Introduction

ULMaster is a system for calculating reserves for fixed and flexible premium universal life and variable universal life policies. Single, first-to-die, and survivorship policy forms are supported. Statutory, minimum, and tax reserve valuations can be run simultaneously.

Universal Life Model Regulation

The UL Model Regulation is used to calculate CRVM (Commissioner's Reserve Valuation Method) reserves for modern Universal Life policies. The method requires us to:

1. Calculate a Guaranteed Maturity Premium (GMP). This is the premium that, if paid from issue to maturity, would result in a fund value at the maturity date equal to the maturity benefit coded for the plan (based on the policy fund guarantees).

2. Determine the guaranteed death benefits. These are the monthly death benefits that would be provided if the GMP were paid at the beginning of each modal period. The fund that develops at the end of each month is the Guaranteed Maturity Fund (GMF).

3. Compute present values. The present values of the valuation premiums and the guaranteed death benefits are calculated using annual mortality and interest discount.

4. Calculate alpha and beta CRVM net premiums such that the present value of net premiums equals the present value of benefits.

5. Calculate the r-factor. This is the ratio of the actual fund value on the valuation date to the GMF at the valuation date. If this ratio is greater than 1, it is set equal to one.

6. Calculate future benefits. A pattern of future benefits was developed when calculating the GMP and the GMF. If the r-factor is less than 1, this pattern of death benefits will be used for calculating the reserve. If the r-factor equals 1, a new pattern of death benefits must be computed using the account value at the valuation date as the starting fund value. The reprojected fund value will be based on all at-issue and post-issue guarantees and will recognize the appropriate corridor to satisfy the 7702 compliance.

7. Calculate the present value of future premiums and the present value of future benefits based on the appropriate valuation interest and mortality assumptions.

8. Compute the reserve as the r-factor times the difference of the present value of future benefits and the present value of future premiums. When calculating Alternate Minimum Reserves, the valuation premium shall be equal to the lesser of the valuation premiums calculated using minimum valuation assumptions and the GMP.

Defining Product Guarantees and Valuation Assumptions in ULMaster

ULMaster allows the user to define: Guaranteed benefits (including benefit and premium periods and patterns), premium type (including options for fixed and flexible premiums), and death benefit options (level death benefit, level net amount at risk, etc.).

The calculation of Statutory Reserves for Universal Life requires the accurate projection of future fund values and cash values which reflect all product guarantees. In addition to providing great flexibility with regard to the specification of policy loads, ULMaster provides support for the following product features:

1. Alternate Issue Date logic for policy loads, surrender charges, and/or guar/stat/tax interest;

2. Guaranteed Interest Bonuses;

3. Guaranteed Persistency Bonuses;

4. Minimum Death Benefits for Variable Universal Life;

5. Secondary Guaranteed Death Benefits;

6. Equity Indexed Interest Crediting;

7. At-issue credited interest and COI guarantees;

8. Post-issue credited interest and COI guarantees;

9. Death Benefit Corridor calculations (TEFRA, DEFRA Guideline Premium, DEFRA Cash Value Accumulation Test, custom).

Select/ultimate and aggregate mortality types are supported by sex and rating category.

ULMaster uses a card index system to link the multiple plan descriptions. For example, all plans can be linked to a single set of tax interest and mortality rates.

Using the System

ULMaster includes extensive audit functions to test and show the details of all reserve calculations. The user can cross check all tables and parameters before the valuation is run to confirm that the coding is properly linked. The system produces error and warning reports. These can be read online or printed out.

All or part of the system coding can be printed for review. Each requested entry has a context sensitive help command available replicating the hard copy user's guide. Documentation is complete including all formulas used in the system.

Inputs to ULMaster

There are two sources of input to ULMaster: the plan assumption coding defined within the ULMaster screen system and the Valuation Master File (VMF).

The product guarantees and valuation parameters themselves are contained in several files which can all be coded in the ULMaster screen system. Any number of plans can be defined. All the information that varies by plan, but not at the individual policy level, is coded in the screens.

Policy level information is reflected in the VMF. The VMF is a file which contains one base policy record ("00" record) for each policy in force. Some specialized policy types require more than one record to describe the plan.

An extract program creates the VMF from your administrative system. The extract program is unique for each user and may be written by you or by PolySystems, Inc. The VMF contains all the information that ULMaster needs to decide what parameters to use to value each policy. It also contains any information that varies at the policy level, such as the issue age and the amount of the fund on the valuation date.

ULMaster accommodates a wide variety of interest guarantees and surrender charges which are tied to premium payments by taking advantage of the VMF flexible record design and special coding "switches" within the ULMaster system. The Valuation Master File (VMF) is specially formatted to handle the needs of each particular client. Multiple record types are used to capture special product related information.