THE VARIABLE PAYMENT LIFE ANNUITY EXPLAINED

A critical concern for new retirees is ensuring that they have sufficient income in retirement. As life expectancies continue to lengthen and the period of drawing retirement income reaches 25 years or longer, the risk increases that you may outlive the assets you have accumulated for retirement.

The UBC Faculty Pension Plan (FPP) offers a variable payment life annuity (VPLA) that can be a valuable vehicle for providing lifetime income. The VPLA is different than a traditional annuity purchased through an insurance company. This article examines the differences and presents some examples.

Traditional Insured Annuity

To buy a life annuity from an insurance company, you pay a lump sum to the insurance company in return for a predictable cash flow. You will receive a guaranteed, fixed amount of monthly income for as long as you live, regardless of market performance or changes in interest rates after your purchase.

The insurance company factors in three elements to determine the fixed monthly income you will receive based on your lump sum—interest rates, mortality rates, and expenses and administration costs—with interest rates having the largest impact. As a result, the amount of fixed monthly income you receive is dependent on the economic environment when you buy your annuity. The following table illustrates the amount of monthly income that a person age 65 at the date of purchase of a single life annuity would have received with a $500,000 balance:

Annuity Purchase Date	Monthly Income from $500,000 annuity purchase*
January 1, 2018	$2,544
January 1, 2019	$2,523
January 1, 2020	$2,461
January 1, 2021	$2,335
January 1, 2022	$2,476
January 1, 2023	$2,802
January 1, 2024	$2,839
January 1, 2025	$2,784

** based on the average of annuities from 5 insurance companies*

The higher the interest rates at the time of purchase, the higher the monthly income the insurance company is able to provide. Although interest rates began to decline mid-2024, the monthly income that can be provided in 2025 is still higher than the monthly income that could have been provided before 2023, as the table shows. Once the purchase is complete, the monthly income amount is a fixed amount guaranteed for life.

The insured annuity provides you with protection from two risks:

- **Longevity Risk** – the possibility that you outlive your accumulated retirement capital. The insured annuity guarantees you will receive a payment every month for your entire lifetime.
- **Investment Risk** – the possibility that the financial markets in which you invest to provide your retirement income perform poorly. With an insured annuity, the monthly amount is fixed at the time of purchase and is not impacted by future changes in economic conditions.

Both of these risks are transferred to the insurance company which incorporates an additional premium in its rates to protect itself from expected losses from these risks.

The FPP VPLA

You can use all or a portion of your accumulated funds to purchase a VPLA. Your money stays in the UBC FPP which means you continue to benefit from the low fees and professional investment management that you experienced while you were accumulating your retirement savings. The VPLA is similar to the insured annuity in that you exchange your funds in return for an income payable for your lifetime. But there is an important difference between the insured annuity and the VPLA annuity—the monthly payment from the VPLA is not a fixed amount for your lifetime. On April 1 each year, your monthly payment is adjusted either up or down based on the difference between actual investment returns and survivorship compared to the assumptions. In addition to the annual adjustments, changes are made from time to time to the VPLA assumptions in order to manage the variability of the annual adjustments and to help ensure that risk is appropriately shared among different generations of pensioners. The impacts of these elements are explained below. The table in the Appendix shows the annual adjustments that have been made to VPLA monthly amounts for each year since 2008.

VPLA Investment Adjustment

The lump sum amount you use to purchase the monthly annuity is invested in the UBC FPP's Balanced Fund. The investment performance of the VPLA portion of the Balanced Fund determines the investment adjustment to monthly amounts in pay.

The UBC FPP VPLA offers two choices: the 7% annuity and the 4% annuity. The initial monthly annuity under the 7% option is calculated based on an assumption that the Balanced Fund will earn 7% each year, and the monthly amount is adjusted each year by the approximate difference between 7% and the Balanced Fund's actual net rate of return in the previous year. For instance, if the Balanced Fund earned 9%, the monthly amount under the 7% annuity option would increase by approximately 2% on the following April 1. Conversely, if the Balanced Fund earned only 1%, the monthly amount would decrease by approximately 6%.

Similarly, the initial monthly amount paid under the 4% annuity is calculated based on the assumption that the Balanced Fund will earn 4% per year. Therefore the initial amount of the 4% annuity will typically be 20% to 30% lower (depending on the age of the retiree and spouse and form of pension elected) than that of the 7% annuity, but the annual adjustment of the 4% annuity will be about 3% higher than that of the 7% annuity.

Best estimates for the expected long term net return on the Balanced Fund are in the range of 5.25% to 6.25% based on economic modelling performed by the UBC FPP's actuary over the last three years. As a result, if you choose the 7% annuity, you should expect that your monthly annuity will generally decrease over time. The amount of your monthly annuity under the VPLA each year is directly impacted by the investment return of the Balanced Fund—**the investment risk remains with you**.

VPLA Survivorship Adjustment

Your monthly annuity may also increase or decrease as a result of the survivorship adjustment—in the VPLA **the longevity or mortality risk is shared amongst all of the VPLA retirees**. The initial monthly amount reflects life expectancy based on the mortality table for the UBC FPP in effect at the date of the purchase. In subsequent years, actual mortality experience is compared to the assumed mortality rates and monthly amounts may be adjusted accordingly. As a general rule, if more retirees than expected have survived, there is a negative adjustment; if fewer retirees than expected have survived, there is a positive adjustment. The adjustment also depends on the ages and annuity amounts of the surviving retirees.

VPLA Mortality Assumption Change

Based on a comprehensive study of Canadian pensioner mortality that was conducted by the Canadian Institute of Actuaries in 2014, the UBC FPP Board of Trustees approved the use of a new mortality table for determining future monthly amounts under the VPLA. This change took effect in 2017.

