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ISSUE BRIEF
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Risk Classification in Voluntary Individual Disability Income and Long-Term Care Insurance

Risk classification helps maintain the financial soundness of the voluntary individual disability income and long-term care insurance markets. This paper was prepared by the American Academy of Actuaries' Task Force on Genetic Testing Issues to help policymakers and the public better understand the risk classification process in these markets. Among the key points examined in this paper:

- *To avoid insolvency, insurers must charge adequate premiums to pay policyholder claims.*
- *Risk classification groups together individuals with similar levels of risk and expected costs, and permits insurers to charge an adequate premium.*
- *If individuals purchase insurance on the basis of health information that is unknown to the insurer, adverse selection results. Adverse selection means that healthier people subsidize the less healthy, which tends to drive healthier people from the insurance system, leading to higher average costs. Ultimately, if enough healthy individuals leave the system, it may lead to insurer insolvency.*
- *Advances in technology and research continually reveal new information that helps insurers better classify risks. Banning the use of such information could lead to higher costs and reduced access to individual insurance than might otherwise be expected.*

The American Academy of Actuaries is the public policy organization for actuaries of all specialties within the United States. In addition to setting qualification standards and standards of actuarial practice, a major purpose of the Academy is to act as the public information organization for the profession. Academy committees regularly prepare testimony for Congress, provide information to congressional staff and senior federal policymakers, comment on proposed federal regulations, and work closely with state officials on issues related to insurance.

This issue brief was prepared by the Academy Task Force on Genetic Testing Issues, which educates legislators and regulators about actuarial aspects of genetic testing, its use by disability income and long-term care insurers, and related actuarial issues important to an understanding of the potential impact of genetic technology on the private insurance system. This issue brief is intended to provide an overview of how health information is currently used in the voluntary individual disability income and long-term care insurance markets. The issue brief's sole purpose is to assist the public policy process through the presentation of clear, objective analysis.

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Risk selection and risk classification, commonly known as "underwriting," play an important role in most private insurance systems, but are often poorly understood outside the insurance industry. As scientists decode the human genetic structure, the links between serious medical conditions and specific genes are becoming better understood. This new information can pose a challenge to insurers, because the cost of providing insurance depends at least in part on the health of their policyholders. Consumers are concerned that insurers may deny them insurance or even cancel an existing policy if they become seriously ill, or if medical tests reveal an increased likelihood of future illness. Policymakers are concerned about the availability and cost of insurance, as well as the number of Americans who may lack needed insurance protection.

Information on a specific individual's health or medical condition is not used to determine eligibility for most employer sponsored and government sponsored insurance programs.[1] However, it is often used in voluntary, individual insurance markets where people must decide whether to purchase coverage based on the relationship of the premium they must pay to the benefit payments they expect to receive.[2]

This monograph is intended to help elected officials, regulators, and the general public better understand the role that risk classification plays in the voluntary individual disability income and long-term care insurance markets.

Introduction

This issue brief discusses risk selection and risk classification for two distinct types of insurance: disability income (DI) and long-term care (LTC) insurance. Disability income insurance protects earned income against potential loss due to disabling injury or illness.[3] Long-term care insurance protects against the cost of needed long-term care services, which may encompass a wide array of medical, social and/or personal care services required by an individual with a chronic illness or disability.[4] Combining these products for the purposes of this discussion is appropriate, because they both involve long-term commitments on the part of insurance companies to pay money to their policyholders if and when they suffer illnesses that either render them incapable of working (DI) or require them to receive long-term assistance with the day-to-day activities of living (LTC).

A DI or LTC insurance policy represents a significant promise, a promise that can extend for decades. To fulfill their promises to pay future claims, insurers selling these products must remain financially healthy over a long period of time. The financial health of an insurer depends on administrative efficiency, sound investment strategy, continued marketplace competitiveness and premium rates that correspond to the amount of money that they will have to pay their policyholders.

