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Insurance Risk Management at Life Insurers: Dynamically Managing Economic Cycles

By Larry Rubin and Xiaokai (Victor) Shi

ALTHOUGH NEAR-TERM SURVIVAL IS STILL A PRESSING ISSUE for many insurers, it is currently the right time for the industry as a whole to revisit its risk management strategies in the wake of the most severe financial crisis in eighty years.

As the crisis unwinds, it is almost certain that there will be a more deleveraged financial system and a substantially different regulatory environment. In the near- to mid-term, it is likely that the global economy will remain volatile, with accompanying uncertainty in the equity and credit markets. With all of this in mind, what should insurers focus on in this changing environment? Which changes to Asset/Liability Management (ALM) and Enterprise Risk Management (ERM) can help companies ride out the current crisis and even come out of it even stronger?

RETHINKING PORTFOLIOS

First and foremost, insurers need to take a longer term view of their business and investment portfolios. If they establish a more top-down view of balance sheet risks and develop risk management approaches that allow them to more successfully withstand volatile markets, then they should be able to effectively manage their risks in changing economic cycles.

The life industry’s portfolios in particular have changed significantly in the past few decades. As the chart below shows, they are much more complicated than they used to be. Assets include structured classes and both callable and embedded options. Liabilities include some embedded options that policyholders have an economic incentive to exercise, and others (e.g., contingent on mortality/longevity events) which they cannot.

Historically, life insurance used a simple, protection-oriented business model. Liabilities were valued with traditional actuarial approaches and insurers generally allocated their assets conservatively in simple fixed income classes. In recent years, however, wealth accumulation products such as variable and fixed deferred annuities have gained popularity as baby boomers plan for retirement. More and more insurers are offering guarantees (which represent short positions) on top of more dynamic wealth accumulation or life protection products. In addition, more and more companies have allocated assets to structured classes such as CDOs or CMBS. Furthermore, some large variable annuity writers’ hedging programs have totally re-shaped their balance sheets.

Life Insurers Balance Sheets Historically		Life Insurers Balance Sheets Today	
Bonds	Whole Life	Bonds	Whole Life
Money Market Funds	Term Life	Money Market Funds	Term Life
	Fixed Annuity	CMO	Fixed Annuity
	Long-term Care	CDO	Long-term Care
	Long-term Disability	CLO	Long-term Disability
		ABS	UL with Guarantees
		CMBS	VUL
		S&P 500 Futures	Equity-indexed Annuity
		Other Options	GMDB
		Equity	GMIB
		Alternatives	GMAB
			GMWB
			GLWB
			Securitized Liabilities
	Surplus		Surplus

Generally speaking, there are three categories of insurers:

- General account carriers (e.g., whole life, universal life, term life or fixed annuity carriers), such as New York Life and Northwestern Mutual. These companies are traditional life insurers that primarily offer protection-oriented and fixed accumulation/income products. They tend to have sound distribution channels, competitive life products, and loyal customers. Since their liabilities are in the traditional life and annuity business, they are not fully exposed to equity market risks. However, they are exposed to large mortality/longevity risk and disintermediation risk (i.e., ALM mismatch risk).
- Separate account carriers (without material guarantees), such as TIAA-CREF. These companies generally offer variable products without material guarantees. Their business are more like mutual funds, although some are life contingent and thus more exposed to equity performance risk than general account carriers.
- Embedded option carriers (e.g., GMxBs), such as The Hartford, AXA, Ameriprise, and Lincoln National. These companies offer guarantees on their variable products or universal life, which exposes them to equity performance and volatility risk, interest rate risk (e.g., GMIB), and policyholder behavior risk. These carriers generally run sophisticated hedging programs, such as entering derivative transactions in the financial markets, to offset some of their positions on the guarantees embedded in liabilities.

Some large insurers, such as Metlife and Prudential Financial, have diversified business portfolios that are a combination of the categories described above.

