A Primer on Long Term Care Insurance

Introduction

If you have read my papers, you might notice a common theme. I often write about the aging population in the United States. This paper will be no different as I will be discussing long term care and why long term care ("LTC") needs are expected to increase as our population ages. I will specifically be focusing on long term care insurance. LTC insurance policies provide payments to individuals once they become eligible for LTC services. These services can be provided in a wide array of settings such as nursing homes, assisted living facilities, continuing care retirements communities or even at home.

Long term care is an emerging issue in the United States because of the aging population. Health generally worsens with age which means the need for LTC services increases. With age, people generally become frailer, are more prone to accidents or may experience cognitive decline. In general, an individual qualifies for long term care if a physician certifies that the individual cannot perform at least 2 of the 6 activities of daily living ("ADL's") or if the individual is deemed to have significant cognitive impairment (Brown & Finklestein, 2009). The 6 activities of daily living are as follows; 1) Eating 2) Bathing 3) Toileting 4) Dressing 5) Transferring (ability to get in and out of a bed/chair/wheelchair/etc. and ability to walk without assistance) 6) Continuance (capability to maintain bladder function and control) (Edemekong et al, 2019).

The rate at which people go on claim and start receiving LTC insurance benefits is referred to as the incidence rate. The incidence rate is a measure of morbidity. Morbidity is the rate at which people are diagnosed with medical conditions (Merriam-Webster Dictionary). Morbidity differs from mortality in that morbidity is subjective whereas death is binary. However, like mortality, morbidity increases with age. This is problematic for the US considering the aforementioned aging population. Currently, roughly 17.5% of the population is older than 65 years old and this proportion is projected to increase to 21.6% in 2043 per the Congressional Budget Office's ("CBO") 2022 projections (CBO, 2022).

Incidence rates will generally increase with age and this curve appears to be steep. The Society of Actuaries ("SOA") periodically publishes reports of industry data about LTC incidence rates. In the SOA's 2018 LTC report, researchers assessed LTC incidence rates overtime from 2000-2010. The 2010 annual incidence rate for 60–69-year-olds was about 0.15% (Morton & Donato, 2018). For 80–89-year-olds, incidence was significantly higher at just below 4% (Morton & Donato, 2018). If you go to 90–99-year-olds, the incidence rate for this age group stood at around 9% (Morton & Donato, 2018). This means 9% of people 90 to 99 years old can be expected to receive LTC insurance benefits in a given year. Incidence rates do not just vary with age and will vary based on policy provisions, adjudication (process of validating claims), geography, demographics and other factors.

LTC insurance has been a major failure for the private sector insurance market. This is because it was mispriced meaning the premiums were not adequate to cover LTC insurance benefits and other expenses related to administering the policy. This led to LTC insurers seeking rate increases from regulators which in turn caused Long Term Care to become very expensive and

now it is mainly a product for people of upper middle class socioeconomic status or higher (Nordman, et al, 2016). Medicaid (and to a limited extent Medicare) provide LTC benefits as well (Brown & Finklestein, 2009). However, the drawback is retirees may need to impoverish themselves in order to qualify for Medicaid's asset requirements (Brown & Finklestein, 2009).

Paying for LTC services out of pocket is not cheap either. The table below summarizes the US annual national average cost of care by site of care[1]. As discussed, the quantity of people needing LTC coverage will increase as the population ages which in turn will increase the demand for LTC services in the future.

Table 1: Average Annual Cost by Setting

Setting	Annual Cost
Homemaker Services	$59,484
Homemaker Health Aide	$61,776
Adult Day Health Care	$20,280
ALF - Private, One Bedroom	$54,000
NH - Semi-Private Room	$94,896
NH - Private Room	$108,408

Source: Genworth. (2021). Cost of long term care by state: Cost of care report. https://www.genworth.com/aging-and-you/finances/cost-of-care.html

Policy Features of LTC Insurance

Long term care policies provide monthly benefits to policyholders receiving LTC services. In this section I will describe the various policy provisions typically attached to long term care insurance policies. Features include reimbursement provisions, inflation protection, benefit periods, elimination periods and site of care provisions. This list is by no means exhaustive. In general, there are two types of LTC payment options; full reimbursement or indemnity. Reimbursement pays the billed amount of LTC claims up to a specified maximum. Indemnity on the other hand pays out a predetermined amount regardless of the billed amount. Reimbursement policies requires more adjudication[2] and monitoring as insurance companies need to verify that they are paying valid amounts for legitimate conditions (i.e. 2 of 6 ADL's or cognitive impairment). Indemnity policies on the other hand, require less administration since only the eligibility needs to be verified. In theory, an individual could profit off indemnity policies if the cost of care is less than their LTC payment. However, from the insurance company's perspective this type of policy introduces less uncertainty[3].

