

The Geneva Association: Variable annuities with guarantees and use of hedging

This article, extracted from The Geneva Papers, looks at variable annuities with guarantees and their hedging programmes to see if they should be considered to be a potentially systemically risky activity (pSRA).

Prepared by a special Working Group of The Geneva Association's Financial Stability in Insurance Initiative

Definition of Systemic Risk

The Financial Stability Board (FSB) defines systemic risk as: "The risk of disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy".

The FSB is currently undertaking a process to identify globally "systemically important financial institutions" or SIFIs. A SIFI is an institution that performs activities which pose a systemic risk. The FSB has identified three key criteria to determine if an institution is a SIFI: size, interconnectedness and substitutability.

Here, we will use the following criteria for determining if variable annuities with guarantees and their hedging programmes should be considered a potentially systemically risky activity (pSRA).

- 1) **Interconnectedness:** The linkage of the potentially systemically risky activities within the financial sector (ie effects on other financial institutions if the insurer fails).
- 2) **Substitutability:** The substitutability of the institutions within the potentially systemically risky activities (ie the potential difficulty in finding a replacement of the product).

Two other criteria are critical in assessing the risk of activities conducted by an insurance company:

- 3) **Timing:** The immediate effect on the market should the insurer fail.
- 4) **Effective regulation:** Risk is extensively monitored and overseen by domestic insurance regulators.

A. Variable annuities with guarantees (VAs)

Variable annuities with guarantees have both protection and saving components. Policyholders can typically invest their premium in separate accounts that represent money market, bond or equity portfolios. Certain guarantees are given for the performance of these investments.

Risk management for VAs

Many VA providers saw their capital positions erode rapidly when markets came under substantial pressure in 2008 and early 2009. This

reflected inadequate hedging strategies and substantial tail risk. However, there have been positive developments as the VA industry survived a real-life stress test. A new generation of VA products has emerged from the lessons learned.

The market crisis has resulted in major changes in the living benefit guarantees in VA products. These products have been considerably de-risked, including changes in pricing and guarantee features. The sophistication of hedge programmes has also improved.

These are examples of adjustments insurers have made to the VA product design to reduce the tail risk:

- Lowered the guaranteed growth of protracted withdrawal values and payout rates on living benefits to make the features less generous.
- Tightened asset allocation limits (helping cap equity market exposure).
- Mandated automatic sub-account rebalancing, and increased the use of index funds (making the product easier to hedge).
- Improved hedging effectiveness, with a number of insurers addressing previously un-hedged risks (such as volatility) or overlaying "macro" hedges to protect their capital positions against a severe market decline.

While these adjustments reflect improved risk management and are currently not mandated by insurance regulation, the requirement of the principle-based calculation of capital and reserves for VAs in the US (C3 Phase II) could lead to higher costs of capital for those insurers that do not adopt such practices.



Potential risks discussed in the context of VAs are:

- 1) Run on the insurer.
- 2) Accentuation of downward market movements.
- 3) Side effects of using derivatives (hedging).

1) Is there the risk of a run on the insurer?

No. While there have been cases of “runs on the bank”, The Geneva Association has concluded that the case of a “run on an insurer” is a misconception.

Policyholders do not have a reason for a run on an insurer

A run is caused by loss of confidence in the ability of the institution to honour its promises. This loss of confidence would be highly irrational in the case of an insurer:

- Insurance liabilities are covered by reserves, and VAs are no exceptions in this context. In an efficient system of insurance regulation (such as current US solvency regulation and future Solvency II) there are wind-down processes, which help ensure that the policyholder is protected. For instance, under Solvency II the ultimate supervisory action commences when the Minimum Capital Requirement (MCR) is breached, at which time the assets would still cover the liabilities with an additional margin. For this reason, there are no grounds for policyholders to start a “run on the insurer”, even if the situation for the insurer is critical.
- Also, in many countries there are guarantee funds for insurers.
- Product design features in VAs pose a further barrier for a potential run on the insurer:
 - Surrender charges for early withdrawal.
 - Tax penalties for early withdrawal (in the US, there is a 10% penalty for withdrawal before the age of 59½).
 - Withdrawals in excess of prescribed limits reduce the guaranteed annual income.
 - Contract surrenders lead to the loss of the lifetime guaranteed benefit and the right to annuitise, which provides a strong disincentive for the customer.
 - VAs are held in separate accounts, in which customers bear the market risk of the account value. In the case of surrender of a customer’s account, an insurer’s general account assets are not impacted, as separate accounts are not co-mingled with the general account.