In order to remain competitive and attract new policyholders, insurers must strive to offer their policies to the public at the lowest possible price. However, insurers must also ensure that the premiums they charge pro-

[1]The situation is more complex for long-term care insurance than for most other forms of health insurance. Most employer-sponsored long-term care insurance is offered on a voluntary basis, where the employer sponsors the program and provides payroll deduction, but the employee pays the entire premium. Coverage is typically offered to active employees, and sometimes their spouses, under a limited form of "guaranteed issue" provision. Eligibility for a minimum face amount of coverage is guaranteed to all active employees who would not immediately be eligible for benefits. When group coverage is not offered on a guaranteed issue basis,streamlined underwriting is generally provided. Coverage is often offered to the parents of employees also, but on an underwritten basis.

[2]Some states prohibit insurers from using health information in the pricing of individual medical expense insurance. These restrictions do not apply to individual disability income and long-term care insurance.

[3]The asset protected is the future earnings capacity of the insured individual. An insured event is the medical loss of the *capacity* to work, not the loss of the *opportunity* to work due to economic restructuring, family obligations, or lack of marketable skills. Benefits are typically expressed as a dollar amount of monthly or weekly income, or as a percentage of pre-disability income.

[4]There are a variety of approaches to designing long-term care benefits. The most common test for benefit eligibility is based on the inability to perform more than a specified number of activities of daily living (ADLs), which are objective and correlate well with the need for care. Most policies also provide benefits for individuals who need care due to cognitive impairment, including cognitive impairment alongside ADLs as a separate test for benefit eligibility. Perhaps the most important defining characteristic of long-term care services is that they provide assistance with everyday activities in order to help an individual maintain as much independence as possible. Services may be provided at home, in the community, in an assisted-living facility, or in a nursing home. Benefits are generally a fixed dollar amount per diem, or a percentage reimbursement of actual charges up to a fixed dollar amount limit per day.

vide an adequate income to allow them to cover claims as they become due and accumulate sufficient funds to remain financially sound. Companies that offer policies at rates that are too high will find that they cannot sell enough policies to cover their outlays (including not only benefit payments, but also the expenses associated with product development, marketing, and administration, many of which are fixed). Companies that offer policies at rates that are too low will find that their assets are insufficient to pay claims and expenses as they arise, and they run the risk of becoming insolvent over time. Establishing premiums that are neither too low nor too high requires the ability to reliably project the level of future claims.

In order to set premium rates, an insurer must project the likelihood and timing of claims by its policyholders as accurately as possible. To make these projections, insurers rely on actuaries who use principles of probability and statistics, expertise in finance and economics, mathematical reasoning, and detailed studies of historical claim patterns to determine appropriate risk classifications when policies are sold, premiums are charged, and reserves are set aside to pay claims.[5] These elements compose the backbone of a financially sound insurance organization.

Underwriting

The process of determining what rates to charge people with different risk characteristics (or whether to deny coverage entirely to some people) is *underwriting*. Underwriting for LTC and DI is done to ensure that the terms and conditions of the policy in conjunction with the premiums charged are consistent with the risk to be insured. The insurer seeks to maximize premium income by accepting as many applicants as possible at premium rates that correspond to the risks presented. Each applicant brings a distinct set of risk characteristics to the common pool. To maintain equity individuals should contribute an amount that is commensurate with the likelihood of receiving benefits and the expected amount of benefit payments that they will receive under the terms of the policy.

The first step in underwriting is called *risk selection*. This is the process through which insurers decide whether to accept the risk of insuring individual applicants, or whether to deny them coverage. Since insurers generally want to sell as much as possible they accept as many risks as they can.[6] The second step in underwriting is to place the accepted applicants into groups with roughly equivalent levels of risk. This process is termed *risk classification*.

Actuaries help underwriters classify risks by weighing various characteristics that show a clear relationship to cost. For example, insurance data may show that an individual with a specific type of diabetes is more likely to become disabled and unable to work (DI), or to require long-term care (LTC), and will therefore, all other things being equal, cost more to insure than an individual without the condition. Such data often come from actuarial studies on disability incidence rates and durations and the frequency with which individuals need long-term care services. Of course, actuaries are not restricted to these studies. Relevant information from clinical experience, expert opinion on medical advances, and data from other reliable sources also are considered. Experts such as physicians and clinical researchers also participate in determining risk classification.

