VIEW POINT

SHIELDING RISKY RETIREMENT INCOMES WITH CONTINGENT DEFERRED ANNUITY (CDA)

Abstract

Consistently increasing human life expectancy across the globe has expanded the retirement phase of life, necessitating retiral incomes for longer durations. Simultaneously, 'defined benefit' retirement plans are losing shine, and people are required to plan for their retirement themselves, mostly through 'defined contribution' plans. Moreover, the longevity risk and market risks of equity investments, which can potentially provide higher returns, are paramount considerations for retirement planning.

In such circumstances, this paper examines a new product available in the market called contingent deferred annuity (CDA). CDA's enable customers to remain invested in approved equity investments, offering protection not only against longevity risk but also against market risk, thereby assuring lifetime guaranteed retirement incomes.

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The financial truth about retirement incomes

With advancements in science, medicine, and technology, people today are living longer than ever before. Consequently, they need more abundant resources for their now longer retirement phase of life. According to a 2018 research report by the National Institute on Retirement Security, social security provides a replacement rate of around 35 percent for a typical worker, as per the current benefit formula. This translates into a retirement income gap of roughly 50 percent of pre-retirement earnings, which needs to be accumulated through alternative means. Meanwhile, the retirement market is shifting from defined benefit (DB) to defined contribution (DC) plans, which transfers the responsibility of managing retirement income related risks from employers to employees.

Up to a certain extent, the comparatively higher returns on equity investments, as compared to debt, can help in bridging the gap. However, even though equity investments appear to be the perfect vehicle for retirement planning, but they are risky and can even lose the principal invested. Consequently, retirees must either opt for a low guaranteed return on investment through debt or be prepared for the risks associated with equity investments. However, both these options have specific issues and expose retirees to risks of some or the other sort.

Amidst such a landscape, the exciting contingent deferred annuity (CDA) product promises excellent trade-offs. In exchange for a premium, the CDA through providing protection against longevity risk and market performance risks of equity investments, provides guaranteed payouts to retirees for the rest of their lifetimes.

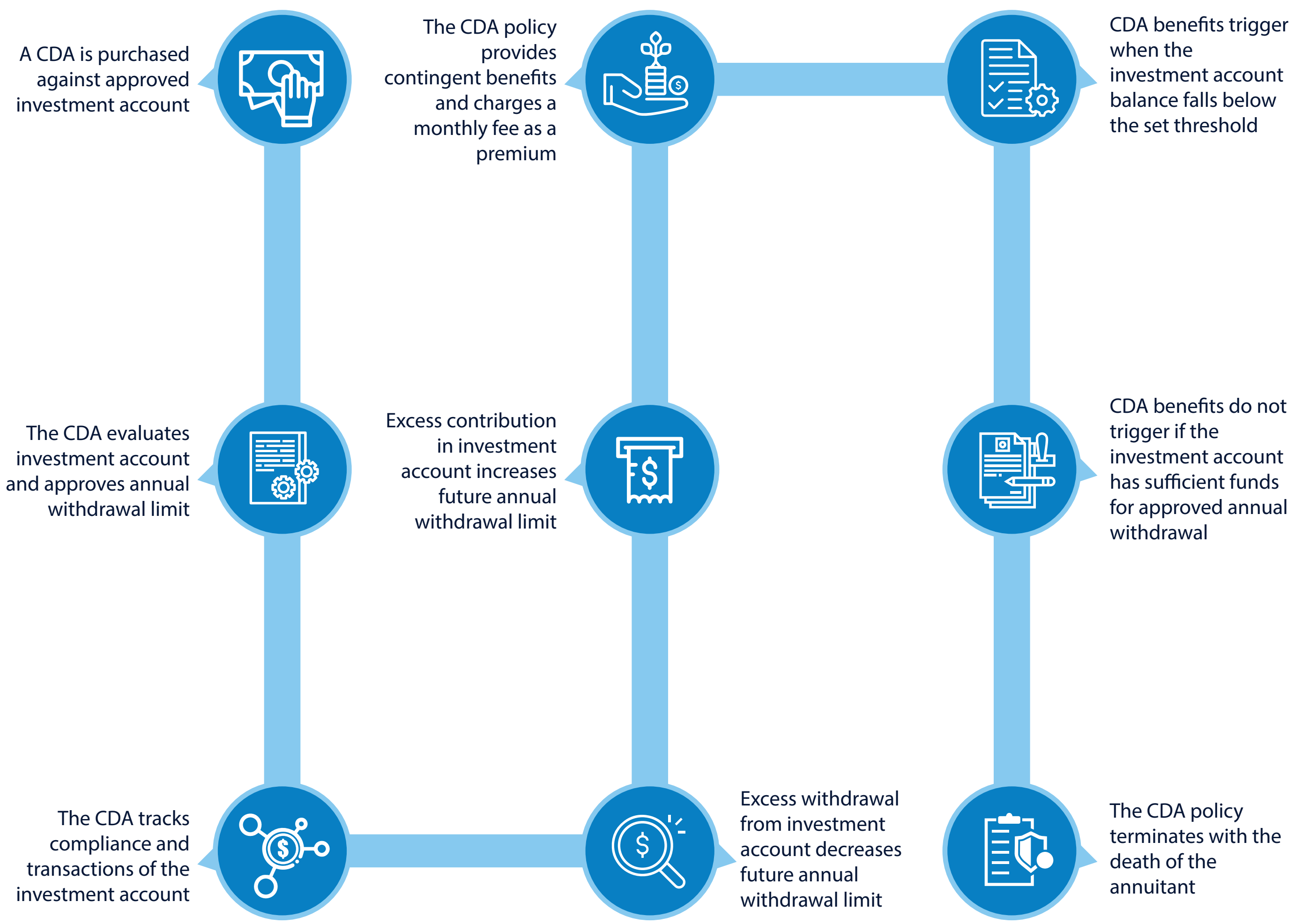
Contingent Deferred Annuity (CDA) - an overview