Comparison of VPLA and Insured Annuity

Unlike the traditional insured annuity, the initial monthly amount of the VPLA is not influenced by current interest rates. As a result, the initial monthly VPLA amount from a given lump sum is not very volatile from year to year—any differences in initial amounts for members retiring in different years are a result of mortality improvements. The table below illustrates the amount of monthly VPLA income that a person age 65 at the date of purchase would have received using $500,000 to purchase a single life annuity. The table also shows the comparable amount of annuity purchased from an insurance company.

Annuity Purchase Date	7% VPLA	4% VPLA	Insurance Company
January 1, 2018	$3,739	$2,842	$2,544
January 1, 2019	$3,734	$2,837	$2,523
January 1, 2020	$3,728	$2,832	$2,461
January 1, 2021	$3,723	$2,827	$2,335
January 1, 2022	$3,719	$2,823	$2,476
January 1, 2023	$3,714	$2,818	$2,802
January 1, 2024	$3,710	$2,814	$2,839
January 1, 2025	$3,706	$2,810	$2,784

The decline in the VPLA options over time reflects the impact of improvements to life expectancy, while the fluctuation in the insurance company annuity amounts also reflect the change in interest rates that are used by insurance companies to price their annuities.

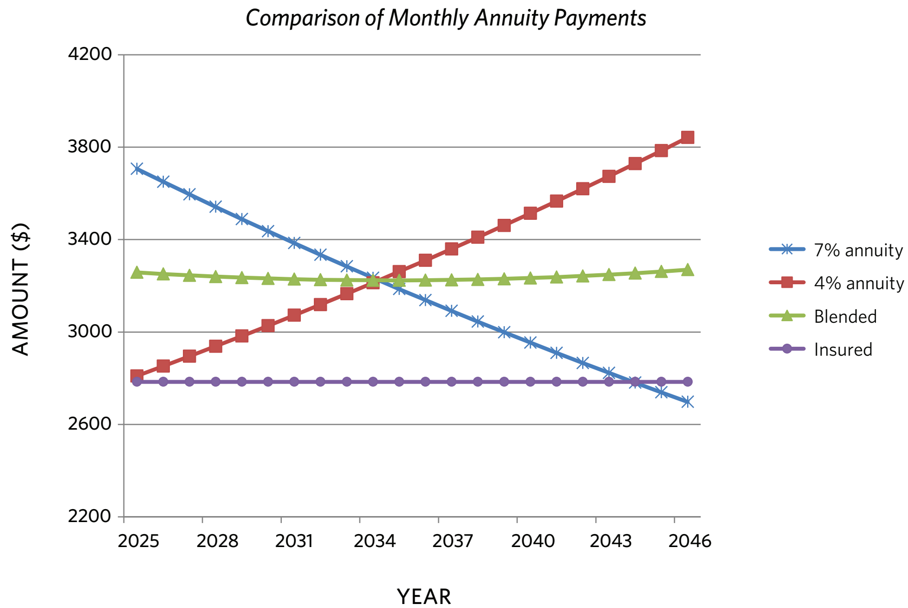
The VPLA in Practice

The following table shows how the 7% and 4% VPLA annuities were adjusted for 2024 and 2025:

	7% VPLA		4% VPLA	
	2025	2024	2025	2024
1. Balanced Fund Net Return in Prior Year	13.53%	7.57%	13.53%	7.57%
2. Investment adjustment	6.10%	0.53%	9.16%	3.43%
3. Survivorship adjustment	-0.36%	-0.81%	-0.38%	-0.85%
4. Mortality assumption change	0.00%	0.00%	0.00%	0.00%
5. Total adjustment (Row 2 + 3 + 4)	5.74%	-0.28%	8.78%	2.58%

Considerations in making your choice

The 4% annuity starts lower than the 7% annuity, but is expected to increase over time, which may better match your spending pattern in retirement. However, if you expect larger expenditures in the early years of retirement (for instance, to travel, purchase retirement property, etc.), the larger earlier amount of the 7% annuity may be preferable. Alternatively, you could do a combination of the two options allocating 50% of your balance to the 4% annuity and 50% of your balance to the 7% annuity, which is approximately equal to a 5.5% annuity. Given that 5.5% is currently in the range of long term expected Balanced Fund returns, you could expect more stable income using this blended approach compared to the other two options. The graph below shows the monthly annuity amounts under the three options assuming you used $500,000 towards the VPLA, and experienced net investment returns of roughly 5.5% each year, with negligible survivorship adjustments.



Both the VPLA and the insured annuity provide protection against longevity risk—the insurance company takes on this risk completely, while the VPLA pools this risk among all of the VPLA participants. The insured annuity also provides protection against investment risk. However, the amount of annuity an insurance company provides will reflect the fact that they are taking all of the risk, and will be priced accordingly.

Members approaching retirement are encouraged to seek the advice of a financial advisor, to obtain a quote of an insured annuity and to assess the suitability of all of the options available.

Appendix

Annual Investment Survivorship Adjustment to VPLA Pensioners

Year	7%	4%	Year	7%	4%	Year	7%	4%
2008	-4.94%	-2.22%	2014	4.84%	7.88%	2020	6.28%	9.32%
2009	-19.78%	-17.48%	2015	3.08%	6.03%	2021	0.43%	3.33%
2010	2.82%	5.78%	2016	-1.57%	1.29%	2022	4.15%	7.14%
2011	1.16%	4.06%	2017	-6.86%	-4.17%	2023	-11.46%	-8.90%
2012	-5.09%	-2.34%	2018	0.94%	3.85%	2024	-0.28%	2.58%
2013	1.82%	4.74%	2019	-8.06%	-5.42%	2025	5.74%	8.78%