Paris, 21 November 2018

The French Treasury Department and the Dutch Ministry of Finance initiated, together with other national regulators in Europe, a project to better take into account the long-term character of equity investment within the Solvency 2 prudential framework, with the creation of a "long term equity investment portfolio" (LTEIP) within the Solvency 2 delegated act, which is to be modified this year. The French Treasury Department requested the French Institute of Actuaries expertise on this scheme.

The Institut des actuaires (France) supervised the study, which has been entrusted to PricewaterhouseCoopers (PwC).

The scheme considered by the Dutch and French authorities consists in a creation of a new asset class within the equity submodule of the standard formula, covering both listed and unlisted equities, benefitting form a reduced market risk shock (22%) so as to take into account the long term and stable nature of this portfolio, captured by the following conditions:

- The management intention of the LTEIP must be aligned with the internal policies (formalized by the written policies), the investment and asset / liability management policy, and the mandates given to the asset management companies. The definition of what constitutes long-term should be clearly stated in the investment policy. It should also be stated how the company measures it and follows it in its internal oversight. The long-term equity investments shall also be taken into account in the Own Risk and Solvency Assessment (ORSA) for the purpose of the solvency assessment;

- A forward-looking liquidity test shall be introduced, where the insurer shall demonstrate that in the coming 5 years its liquidity position will not trigger the sale of equity of the LTEIP, with a stressed scenario inspired of the shocks used for calculating the SCR, but on a deterministic and going-concern basis, and that would result in cash outflows. Assets would be eligible to the LTEIP only if, in such stressed conditions, and for every year of the projection, asset cash flows cover liabilities cash flows. The liquidity test shall be defined in the delegated act ;

- The insurer shall document in qualitative terms the presence in its balance sheet of long-term liabilities resulting in a stability of its resources, like long-term contracts, but also stable portfolios of contracts or own funds in excess;

- For unlisted equities of the LTEIP, independent market valuations shall be provided at least once a year or more often if available. As regards equities held through funds, the insurer shall have all the information necessary to assess the performance of the fund manager.

You will find below the main findings of the study, based on the proposal of the Dutch and French authorities and for which it can be used as an impact assessment.

This study does not take into account, nor can serve as an impact assessment for, the recent proposal of the European Commission, which is currently under consultation (https://bit.ly/2znZsN3) and differs from the initial LTEIP proposal on three important points:

- A condition of ringfencing of the assets and liabilities is added, which would make the approach very burdensome for the insurers and is not relevant to capture the long term character of the investments. This would create artificial modifications of the hierarchy of creditors between policyholders. In our views, it would deprive the whole approach from its useful effect ;
- The Commission requires the investments in the portfolio to be held for a period of 12 years on a line-by-line average. This seems to be very constraining for the management of the portfolio and a too long period as compared to the length of a financial cycle. This could also be detrimental from a prudential point of view since insurers could be locked on the long run with underperforming assets ;
- The Commission's proposal does not include a liquidity test but allows a great margin of discretion to the supervisors to agree on the eligibility to the portfolio. In our views, this could create heterogeneity in the implementation of the proposal across the Member.

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Report on a new category of equities (LTEIP) under Solvency 2 Standard Formula

Summary

1. Executive summary and limits

With the implementation of Solvency II, concerns have been raised about the potential adverse effects the new regulation could induce on investment in equities by insurance and reinsurance undertakings, as they typically invest in equities and manage these assets over a long period.

In this context, the Dutch Ministry of Finance and the French Treasury Department have initiated, with other national regulators in Europe, a project to better take into account the long-term character of equity investment (hereafter the "Dutch-French proposal").

Based on this consideration and with the objective to finance European economy by encouraging investment in equities by insurers, the Dutch-French proposal proposes to add a new category of Equities in the Standard Formula, aligned with the Asset and Liability Management (ALM) of Insurance companies and grouped within an investment portfolio held for the long term (LTEIP). This new category would be subject to a lower shock than equity type 1, at 22 % according to the Dutch-French proposal.

The Institut des actuaires is committed in reflections on prudential issues, in the implementation of Solvency II and in the discussions on the revision of the Delegated Acts planned for 2018. As part of its general interest missions, the Institut des actuaires is sensitive to the impact of regulation on the financing of the economy by financial institutions, in particular insurance companies, and their risk management.

Therefore, the Institut des actuaires welcomes the opportunity to contribute to the reflection started with the Dutch-French proposal. A dedicated working group within the Institut des actuaires has been appointed to carry out this mission with the assistance of an external support.

The Institut des actuaires entrusted PwC France to analyze the Dutch-French proposal to establish a Long-Term Equity Investment Portfolio (LTEIP), notably to assess the potential criteria this portfolio should respond to, and to estimate the potential impacts of the LTEIP on the asset allocation of European insurers and their Solvency 2 results. The calibration for the 22% shock has not been challenged during this work.

The study concluded that the criteria proposed by the Dutch-French proposal are generally relevant, even if some further developments need to be made to limit the room for divergent interpretations, notably regarding the liquidity test to demonstrate the ability to hold these assets for the long term under stressed conditions.