The distinctive nature of individual companies puts them at different competitive advantage/disadvantage depending on market cycles. Clearly, the extreme bear market in late 2008—which was characterized by a plunging stock market, sky-rocketing equity volatility, and low interest rates (as well as credit crunch)—has substantially hurt embedded option carriers. GMxBs of variable annuities often have roll-up, ratchet or step-up features, which made these exotic options extremely difficult to move out of money and negatively affect insurers when equity markets fall.

Separate account carriers also suffered, though to a lesser extent than embedded option carriers, because their incomes declined as a result of lower account values. Other than suffering declines in the value of their investment portfolios, most general account carriers have weathered the crisis reasonably well thanks to their relative isolation from the volatility of the financial market. In contrast, many embedded options carriers are de-risking their products and some are even considering exiting their current business (e.g., variable annuities).

It is increasingly clear that insurers will continue to significantly restructure both the assets and liabilities on their balance sheets. It also is likely that there will be industry consolidation once a recovery begins apace. However, insurers cannot afford to misinterpret the current situation as a solely temporary one or the result of a market over-reaction. Management needs to think broadly about how the industry is changing and develop clear strategies to ride out future economic cycles.

PREPARING FOR THE INEVITABLE SUNNY DAY—AS WELL AS MORE RAINY ONES

How can insurers ensure they will be adequately capitalized in a less leveraged financial world? If high inflation and interest rates return, how should insurers mitigate the disintermediation risk and how will policyholder behavior change?

History can teach us a great deal about managing economic cycles. As the graphic below shows, the U.S. economy has experienced seven recessions in the past 40 years. Although circumstances have varied leading up to each recession, downturns generally correspond to distortions in:



Larry Rubin, FSA, MAAA, CERA, is a partner with PricewaterhouseCoopers based on New York. He can be reached at larry.rubin@us.pwc.com.



Xiaokai (Victor) Shi, FSA, MAAA, is a manager with PricewaterhouseCoopers based on New York. He can be reached at victor.shi@us.pwc.com.

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- Interest rate levels (which generally correspond to the level of inflation), and credit supplies/events, and
- Equity market performance and volatility.

Declining yet already low interest rates have been the rule since 90s. However, this has been an aberration—albeit a fairly lengthy one—that has corresponded to unusually low rates of inflation (other than in equities and real estate).

The converse of the past decade was the inflationary mid-1970s to mid-1980s, which saw interest rates top 15 percent, and substantially affected the insurance industry. Life policy surrenders and policy loans increased to higher than anticipated levels, which resulted in disintermediation risks for insurers. Many of them had to liquidate their assets in order to pay off cash withdrawals from the general accounts. As noted in one recent report published by Bridgewater Associates,¹ in the early 1980s, policy lending had reached 9.3 percent. In the same period, policy surrenders had reached 12.3 percent (compared with 6.7 percent in 2007). When interest rates fell in late 1980s and guaranteed crediting interest rates on policies were higher than what companies made on investments, cash inflows

