Question and Commentary regarding application of VM-20 mortality to business issued under an Accelerated Underwriting program

American Academy of Actuaries' Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group ("Joint Committee") Accelerated Underwriting Subgroup

November 2017

The American Academy of Actuaries is a 19000+ 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.

The Society of Actuaries (SOA) is an educational, research and professional organization dedicated to serving the public, its members and its candidates. The SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal problems. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

Mary J. Bahna-Nolan, MAAA, FSA, CERA, Chairperson, Joint Committee

Lauren M. Cross, MAAA, FSA, Co-Chairperson, AUW Subgroup
Matthew A. Monson, MAAA, FSA, Co-Chairpoerson, AUW Subgroup

Albert A. Abalo, MAAA, FSA, CERA
Frederick J. Anderson, MAAA, FSA
Tony R. Litterer, MAAA, FSA
Mark C. Massey, MAAA, FSA
Constance S. Nicklien, MAAA, FSA, CERA
Armand M. de Paolo, MAAA, FSA
Ryan A. Reimers, MAAA, ASA
Karen K. Rudolph, MAAA, FSA
Mark A. Sayre, FSA, CERA
Benjamin Slutsker, MAAA, FS

VM-20 Accelerated Underwriting Question & Commentary

Many U.S. life insurance companies find themselves in an era of changing and evolving underwriting methodologies in contrast to the stable techniques or requirements employed in recent decades. These changes may be motivated by a number of factors, including, but not limited to, taking advantage of new technology or data sources, improving the customer experience during the underwriting process, or reducing acquisition costs. VM-20 may not have specifically contemplated the emergence of these new underwriting methodologies in its drafting. As such, the American Academy of Actuaries' Life Experience Committee and SOA Preferred Mortality Project Oversight Group ("Joint Committee") developed this Question & Commentary which identifies some references and considerations that may be useful to a practitioner determining reserves for life insurance policies where Accelerated Underwriting methods were used.

The valuation actuary may also find it helpful to consult the definitions for different categories of underwriting methods, as proposed by the GI/SI/AUW definitions sub-group of the Joint Committee: INSERT LINK once finalized]

Credibility and Mortality Segments Related to Accelerated Underwriting

References[1]

VM-20: Requirements for Principle-Based Reserves for Life Products Sections 1.C, 9.C.1, 9.C.2.b, 9.C.4.b
VM-31 PBR Actuarial Report Requirements for Business Subject to a Principle-Based Valuation Section 3.D.3

Question #1

Can different mortality segments, such as different risk classes, products, and genders, be combined for the purposes of calculating credibility?

Commentary

VM-20 Sections 1.C.9 and 9.C.1 define and prescribe use of mortality segments. VM-20 Section 9.C.2.d provides guidance on aggregation and subdivision of mortality segments. Mortality segments, such as for different risk classes, products, genders, underwriting methods, or product distribution practices, may be combined for credibility purposes if the experience associated with these mortality segments is aggregated for the purpose of determining mortality assumptions. Aggregation of experience between mortality segments must comply with VM-20 Section 9.C.2.d. and VM-31 Section 3.D.3.b on disclosures for aggregating experience across mortality segments and VM-31 Section 3.D.3.f on disclosures related to credibility method and level.

[1] VM References are to the 2017 Valuation Manual, NAIC Adoptions Through August 29, 2016.

Question #2
Can mortality experience from different policy forms be combined in the same mortality segment?

Commentary
VM-20 Sections 9.C.2.d and 9.C.4.b allow experience from different policy forms to be combined under certain circumstances related to the relationship of the expected mortality among lives within each mortality segment and between different mortality segments. VM-31 Section 3.D.3 requires disclosure of mortality assumptions in the PBR Actuarial Report, specifying that actuaries should consider whether polices in the same mortality segment follow similar marketing and distribution practices. Possible examples of aggregating mortality include:

- Policy Forms from Different Issue Years – Combining experience for term business using a policy form issued in 2017-2018 with experience for term business using a policy form issued in 2019-2020.

- Policy Forms with the same Underwriting Requirements – Combining mortality experience associated with a term policy form with experience associated with a universal life policy form with the same underwriting requirements.