Regarding the potential impacts resulting from the introduction of LTEIP, the study estimated that:

- 50% of equities held by European companies (excluding IL/UL) could be eligible for the LTEIP classification;
- As a consequence, the coverage ratio would be improved by up to ten points if the shock is reduced to 22%, assuming equity investments are unchanged;
- European insurers applying the Standard Formula or a partial internal model that does not cover equity risk could reinforce their allocation in equities up to 20%, assuming they would maintain their coverage ratio at the level observed before the LTEIP measure goes through;
- This would correspond to additional purchases of equities in the range of 50 and 100 EUR bn, while also allowing that other constraints than Solvency 2 (statutory or IFRS accounting rules, economic context…) could reduce the expected impact.

These amounts should be considered as estimates and with the caveats that they lean on a number of hypothesis, simplified calculation, limited number of interviews, and only the most representative European countries have been selected to quantify the order of magnitude of the impacts and to extrapolate to the whole European insurance industry.

Caveats

This study has not considered the appropriateness of the level of the shock that would be applied to LTEIP (22%);

This study relies on the reflections of members of the Prudential Committee of the Institut des actuaires and does not represent the views of the French Insurance industry or other European countries, even if PwC France interviewed several insurers to get their views on LTEIP;

The qualitative analysis and the estimated impacts, partially based on available public data and interviews, have been established in a short period of time and with defined resources. The results must be considered taking into account this framework, the assumptions and the underlying simplifications;

The estimate of the impacts of LTEIP is based on the current economic and financial market conditions; if significant changes occur, the results might differ and lead to other conclusions.

2. Context

In the context of the review process of the Standard Formula in 2018, the Dutch-French Treasury Departments initiated with other national regulators among Europe a project to better take into account the long-term character of equity investment and to mitigate the disincentives created by Solvency II for investment in equities, as a consequence of the calibrations of the SCR.

This reflection focused on creating a new category of equities named LTEIP (Long-Term Equity Investment Portfolio) whose shock under the Standard Formula would be lower than the shocks currently applied on Equities type 1 and type 2.

The Institut des actuaires welcomes the opportunity to contribute to the reflection initiated by the Dutch-French Treasury Departments and to provide its views on the criteria for equities LTEIP as designed in the proposal, and a rough estimate of the potential impacts of the introduction of this new assets category for European insurers on their Solvency 2 reporting.

This report presents the findings of this study, which has been prepared with the assistance of PwC France. The approach consisted in analysing the relevance of LTEIP criteria in accordance with how insurers manage their assets and their ALM strategy, and in estimating the magnitude of the impacts on Solvency 2 reporting.

3. Dutch-French Treasury Departments proposal

The Dutch-French proposal corresponds to a change within the Equity sub-module SCR calculation. The purpose of this change is to encourage long-term investments in equities and to reduce pro-cyclical effects related to equity investments.

To achieve this goal, the Dutch-French Treasury Departments propose to create a specific portfolio for long-term equities within the equity sub-risk module, for which the capital charge would be reduced to 22%. The eligibility of equity assets to this long-term portfolio for an insurer could be subject to four criteria that will be further described in this section.

a. **The intention to manage the equity assets within the long-term equity portfolio in the long-term**

   This shall be demonstrated by the existence of asset-liability management and investment policies at entity level (e.g. including the own funds in the asset-liability management) in which the intention of managing the assets within the long-term equity portfolio would be defined.

   Thus, the management of this asset class should be considered within the risk appetite framework and therefore through adverse scenarios.

b. **The presence of long-term liabilities in its balance sheet**

   This corresponds to a qualitative definition, which shall be included in the written policies.

c. **The validation of a liquidity test demonstrating the ability to hold the long-term equity investments portfolio even under stressed conditions, as defined in the article 170(a) of the proposal.**

   The liquidity test corresponds to a 5 years forward-looking view in stressed conditions.

   The liquidity test will be validated if, within this scenario, at the end of each year, the cash in-flows (e.g. assets inflows such as bonds coupons or redemption, or premiums) are greater than the cash out-flows (e.g. claims, expenses, taxes, etc.).

d. **An independent valuation for equities unlisted in regulated markets nor traded in multilateral trading facilities, at least on an annual basis.**

4. LTEIP criteria analysis

We have analysed the proposed criteria concerning under the angle of the simplicity, the caution, the stability and the operational applicability. This section's purpose is to summarize the observations made based on the shared version of the updated Delegated Acts.

The LTEIP and related eligibility criteria from the Dutch-French proposal are regarded as not overly restrictive. The current understanding of the eligibility criteria is indeed that most of the insurance and reinsurance undertakings would be in a position to include a LTEIP in their equity investments. Consequently, the proposed measure would certainly develop long-term equity investments.

On the other hand, the proposed criteria cover the capacity of an insurer to own equity investments in the long-term both qualitatively and quantitatively respectively through the existence of long-term liabilities within the balance sheet and through the proposed liquidity test. Thus, the following additional requirements have to be provided

- The intention of maintaining long-term equity investments is ensured through internal policies related to investments.
- Potential uncertainty on market valuation of equity investments, which do not have observable market values is backed by independent market valuation which will avoid the application of reduced shocks on assets where an uncertainty around the market valuation remains.

Based on this general observation, more detailed analyses and remarks about each criteria are detailed in the remainder of this section:

a. <u>The intention to hold the LTEIP in the long-term</u>

This criterion is related to governance and corresponds to specific requirements on equity asset investments.

The requirement to consider the whole balance sheet within the asset liability management is consistent with the definition of long-term liabilities (see next point). Thus, to consider the impact of holding the long-term equity investment portfolio within the risk appetite framework will allow insurance companies to identify and monitor this specific portfolio investment.

