

“All the time you're saying to yourself, 'I could do that, but I won't,' which is just another way of saying that you can't.”

— Richard P. Feynman

Will the market go up? Will it go down? Will the U.S. government default? Will the dollar crash? The looming potential disasters never seem to end. Pundits will recommend numerous trades, but ultimately the businesses that consistently profit are the liquidity providers. While the methods of implementation continue to change (from ticker tapes to electronic networks) the business model that has stood the test of time is *liquidity providing*.

What is liquidity providing? The definition is broad, but we define it as businesses that are paid to absorb risk others do not want. This can vary as firms hold inventory for different horizons: moment-to-moment, to hours, days, weeks, months and even years.

One of the biggest and most profitable liquidity providing businesses is **insurance**.

The interesting thing about insurance is that everyone knows how it works. Everyone knows that insurable events can occur randomly and unpredictably. Yet even with this randomness, insurance companies can profit. Insurance thrives on turmoil and randomness. *Randomness or unpredictable events do not necessarily translate to random or unpredictable P/L.*

Options are very similar to insurance. They exist for the same reasons: hedging and risk transfer. Unlike traditional insurance, exchange-traded options are centrally cleared, transparent, liquid and accessed electronically. Even if the underlying markets are unpredictable, options, like insurance, can be a source of profit. Like any insurance business, one must do several things correctly: calculate and update the price of insurance, manage the amount of insurance to underwrite and only do so with favorable odds, manage the risk through reinsurance, and follow the process in a disciplined manner.

However, options and insurance can be risky. Just selling insurance, even at favorable odds, will show steady profits until the insurable event occurs. While this type of steady income stream with a lumpy large loss is expected, many are surprised when the large losses occur. Similarly, the investors who only buy insurance tend to underestimate the many years of steady losses that must be endured before a profit is realized. Well-run insurance companies will favor a balanced long reinsurance and short underwriting approach to harvest this known edge profitably over time.

There are many options traders using different trading techniques, though most are speculators or hedgers. Most use options to express a “view” or a “story.” These strategies have merit, but they are not liquidity providing businesses.

Insurance, like options, relies on complex actuarial tables, mathematical models and other related methods. Even if all of the formulas are programmed on a computer, one may still be biased and make incorrect decisions. The key is to maintain discipline and stick to the core edge. Any one-off bet may, or may not, payoff. A small “edge” (favorable odds) accumulated over time, however, will generate systematic profit. Deviating from a disciplined investment approach will lead to failure.

Insurers estimate the expected payouts using real data coupled with current market prices. Figure 1 is a stylized histogram of life insurance claims. This is a good starting point for modeling the price and payoff of any given policy. Underwriters who assess risk will use basic actuarial science to translate these statistics into prices.