Mortality Margins Related to Accelerated Underwriting

References
VM-20: Requirements for Principle-Based Reserves for Life Products Sections 9.A.6, 9.C.2, and 9.C.5.
VM-31 PBR Actuarial Report Requirements for Business Subject to a Principle-Based Valuation Section 3.D.3

Question #1
A company underwrites a group of policies using both traditional and new accelerated underwriting methods. The new underwriting method was introduced recently and is designed to result in risk class assignments that are similar to the traditional method. Retrospective studies of inforce policies that were issued using traditional underwriting found the new method reproduces risk selection outcomes to within a targeted threshold.

The company establishes its anticipated mortality experience assumption using sound actuarial judgment for the group of policies by relying on relevant and credible company experience that includes the policies underwritten using traditional methods. The company has designed the new underwriting method with the objective of reproducing traditional methods' results and has tested the outcome.

For a group of such policies that is valued using VM-20, is the company allowed to base the anticipated mortality experience and credibility of the policies that use the new underwriting method on the larger group of policies?

Commentary

VM-20 Section 9.A.6 has general assumption requirements for a company to use its own experience, if relevant and credible, to establish an anticipated experience assumption for any risk factor. VM-20 Section 9.A provides guidance for use of other company experience in situations where data is not relevant or credible and the use of industry data, as appropriate. VM-20 Section 9.C.2.b provides guidance on what constitutes company experience data.

In the situation described above, the mortality assumption for policies subject to VM-20 has been established using sound actuarial judgment. If when using studies and the most relevant data available, the actuary has determined the inforce policy block's experience to be the best predictor of the mortality risk for the policies issued using the new underwriting method, then compliance with VM-20 is satisfied for the current reporting period.

Question #2

What amount of additional margin, if any, would be required per the language of VM-20 Section 9.C.5.d?

Commentary

VM-20 Section 9.C.5.d anticipates an additional margin, as appropriate, if a company is relying on new risk selection techniques, such as the predictive value of experience under its traditional underwriting program. VM-31 Section 3.D.3 would require disclosure in the PBR Actuarial Report of judgment used in determining the amount and form of any additional 9.C.5.d.iii margin, including when no additional margin is added.

The margin may be level or could decrease by duration from its initial level. The margin may be set as a percentage increase to the underlying mortality rate (i.e., "added to" the prescribed margin) or set as a percentage increase to the prescribed margin (i.e., "scaling up" the prescribed margin). The margin may vary by other characteristics of the policy, such as issue age, risk class, and/or policy size. The margin may vary by the characteristics of the new underwriting method which are intended to mitigate excessive mortality risks.

Emerging experience under the new underwriting method will be recognized in future reporting periods in proportion to its credibility within the larger group of policies in the mortality segment.

Rationale and Support Related to Accelerated Underwriting

References

VM-20: Requirements for Principle-Based Reserves for Life Products, Section 9.C

VM-31: PBR Actuarial Report Requirements for Business Subject to a Principle-Based Reserve Valuation, Section 3.D.3.

Question

What rationale and support are needed for a company to adjust experience data for emerging accelerated underwriting techniques when setting prudent estimate mortality assumptions?

Commentary

Consider a new accelerated underwriting program that has not built a critical mass of inforce policies. There may be no actual company experience for the book of business within the accelerated underwriting segment, as referred to by VM-20 Section 9.C.2.b.i.

However, VM-20 Sections 9.C.2.b.ii and iii permit the use of experience from other books of business within the company with similar underwriting as well as experience data from other appropriate sources. As examples, the other book of business may be the company's inforce block of traditionally underwritten policies that were issued without medical tests, or traditionally underwritten policies with similar underwriting and expected mortality experience characteristics. These would be the alternative data sources the company could use to develop company experience assumption for the accelerated underwriting mortality segment. In this example, the company considers the traditionally underwritten book of business to be a mortality segment separate from the accelerated underwritten book of business.

The details around the specific requirements for documenting the supporting rationale for the company's mortality assumption when an alternative data source is used can be found in VM-31 Section 3.D.3.d.