It is worth noting that this requirement applies to the identification of a sustainable envelope invested in equities but not an obligation to keep a particular stock over a long period. A dynamic management would still be allowed, provided that the amount of LTEIP remains stable.

However, for equities invested through funds, the following can be observed:

- For existing investments through funds:
    - Existing mandates given to asset managers regarding investments policy do not necessarily include any criteria regarding the insurance/reinsurance

undertaking's intention to hold the equity in the long term. Insurers might need to adapt the mandates of asset managers as appropriate.

    - Controls to ensure that the long-term intention is fulfilled will need to be performed at fund level. It can be achievable, even though slightly burdensome, if actual operational controls are expected on the equity investments at fund level.

- For new investments through funds, the mandates will need to be adapted as well in order to reflect the intention to hold equities in the long term in the funds.

Therefore, in its actual formulation, fulfilling this criterion appears easy: it requires to integrate the specificities of the long-term portfolio within the risk appetite framework and within the best practice regarding asset liability management and investments, including the impact on the own funds.

As its governance framework would then commit the insurance/reinsurance undertaking, deviating from the intention to hold in the long-term these equity investment (e.g. selling at least partially some of the long-term investment portfolios) would need to be formally justified and would therefore be observable. From this perspective, this qualitative criterion would bind in most cases the insurance/reinsurance undertaking to follow its governance framework. Therefore, this criterion appears to be an appropriate qualitative criterion with respect of the stability and prudency of the investments in the long-term investment equity portfolio.

However, from an operational standpoint, the obligation to reflect this intention at a more granular level, especially at fund level, might request to update the mandates with asset managers.

b. The presence of long-term liabilities in balance sheet

As mentioned in the previous section, this criterion is qualitative. Indeed, the existence of long-term liabilities (including free surplus) corresponds to a pre-requisite to the capacity to hold long-term equity investment in the assets.

The long-term character of liabilities is generally conceived from an ALM point of view in accordance with a going-concern vision, in taking into account the renewals of existing insurance contracts, which leads to a sustainability of the liabilities and allows for a stability in the assets held.

However, different interpretations of this criterion from local supervisors might appear, notably regarding the definition of long-term character, which could lead to various application within the European Union.

We recommend:

To further specify this criterion, especially with regards to the long term definition conceived in accordance with a going-concern vision which leads to a sustainability of the liabilities.

c. The validation of a liquidity test demonstrating the ability to hold the Long-Term Equity Investments Portfolio even under stressed conditions, as defined in the article 170(a).

A liquidity test appears to be useful with respect to LTEIP. It introduces a quantitative approach, which is deemed relevant and necessary to assess the ability to hold the LTEIP even under stressed conditions.

The 2 methodologies considered in the Dutch-French proposal have been subject to discussions between the members of the working group and with PwC France.

Indeed, further enhancements would help to clarify the current proposal, which does not allow for a unique interpretation and a unique potential application.

In particular, during the QIS5 exercise, participants were requested to define a single equivalent scenario for determining the SCR. Only 39% of the participants addressed this request. Feedback from the industry and from the EIOPA was the following:

"This lack of engagement with the method was accompanied by extensive feedback from industry, as well as from supervisors, on its shortcomings. Almost all countries reported complaints from their industries on the complexity and impracticability of the single equivalent scenario. In addition, there seem to have been issues with the stability of the approach. However, no authority elaborated on the latter any further than attributing it to general input sensitivity."[1]

In order to avoid similar issues, the revised Delegated Acts should explicitly define the scenarios and shocks to be applied in the liquidity text and not to refer to an equivalent scenario. This would indeed avoid discrepancies in the application within European countries.

- For instance, a solution could be to define the scenarios by the following elements:
- The scenario for the liquidity test is defined as deterministic. Interest rate conditions are defined consistently with Best Estimate Liabilities.
- The shocks to be applied within this liquidity test are the following :
    - 50% of Standard Formula shocks for all underwriting risk modules
    - Note: Mass shock lapse risk should be taken into account when considering lapse risk.
    - 50% of Standard Formula shocks for market risk modules (excepting equity risk module)
    - 100% of Standard Formula shocks for equity risk module, considering that none of the equity assets has been classified within LTEIP.
- The liquidity test will compare cash inflows and cash outflows year after year for a 5-year period to ensure that available cash will be roll-forwarded year after year, without any reinvestment of this cash flows. .

Then, the proposal stipulates that the liquidity test has to be performed on a 5-years basis. We understand his 5-year horizon has been defined in line with best practice around business planning and ORSA projections. As the adverse shocks would be applied at the beginning of the projections, a 5-years projection should be adequate to test the resilience of a company in stressed economic situation.

[1] https://eiopa.europa.eu/publications/reports/qis5_report_final.pdf

However, given the cyclical nature of financial markets and the observed delay between extreme points, the 5-year horizon could be eventually challenged. Considering a longer horizon (for instance 8 years) could either be questioned, because the longer is the projection, the less the assumptions and the results are reliable.

That is why a 5-year horizon could be considered as an acceptable compromise for the duration of the liquidity test, the long-term condition of the liability being already covered by two first criteria and the cyclical nature of financial market being captured by the amplitude of the stresses.

Another issue relates to the structure of the balance sheet of the undertaking, with the existence of segregated funds for which mutualizing cash with other funds or general assets would be impossible.

