
THE APPLICATION OF THE LIFE ILLUSTRATIONS MODEL REGULATION TO POLICIES WITH INDEX-BASED INTEREST SOLD AFTER [greater of 5 months after LATF adoption and 3 months after EX/Plenary Adoption*]

Background

The Life Insurance Illustrations Model Regulation (#582) was adopted by the NAIC in 1995. Since that time there has been continued evolution in product design, including the introduction of benefits that are tied to an external index or indices. Although these policies are subject to Model #582, not all of their features are explicitly referenced in the model, resulting in a lack of uniform practice in its implementation. In the absence of uniform guidance, two illustrations that use the same index and crediting method often illustrated different credited rates. The lack of uniformity can be confusing to potential buyers and can cause uncertainty among illustration actuaries when certifying compliance with Model #582.

This guideline provides uniform guidance for policies with index-based interest. In particular, this guideline:

1. Provides guidance in determining the maximum crediting rate for the illustrated scale and the earned interest rate for the disciplined current scale.
2. Limits the policy loan leverage shown in an illustration.
3. Requires additional consumer information (side-by-side illustration and additional disclosures) that will aid in consumer understanding.

Text

1. Effective Date

This Actuarial Guideline shall be effective as follows for all new business and in force illustrations on policies sold on or after [greater of 5 months after LATF adoption and 3 months after EX/Plenary Adoption].

i. Sections 4 and 5 shall be effective for all new business and in force life insurance illustrations on policies sold on or after September 1, 2015.

ii. Effective March 1, 2017, Section 4 and Section 5 shall be effective for all in-force life insurance illustrations on policies within the scope of this actuarial guideline, regardless of the date the policy was sold.

iii. Sections 6 and 7 shall be effective for all new business and in force life insurance illustrations on policies sold on or after March 1, 2016.

2. Scope

This Actuarial Guideline shall apply to any life insurance illustration that meets both (i) and (ii), below:

i. The policy is subject to Model #582.

ii. Interest credits are linked to an external index or indices.

ii. The policy offers Indexed Credits.
3. Definitions

A. **Alternate Scale**: A scale of non-guaranteed elements currently being illustrated such that:

i. The credited rate for each Index Account does not exceed the lesser of the maximum credited rate for the illustrated scale less 100 basis points and the credited rate for the Fixed Account. If the insurer does not offer a Fixed Account with the illustrated policy, the credited rate for each Index Account shall not exceed the average of the maximum credited rate for the illustrated scale and the guaranteed credited rate for that account. However, the credited rate for each Index Account shall never be less than the guaranteed credited rate for that account. The total Indexed Credits illustrated as a percentage of the account value in each Indexed Account does not exceed the maximum total Annualized Percentage Rate of Indexed Credits for the illustrated scale for each Index Account determined in accordance with 4(B) and 4(C), but with the multiple of 120% specified in 4(B) replaced by a multiple of 100%.

ii. If the illustration includes a loan, the illustrated rate credited to the loan balance does not exceed the illustrated loan charge. Policy Loan Interest Credit Rate shall not exceed the illustrated loan charge, Policy Loan Interest Rate. For example, if the illustrated Policy Loan Interest Rate is 4%, the Policy Loan Interest Credited Rate shall not exceed 4%.

iii. All other non-guaranteed elements are equal to the non-guaranteed elements for the illustrated scale.

B. **Annual Net Investment Earnings Rate**: Gross portfolio annual earnings rate of the general account assets (excluding hedges for Indexed Credits), less provisions for investment expenses and default cost, allocated to support the policy. Charges of any kind cannot be used to increase the Annual Net Investment Earnings Rate.

C. **Annualized Percentage Rate of Indexed Credits**: The annualized total Indexed Credits divided by the account value used to determine index credits according to the policy features.

B-D. **Benchmark Index Account**: An Index Account with the following features:

i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)

ii. An annual cap is used in the interest calculation.

iii. The annual floor used in the interest calculation shall be 0%.

iv. The participation rate used in the interest calculation shall be 100%.

v. Interest is credited once per year.

vi. Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy’s Index Accounts, subject to the requirements of 5.D., however, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account.

vii. Additional amounts credited are not less than the additional amounts credited for any corresponding Index Accounts within the policy in any policy year. Any rate calculated in 4 (B) shall not apply for an Index Account if the additional amounts credited for the applicable Benchmark Index Account are less than the additional amounts credited for that Index Account in any policy year. Additional amounts
include all credits that increase policy values, including but not limited to experience refunds or bonuses, that are not linked to an index or indices.

viii. There are no limitations on the portion of account value allocated to the account.

C.E. **Fixed Account**: An account where the credited rate is not tied to an external index or indices there are no Indexed Credits.