VM-31 Section 3.D.3.d addresses documentation requirements when a company uses a data source as the basis for the company's experience mortality for the accelerated underwriting mortality segment and is summarized below.

i. The company must describe the data source and why this data source is deemed relevant and appropriate. A description of the development of the mortality rates for the data source must be included.

ii. The company must fully describe the similarities and differences between the data source and the mortality segment. For example, a listing of all the considerations that would be used in a traditionally underwritten, non-medical issue versus those used in the accelerated underwriting approach, as well as similarities or differences in target markets, face amounts and distribution channels, for example. Charting these out side-by-side is an organized way to provide a meaningful comparison.

iii. The company must detail any adjustments made to the experience mortality to account for the differences between the mortality segment and the data source. An example would be adjustments made in early policy durations to account for potential anti-selection by smoking risks if the accelerated underwriting program relies on self-reporting for smoking habit.

iv. For the data source, the company must provide the number of deaths and death claim amounts by major grouping and including: age, gender, risk class, policy duration and other relevant information. For example, face amount bands may be a grouping that is relevant for the data source experience to be considered comparable to the accelerated underwriting assumption.

Decision Making Process for Accelerated Underwriting

References

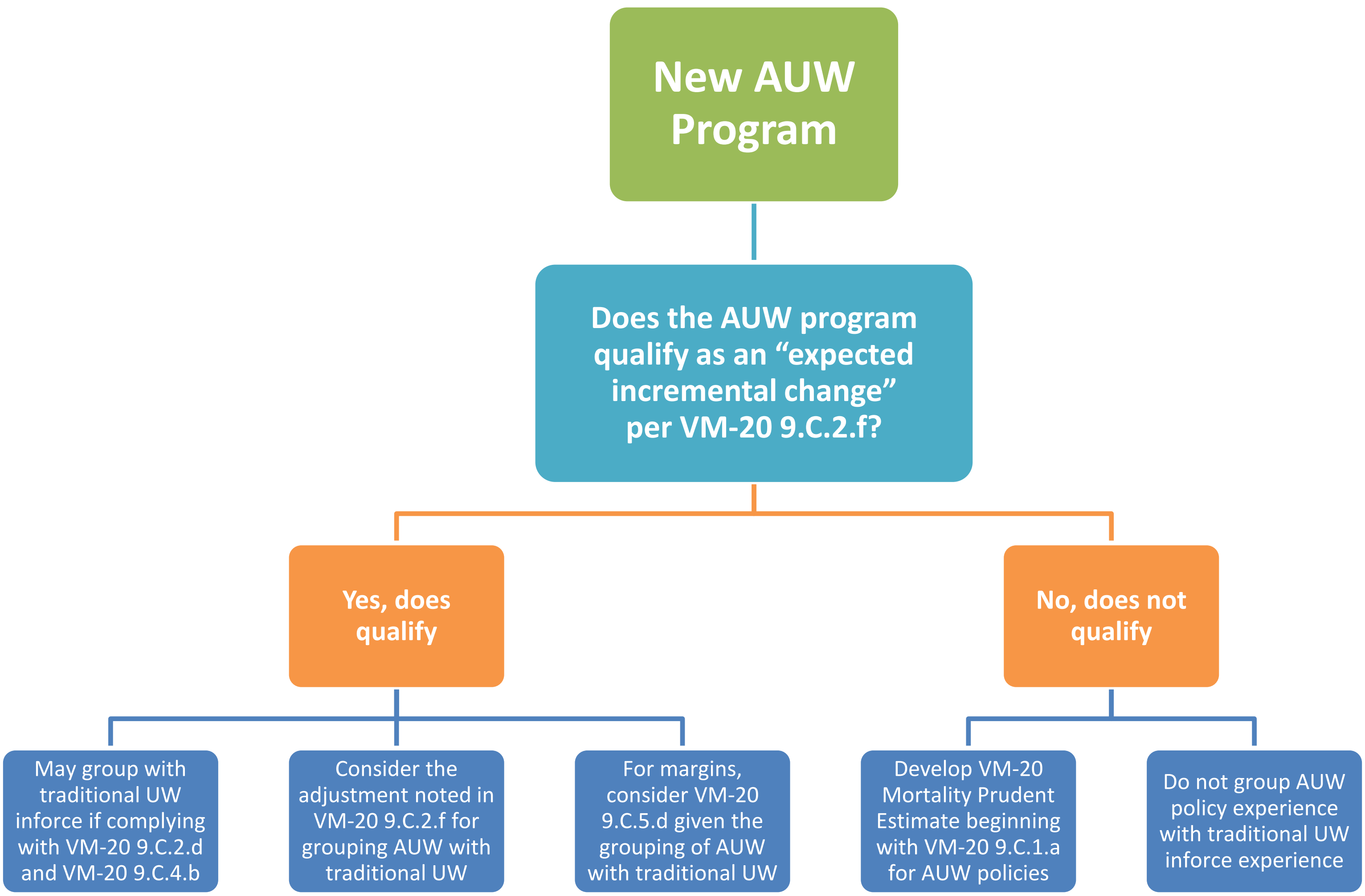
VM-20: Requirements for Principle-Based Reserves for Life Products, Section 9.C

