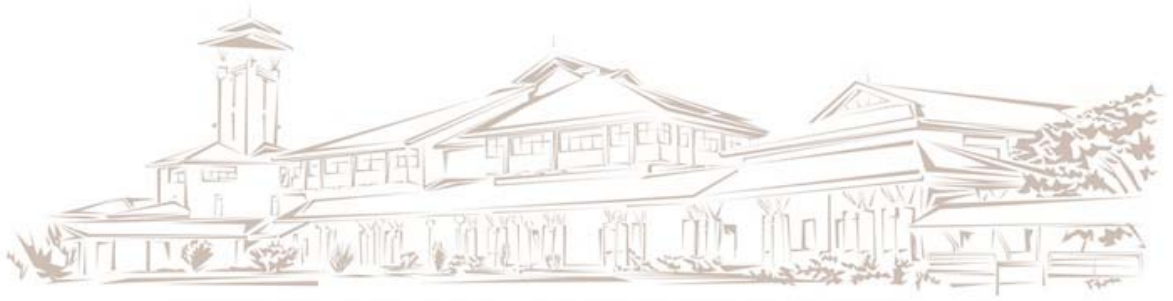


"A man is
great by
deeds, not by
birth"

-Chanakya

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INDIAN INSTITUTE OF MANAGEMENT KOZHIKODE



Case Study

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Incorporating inflation in a key planning exercise

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Incorporating inflation in a key planning exercise

Abstract: *How a simple tool learnt in Capital budgeting can help to figure out whether a retirement product is overpriced?*

Mr. Chaturvedi, aged 40, has just completed 15 years of service in the organization he had joined just after college. This was a remarkable achievement considering the fact that most of his college mates have changed at least two jobs during this time and the remaining have started their own business. Crossing this milestone set him thinking about his future career plans and especially about what he wants to accomplish before he retires.

He was also simultaneously thinking about his 'retirement number' i.e. the amount of wealth he would like to have when he retires so that he and his wife can continue to live comfortably, focussing on their true passions while continuing the same standard of living they are having right now.

But this number has been elusive for Chaturvedi due to various reasons. First, he is not sure about how to estimate the future cost of living, say 25 years from now. Second, how should he break this retirement nest at the time of his retirement? For example, should it be a fixed annuity or should it be an increasing annuity in such a way that it also takes care of inflation or should it be a like regular coupon bond giving coupons every month and the face value at maturity.

And lastly he is not sure how he can manage the longevity risk, since his assumptions on this factor is going to greatly affect his 'retirement number'. He started thinking more about the last point, ever since he read an article in a science magazine about how the longevity of humans have increased in the last 40 years.

For Chaturvedi, another trigger for the above thoughts had been a new annuity product named BRH (Bonds for Retirement Happiness) that he came across, which was claiming that it could solve most of the above problems through a single investment. The main idea of BRH was the following. It is a forward-starting product i.e. if Chaturvedi decides that he will retire in 2047 at the age of 65, he can buy the BRH-2047, which will pay him a fixed amount every month, from 2047 onwards, for a period of 20 years.

And most importantly the fixed coupons paid by BRH will be in terms of real rupees rather than nominal rupees. Besides BRH is more of an annuity than a bond, since besides the annual payouts there is no lump sum payment at maturity. This makes perfect sense for a retirement product. And this is how BRH was solving the first two problems of Chaturvedi.

Moreover, the BRH is designed in such a way that, one BRH-2047 promises ₹10 in real terms every month, for 20 years, starting from 2047. So if Mr. Chaturvedi calculates that post retirement, he and his wife will need ₹50,000 every month (in terms of today's purchasing power) to have a comfortable retired life, then he can target accumulating 5000 BRH-2047 before he retires.

Though the product has been well thought out, Chaturvedi was not immediately interested in BRH since the company selling this product is a relatively new name in the industry and he is not sure whether they will last for such long time periods in the competitive insurance market and with so much uncertainty whether he can park his entire retirement savings with this company.

Nevertheless, he was wondering whether one can calculate what is the maximum price one should pay for a BRH assuming an average real risk-free rate. This can give a simple check to see if the BRHs are really overpriced. Besides if he were to buy such a product from a safer and reliable provider, he was wondering what could be some of the ways in which he can manage the longevity risk problem, which is currently not addressed by the BRH.

Can you help Mr. Chaturvedi?

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