Some LTC insurance policies provide inflation protection. This inflation protection is designed to increase the benefit amount each year to keep up with cost of care inflation. Per the Northern American Insurance Commissioner's ("NAIC") Long-Term Care Insurance Model Regulation of 1993, the NAIC specifies that the company must offer inflation protection and must offer an option that exceeds 5% compound interest (NAIC Model Law # 641). This act was further cemented by Section 325 of the Health Insurance Portability and Accountability Act of 1996

[1] Note that these amounts can vary drastically by geographic location
[2] Adjudication is the process by which insurance companies validate reported claims
[3] By paying a pre-specified amount, insurance companies are less exposed to volatility in the cost of care

(HIPPA, 1996) which stated insurance companies must offer inflation protection at least as protective as 5% compound inflation in order for their LTC policies to be considered tax qualified. In general, inflation can accrue using either simple inflation (if the policyholder chooses simple inflation) or compound inflation[4]. This law was established in 1996 when treasury rates were around 6-7% (US Department of the Treasury). However, as interest rates declined, companies were unable to yield enough return to cover annual increases in benefits. Long Term Care policies tend to have high liability duration (much greater than the asset duration) due to the long nature of morbidity. Inflation coverage increases reinvestment risk further by extending liability duration[5].

The benefit period represents the maximum number of payments that the insurance company will distribute to the policyholder. If the benefit period is 3 years than the company will typically pay the policyholders a maximum of 36 payments (assuming monthly payments). The benefit period typically ranges from 3 years to unlimited (referred to as lifetime). As the LTC industry has matured, longer benefit periods have become less common due to the associated risk with longer benefit periods[6] (Nordman, et al., 2016).

Most LTC policies have a waiting period called an elimination period. After a policyholder becomes eligible for payments, they do not generally receive payments right away. They generally must satisfy an elimination period (typically 90 days) prior to receiving payments (Skwire, et al., 2021). This elimination period gives the insurance company time to adjudicate/verify claims (Skwire, et al., 2021). In essence, the insurance company's adjudication team must validate that the policyholder satisfies the benefit triggers specified in the contract (i.e., 2 of 6 ADLs or significant cognitive impairment).

Long term care policies generally specify what types of care can be reimbursed. LTC services can be provided in nursing homes, assisted living facilities, or at home. The mechanics of LTC payments by setting will be specified in the contract. There has been a trend to providing LTC services at home (commonly referred to as "aging in place") as many Americans prefer to stay in their homes to preserve their independence through retirement.

The Private LTC Insurance Industry

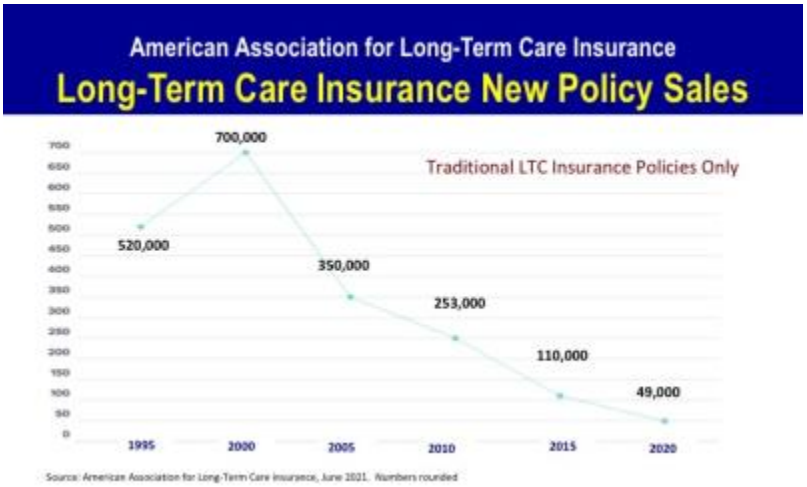
Long Term Care Insurance is arguably one the largest failures in the US insurance industry. As such sales have plummeted in the first part of the 21st century. The graph below is a screenshot from the American Association of Long-Term Care Insurance that highlights the decline of annual sales from 1995 to 2020. This decline in sales is driven in two parts. The first being many insurers have exited the market and no longer sell LTC insurance. The amount of insurance carriers offering LTC insurance has declined from 100 in 2004 to around 12 in 2020 per the NAIC (NAIC, 2023). The second part is driven by the fact that LTC insurance has become very

