August 11, 2015

Fred Anderson
Chair
Indexed Universal Life Illustration Subgroup
National Association of Insurance Commissioners

Co/ Reggie Mazyck: rmazyck@naic.org

Dear Fred,

Per your request, the Life Illustrations Work Group of the American Academy of Actuaries[1] has prepared the attached paper for the National Association of Insurance Commissioners (NAIC) Life Actuarial Task Force (LATF) Indexed Universal Life (IUL) Illustration Subgroup. This paper describes bonus structures that may be available for various life products. It also discusses the illustration Disciplined Current Scale (DCS) supportability testing for life insurance products subject to the NAIC Life Insurance Illustrations Model Regulation (Model), including IUL products that are within the scope of Actuarial Guideline XLIX (AG 49) as well as other life insurance products that are outside the scope of AG 49.

This is an educational paper. Accordingly, statements should not be construed as supporting any particular position or product design. In addition, statements may not cover all possible features or practices as noted throughout this paper.

If you have any questions, please contact Academy's Life Policy Analyst, Scot Davies, at davies@actuary.org.

Sincerely,

Linda Rodway, FSA, MAAA
Chairperson
Illustrations Work Group
American Academy of Actuaries

[1]The American Academy of Actuaries is an 18,500+ member professional association whose mission is to serve the public and the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

TYPES OF BONUSES

Terminology*	Description
Interest bonus	Bonus may be expressed as a percent of the interest credit (e.g., interest credit is increased 10%) or as an additional x basis points (e.g., interest credited is increased 50 bps)
Account value bonus	Bonus expressed as a percent of the account value (e.g., 0.10% AV bonus)
Persistency bonus	Bonus applies in later years (e.g., policy years 11+); may be expressed as an interest bonus or an account value bonus
Premium bonus	Bonus expressed as a percent of premium paid (e.g., 4% of premium)
Cash bonus	Bonus paid to policyholder in cash rather than applied to policy values
Guaranteed bonus	Bonus contractually promised to policyholder
Nonguaranteed bonus	Bonus not contractually promised to policyholder

*Terminology can differ between insurers. Other types of bonuses are possible.

SOURCES OF BONUS FUNDING

Bonuses can be funded by one source or multiple sources, regardless of the bonus type.

Source	Description
Policy charges (UL, IUL), higher premium (whole life)	Policy charges (such as cost of insurance (COI) or expense charges) or premiums/dividend modifications in the case of whole life, are set at a level to support mortality costs, expense costs, bonus payments, etc.
Investment strategy	Modify investment strategy to increase yield
Existing "option budget"	In years where the bonus applies, the option budget is used to support both the interest credit and the bonus
Favorable experience refund	If claims and/or expenses are lower than expected, a refund may be paid in the form of a nonguaranteed bonus
Other	Any combination of the above or other sources are possible

EXAMPLE

Company X designs a traditional UL policy with the following:

- Current investment return: 5%
- Current pricing spread: 1%
- Expected crediting rate: 5% – 1% = 4%

If Company X wants to add a 50 basis point interest bonus in years 10+, Company X could:

- Increase policy charges to pay for the 50 basis point bonus
- Reduce interest crediting rates in years 1-10
- Change investment strategy to increase investment return
- Any combination of the above or other options are available

ILLUSTRATION BASICS

Model Concepts

Illustrated Scale: The scale of nonguaranteed elements being illustrated; cannot exceed the lesser of the currently payable scale and the disciplined current scale.
Currently Payable Scale: A scale of nonguaranteed elements currently in effect for a policy.
Disciplined Current Scale (DCS): A scale of nonguaranteed elements based on actual recent experience:

- Must reflect a minimum expense assumption
- Cannot assume any projected improvements
- Certified annually by the illustration actuary.

DCS Testing

Goal: Accumulated cash flows ≥ the policy's cash surrender value in years 15+ (20+ for second-to-die policies).

Accumulated cash flows $_t$	=	Accumulated cash flows $_{t-1}$	plus	Cash in Premium Investment income incl. hedge payoffs	minus	Cash out Policy benefits Expenses/commissions Taxes

An illustrated policy must pass two tests: [2]
1. The **self-support test** ensures the accumulated, illustrated "cash in" is sufficient to support both the illustrated "cash out" and the illustrated policy cash value.

- Assumes DCS.

2. The **lapse-support test** limits illustrated values that are heavily subsidized by policyholder lapse assumptions.

- Assumes 100% persistency assumption in years 6+; otherwise assumes DCS.

The illustration actuary must perform DCS testing in accordance with ASOP 24.