Liquidity management mitigates the effect of a high volume of surrenders

Insurers have liquidity management in place in order to deal with an unexpectedly high volume of surrenders. In some countries effective Asset Liability Management (ALM) is a regulatory requirement [this will be the case under Solvency II].

If there were to be an unprecedented run on the insurer, what would be the consequences?

There is an important difference between a run on a bank and a run on an insurer. While the former will impact the real economy, the latter may not:

- A run on the bank is characterised by the bank not being liquid enough to honour massive withdrawals. The assets of the bank are typically invested in loans to businesses. If it could liquidate the loans, then the

businesses would lose the funding that is essential for their continued operations. This would exacerbate the situation of the real economy.

- Assume that there is a run on an insurer. The insurer would typically be invested in the stock and bond markets. It would sell those investments. If the insurer is sufficiently large, this could affect the value of stocks and bonds, but it would not directly cut the funding of real businesses. Therefore, there would not be a direct impact on the real economy.

2) Is there a risk of an accentuation of downward market movements?

Yes, such a risk exists. For example, to manage risk in making withdrawal-based lifetime income guarantees, some insurers require that the customer allow the insurer to adjust the customer’s asset allocation to be more conservative as performance declines and vice versa. It is possible that these actions taken by the insurer with customer authorisation could exceed those customers would have taken on their own.

The risk of an accentuation of downward market movements is not specific to VAs

For instance, European “With Profit Products” have the same characteristic. In addition, as any private and institutional investor will use trading strategies in order to protect themselves against downward risk, they will also engage in risk management activities that accentuate market declines.

The alternatives to financial products that offer protection against downward market movements may accentuate these movements even more

The provision of investments with downside guarantees is an important service to society. It enables people to accumulate the funds necessary to retire with dignity.

If the insurance industry would not offer variable annuities with guarantees or similar products, private, non-professional investors could invest their assets themselves using platforms such as e-trade. It is possible that non-professional investors would get “spooked” by an initial market decline and excessively sell equity. Such a scenario could have a larger impact than the effect of dynamic hedging by institutional investors.

Downward movements that are solely caused by trading activity will correct themselves

At some point of the market decline, it will be clear to professional investors that companies are undervalued. At this point the market will recover. For this reason, the effect of risk mitigation techniques in a declining market will only rarely have an impact on the real economy.

3) Are there undesirable side effects of using derivatives (hedging)?

Criteria for pSRA

The insurer operates in the market as an investor. For all practical purposes, the insurer is an intermediary engaged by the policyholder. This is not a systemically relevant activity. In addition, the insurer uses derivatives for hedging purposes in order to cover the liabilities that arise from guarantees for the policyholder.



- **Interconnectedness**

The liability counterparty of the insurer is the policyholder – a retail customer. The insurer acts in the financial market as an investor. It does not offer any guarantees to other financial institutions. VA activities are not services on which other financial institutions rely. *There is no significant interconnectedness.*

- **Substitutability**

VA products can be substituted with a combination of pure investment products and pure insurance products that address the biometric component. Life insurance companies do provide an important service to society. As there are many life insurers in most markets and since it is possible for foreign life insurer to enter markets, each individual life insurance company is substitutable. *Substitutability is ensured unless the life insurance sector fails globally.*

- **Timing**

The risks considered here could lead to a short-term impact

- **Effective regulation**

Variable annuities are addressed in solvency regulation. There is extensive and specific regulation in the US for VAs. The European Insurance and Occupational Pensions Authority (EIOPA) is considering specific regulation for VAs as well, and it has published a consultation paper on this subject.