[4] Simple: Inflated Benefit(t) = Initial Benefit x (1 + 5% * t). Compound: Inflated Benefit(t) = Initial Benefit x $(1 + 5\%)^t$

[5] See Modified Duration Derivation in Appendix, essentially inflation weights later time period cash flows in the duration formula higher.

[6] Increased investment risk and termination rate risk

expensive. As such LTC has generally become a policy for people of upper-middle class socio-economic statuses (Nordman, E., et al., 2016).



Source: American Association for Long Term Care Insurance. (2022). Long-Term Care Insurance Facts - Data - Statistics - 2021 Reports. https://www.aaltci.org/long-term-care-insurance/learning-center/ltcfacts-2021.php#sales1995-2020

LTC policies have also been subject to rate increases. In a rate increase, the insurance company asks state regulators for permission to increase premium rates on existing LTC policyholders to correct future expected unprofitability. These rate increases are allowed per the contract but may come as a surprise to policyholders. Rate increases are naturally viewed negatively by policyholders. Rate increases can make LTC insurance unaffordable for some and these people may be forced to lapse[7] their coverage. Further rate increases can lead to anti-selection. By implementing a rate increase, relatively healthy policyholders who may not need LTC services may be more likely to forgo the rate increase and lapse their coverage. This will lead to unhealthy policyholders keeping their policies which will hurt insurance company profitability. This phenomenon is referred to as an anti-selection spiral (Bluhm & Leida, 2015).

LTC insurers experienced significant losses after selling these policies and were faced with two choices; exit the LTC insurance market or drastically increase prices. Insurers experienced losses because of several factors. The three main factors are lower than expected interest rates, lower than expected claim termination rates and lower than expected lapse rates. Long Term Care is required to hold significant reserves since there is a large mismatch between premiums and projected LTC claims.[8] Fixed income assets are used to back these reserves. These fixed income assets earn interest and when interest rates decline future fixed income asset purchases will earn less interest. Because the liability duration is larger than the asset duration, LTC products are subject to significant reinvestment rate risk and will deteriorate in value when interest rates decline[9].

[7] When a policyholder lapses their coverage, they stop paying premiums, thus forfeiting their coverage.
[8] See my paper "Why we Set Reserves"
[9] See appendix, Modified Duration Derivation

Moving on to termination rates, higher termination rates are generally positive to the insurance company. When a policyholder goes on claims the insurance company will pay claims until the policyholder goes off claim. A person goes off claim if they die, recover or if their benefit period is exhausted. Deaths and recoveries are generally called claim terminations and were generally lower than what was assumed in the pricing assumptions (Nordman et al, 2016). The insurance company benefits when termination rates are high because higher terminations will reduce the insurance company's liability.

Lastly, lapse rates were also lower than expected (Nordman et al, 2016). The lapse rate is the rate at which the policyholder will stop paying their premium and therefore their coverage is cancelled. Since LTC has no cash value, upon lapsing, there is generally no financial payment to the policyholder from the insurance company when a lapse occurs. Further, the insurance releases the reserves backing the lapsed policy which is beneficial. The lapse rates originally assumed were too high and were assumed to be similar to life insurance lapse rates. However, lapse rates were much lower, potentially due to how much LTC policyholders valued their policies. In turn, there were more policyholders who kept their policies up until they became eligible for LTC claims.

