



# RETIREMENT INCOME UNIVERSITY

[A MONTHLY COURSE ON RETIREMENT ECONOMICS BY MOSHE A. MILEVSKY, Ph.D.]

## LESSON 9:

# Moral Hazard

ONE OF THE THEORETICAL FOUNDATIONS of modern insurance pricing is a principle called “moral hazard.” It lies at the heart of many actuarial models, is based on common sense and I make sure to spend quite a bit of class time explaining the implications to my undergraduate and graduate students. For those of you who haven’t heard the term before, moral hazard has little to do with religion, ethics or corporate social responsibility. Rather, it is an axiomatic assumption that when individuals are protected from the negative implications of their actions — they tend to take more chances.

Some examples that are usually given to illustrate this fundamental principle is the careless rental car driver who doesn’t worry about damages he might cause, the homeowner who occasionally leaves the door unlocked, or even the bank depositor who relies too heavily on the FDIC; all of them — consciously or sub-consciously — tend to behave in a more careless manner, since they have insurance if something goes wrong.

Now it seems this exact same principle is manifesting itself in the asset allocation and investment selections of policyholders who own variable annuities. They are unequivocally accepting greater equity market risk simply because they have insurance — i.e., guaranteed living benefits — and it remains to be seen how this will impact the market and pricing of these benefits in the long run.

The evidence for all of this comes

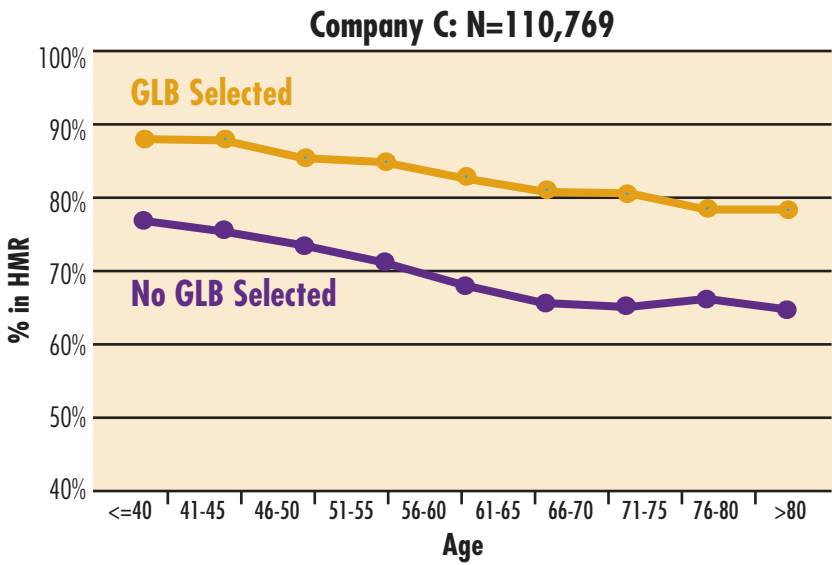
from a large database of variable annuity policyholders that the researchers at LIMRA International have been kind enough to allow us to probe and dissect (anonymously, of course).

Together with Vlad Kyrychenko (a PhD candidate at York University), I reviewed the overall asset allocation of variable annuity account holders and classified their investment asset allocations within these products into two distinct categories: risky and risk-free. We were interested to see how these allocations varied by age as well as the types of guarantees (riders) selected. The kinds of questions we were interested in were: Do older policyholders allocate less wealth to riskier asset classes? Do younger policyholders embrace riskier asset classes? How does this change when various insurance riders and guarantees are elected?

After all, academics and theoreticians can develop normative models on how investors should be behaving, but it’s always interesting to see what they are doing in practice. The following figure provides a graphical illustration of the main results for just one of the insurance companies we analyzed.

The x-axis displays the age of the policyholder when they opened or purchased the variable annuity. Our data extend from under age 40 on the left-hand side up to age 80 on the right-hand side. On the y-axis we plotted the average amount that was allocated to the High and Medium Risk (HMR) categories, which included equity-based funds as well as real estate and international investments.

First of all, as you can see, the older investors tend to allocate smaller amounts to risky sub-accounts within





# LARRY KUDLOW IS RIGHT ON THE MONEY

Watch him weekdays, live at 5 p.m., on CNBC's

**kudlow**  
  
**company**  
 Putting the capital back into capitalism



## Most advisors will readily agree that guaranteed living benefits help investors accept more risk.

their variable annuities. This is fairly consistent with intuition and what economists call the life-cycle theory of investing.

Second, we find that when no guaranteed living benefit (GLB) — i.e., extra levels of protection — was selected by the client, the level of risky equity exposure within the account tended to be lower, by about 10 to 30 percentage points, compared to the basic case. We think this is the more interesting result.

In other words, roughly half of the over 100,000 policies purchased contained no living benefits. In those cases the amount of equity exposure tended to be much lower compared to the policies in which the riders were elected (and paid for.)

Is this terribly surprising? Not really. Most advisors will readily agree that these guaranteed living benefits provide some comfort and help investors accept more risk. These numbers support this fact and provide some estimates on the magnitude of this effect.

Note that this pattern — where GLB selection is associated with greater risk exposure — is consistent across all insurance companies we analyzed. This is not just a fluke associated with one or two companies, a given living benefit rider or a particular company's asset allocation restrictions.

Is this extra level of risk justified in

theory? I believe the answer is a definite yes. After all, if you are granted an “equity put option,” which is a type of insurance on your portfolio, how else would you behave? Stated differently, why bother protecting or insuring a portfolio (i.e., asset mix) that has little chance of requiring protection in the long run? If you want to hold bonds and other fixed-income products in your portfolio, don't waste valuable dollars insuring them; find some other silo in your investment holdings to keep these low-risk instruments.

Now, along the same lines some advisors have argued that a variable annuity with a GLB can actually be treated as a “bond substitute” in the overall asset allocation. This, I tend to disagree with. Remember that you and your client *cannot* cash-in and get your money back at any time. In some cases you have to wait for decades before you get the guaranteed return that these products promote. This is very different from a conventional bond.

That said, it bears reiterating that granting investors an equity put option should give the investor greater confidence to take on equity market risk, and one doesn't require a bond classification to achieve this result.

In the big scheme this is yet another reason that I remain concerned about the prudent risk management of these products, an issue I aired in the January 2007 issue of *Research*. Sure, if 80 percent of policyholders surrender, exchange or allow their variable annuity to lapse within 10 years, then I wouldn't worry much about the long-term put options granted to investors. On the other hand, if we do enter a prolonged sequence-of-return spiral in the equity markets, policyholders will be advised to hold on to their puts. Either way, everyone would be better served if they took a moment to appreciate the implications of moral hazard. **■**