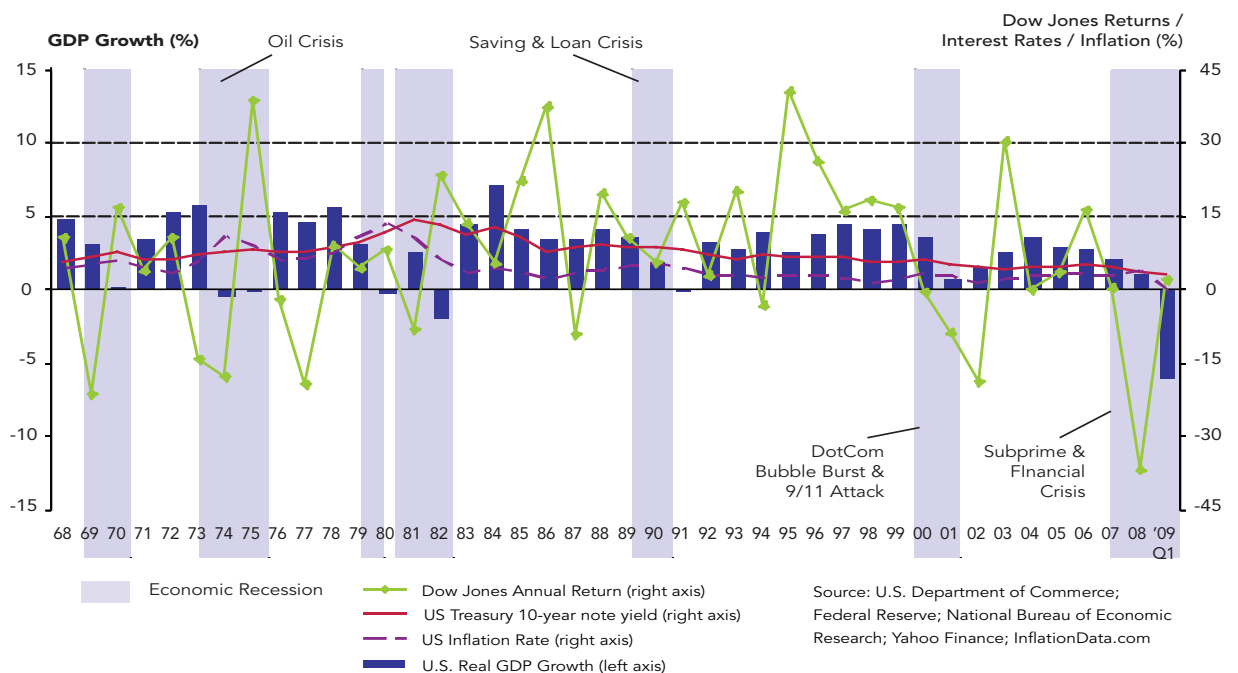
into insurance companies immediately caused solvency problems and rating downgrades.

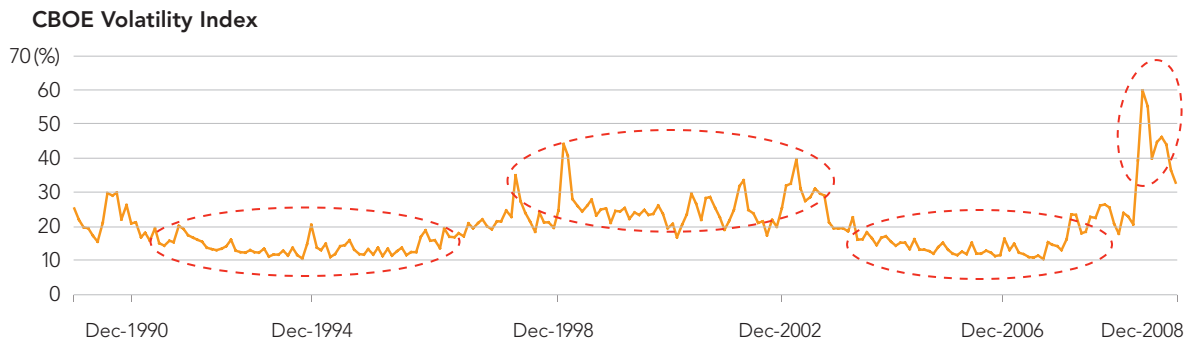
What relevance does this have to current conditions? Many economists believe that there is a good chance high inflation and interest rates will return in the near- to medium-term. They base their views in large part on the Federal Reserve’s aggressive policy of increasing the U.S. dollar supply. For example, in March 2009, the Fed announced a plan to buy \$1 trillion in debt (including up to \$300 billion in longer-term Treasury securities and an additional \$750 billion of mortgage-backed securities) in order to unfreeze the credit markets in the midst of financial crisis. This aggressive policy could undermine dollar values, which in turn could drive up interest rates—although no one can predict with certainty if and when this will occur. In addition, substantially increasing government spending (and the deficit), as well as the United States’ international

FOOTNOTES:

¹ “The Coming Insurance Industry Crisis,” Bridgewater Associates, Inc, March 2009

Economic Cycles (1963-2009 Q1)





trade deficit, might further shake investor confidence in the dollar's long-term value—all of which compounds the risk of inflation and rising interest rates. Conversely, if high unemployment and lower wages persist, and both consumers and business continue to cut expenditures, then a deflationary spiral might be possible. The latter scenario would be especially pernicious because, in light of the fact money market rates are already close to zero, policymakers do not have the flexibility to lower rates to stimulate demand.