A contingent deferred annuity (CDA) provides lifetime benefits to the annuitant, contingent on his investment account balance dropping below a set threshold. The investment account balance can fall below the threshold either due to the poor performance of assets in the investment account and/or due to allowed withdrawals for an extended period. No benefit is payable from the CDA if the investment account balance remains above the threshold.

The CDA is generally layered on top of the investment account, which should comply with approved securities and funds and is regularly tracked by the insurer. Based on the balance and the riskiness of the assets in the investment account, the insurer fixes an annual withdrawal limit for the investments which can be withdrawn from the account. If the annuitant contributes further to the investment account, the withdrawal limit is adjusted upwards, and likewise the limit is adjusted downwards when there is an excess withdrawal.

The responsibility for managing the investment account rests with the annuitant or his/her agent and does not involve the transfer of any security or funds to the insurance company. So, he can remain invested in the equity market and earn potential higher investment returns. Moreover, the risk of poor equity performance is also out of the equation as CDA benefits kick in when the investment account balance falls below the set threshold due to covered scenarios (such as poor market performance or longevity). Consequently, CDA offers guaranteed regular income through the 'approved annual withdrawal limit' throughout the annuitant's lifetime. In exchange for these contingent benefits, the insurance company charges a premium, which usually is due monthly. Lastly, the CDA policy terminates with the death of the annuitant.

The process flow diagram below shows the sequence of essential transactions in the CDA.