We recommend:

To enhance the actual measure by defining more clearly and precisely the liquidity test to be performed;

To specify if the test is applied at entity level, allowing for fungible liquidity across the portfolios, or if the test should be more granular by taking all the existing ALM constrains within the balance sheet as in the Best Estimate valuation (notably to separate segregated funds from the general policyholders fund);

To specify that cash can be roll-forwarded year after year;

To specify that equities not classified as LTEIP can be sold when performing the liquidity test.

d. An independent valuation for equities that are not listed in regulated markets nor traded in multilateral trading facilities at least on an annual basis

This criterion has not been seen as the most impactful / material criterion concerning the creation of the LTIEP.

However, it has been argued that a sufficient level of confidence for the valuation of the investments also corresponds to a requirement for IFRS reporting. Therefore, the role of a criterion related to an independent market valuation does not seem completely necessary for justifying the integration of certain assets in the LTIEP, and might potentially be avoided.

Thus, the concept of "Independent Market Valuation" is not defined and can lead to different interpretations (e.g. valuation from the asset manager, valuation from an independent firm, valuation from a validation unit within the firm, etc.).

We recommend:

Should this fourth criterion be maintained, the text should specify the meaning of "independent" valuation.

5. Estimate of potential impacts

5-1 Most affected European countries

Local supervisors publish standardized statistics on solo entities, in aggregating QRTs of all the domestic insurers. Based on these public data, we compare the weight of the top five European countries in terms of assets held by insurers:

2017 (in billions)		
Country	Number of Insurers	Total Assets (in billions €)
France	493	2 802
United Kingdom[2]	285	2 768
Germany	325	2 202
Italy	99	920
Netherlands	143	486
Total Scope	1345	9 180
Total Europe	3486[3]	11 443
% Scope	39%	80%

We compare as well the weight of the SCR derived from the Standard Formula in those countries:

Country	Total SCR (in millions €)	% SCR calculated in standard formulae	%SCR calculated in partial internal model	*Of which % SCR calculated in partial internal model (including market risk)*	%SCR calculated in internal model
France	147 935	77%	6%	*47%*	17%
United Kingdom	140 005	32%	22%	*91%*	46%
Germany	138 533	50%	8%	*96%*	42%
Italy	53 314	31,5%	58,5%	*100%*	10%
Netherlands	31 503	78%	not available		
Total Scope	511 291				

France (holding the largest amount of assets among European countries) and Netherlands appear to be the countries where the LTEIP measure would have the largest effect, given that

[2] The United Kingdom has not yet published its aggregated statistical data for insurance and reinsurance companies subject to Solvency II at 31 December 2017. For this country, the data used are at 31 December 2016.

[3] The total number of European insurers shown is at 31 December 2016, Source: https://www.insuranceeurope.eu/insurancedata

France and **The Netherlands** have the highest proportion of SCR calculated with Standard Formula and that market risk SCR is higher than in other European countries.

The second country in terms of amount of assets held is **Germany**. The percentage of SCR based on Standard Formula stands at 50%, and the percentage of assets allocated to equities is very high (around 40%). However, a proportion of equities higher than in other countries corresponds to holdings in undertakings and strategic participations (following Solvency II definition), and already stressed at 22%. Because of this specificity, the LTEIP measure is expected to have a lower impact in Germany than in France.

The third country is **the Netherlands**, where the proportion of insurers using the Standard Formula is 78%, as high as in France. However, Dutch insurers hold much less assets than French or German insurers, which reduces the potential impact of the LTEIP measure and the size of stock purchases by Dutch insurers. Thus, the relative contribution of SCR Equity to the total SCR is much lower for Netherlands than for other countries such as France. Therefore, the LTEIP measure is expected to have a lower impact on Solvency 2 figures for Dutch insurers.

In the **UK** and in **Italy**, less than 1/3 of the SCR results from the Standard Formula. Therefore, the LTEIP measure should have less impact in these countries, since the measure is not intended to benefit insurers using an Internal model, at least in the short term.

Based on these evidences, priority has been given to perform a detailed study of the impacts for France, including two phases:

- First, interviews of several major French life insurers using the Standard Formula and an insurer with predominant non-life business.
- Second, use of public data on the French Insurance market to estimate the potential impacts for the whole market, and critical assessment with the lessons from the interviews.

Then, we analyse **Germany** and **the Netherlands**, in using domestic public data in the same way as for France.

For the **UK** and **Italy**, due to the marginal part of insurers under the Standard Formula, we perform a simplified calculation, extrapolating the results obtained for **France**.

We have not considered other European countries, because their weight is smaller, even if at the local level the LTEIP measure might have some material impact.

5-2 Interview survey in France

We realized an interview survey with eight life insurers and one non-life insurer to get their views on the LTEIP measure and to corroborate the impacts based on public data (see further section). We selected seven important French life insurers using the Standard Formula, and interviewed a Belgium group as well, and a French non-life insurer. The assets held represents 35% of the assets held by French insurers, and circa 46% if we consider solely the French insurers in Standard Formula.

As the French market appears to be the most affected by the proposed measure, we consider that this inquiry provides valuable insights to assess the impact of the LTEIP measure at European level, even if we interviewed only French insurers and one Belgium group.

This survey covered two aspects:

- Appropriateness of the LTEIP criteria,
- Expected impacts of the LTEIP on insurers.