The authors cannot predict the future, but effective risk management is not about predicting the future as much as it is about preparing for what is possible. Insurers, especially general account carriers, have to be aware of and prepare for uncertainty about inflation, deflation, and interest rate movements.

EQUITY MARKET CYCLES

The equity market has gone through many cycles in the past 40 years. In general, equity cycles switch more

frequently than credit cycles, are more seriously affected by crises (especially crises of confidence), and often bottom out swiftly. As shown in the chart, the U.S. stock market—thanks in large part to technological developments—experienced unprecedented growth starting in the mid-1990s. However, this growth was interrupted by three serious crashes resulting from the Asian financial crisis of 1998, the bursting of the internet bubble in 2001, and the bursting of the credit bubble last year.

Embedded in these market cycles has been a number of volatility cycles (see chart below). Between 2004 and late 2007, volatility was relatively low, but it soared to an extraordinarily high level in the middle of last year's financial panic. For embedded option carriers who offered short positions such as GMxBs on variable annuities, increased volatility substantially hurt their bottom line and capital strength. In light of ongoing volatility, the GMxB business faces an uncertain future as guarantees have created extreme stress on insurers' balance sheets.

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In order to avoid or at least better manage future volatility, insurers need to give serious thought to the following questions:

- How will the industry evolve after the crisis, taking into account different economic scenarios?
- Will current volatility revert to a more normal level, or has there been a paradigm shift?
- What are the right strategies for dealing with uncertain equity performance and volatility, especially in light of the direct relationship between revenues and equity performance for separate account carriers and embedded option carriers?
- What are the right strategies if the market recovers, stag-nates, or declines further?

DYNAMIC RISK MANAGEMENT ACROSS ECONOMIC CYCLES

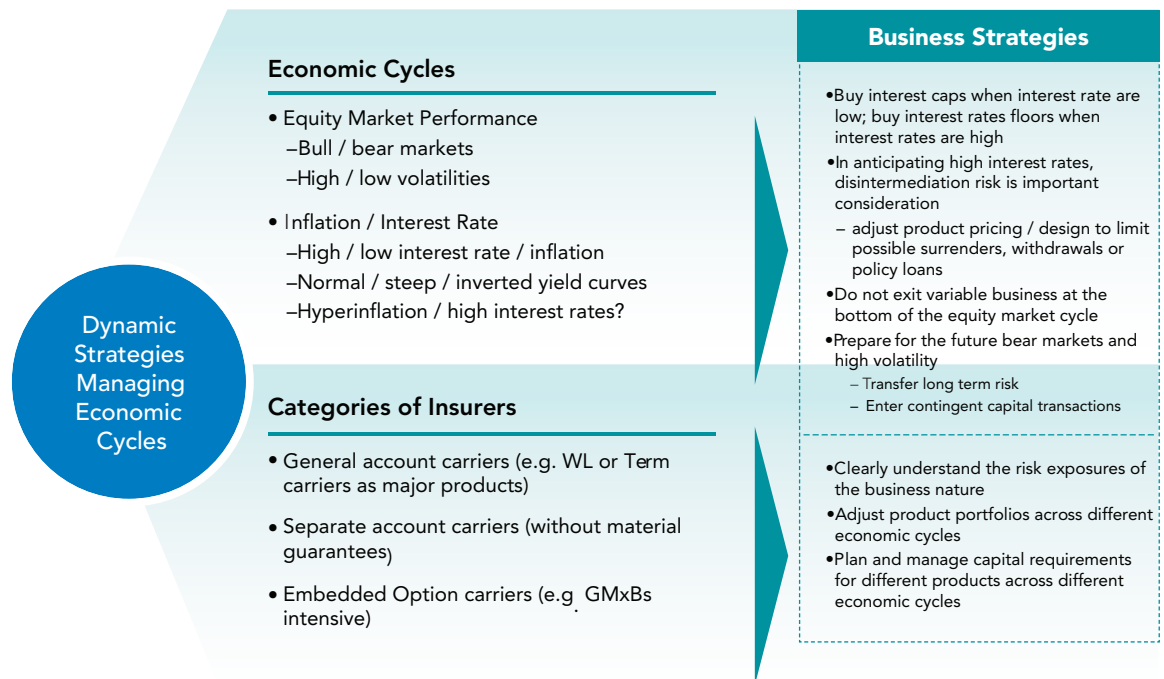
Life insurance companies, which by their nature are supposed to endure, will inevitably face many severe economic shocks such as the inflation of the 1970s and the systemic shock of 2008. Insurers' risk appetites are generally high when the economy peaks, and are much