Actuaries who determine risk classifications follow the principles of their profession's standards of practice. Actuarial Standard of Practice Number 12, Concerning Risk Classification, states that risk classification systems should accurately reflect the cost of a given risk characteristic, be applied objectively and consistently, be administratively practical, and be cost-effective and responsive to change. These principles ensure that insurance premiums are comparable for individuals with similar risk status at the time the insurance is purchased. This is known as *financial equity*. They also require that classifications be modified to reflect advances in diagnosis and treatment. For instance, coronary conditions and high blood pressure usually can be underwritten far more liberally today than fifteen years ago. It is important to note that actuaries do not assert a cause-and-effect rela-

[5] Reserves are necessary because premiums for these products are generally level over the lifetime of the policy, even though benefit costs tend to rise with age. As a result, a portion of the premium must be set aside during the early years of the policy to help pay benefits during the later years when the level premiums will be inadequate to cover all of the claims and expenses associated with the policy.

[6] There may be financial and organizational limits, such as access to capital and the ability to effectively manage a large organization, on both the sustainable rate of growth and ultimate size of an insurer.

tionship between each risk characteristic and a specific individual's future claims. Rather, risk characteristics are chosen so that collectively they have a material effect on the aggregate claim costs of a group of similarly situated policyholders. This standard of practice also explicitly recognizes that there may be legal constraints on the risk characteristics that may be considered in a particular risk classification system, and imposes on the actuary a professional obligation to comply with any such constraints.

Once an individual accepts insurance within a risk classification, they remain in that group so long as they keep the policy in force.[7]

Adverse Selection in the Individual Market

Individual voluntary insurance differs from group insurance in several ways. (Very small groups, such as those with two or three members, can exhibit many of the same characteristics as individual purchasers.) Individual insurance premiums usually are paid for by the person insured, while employers typically pay at least part of the premium under group policies.Employer-sponsored LTC insurance is an exception; it is often provided on a voluntary, employee-pay-all basis. Individual applicants can use far more discretion and control over which policy to buy and when to buy it than participants in group insurance plans. Usually, individual insurance contracts are required to continue as long as premiums are paid while group insurance often expires upon termination of employment or group membership. Again, LTC insurance is unusual in that it provides for continuation of coverage or conversion to an individual policy. These provisions, along with the fact that the individual insured bears the entire cost, give voluntary LTC coverage some of the same characteristics as individual coverage.

Individual applicants may choose the timing and (within limits) the amount of their insurance purchase, as well as benefits and types of plans. This discretionary power permits applicants to make decisions that favor themselves at the expense of the insurance program, and thus ultimately the other pool participants. When viewed from the standpoint of the insurance program, this phenomenon is known as *antiselection* or *adverse selection*. For this reason, information about each applicant must be collected for individual policies, whereas group underwriting largely relies on information about the group as a whole. (Because voluntary LTC coverage is in many respects similar to individually purchased LTC insurance, information about individual applicants may be relevant. Voluntary coverage is typically offered to active employees,and sometimes their spouses,under a limited form of "guaranteed issue" provision. Eligibility for a minimum face amount of coverage is guaranteed to all active employees who would not immediately be eligible for benefits. When group coverage is not offered on a guaranteed issue basis,streamlined underwriting is generally provided. Coverage is often offered to the parents of employees also, but on an underwritten basis.)

What, exactly, is adverse selection? Simply put, it is the financial advantage that applicants gain by making decisions based on risk characteristics known or suspected by them but unknown to the insurer. People tend to make financial decisions that are in their own best financial interest. Consequently, people who apply for individual voluntary insurance are not a randomly selected group. It is possible that the decision to buy insurance is motivated by knowledge of the presence of or susceptibility to a particular health condition, unknown to the insurer. This inequality of knowledge makes adverse selection possible.

Adverse selection is not necessarily an intentional deception on the part of the consumer. It can also occur if the insurer fails to inquire about a health condition, is prohibited from doing so, or is limited in the degree to which that information can be reflected in the premium.

If applicants are allowed to make financial decisions that select against the insurance program, then the cost of insurance for all policyholders may rise. In effect, this is requiring policyholders with lower expected costs to unfairly subsidize those with higher expected costs. Ultimately, the financial solvency of the program, and in a private market the continued presence of insurers offering coverage to the public, could be threatened.