In the US, insurance regulators introduced a new principles-based capital reserve standard, which has been an important development in assessing the true risks associated with VA products.

The standard includes the use of sophisticated internal stochastic models and scenario analysis of various market conditions in determining necessary capital required for VAs, and consolidates various offshore reinsurance subsidiaries back on-shore in determining capital adequacy.

Similar techniques are mandated for the calculation of reserves for VAs.

Variable Annuities are already subjected to extensive insurance regulation.

Conclusion

While short-term effects are conceivable, none of the criteria pSRA concerning “Interconnectedness”, “Substitutability”,

and “Insurance regulation” is triggered.

In addition, the risks “Run on the insurer” and “Undesirable side effects from hedging” are not substantial. While the “Risk of accentuation of downward market movements” exists, this is true for many types of equity-linked products that have rebalancing features and is not unique to VAs.

- **Not a potentially systemically risky activity (pSRA)**

B. Hedging

Hedging techniques used in VAs and other insurance products are a risk mitigation measure in order to ensure that the liabilities with respect to guarantees to policyholders are covered.

It is important to note that hedging has to be seen in concert with other financial risk mitigation techniques and not as a stand-alone. For instance, innovative VAs sold by Prudential Financial requires an asset rebalancing algorithm for all contracts electing the optional GMWB. If the market declines, funds are shifted from equity accounts into an investment-grade bond fund. This reallocation of the customer’s money in the VA has the effect of reducing the amount of dynamic hedging necessary on the part of the insurer.

Potential risks discussed in the context of hedging

- Risk of uncontrolled liabilities due to the use of derivatives.
- Accentuation of downward market movements.

1) *Is there a risk of uncontrolled liabilities due to the use of derivatives?*

No. The use of derivatives for hedging is distinct from trading derivatives for profit generation. Derivatives which are bought by insurers provide a right/guarantee against a premium. This guarantee is used to cover promises given to policyholders. It is the seller of the derivative (rather than the insurer) who is exposed to the risk of generating uncontrolled liabilities if the market crashes and the guarantees gain value.

2) *Is there a risk of accentuation of downward market movements?*

In the case of large market declines, the insurer may rapidly and significantly change its hedging activities in order to continue to cover their guarantees. This could affect

market perception and increase volatility in the market. However, these activities would simply reflect the market decline that has already occurred. The insurer would exhibit normal market behaviour that is not different from the behaviour of any other investor that tries to protect his or her downside risk.

Criteria for pSRA

- **Interconnectedness**

Risk mitigation through hedging consists of buying and selling financial instruments. The insurer acts in the financial market as an investor. It does not offer any guarantees to other financial institutions. There is no significant interconnectedness.

- **Substitutability**

The use of hedging techniques is not a product or service that is sold directly. The issue of substitutability does not arise. There is no issue of substitutability

- **Timing**

The risks considered here could lead to a short term impact

- **Effective regulation**

Hedging programmes for VA products are supervised by insurance regulators and are subject to reporting and reserving requirements.

In the US, the regulatory environment for VA hedging has gone through an evolution of increasing sophistication.

Regulations have been instrumental in ensuring healthy hedge programmes among VA writers.

Insurers are required to file derivative use plans (DUP) and more recently, capital and reserve regulation for variable annuities with guarantees (C3 Phase II) have formally introduced the concept of a clearly defined hedging strategy (CDHS), which further defines the application of derivatives for hedging purposes.

The use of hedging techniques is closely regulated.

Conclusion

While short-term effects are conceivable, none of the criteria pSRA concerning “Interconnectedness”, “Substitutability”, and “Insurance regulation” is triggered. In addition, the “Risk of generating uncontrolled liabilities due to the usage of derivatives” is not significant.

• **Not a potentially systemically risky activity (pSRA) **

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