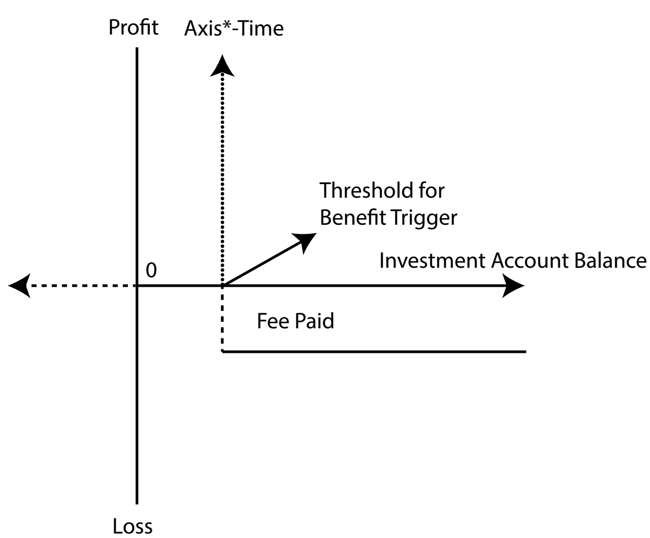
The financial structure

CDA products are like options derivatives with some tweaks, and we can call them 'modified options,' where the underlying option is the investment account balance. Due to the nature of the product, limited withdrawals are allowed from the investment account, and the benefit is automatically triggered when the balance falls below the threshold. The threshold is generally close to zero, but some dollar values are also possible.

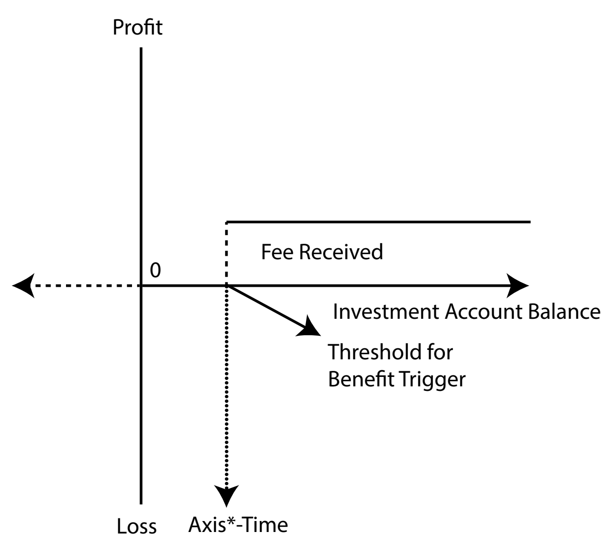
In the CDA policy, the insurer is writing a 'modified put option' while the customer is buying a 'modified put option'. In consideration, the modified option premium is available to the option writer (insurance company) from the option buyer (CDA customer). The strike price is the threshold at which benefits trigger, and benefits are repetitive payments for the lifetime of the annuitant. Therefore, CDA benefits can be drawn against a new axis 'time,' post the trigger. The 'time' is the remaining lifetime of the annuitant, once benefits kick in. If CDA benefits do not trigger, obviously due to unfulfilled criteria, the fee (modified option premium) is retained by the insurance company. In effect, we can see that for a CDA customer, the cost is limited, but the benefits are potentially unlimited.

The payoff diagrams for the CDA policy is presented below and is a modified version of the put option payoff diagram. The new axis (time) in the payoff diagram is used to show repetitive payouts, once benefits kick in.

Payoff Diagram for the CDA Customer



Payoff Diagram for the CDA Insurer



The following table shows CDA benefits under different scenarios. Here we can see that benefits range from zero (scenario 4) to $412,501.21 (scenario 3). Also, the impact of additional contributions and excess withdrawals are also quantified.

Contingent Different Annuity Benefit Table under Different Scenarios				
CDA - Events & Timelines	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
CDA Initial Coverage Amount	$1,00,000.00	$2,50,000.00	$8,00,000.00	$10,00,000.00
Payout Start Age	60	65	65	68
Approved Annual Withdrawal	$5,000.00	$11,175.00	$37,500.00	$57,642.00
Benefit Starts when Investment Account Balance is below	$1,000.00	$2,000.00	$5,000.00	$5,000.00
Approved Equity Class	A (Safest)	B (Moderately Safe)	C (Least Safe)	A (Safest)
Additional Withdrawal at Age 72	$10,000.00	$0	$0	$50,000.00
Adjusted Withdrawal Amount after Age 72	$4,198.45	$11,175.54	$37,500.11	$54,391.91
Additional Contribution at Age 75	$0	$1,00,000.00	$0	$2,50,000.00
Adjusted Withdrawal Amount after Age 75	$4,198.45	$16,254.21	$37,500.11	$70,376.76
Investment Account Balance at age 80	$987.19	$83,234.54	$3,00,987.43	$4,86,732.08
Benefit Trigger	Yes	No	No	No
Investment Account Balance at age 85	NA	$1,876.12	$3,467.99	$1,34,567.66
Benefit Trigger	Already Triggered	Yes	Yes	No
Retiree/Annuitant Death Age	93	88	95	87
Comments	CDA benefit starts at age 80 and continues for 14 years with a total benefit of $58,774.66	CDA benefit starts at age 85 and continues for 4 years with a total benefit of $65,016.84	CDA benefit starts at age 85 and continues for 11 years with a total benefit of $412,501.21	CDA benefit does not trigger at all