lower when the economy contracts. However, this tends to result in a reactive rather than proactive approach to managing economic cycles. As the graphic below shows, management would be better served by taking a long-term perspective and dynamically managing the business throughout economic cycles.

Initially, it is good practice to anticipate the scenarios that could unfold in the next cycle and what action is needed to both protect the company's balance sheet and ease future earning volatility. For example, when interest rates are low, management should consider what may happen if they rise. Purchasing interest rate caps when interest rates are low is economically advantageous and is clearly a strategically sound way to protect a company. Furthermore, when interest rates are high, companies could purchase interest floors when their market price is low. Interest rate floors would have offered inexpensive protection 20 years ago, and it is possible that interest rate caps offer inexpensive protection today.

Dynamic risk management also can include adjusting risk and product design pricing. At the bottom of an economic

Risk Management: Dynamically Managed Economic Cycles



cycle, when policyholders' risk aversion is high and there is increased demand for guarantees, insurers that maintain high ratings have the ability to charge higher prices for the long-term risks (e.g., long-term disability) they offer. Management should have a clear understanding of policyholders' economic incentives and how they may exercise guarantees. For example, in anticipation of higher future interest rates, companies may offer products with higher or longer surrender charges on their UL products. Furthermore, some existing variable annuity guarantees, such as roll-ups, step-ups and ratchets, are clearly at odds with dynamic cycle management; accordingly insurers should determine if they can continue to offer them.

Another way for individual companies to manage economic cycles is by purchasing contingent capital as a supplement to economic capital. As one example, in the midst of the financial crisis, many variable annuity writers started macro-hedging programs to avoid further losses and protect their balance sheets from equity market declines. As another example, in the middle of the 2008 financial crisis, Prudential Financial benefited from one put option they entered into with Wachovia some years before; Prudential's resulting capital access has helped them retain the investor confidence.

Finally, management should have a clear view of and strategies for determining which risks on their balance sheets it needs to transfer or exit, and when to do so. For example, at the bottom of an equity market cycle, it is probably unwise to exit the variable business and expand the general account business. As another example, when they face considerable equity or credit market uncertainty, companies should consider expanding into less capital intensive businesses and take on risk (e.g., mortality) that is less correlated to the markets.

CONCLUSION: MANAGE FOR THE LONG-TERM

In conclusion, insurers need to take a long-term view of their business and investment portfolios. If they establish a more top-down view of balance sheet risks and develop risk management approaches that allow them to more

successfully withstand volatile markets, then they should be able to effectively manage their risks in changing economic cycles.

As importantly, effective risk management is not about predicting the future as much as it is about preparing for what is possible. Because very few things in this world are certain, a wide range of plausible "what ifs" and potential responses to them deserve careful consideration. In his book *The Black Swan*, Nassim Taleb talked about two different worlds, Mediocrastran and Extremistan. Risk management typically operates under the assumption that we live in Mediocrastran, where investment returns and deviations are based on the standard normal distribution. Managing for the long-term requires us manage as if we are in Extremistan. When market interest rates were 10 percent, the interest rate scenario of sustained rates below one percent was in Extremistan, not Mediocrastran. In today's environment rates above 10 percent are in Extremistan.

Accordingly, while history never repeats itself exactly, it is prudent to examine long-term investment trends—as well as micro-trends inside them—when considering what may happen in the future. While such an approach will not immediately reverse the damage the recent financial crisis has caused to many insurers' balance sheets, it can help strengthen ALM practices and prevent similar stresses from recurring in the future. ■