer's empirical reserve distribution is truncated and that the true underlying distribution is wider. The ENID loading equals the percentage difference between the true mean and the truncated mean. This method requires assumptions about the form of the true underlying distribution and a selection of the truncation point (e.g. the 95th percentile).

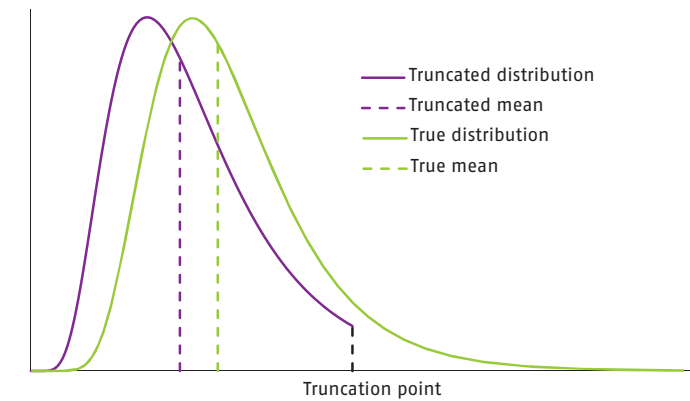


Figure 1: The distribution-based method. Note that this illustrates a one-sided truncation. A two-sided approach (also allowing for positive events) is also possible and actually preferred.

Secondly, in a scenario-based approach, a list of scenarios is produced, where each is given a likelihood and impact. The total probability-weighted impact is the ENID loading. Thirdly, one can adjust reserve parameters (e.g. loss ratios or development patterns) to make additional allowance for ENID. Alternatively, a % uplift based on expert judgment or benchmarking can be used, or a mixture of the aforementioned methodologies.

GLOBAL TREATMENT OF ENID

With the use of an informal survey, we have investigated which countries have specific regulations with regard to ENID, and how this is typically treated within their respective market.

In the **United Kingdom**, as mentioned previously, the PRA (SS5/14 Section 2.4 – 2.7) requires insurers to take ENID into account when calculating technical provisions. In **EU countries**, article 77 of the Solvency II Directive applies, which does not make specific mention of ENID.

In **Bermuda**, the Bermuda Solvency Capital Requirement (paragraph 34(11)) makes specific mention of ENID and requires insurers to allow for them.

In the **United States**, US GAAP (section 944-40-30-1) requires insurers to account for any factors that would modify past experience, which can be interpreted as allowance for ENID.

In **South Africa**, the Solvency Assessment and Management Framework (FSI 2.2. Section 6.1 and 6.2) has a similar requirement to Solvency II which does not specifically mention ENID but still requires insurers to account for all possible future outcomes.

Following our survey, it was our understanding that limited mention was made with regard to ENID in the **Australian** and **Canadian** insurance regulations.

The below table displays how each country in the survey typically makes allowance for ENID within their reserves:

Country	Treatment within the specific insurance market	Typical method to allow for ENID loadings
United Kingdom	Following the PRA requirement, most UK insurers make an explicit allowance for ENID.	<ul style="list-style-type: none">• Distribution-based approach• Scenario-based approach• Percentage load based on benchmarks and expert judgement• Combination of the above
EU: Germany	Entities that form part of a group (German or international) typically apply ENID for SII reserves. In German GAAP it is not typically considered.	<ul style="list-style-type: none">• Distribution-based approach, typically per line of business
EU: Netherlands	Typically, no explicit allowance for ENID, except when the insurer forms part of a UK insurance group.	<ul style="list-style-type: none">• No explicit load
EU: France	Typically, no explicit allowance for ENID, except when the insurer forms part of a UK insurance group.	<ul style="list-style-type: none">• No explicit load
Bermuda	Allowing for ENID is a specific requirement in the regulation, but explicit recognition is uncommon.	<ul style="list-style-type: none">• No explicit load
United States	Explicit allowance varies across the market; some catastrophe events have led regulators to require reserves at defined return periods.	<ul style="list-style-type: none">• Distribution-based approach• Percentage load based on benchmarks and expert judgement
South Africa	Typically, no explicit allowance for ENID, except when the insurer forms part of a UK insurance group.	<ul style="list-style-type: none">• No explicit load
Australia	Typically, no explicit allowance for ENID, as insurers already allow for a risk margin calibrated at the 75th percentile.	<ul style="list-style-type: none">• No explicit load
Canada	Allowance for ENID is common, either through the IELR or as part of the risk adjustment.	<ul style="list-style-type: none">• Adjusted reserve parameters

CONCLUSION

Various methodologies have been adopted globally to allow for ENID and ensure that the reserves are sufficient and calibrated at a true best estimate level. We recommend insurers to consider whether their reserves are sufficiently allowing for unknown outlier events or whether a separate ENID allowance needs to be made. ■

1 – CEIOPS' Advice for Level 2 Implementing Measures on Solvency II, 2009
2 – IFoA Solvency II Technical Provisions for General Insurers, 2013
3 – PRA Supervisory Statement SS5/14, 2014
4 – Lloyd's Solvency II Technical Provisions Guidance, 2024