Question

Upon the introduction of a new accelerated underwriting program, how might an actuary go about making decisions for the PBR treatment of the associated mortality assumptions?

Commentary

For an example on how to make decisions for treating accelerated underwriting (AUW) programs for PBR valuation, please see the following decision tree:



When determining whether the accelerated underwriting program qualifies as an expected incremental change, refer to the guidance in VM-20, Section 9.C.2.f, which specifically mentions the adoption of risk selection and underwriting practices different from those underlying the company experience data. Also note that the valuation manual requires actuaries using such an approach to meet two criteria: (1) The adjustments are supported by published studies; and (2) The rationale and support for such an action is disclosed in the PBR Actuarial Report.

One additional consideration is that the guidance note in VM-20, Section 9.C.2.f states “It is anticipated that the adjustment described in 9.C.2.f to experience will rarely be made.” Therefore, companies should be aware of this statement and the expectations of state regulators regarding underwriting adjustments when developing the VM-20 prudent estimate mortality assumption.

Use of RR Tool for Application of Preferred Class Discounts or Loads to Applicable Industry Mortality Tables

Reference

VM-20: Requirements for Principle-Based Reserves for Life Products Sections 9.C.3

Question

Does the underwriting criteria scoring (UCS) procedure promoted by VM-20 accommodate accelerated underwriting programs? Are there any alternatives to direct use of UCS tool to identify the appropriate RR Table form of an accelerated underwriting program that offers preferred classes?

Commentary

No, the UCS procedure will not accommodate most accelerated underwriting programs (or, at least, not directly).

Per Sections 9.C.3.c and 9.C.3.d of VM-20, the underwriting criteria scoring tool may be used to score every risk class in a preferred risk class structure in order to determine the industry basic relative risk table that can serve as industry experience rates. These rates are used when company experience data is limited or not available, as well as when grading from company experience to industry experience mortality.

As the tool relies on quantifiable (e.g., blood pressure, cholesterol) medical information collected by traditional underwriting methods, it is not directly applicable to most accelerated underwriting programs that have eliminated some of the more invasive, expensive, and time-consuming aspects of traditional underwriting.

In cases when direct use of the UCS tool may not be suitable, VM-20 allows for use of alternative methods. No further guidance is provided other than such methods must be actuarially sound. If an alternative risk scoring methodology is used, Section 9.3.C.e of VM-20 states: “the company shall document the analysis performed to demonstrate the applicability of the chosen method and resulting choice in tables and reasons why the results using the Underwriting Criteria Scoring Tool may not be suitable.”

To the extent a proprietary methodology relies in some way on medical information and can be translated to the UCS tool, VM-20 allows the company to take risk factors into account which are not considered by the tool by adjusting the industry tables up or down two tables from that determined by the application of the underwriting criteria scoring procedures.

Further adjustments to reflect risk characteristics not captured by the underwriting scoring criteria tool may be allowed upon approval by the commissioner.

Considerations for these adjustments may include:

- Some aspects of mortality level expected or experienced may be unrelated to underwriting (e.g., Distribution Channel, Market, type of product, premium structure)

- Accelerated underwriting programs may rely on new data sources to determine whether an applicant is eligible for acceleration, or if the applicant is upgraded or downgraded to a different class. Data "cut points" may differ by product and would most certainly vary by company. Hence, a standardized method is likely unviable. Examples of new data sources that may be utilized in an accelerated underwriting program include:
    - Credit Scoring
    - Prescription Data Scoring
    - Diagnostic or Clinical Lab Scoring
    - Electronic Health Records
    - Inspection Scoring (criminal history, bankruptcies, etc.)

- Many companies have performed "blind" retrospective studies to understand the mortality impact of accelerated underwriting programs. Acquiring this type of data may help to address the value of the new data sources.