In the introduction to each interview, we outlined the key objectives of the new class of equities and presented the four criteria envisaged.

Then we asked each insurer, based on their Asset-Lability management, Investment strategy and Risk management, to provide us with their thoughts regarding:

- Appropriateness of the four criteria,
- Equities they might elect as LTEIP,
- Coverage ratio impact,
- Additional purchase of equities in case the measure goes through.

With respect to the four LTEIP criteria:

a) **Management intention to hold the long-term equity investment portfolio even in stressed conditions**: a majority of insurers currently allocates a minimal portion of their investments to equities in accordance with a long-term strategy, and they would not face difficulties to write a policy stating such engagement; some others will have to adapt their policy because their model which calculates Best Estimate Liability on participating contracts may sell equities under unfavourable scenarios;

b) **Existence of long-term liabilities or own funds in excess**: all insurers interviewed consider they do hold long-term liabilities, notably under a going concern vision;

c) **Liquidity test**: although the 2 approaches featuring in the proposal need to be further developed in a quantitative way, most of the interviewees welcomed favourably the liquidity test. Based on the way the insurers match their assets and liabilities, and the allowance for taking into account bond sales and future premiums on existing contracts within the future cash flows, most of them were confident to pass the test if the scenario stresses are not too extreme. Two insurers noted that the existence of segregated funds could make the test more difficult to pass for such funds. Notably because of the liquidity test, almost all interviewees said they would not classify all their equities in LTEIP (see below) by prudence.

d) **Independent valuation of equities not listed in regulated markets nor traded in multilateral trading facilities, at least on an annual basis**: most interviewees think this criterion is not an obstacle. However, some of them worry that this request could be too costly and disincentive, depending on what adjective “independent” means exactly (please refer to previous section where we make a recommendation on this point).

With respect to quantitative impacts:

Interviewees appeared to be relatively cautious regarding the magnitude of the impacts, because they had only an oral information about the proposal, limited understanding of the liquidity test, and not enough time and/or resources to perform simulations.

Due to these caveats, the answers should be treated with caution. Nevertheless, the interviews reveal some consensus among insurers.

- Portion of equities to be elected as LTEIP
    - The answers from the interviewees cover a wide range of estimations, from 25% to 75% of their actual equity portfolio, with a majority at 50%.
- Coverage ratio impact
    - The interviewees said it was difficult to provide an exact quantitative impact without any simulation. Nevertheless, based on expert judgement, most of them think their coverage ratio could increase up to ten points, all other things being equal.
    - In the current calibration, equities have much higher shocks (39% or 49%) than other asset classes. As a result, selling equities and reinvesting in capital-light assets has an immediate effect to increase the coverage ratio. Hence applying a lower shock on LTEIP equities would have a contra-cyclical effect because insurers will be less tempted to sell their equities to protect their coverage ratio if a financial crisis occurs.
- Purchase of additional equities
    - The most frequent answer from interviewees is an increase of 20% of the percentage of equities held.
    - However, some other insurers were more prudent regarding the impact on their equities allocation notably because it is already high..
    - Other obstacles than SCR Equity were put forward by some insurers:
        - High volatility of equities reduces S2 Own funds on participating business
        - Accounting rules on French statutory accounts like "*Provision pour Risque d'Exigibilité*" and the impairment mechanism, associated with the minimum legal quote, reduces S2 Own funds and increase SCR; as long as these rules exist, investment in equities will be hindered;
        - IFRS 9 and 17 are going to increase volatility of the Net income in consolidated accounts; therefore, equities exposure will be constrained in the fear of undesired effects.
    - In addition, current low interest rates put pressure on revenues, which put constraints on assets allocation.

More broadly, the trade war raging on the world market, worries about the future of Europe (Brexit, Italy, elections uncertainty…), the risk of an increase in interest rates when quantitative easing ends, make insurers relatively cautious regarding investment in equities.

5-3 Estimate of impacts based on European public data

a. France

i. Calibration

First, we have focused on the French market to estimate the potential impacts of the introduction of equities LTEIP. For France, we rely upon the quantitative report available on the ACPR website via the link: https://bit.ly/2QUOhSC.

The table on the ACPR website provides, at the end of 2017, amount for total Own Funds and SCR, share of SCR relative to insurers applying Standard Formula, SCR by risk sub module expressed as percentage of the Standard Formula SCR. It provides as well the total amount of investments held by insurers, excluding Unit linked assets.

Then these public data have been completed by data from the SFCR of a few representative French insurers: the goal was to estimate the portion of equities in invested assets. We retain 10% as an average on the French market for life and non-life undertakings. We used the same source of information to determine the split between Type 1 and Type 2 equities, and obtained 75% for type 1 and 25% for type 2 equities.

Based on these data and the formula below, we estimate SCR Equity:

$$SCR_{equity} = \sqrt{\begin{array}{c} SCR_{equ1}^2 + 2.0{,}75.SCR_{equ1}.\left(SCR_{equ2} + SCR_{quinf} + SCR_{quinfc} + SCR_{lteip}\right) \\ +\left(SCR_{equ2} + SCR_{quinf} + SCR_{quinfc} + SCR_{lteip}\right)^2 \end{array}}$$

To reconcile with the SCR Equity derived from the public data featuring on the ACPR website, we found a factor related to absorption capacity equal to 10% (i.e. SCR net = SCR gross * (1-10%)). Considering that ACPR data cover the entire French insurance market (life, non-life, protection, reinsurance…), the average absorption capacity is logically lower than for life insurers. Moreover, we have not taken into account the strategic equities held by French insurers (as we did for Germany and Italy where they represent a significant part of equities) which would increase SCR equity and absorption capacity factor.