Another failure with LTC insurance is the lack of take up by consumers. This could be driven by a multitude of factors. One aspect is affordability. LTC prices have increased drastically because many insurers have exited the market (less competition) and many insurers likely made their pricing assumptions more conservative (thus increasing pricing loads) based on adverse prior experience (Nordman, E., et al., 2016). On the demand side, some people may not understand the product fully so they are less willing to purchase LTC insurance (Nordman, E., et al., 2016). LTC insurance is very complex and explaining elimination periods, benefit triggers, inflation protection, site of care provisions, and the various other provisions is no easy task for an insurance broker. Further, people may not be fully aware of their LTC needs. The average American at 65 years old can expect $138,000 in LTC costs as of 2016 (Nordman, E., et al., 2016). In addition, Brown & Finkelstein (2009) contend that Medicaid's implicit tax crowds-out people out of buying private LTC insurance. Essentially if someone who could qualify for Medicaid, purchases private LTC insurance, they would lose out on Medicaid LTC benefits since Medicaid is the secondary payer relative to private LTC insurance.

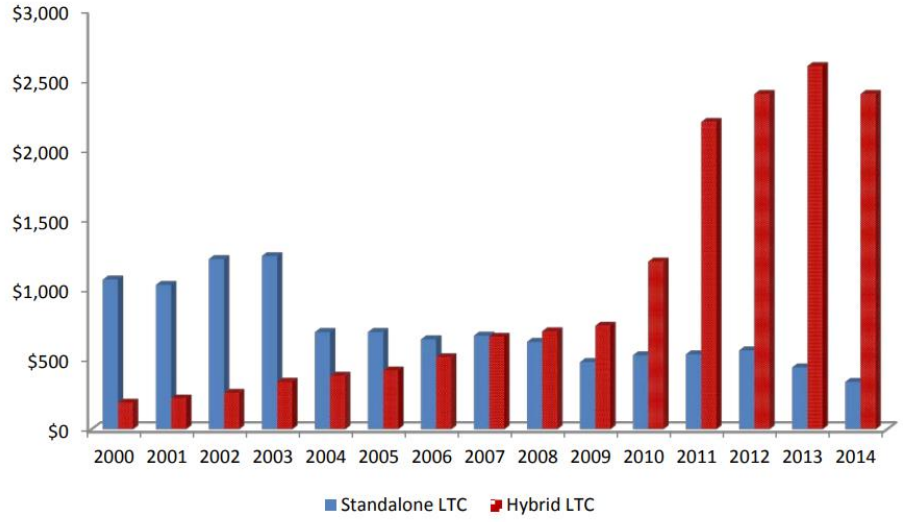
Looking Forward

We will now turn our attention away from the past and pivot to the future. I will discuss the following trends; hybrid products, aging in place, and public LTC solutions. Hybrid products combine life insurance/annuities products with an LTC add-on (called a "rider"). Aging in place is the trend where policyholders seek to receive their LTC services at home which may be cheaper. Lastly, public solutions have been proposed where the government will offer Americans an LTC policy but will levy a tax to fund this potential public program.

The figure below is from the SOA's 2016 State of LTC research report and illustrates how insurers have exited the LTC insurance market but have replaced LTC insurance with hybrid products. These hybrid products are a combination of life insurance/annuities with LTC products. Insurers are more willing to offer these riders because they are viewed as less risky. They are less

risky since there is natural hedging between the LTC product and the base life/annuity product. A majority of these hybrid products are single premium whole life insurance products in combination of LTC (Nordman, E., et al., 2016). In this case mortality and morbidity generally hedge against one another as LTC policies tend to have lower mortality (which results in lower death benefits) (Nordman, E., et al., 2016). On the other hand, upon death, the insurance company is not liable for future LTC benefits. Further, these products are designed such that the LTC benefits are deducted from the death benefit (Nordman, E., et al., 2016).

Figure 26: Traditional vs. Hybrid New Premiums Issued (Millions)
Sources: 2001–2013 Broker World Surveys, LIMRA



Source: Nordman, E., et al. (2016). The State of Long-Term Care Insurance: The Market, Challenges and Future Innovations. National Association of Insurance Commissioners. Retrieved from https://content.naic.org/sites/default/files/inline-files/cipr_current_study_160519_ltc_insurance.pdf.