To ensure that an applicant's premium cost is commensurate with his or her level of risk and to limit the chance of adverse selection,insurers ask detailed questions of applicants for individual coverage. Characteristics considered include age, sex, medical history, and current physical condition. Behavioral risk factors such as

[7] A relatively small number of DI policies may be sold where the insurer has the right to revise (or cancel) the risk grouping after issue. This is always disclosed during the application process.

smoking or high-risk avocations are also considered. For DI, the type of job performed is a particularly important underwriting consideration, both due to its impact on the likelihood of injury or illness and because the requirements of the position determine the impact that any particular impairment will have on an individual's ability to continue working at that job. (A given physical limitation may have no impact on the ability to perform some jobs, but may completely preclude someone from performing other jobs.) Similarly, marital status strongly influences the likelihood that an individual will need to receive long-term care services from outside the family. Based on information relating personal characteristics to the cost of insurance, companies establish different premiums for different classes of risks.

Why is risk classification so important in voluntary individual insurance, given that the large majority of applicants are healthy and pose no special risks? The answer is that in the absence of risk classification, a complex interaction of factors would occur to make insurance less affordable.

Suppose that each person in the United States simultaneously applied for the same amount of DI or LTC coverage. Also imagine that no underwriting were allowed, meaning that otherwise substandard or uninsurable individuals would receive coverage. In this case the premium for the average person would rise, as they would have to pick up the costs of those who would otherwise be substandard or uninsurable. Because the market is voluntary, and no one is required to purchase coverage, rising prices would most likely lead to changes in buying patterns. High-risk individuals would tend to buy more than the average amount and individuals with low risk would tend to purchase less coverage, or not buy any coverage at all, because the higher price would no longer seem commensurate with the risk. The resulting increase in the proportion of high-risk individuals would further increase the required premiums, which would drive even more low-risk participants away. This pattern of price increases causing lower-cost individuals to purchase less insurance or no insurance at all, leading to still higher prices, could ultimately cause premium costs to approach the amount of the benefit to be paid.

It is important to note that the opportunity for adverse selection arises from an imbalance in the information available to the consumer and the insurer. A problem is created when information available to the applicant is not also made available to the insurer. If adverse selection, and the resulting implicit subsidies, are to be avoided in a voluntary system, it is important that a level playing field be maintained between the buyer and the seller, which requires that pertinent information be shared equally between the two. To ensure that an applicant's level of premium cost is commensurate with the applicant's level of expected claims and to limit the chance of adverse selection, insurers ask detailed questions of applicants for individual DI and LTC insurance.

The Current Roster of Risk Factors

Over the years,insurers have become better able to pinpoint factors that correlate with the costs of insuring their policyholders.

Medical history is important for both LTC and DI insurance, but is not the only factor considered. Many disabilities arise from nonmedical factors. Loss of independence may arise from illness, accident, or the aging process. Key risk factors for LTC coverage include marital status, self-reported health status, and whether the applicant, even if very old,still has an active and healthy lifestyle. Similarly, because the ability to return to work depends heavily on the occupation involved, occupation has a direct link to the cost of DI insurance. The relationship between the level of benefits provided and the pre-disability income also has a direct affect on the cost of disability income protection. Consequently, extensive "financial" underwriting may be required to verify the earnings history of applicants for individual policies. Also, the anticipated financial future (e.g., compensation and employment levels) of an occupation can impact the incidence and duration of disabilities. It is important that the amount of disability insurance provided (adjusted for taxes) does not exceed the applicant's income, because that would tend to eliminate any incentive for the insured to return to work.

Each insurer must decide which combination of risk factors to include in determining premiums and coverage availability. After applicants are classified according to the basic criteria of age, sex, smoking behavior, (and for DI, occupation,) an insurer must evaluate those applicants whose expected costs exceed its established range for standard risks. It should be noted that, while almost any medical condition will be examined as part of the underwriting process, not all conditions will have an impact on the risk of disability or the likely need for long-term care services. As a result, not all medical conditions will affect the availability or cost of coverage. The goal of the underwriter is to accept all applicants who meet a minimum level of health.

Medical condition is one of the more significant factors considered by insurers in classifying risk. Medical factors are particularly important when evaluating the applications of older individuals, who are more likely to be in poor health. In the typical underwriting process, the underwriter is expected to consolidate all of an applicant's medical conditions (which may vary in severity, symptoms, and treatment) in order to evaluate the applicant's overall level of risk. Individuals whose characteristics place them in the standard-risk category according to age provide the benchmark by which the costs of substandard risks are measured.