[2] Note: Policies that can never develop nonforfeiture values are exempt from the lapse-support test.

TESTING DEMONSTRATION

The following demonstration shows a hypothetical DCS test for two hypothetical policies: Policy A (no bonus) and Policy B (bonus in years 10+). All other policy features and experience assumptions are assumed to be the same for both policies. Notes:

- Policy B has a higher cash value due to the bonus.
- The DCS test is only applicable in years 15+ (for single life policy).
- Policy B fails DCS test in years 24+ because the cash value exceeds the accumulated cash flows (i.e., the policy is not supportable).

Policy A: No bonus

Policy Year	Prem	Inv Inc	Bonus	Benefits	Exp	Tax	CV	ACF	ACF≥CV
5	2,000	84		200	45	80	9,500	1,759	
10	1,548	488	0%	243	39	80	12,756	10,256	
15	1,197	888	0%	295	21	80	16,786	18,640	PASS
16	1,138	969	0%	306	19	80	17,733	20,342	PASS
17	1,081	1,050	0%	318	16	80	18,734	22,058	PASS
18	1,027	1,133	0%	331	14	80	19,792	23,793	PASS
19	975	1,217	0%	344	12	80	20,909	25,548	PASS
20	927	1,301	0%	358	11	80	22,089	27,327	PASS
21	880	1,387	0%	372	10	80	23,335	29,134	PASS
22	836	1,475	0%	386	8	81	24,652	30,969	PASS
23	794	1,564	0%	402	7	82	26,044	32,836	PASS
24	755	1,654	0%	418	6	83	27,514	34,738	PASS
25	717	1,747	0%	434	6	84	29,067	36,678	PASS

Policy B: 0.50% bonus in years 10+

Policy Year	Prem	Inv Inc	Bonus	Benefits	Exp	Tax	CV	ACF	ACF≥CV
5	2,000	84		200	45	80	9,500	1,759	
10	1,548	488	0.50%	243	39	80	12,814	10,256	
15	1,197	888	0.50%	295	21	80	17,249	18,640	PASS
16	1,138	969	0.50%	306	19	80	18,679	20,342	PASS
17	1,081	1,050	0.50%	318	16	80	20,227	22,058	PASS
18	1,027	1,133	0.50%	331	14	80	21,904	23,793	PASS
19	975	1,217	0.50%	344	12	80	23,720	25,548	PASS
20	927	1,301	0.50%	358	11	80	25,687	27,327	PASS
21	880	1,387	0.50%	372	10	80	27,816	29,134	PASS
22	836	1,475	0.50%	386	8	81	30,122	30,969	PASS
23	794	1,564	0.50%	402	7	82	32,619	32,836	PASS
24	755	1,654	0.50%	418	6	83	35,323	34,738	FAIL
25	717	1,747	0.50%	434	6	84	38,251	36,678	FAIL

EXAMPLE **continued**

Assume Company X chooses to increase policy charges to support the 50 basis point bonus for their traditional UL policy, and then performs DCS testing.

- If policy PASSES DCS testing – Company X can illustrate policy at 4% in years 1-10, 4.50% in years 11+
- If policy FAILS DCS testing – Company X must find additional ways to either increase the accumulated cash flows or decrease the illustrated cash value, such as:
    - Further increasing policy charges
    - Reducing interest crediting rates in years 1-10
    - Modifying investment strategy to increase yield
    - Reducing bonus
    - Combination of the above and/or other product changes

IUL AND AG 49

- Section 4 of AG 49 limits the illustrated credited rate for IUL illustrations.
    - An illustrated credited rate limit also exists for traditional UL illustrations.
- Section 5 of AG 49 limits the earned interest rate assumption used in DCS testing.
    - Limits the hedge payoff assumption ("cash in") and thus limits the assumed benefit payments ("cash out" and/or cash value).
    - Investment return limits do not exist for whole life or traditional UL illustrations.
- Bonuses are inherently limited by DCS testing, but are not explicitly limited by Section 4 of AG 49.

CONCLUSIONS

- A bonus is a policy element similar to other elements in the policy (e.g., policy charges and credited rates).
- Bonus funding may come from a variety of sources, so it should not be assumed that a hedge is the source of an IUL bonus.
- All policy features and benefits are captured in DCS testing, so an illustration can only show a bonus that passes DCS testing and is compliant with current regulations.
- A traditional UL policy may illustrate a bonus so long as the policy form passes the applicable DCS tests. AG 49 parallels this approach for IUL policies since there is no explicit bonus limit in Section 4.