As I have mentioned earlier policyholders generally want to stay in their homes throughout their retirement. This could be beneficial for the insurance company too since home care is generally cheaper than nursing home admissions per Table 1 presented in the Introduction (~$60,000 per year for a homemaker health aid vs. ~ $108,000 per year for a private nursing home room). Further home-based LTC services can be cheaper if the policyholder only needs limited help (i.e., a couple hours a day) as home care professionals are likely paid on an hourly basis. These arrangements can preserve the elderly's independence and assets. Nursing homes may have unintended adverse outcomes. Before digging into my next point about nursing homes, I want preface, I do not mean to demonize nursing homes however, nursing homes can have unintended consequences. In Atul Gawande's book, *Being Mortal*, Gawande focuses on the amount of money the US spends on end-of-life care. One example he shares is an experiment by Bill Thomas, a doctor running a nursing home in the 1990s. Thomas concluded that his nursing home was literally sucking the life out of his patients (Gawande, 2014). As a solution he got creative

and adopted dogs and cats and added plants into the rooms of the nursing home patients so his patients had something to take care of. His nurses were initially not major supporters of this initiative, especially when the animals had accidents on the facility floors. However, the results were miraculous. When compared to the other nursing homes in the area, the mortality rate for Thomas' nursing home declined by 15% and drug costs declined by 38% (Gawande, 2014). Thomas believed that by giving his patients autonomy and purpose in their lives, life could be implanted back into his patients and they would have better health outcomes. There appears to be some credibility to his madness.

Lastly, public options for LTC have been floated by some legislatures. California and Washington have both implemented private-public partnerships that attempt to make LTC coverage universal (Washington State, 2023 & California State). In a recent research paper by the Society of Actuaries, the researchers explore various public policy options for LTC insurance. There are many considerations for developing a public option for LTC insurance. Such considerations include the benefit provisions (inflation, benefit period, elimination period, etc.), taxes to fund the program, if it will be mandatory, and whether the coverage is means tested. Taxes will be a major roadblock in any public solution as it will require politicians to get constituents to buy in. Further it may be challenging to get younger constituents on board for these taxes as the young cannot reasonably be expected to need LTC for many years (O'Leary & Cutler, 2023).

The three above trends are by no means comprehensive. However, the US will need to act so that we are prepared for the nation's elderly LTC needs. As of 2020, 42% of LTC is funded by Medicaid, 18% by Medicare, 12% by other public sources[10], only 8% by private insurance, 13.5% out of pocket and other sources are 6.5% (Congressional Research Service, 2022). As I briefly alluded to, leveraging Medicaid is not a sustainable solution as many Americans are required to spend down their assets, basically impoverishing themselves, to qualify for Medicaid reimbursement. Further, much of LTC services are for unpaid caregivers. People whose elderly parents, spouses, friends, etc. become disabled may step in to provide them with care. This may result in the caregiver being able to work less, leading to economic loss. In 2020, 48 million Americans were unpaid caregivers for adults needing LTC (CDC LTC 2022). With the retiring baby boomers, the need for LTC services will grow substantially. There are many possible solutions, whether they be public solutions or private solutions. Within each solution type, there are even more permutations of how to structure an LTC insurance program. However, this impending problem should be brought to public's attention.

[10] 2020 figures are distorted by Covid-19 CARES Act

Appendix

Modified Duration Derivation

This appendix is sourced from [Social Security's Interest Rate Risk]

$Let\ V = valuation\ of\ an\ asset/liability\ generating\ annual\ cash\ flows$

$CF_k = Cash\ flow\ in\ year\ k$

$v^k is\ discount\ factor\ for\ future\ projected\ cash\ flows\ recieved\ in\ year\ k.$

$v^k = (1+i)^{-k}\ where\ i\ is\ constant\ (4\%\ baseline)$

$$V = \sum_{k=1}^{n} CF_k \times v^k = \sum_{k=1}^{n} CF_k \times (1+i)^{-k}$$

$$\frac{\partial V}{\partial i} V = \sum_{k=1}^{n} -k \times CF_k \times (1+i)^{-k-1}$$

$$Duration = \frac{1}{V} \times \frac{\partial V}{\partial i} V$$

$$=> Duration = \frac{\sum_{k=1}^{n} -k \times CF_k \times (1+i)^{-k-1}}{\sum_{k=1}^{n} CF_k \times (1+i)^{-k}} = \frac{\sum_{k=1}^{n} -k \times CF_k \times (1+i)^{-k}}{\sum_{k=1}^{n} CF_k \times (1+i)^{-k+1}} = \frac{\sum_{k=1}^{n} -k \times CF_k \times v^k}{\sum_{k=1}^{n} CF_k \times v^{k-1}}$$

The negative sign is omitted in practice. It is important to remember that increases in interest rate will reduce the value of cash flows received in the future.

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