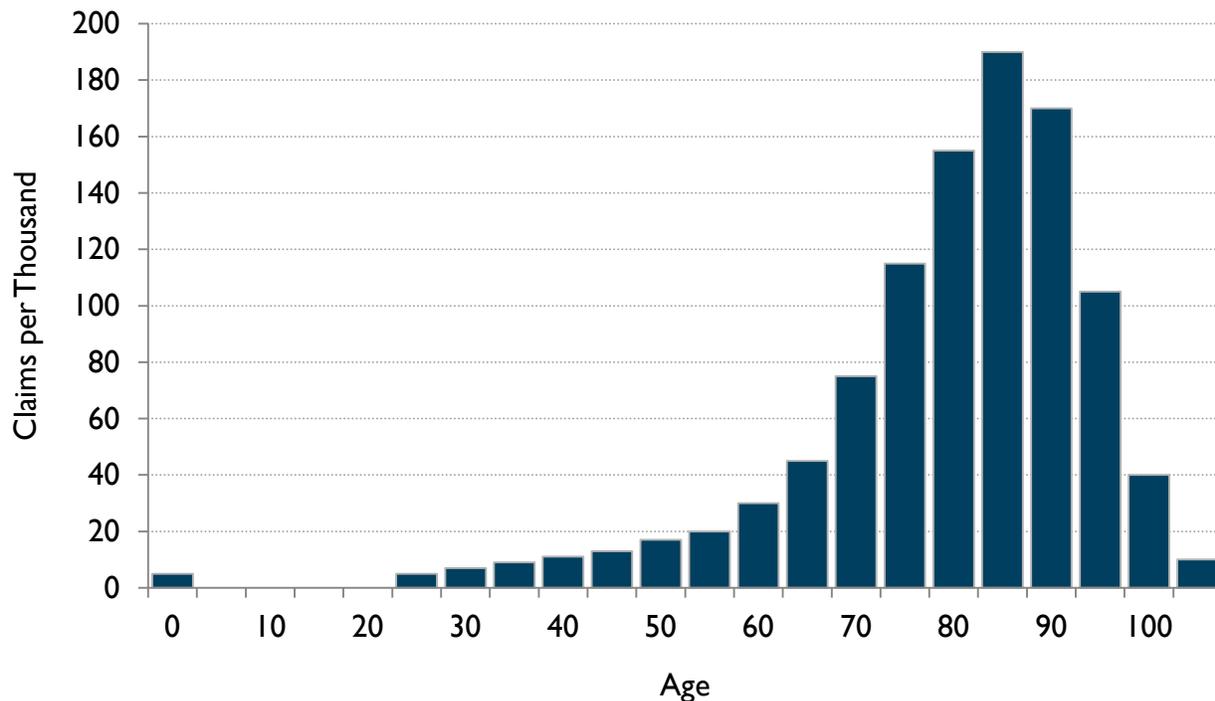


Figure 1: Sample distribution of life insurance claims.

Even though most of us do not spend our days looking at life expectancy tables, the distribution in Figure 1 looks similar to the distribution of daily S&P 500 returns shown in Figure 2. If an actuary were assessing the price of risk for the distribution found in Figure 2, the same actuarial science applies. In other words, the math for pricing insurance is analogous.

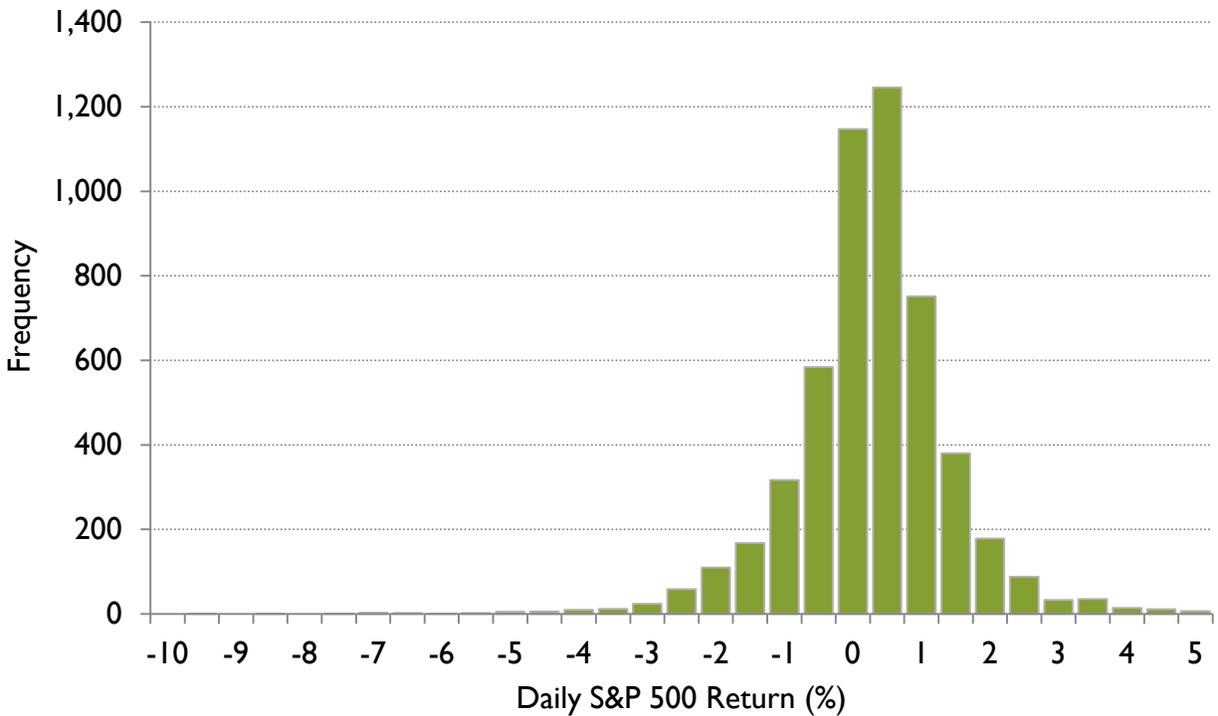


Figure 2: Daily return distribution of the S&P 500.

One unique difference between listed options and insurance is that, with options, the probability of an event occurring is impacted by the amount of insurance bought and sold. This is similar to pari-mutuel betting.

One way to answer the age-old question “what is the fair price of insurance?” is to monitor the odds and distribution over time ([LINK](#)).¹

¹ Lake Hill US Stock Market Rolling Returns since 1896: <http://www.youtube.com/watch?v=7V82EfS3aZk>

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