F. **Index Account**: An account where some or all of the amount credited are Indexed Credits.

G. Indexed Credits: Any interest credit, multiplier, factor, bonus, charge reduction, or other enhancement to policy values that is linked to an index or indices. Any additional amounts credited to the policy resulting from an annual floor on an Index Account are included.

H. Hedge Budget: For each Index Account, the total annualized amount assumed to be used to generate the Indexed Credits of the account, expressed as a percent of the account value in the Index Account. This total annualized amount should be consistent with the hedging program of the company.

I. Loan Balance: Any outstanding policy loan and loan interest, as defined in the policy.

J. Policy Loan Interest Rate: The current annual interest rate as defined in the policy that is charged on any Loan Balance. This does not include any other policy charges.

D.K. Policy Loan Interest Credited Rate: The annual interest rate is tied to an external index or indices. credited that applies to the portion of the account value backing the Loan Balance, as defined in the policy.

i. For the portion of the account value in the Fixed Account that is backing the Loan Balance, the Policy Loan Interest Credited Rate is the applicable annual interest crediting rate, as defined in the policy.

ii. For the portion of the account value in the Fixed Account that is backing the Loan Balance that is in an Index Account, the Policy Loan Interest Credited Rate is the total percentage rate of Indexed Credits for that account, as defined in the policy.

4. Illustrated Scale

The credited rate total Annualized Percentage Rate of Indexed Credits for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter ending with the 25-year period that ends on 12/31 of the prior calendar year. Calculate the value of the replicating option trades to provide the total Indexed Credits for the Benchmark Index Account over the preceding calendar year, based on the Black-Scholes formula using the following inputs calculated on each trading day:

i. Average closing implied volatility for 12-month S&P 500 call options

ii. Average closing implied volatility for out-of-the-money 12-month S&P 500 call options with a normalized strike price equal to the currently declared cap

iii. Average dividend yield on the S&P 500

iv. Average 12-month LIBOR or another appropriate interest rate measure

v. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).
If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypoethical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

B. For each applicable Benchmark Index Account, the total Indexed Credits illustrated as a percentage of the account value in the Index Account shall not exceed 120% of the minimum of (i) and (ii):

iii. the value calculated in 4 (A) the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.

ii. the greater of 5% and the Annual Net Investment Earnings Rate.

C. For any other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall Account that is not the Benchmark Index Account in 3 (D), the total Indexed Credits illustrated as a percentage of the account value in the Index Account shall not exceed the minimum of (i) and (ii):

i. The maximum Indexed Credits for the Benchmark Index Account calculated in 4 (B).

B.ii. Total Indexed Credits that reflect the fundamental characteristics of the Index Account as related to the Black-Scholes valuation formula, including realized volatility, implied volatility, volatility targets (if applicable), embedded fees (if applicable), deduction of an interest rate component (if applicable), dividend participation (if applicable) and any other factors that may apply. The illustration actuary shall use actuarial judgement to determine this value using Black Scholes methodology in a manner consistent with 4(A) and 4(B) where appropriate. and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4(B).

D. At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).

5. Disciplined Current Scale
   The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for index-based interest Indexed Credits, the assumed earned interest rate underlying the disciplined current scale for the policy, inclusive of all general account assets, both hedge and non-hedge assets, that support the policy, net of default costs and investment expenses (including the amount spent to generate the Indexed Credits of the policy) shall not exceed 445:

i. the Annual Net Investment Earnings Rate, plus

ii. 45% of the Hedge Budget minus any annual floor. net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding

These amounts should be adjusted for timing differences to ensure that fixed interest is not earned on the hedge cost. The assumed return on hedges for index-based credits) allocated to support shall only be used in the disciplined current scale testing to support the illustrated Index Credits in the policy.

Guidance Note: The above approach does not stipulate any required methodology as long as it produces a consistent limit on the assumed earned interest rate underlying the disciplined current scale.
A-B. If an insurer does not engage in a hedging program for index-based interest Indexed Credits, the assumed earned interest rate underlying the disciplined current scale shall not exceed the annual net investment earnings rate of the general account assets allocated to support the policy Annual Net Investment Earnings Rate.

B-C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all illustrated benefits including any illustrated bonuses that impact the policy’s account value.

C-D. If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582, subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.

6. Policy Loans

If the illustration includes a loan, the illustrated rate credited to the loan balance Policy Loan Interest Credited Rate shall not exceed the illustrated loan charge Policy Loan Interest Rate by more than 100 basis points. For example, if the illustrated Policy Loan Interest Rate is 4%, the Policy Loan Interest Credited Rate shall not exceed 5%.

7. Additional Standards

The basic illustration shall also include the following:

A. A ledger using the Alternate Scale shall be shown alongside the ledger using the illustrated scale with equal prominence.

B. A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).

C-B. For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical interest rates Indexed Credits using current index parameters for the most recent 20-year period.