The benchmark group may be thought of as establishing a base rate of 100 percent. For instance, an applicant might have a particular heart condition that increases costs by 50 percent on average. Other factors, such as regular exercise, a healthy diet, or a history of not smoking, may be expected to reduce future costs by 10 percent. In that case, the applicant's expected costs would be 140 percent of those for a standard risk individual, and they would typically be offered a policy with a higher, substandard premium rate. Individuals with very high expected-cost levels may be considered uninsurable. With DI policies, waivers that would exclude coverage for certain disabling conditions are often used as a tool to extend coverage to otherwise uninsurable individuals,and to make coverage more affordable for substandard risks. A waiver is a legal agreement between the insurer and the insured, which is added to an insurance policy and excludes claims arising from a specified hazard, most often a pre-existing physical condition, from coverage under the policy. Waivers are not generally used with LTC policies. Because both DI and LTC insurance are generally considered somewhat discretionary, the use of substandard rating is limited. Consumers will simply forgo coverage if the price is too high.

The exact underwriting methodology, of course, will vary from insurer to insurer. To determine risk factors, insurers will request an applicant's medical history and may require an examination that includes measurement of height, weight, blood pressure, and pulse; laboratory tests of blood and urine; and in some cases an electrocardiogram and chest X-ray. Attending physician's statements and questions on the application for insurance also provide useful medical information. This information helps insurers properly estimate the applicant's expected costs. It should be noted that some of the conditions that increase costs for DI differ from those that increase costs for LTC. For instance, lower-back injuries are common causes of disability for working individuals, while Alzheimer's disease is of particular concern for LTC carriers.

Summary

Risk selection and risk classification taken together form the empirical process of grouping together individuals with similar risk levels into categories and using those categories to estimate the expected claim costs under an individual insurance policy. From this process, premiums are calculated for each category of applicants that are commensurate with the expected claim costs of those applicants. The more precisely applicants are categorized (consistent with objectivity, administrative practicality, and cost-effectiveness), the more precise and financially equitable will be the premium costs for each participant in the insurance program.

Financial equity (premiums that are commensurate with the likely level of benefits received) is important in voluntary individual insurance systems because people decide whether to participate in the system based on their own economic circumstances. Any subsidy tends to bias enrollment by encouraging greater participation among those benefiting from the subsidy, and in the case of an internal subsidy (requiring some market partic-

ipants to pay higher premiums so that others can pay less) discouraging participation among those implicitly providing the subsidy. This results in higher average claim costs,and thus higher average premiums for the system as a whole. In extreme cases this may result in premiums that continue to spiral upwards.

Actuaries consider underwriting and risk classification vitally important for insurers and consumers alike. For consumers, underwriting keeps premiums low for the majority of applicants and protects the insurer's ability to deliver payment when needed. Policyholders count on fulfillment of the insurance promise to protect their finances in the case of disability or need for long term care services. For the insurer, screening and classification of risks protects solvency by allowing premiums to be set at a level commensurate with those risks and helps keep voluntary coverage affordable. To offer this protection at a price that attracts the greatest number of consumers, DI and LTC insurers must be financially healthy and able to market coverage to new applicants whose risk characteristics have been accurately reported. Substandard risks who do not reveal relevant information when applying for coverage at standard rates may be unfairly subsidized by the rest of the insurance buying public.

Over the years, advances in technology and research have introduced new risk factors, such as smoking behavior, into the underwriting process. As research into the human genetic structure continues to reveal links between specific genes and serious medical conditions,insurers face a dilemma regarding the use of genetic testing results. At present,the complexity and expense of genetic tests make premature the widespread use of genetic testing in underwriting, but as more people gain information about their health status through genetic tests, insurers could find adverse selection an increasingly costly problem. Particularly troublesome is legislation, proposed in some jurisdictions, that would prohibit insurers from requiring applicants to disclose the results of any genetic tests that they might have had performed in the past. Insurance can only work when insurers and applicants have equal knowledge of all significant underwriting factors.

The risk characteristics used in underwriting voluntary individual disability income and long-term care insurance will continue to be a matter of concern to both the insurance industry and general public. Balancing the twin needs of access and affordability in a voluntary insurance market will provide policymakers and insurers with an ongoing challenge.

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