We assumed as well an adjustment for operational risk and applied a scaling factor of 2%. Results of this calibration exercise are presented below:

Calibration France	
Equity Loss Absoprtion Capacity	90%
Proxy Market	102%
Proxy Diversification & Op Risk	92%
Equity Risk	57 301 873 043
Market Risk	101 615 436 978
SCR	113 379 066 287
Own Funds	267 392 155 510
Coverage ratioCoverage ratio	236%

ii. Estimated impacts of LTEIP

Firstly, we simulate an allocation of equities in the new class LTEIP and estimate the impact on the coverage ratio. We assumed three levels of LTEIP: 25%, 50%, 75% of the total equity portfolio held by insurers.

The results are presented in the table below:

€ Million	Summary France							
	Scenario 0 - 0% LTEIP		Scenario 1 - 25 % LTEIP		Scenario 2 - 50 % LTEIP		Scenario 1 -75% LTEIP	
	Amount	Variation	Amount	Variation	Amount	Variation	Amount	Variation
Equity Risk	57 302	*0%*	50 466	*-12%*	44 076	*-23%*	38 357	*-33%*
Market Risk	101 615	*0%*	94 926	*-7%*	88 715	*-13%*	83 195	*-18%*
SCR	113 379	*0%*	107 520	*-5%*	102 110	*-10%*	97 331	*-14%*
Own Funds	267 392		267 392		267 392		267 392	
Coverage ratio	236%	*0,0%*	249%	*12,9%*	262%	*26,0%*	275%	*38,9%*

We note an increase in the coverage ratio due to the reduction of the shock applied on LTEIP equities to 22%. With respect to the average initial coverage ratio of French market of 236%, a classification of 50% of equities as LTEIP would increase the coverage ratio by 26 points (i.e. the coverage ratio would become 262%).

We note that the coverage ratio increase is much higher than the percentage emerging from the interviews, which was circa 10 points of coverage ratio. We consider that the difference can be explained by 2 potential main factors: the loss absorption capacity of interviewees is higher than the average of French insurers, because of participating contracts. That is why the impact on SCR of LTEIP for the interviewees is lower than for the market in average. Secondly, most of the interviewees have an allocation in equities lower than 10%, so the impact of LTEIP is lower than for the market in average.

Then, we estimate the increase of allocation in equities, which could result from the LTEIP measure. We determine the increase of the allocation in equities, compensated by an equivalent decrease of the allocation in other assets classes, so that the coverage ratio comes back to its initial level (236%). For the sake of prudence, we assume all equities will be increased in the same proportion, i.e. type 1, type 2, and LTEIP, in order not to distort the proportion of LTEIP with respect to other equities.

We retain for this calculation the case where the LTEIP contains 50% of total equity investments.

The results are presented in the table below:

Scenario 2 - 50 % LTEIP	Amount (€ bn)	Variation
Equity Risk	59	*2%*
Market Risk	102	*0%*
SCR	113	*0%*
Own Funds	267	
Coverage ratio	236%	*0%*
Equity Variation		33,2%
Other Investment Variation		-3,8%

We see that insurers could increase their allocation in equities by 33%, i.e. the allocation in equities with respect to their total assets would increase from 10% (assumption of our calibration) to 13,3%.

However, when a life insurer purchases more equities, its SCR increases but Own funds decrease at the same time because of the increase of Time Value of Options and Guarantees on participating contracts. This increase is due to the volatility of equities, which is much higher than the volatility of other assets. Loss Absorption capacity decreases as well as a side effect.

Therefore, we have re-performed our assessment assuming a decrease of 5% of Own funds caused by the increase of Time Value of Options and Guarantees.

This second leads to the results below:

Scenario 2 - 50 % LTEIP	Amount	Variation
Equity Risk	51	*-10%*
Market Risk	95	*-6%*
SCR	108	*-5%*
Own Funds	254	
Coverage ratio	236%	*0%*
Equity Variation		17 %
Other Investment Variation		-2%
Own Funds Variation		-5%

We see that the increase of equities allocation is now of 17%. If we assume a smaller decrease of 2,5% of Own funds, the increase in equity allocation would be 25%. We see then that our estimation is close to the estimation of 20% emerging from the interviews. Based on our estimations, it would represent an additional equity investment of circa 34 EUR bn.

iii. Summary for France

Based on the interviews, we conclude that:

- LTEIP could represent 50% of the equities held by insurers,
- Cover ratio could improve by 10 points, all other things being equal,
- Allocation in equities could improve by 20% (i.e. the percentage invested in equities with respect to the totals assets could increase from 7% to 8,4% for instance), which represents 34 EUR bn.

By using public data on the entire French market available on the ACPR website, we obtained higher results regarding improvement of the coverage ratio and increase in equities allocation. However, we rationalized these differences, in considering the specificities of the insurers we interviewed, who were mostly life insurers, holding a significant part of their liabilities in participating contracts.

These insurers will be the most concerned by the LTEIP measure, even if other French insurers (non-life, reinsurers, and medium or small size insurers) would be affected as well.