The customer's dilemma: costs vs benefits

It's a no-brainer that the substantial benefits and financial guarantees of the CDA product will appeal to almost every customer. However, the pricing for such a complicated product will depend on assumptions that will be almost impossible to be understood by the average person. Moreover, the customer may also have problems visualizing all possible risk scenarios. Therefore, the pricing, which is often the most important criteria while making the decision to purchase a retirement product, should appear reasonable to the customer, though it may not be fully transparent.

In addition to the risk-reward trade-off, a customer will be more price-sensitive due to the following reasons. The insurer will have the added responsibility of convincing customers that the fee is not only rational but is also justified.

- Considering the benefits, the cost of the product will be on a higher side.
- The product is relatively new, and so prone to being compared with unrelated products.
- Understanding of the product itself will not be easy for an average customer.
- The complex product structure may fail to win over convenience factors.
- Behavioral biases will play their role with lots of assumptions and subjectivity.

Is the CDA innovation practical?

Like any other complex product, the desirability of CDA is very subjective and depends heavily on the need, knowledge, and sophistication of the customer. Therefore, the desirability score for CDA will be much higher for a sophisticated customer, when compared to an ordinary customer. Moreover, recency bias related to equity market performance will also impact a CDA's evaluation. In an up-trending equity market, a customer failing to visualize that the 'investment account balance' could fall below the threshold may not appreciate CDA's benefits.

Theoretically from a financial standpoint, CDA is an important innovation and can potentially help retirees in many ways. Nevertheless, the product is complex, and there are many touch points besides investment tracking and compliance determination. Therefore, operational costs will be on the higher side unless the product structure sets additional discipline requirements.

Consequently, the CDA may not score well on practical grounds now but we must acknowledge that it has just been introduced and is yet to go through its maturity curve. The Retirement market may soon understand the need for a product like CDA, considering the extended longevity of the annuitants. Unquestionably, CDA may not suit all retirees or annuitants but will be both practical and a lifesaver for some of them.

The way forward

In the challenging retirement landscape, where 'retirement income gap' is a common problem, the innovative CDA features will be beneficial to several retirees. With the investment account remaining in the control of the customer, he or she can make additional contributions and/or withdrawals with the associated impact on the annual withdrawal limit. Furthermore, CDA has yet to go through its maturity cycle and can potentially provide many more flexible features in upcoming versions.

By and large, the high premium for a CDA may not be taken to very well by customers because of a lack of understanding. This product may appeal only to sophisticated customers in the initial years. To attract the attention of average customers as well, insurers will need to work hard to increase product awareness and understanding in the market.

Lastly, while in its current form CDA may not be suitable for all customers, it has at least brought in the paradigm of guaranteed retirement income. It is now for the retirement think tanks, actuaries, product development groups, and regulators to take the next steps in refining the product further.

Author

Nitin Kumar - *Lead Consultant, Infosys McCamish*

Nitin is a Financial Risk Manager (FRM®) at Infosys McCamish and has 8+ years of experience in Domain & Process Consulting, Business Analysis and Research. His areas of interest include Insurance, Annuities, Actuarial, Risk Mangement & Investments.

For more information, contact infosysbpm@infosys.com

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