Efficiency Dynamics of the Canadian SPIA Market

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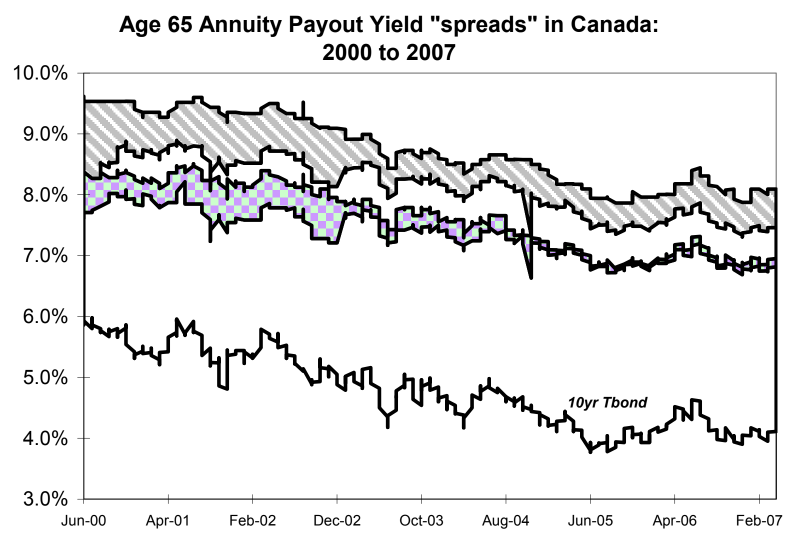
In this brief research note we document an improvement in the relative efficiency of the Canadian SPIA (single premium immediate annuity) market. Specifically, during the last ten years there has been a statistically significant decline in the spread or gap between the "highest" and "lowest" quotes offered by Canadian insurance companies and available to retiring annuitants. The phenomena of declining spreads – for a product that yields commodity benefits -- is usually associated with an increase in the economic efficiency of a market and is generally a positive development for consumers.

For example, in early 2000 the highest or best annuity quote available to a Canadian 65 year-old male led to approximately $9,620 dollars of annual lifetime income in exchange for a $100,000 premium. The lowest or worst quote offered the same 65 year-old male $8,310 dollars of lifetime income per $100,000 premium. In other words, the spread between the highest and lowest company quote – which is due to a variety of reasons – was approximately 1.3% of premium in the year 2000. Yet, towards the end of 2007, the same spread between highest and lowest had declined to a mere 63 basis points.



The above figure illustrates the overall decline of the highest-minus-lowest spread over the period in question. Note that for females this trend is even more pronounced compared to males. Of course, during the same period of time the overall annuity yield declined, primarily due to the decline in long-term interest rates; off which these instruments are priced.

For the purpose of our statistical analysis, we discarded any data outliers in the time series so that the figure reflects a true economic spread as opposed to being influenced by (or two) uncompetitive companies offering very low payouts. In general, the spread in annuity quote/yields across different companies can be (partially) justified by credit risk concerns, although guarantee funds offset and mitigate this risk and especially for lower premium levels. In other words, some level of quote/yield spread is justified.

A formal regression analysis provides us with a statistically conclusive rejection of the null hypothesis that quote/yield spreads have remained constant over the analyzed period. This conclusion is reached because the estimated coefficient on the slope – in the linear equation relating spreads to calendar time -- is negative for both males and females. In other words, there has been a economically significant decline in the spread as a function of time. The adjusted R-squared value (which is a measure of goodness of fit) is in the vicinity of 70%, which further implies that our model explains the variation in spreads over time. Notice also that the decline in spread is more pronounced (double) for males than for females, which is evident from the chart as well.

Is There a Trend in the Spread?

Regression Model: spread(t) = a + b*t + e

Gender	Coeff.		Adj R-sq
	a	b	
F	0.0059*	-0.00002*	0.7158
M	0.0083*	-0.00001*	0.7234

Either way, these results naturally lead to the question; why? Is this phenomena due purely to general competitive market forces or was there something unique that drove these spreads down?

Our current hypothesis is that during the last ten years (partially the result of internet availability) the cost of acquiring information about competing and rival annuity quotes has declined dramatically. Today, insurance agents, financial advisors and even individual consumers can log-on to a variety of websites to obtain up-to-date annuity quotes. Moreover, the availability of the unique CANNEX[1] service which allows users to obtain and compare this information in one location and on one platform has likely reduced the information costs as well.

In conclusion, although Canadians must now pay more for their life annuities (i.e. the overall annuity yield is lower), compared to the early 2000 period, the actual spread has declined. We interpret this evidence as an increase in the economic efficiency and competitiveness of the annuity market in Canada.

[1] Full disclosure: CANNEX Financial Exchange supplied the data that was used to generate this report and are a corporate sponsor of the IFID Centre.