That is why we consider that a plausible estimation of the LTEIP impacts over the French market correspond to the lessons emerging from the interviews, which converges with the results of the approach relying on public data, accompanied by qualitative considerations as mentioned above.

b. The Netherlands

For The Netherlands, we followed the same approach as for France. Therefore, we will focus here on results and related analyses.

As for France, we simulated an allocation of equities in the new class LTEIP and estimated the impact on the coverage ratio. We assumed three levels of LTEIP: 25%, 50%, 75% of the total equity portfolio held by insurers (without participations).

The results are shown in the table below:

€ Million	Summary Netherlands							
	Scenario 0 - 0% LTEIP		Scenario 1 - 25 % LTEIP		Scenario 2 - 50 % LTEIP		Scenario 1 -75% LTEIP	
	Amount	Variation	Amount	Variation	Amount	Variation	Amount	Variation
Equity Risk	4 190	*0%*	3 690	*-12%*	3 223	*-23%*	2 805	*-33%*
Market Risk	11 467	*0%*	10 970	*-4%*	10 509	*-8%*	10 099	*-12%*
SCR	24 446	*0%*	23 995	*-2%*	23 581	*-4%*	23 218	*-5%*
Own Funds	44 765		44 765		44 765		44 765	
Coverage ratio	183%	*0,0%*	187%	*3,4%*	190%	*6,7%*	193%	*9,7%*

As expected, as the contributions of the SCR Equity to the SCR Market and as of the SCR Market to the total SCR are lower, the impact of the LTEIP measure is lower for Netherlands. In fact, the enhancement of S2 ratio is comprised between 0 and 10 points.

We think it can be explained by the following elements:

- Netherlands life insurance business is less driven by participating contracts than France. It results in a higher proportion of unit / index-linked products and of traditional life insurance products, for which either the Equity risk has no impact or the business is simply not driven by investment.

- Consequently, the asset allocation in equity (other than those related to unit / index-linked) is lower in the Netherlands than in France and therefore SCR Equity is less predominant within the SCR calculations.

Then, the same 2nd test has been performed to assess the additional equity investments it would represent to reach the same level of coverage ratio. Based on our estimation, this would allow for a relative additional investment of 36% in equity, which represents circa 5 EUR bn.

c. Germany

For Germany, we have followed the same approach as for France and the Netherlands. However, as a larger part of equity investments corresponds to strategic participation, the impact of participation has been included in the SCR Equity calculation, considering that they represent 40% of the total equity investments. This estimate is an average based on SFCR of few German insurers.

We have simulated an allocation of equities in the new class LTEIP and estimated the impact on the coverage ratio. We assumed three levels of LTEIP: 25%, 50%, 75% of the total equity portfolio held by insurers (without participations).

The results are presented in the table below:

€ Million	Summary Germany							
	Scenario 0 - 0% LTEIP		Scenario 1 - 25 % LTEIP		Scenario 2 - 50 % LTEIP		Scenario 1 -75% LTEIP	
	Amount	Variation	Amount	Variation	Amount	Variation	Amount	Variation
Equity Risk	33 248	*0%*	30 357 0	*-9%*	27 509	*-17%*	24 719	*-26%*
Market Risk	58 184	*0%*	55 367	*-5%*	52 607	*-10%*	49 918	*-14%*
SCR	69 267	*0%*	66 773	*-4%*	64 342	*-7%*	61 988	*-11%*
Own Funds	239 578		239 578		239 578		239 578	
Coverage ratio	346%	*0,0%*	359%	*12,9%*	372%	*26,5%*	386%	*40,6%*

We note a relatively strong impact on the Solvency II ratio, as it leads to an improvement of the Solvency II ratio by 41 points for an assumption of 75% LTEIP.

This should be regarded in relation to the initial average coverage ratio, which is 346%. Therefore, it is deemed more relevant to consider the impact on the SCR. In comparison with France, we observe a reduction of 7% for an assumption of 50% LTEIP. In comparison, the impact on SCR for France of the same test is a reduction of 10%.

This can be explained by the fact that Germany equity investments (without participations) are less important than in France. This leads to less material impact of the measure for Germany.

Then, the same second test has been performed to assess the additional equity investments it would represent to maintain the same level of coverage ratio. Based on our estimation, this would represent a relative additional investment of 30% in equity investments (besides strategic participation), which represents circa 21 EUR bn of investments.

d. Italy

The proportion of SCR coming from insurers using the Standard Formula is much lower than in France, Netherlands of Germany, barely one third of total SCR.

In Italy, as for Germany, a large part of equity investments corresponds to strategic participation. Considering that they represent 80% of the total equity investment, their impact has been included in the SCR Equity calculation. This estimation comes from an annual report published by ANIA[4] (Italian National Association of Insurance Companies).

In the next section, we will focus here on results and related analyses.

Estimated impacts of LTEIP for Italy

We have simulated an allocation of equities in the new class LTEIP and estimated the impact on the coverage ratio. We assumed three levels of LTEIP: 25%, 50%, 75% of the total equity portfolio held by insurers.

[4] http://www.ania.it/export/sites/default/it/pubblicazioni/rapporti-annuali/Assicurazione-Italiana/2017-2018/LASSICURAZIONE-ITALIANA-2017-2018.pdf

The results are presented in the table below:

€ Million	Summary Italy							
	Scenario 0 - 0% LTEIP		Scenario 1 - 25 % LTEIP		Scenario 2 - 50 % LTEIP		Scenario 1 -75% LTEIP	
	Amount	Variation	Amount	Variation	Amount	Variation	Amount	Variation
Equity Risk	4 142	*0%*	3 996	*-4%*	3 853	*-7%*	3 713	*-10%*
Market Risk	11 761	*0%*	11 618	*-1%*	11 478	*-2%*	11 342	*-4%*
SCR	16 767	*0%*	16 628	*-1%*	16 493	*-2%*	16 361	*-2%*
Own Funds	40 463		40 463		40 463		40 463	
Coverage ratio	241%	*0,0%*	243%	*2,0%*	245%	*4,0%*	247%	*6,0%*

As expected, due to the presence of strategic participations, which are already shocked at 22%, the impact of the LTEIP measure is low for Italy. In fact, the enhancement of S2 ratio is in the range from 0 to 6 points. The ratio improves only by 4 points for a 50% investment of LTEIP, compared to 26 points for France and 7 points for the NL.

This can be explained by the fact that Italy equity investments (without strategic participations) are less important than the studied scope. This leads to less material impact of the measure for Italy.

Then, the same 2nd test has been performed to assess the additional equity investments it would represent to reach the same level of coverage ratio. Based on our estimation, this would represent a relative additional investment of 8 % in equity investments, which represents roughly 3 EUR bn investments excluding strategic participations.

e. United Kingdom

The proportion of SCR coming from insurers using the Standard Formula is much lower than in France, Netherlands of Germany, barely one third of total SCR.

For the UK, data available was from the end of 2016. However, this data is deemed unreliable, because for SCR Market, the arithmetic sum of the percentages of SCR by market risk sub-modules is lower than the percentage of SCR Market risk module. Therefore, we were not able to rely upon this data for the study, conversely to France, Netherlands, Germany and Italy. Even if UK insurers holds 2800 EUR bn of assets (comparable amount to France), only one third of SCR comes from insurers under the Standard Formula.

Then the impact of LTEIP would be lower than in France or Germany.

6. Conclusions

The proposal put forward by the Dutch Ministry of Finance and the French Treasury Department to create a new asset class for Equities held in a long-term perspective would likely be favourable to the overall level of investment in equities by European Insurers applying the Standard Formula if the shock is reduced to 22% as envisaged in the project.

The four criteria governing this new class seem to be appropriate. However, we have the following recommendations:

- The proposed measure as it is currently drafted would need some clarifications. Indeed, some elements such as the definition of "long-term investments", "long-term liabilities" or "independent valuations" are subject to interpretation. This could lead to different local interpretations and applications, and therefore to a distortion of the level playing field within the European Union. A more precise definition of these concepts would facilitate the application of the proposed measure.
- The applicability and simplicity of the proposed measure could be further developed, especially with regards to the liquidity test. We conclude that a prescriptive definition of this test within the Delegated Acts would facilitate the potential application of the measure by a larger part of insurance and reinsurance undertakings and avoid a distortion of the level playing field within the European Union.

Regarding the potential impacts on Solvency 2 reporting and the magnitude of investment in equities, the work performed leads to the following estimation:

- LTEIP could represent 50% of the equities held by insurers,
- Coverage ratio could improve up to 10 points,
- Allocation in equities could improve up to 20%, representing circa 34 EUR bn.

France appears to be the country where the LTEIP measure would have the largest effect, given that French insurers hold the highest amount of assets within European countries, and the proportion of SCR based on the Standard Formula is among the highest in Europe.

For other European countries, it is much more difficult to assess the potential impact. The exercise performed in France has highlighted the fact that relying upon public data to estimate the LTEIP impacts could lead to potential distortions because the public data available at country level is not sufficiently granular and therefore request the use of simplified assumptions, which have a strong impact on the results. This being said, we obtain the following results for the Netherlands, Germany and Italy:

- In the Netherlands, where almost 80% of insurers use Standard Formula, we found the impact would be circa 5 EUR bn (assuming a constant coverage ratio).
- In Germany, we expect the impact of the measure to be slightly less material than in France, as equity investments (besides strategic participation) represent a lower proportion of the assets invested. However, the measure would still generate a potential benefit to equity investments, as it could lead to an additional purchase of circa 21 EUR bn.
- In Italy, less than 1/3 of the SCR results from the Standard Formula. Therefore, the LTEIP should have less impact, since the measure is not intended to benefit insurers using an Internal model, at least in the short term. We found that the LTEIP would represent a limited additional investment in equities of circa 3 EUR bn, due to the large investments in strategic participations which are already shocked at 22%.

In summary, for these 4 countries, (France, The Netherlands, Germany and Italy) the additional investment in equities might amount circa 63 EUR bn, which represents 1% of the total assets held.

For other European countries, including the United Kingdom for which public data on the PRA website were not operable, a similar percentage would lead to circa 50 EUR bn of additional investments in equity asset class.

Based on this approximate approach, the additional investment in equity could reach 113 EUR bn in Europe, representing 1% of total assets held by European insurers.

In conclusion, additional purchases of equities could be expected to be in the range of 50 and 100 EUR bn, while also allowing that other constraints than Solvency 2 (statutory or IFRS accounting rules, economic context…) could reduce this estimation. This range should be considered carefully, because of the approximations and the limitations of this preliminary study. To obtain a better evaluation of the potential impacts of LTEIP, further comprehensive studies should be done in each European country and taking into account the specificities of local insurance market.

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