

## ***The Actuary magazine, December 1999***

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Dear Editor

You ran an article in your November issue apparently reconciling financial economics and actuarial intuition. It took us some time to realise it wasn't a hoax, at which point we felt obliged to set down some comments and address the article's omissions.

The most glaring absentee from Mr Truslove's flawed analysis was the point about considering a pension fund and its associated employer in aggregate. The risk that financial economists focus on is not that of the pension fund, rather of the sponsoring employer's share price. True-blue financial economists would claim that any apparent gain from equity investment within the pension fund is cancelled out by the share price being depressed, due to shareholders being averse to the extra volatility introduced.

(However, as a slightly wavering sceptic, one of us has previously written on his doubts about this in practice eg the theory is inapplicable for privately-owned companies, and shareholders do not seem to act in as analytical a way as the theory would require.)

Next, Mr Truslove appears to believe the debate is about equities versus fixed interest, and that financial economics claims that the same single asset is appropriate regardless of liability duration. Both are false. The goal of financial economics is identifying (virtually) "default free" investments, be they index-linked or fixed interest, and of short or long term, both of these characteristics being included so as to reflect the liabilities for which the pension fund is responsible. This all comes without any equations. (The sceptic would also point out that it comes without consideration of the relative market sizes and breakdowns of the asset classes involved, but that's another article in itself.)

Once he starts on the "simple financial economics approach", Mr Truslove appears to bring in more red herrings than would be found in a Russian fish market. He seems to sneer at maths ("arcane equations"), and then produces fallacious equations of his own. He thinks "no risk [at future time  $t$ ]" is the same as "zero mean and variance" at that time according to the stochastic model selected, but "no [investment] risk" is much more than that – it is about aiming for absolute equality between assets and liabilities with no dependence on any model of future asset returns.

He then claims that there is an assumption within "simple financial economics" (in his notation) of  $A$  and  $L$  being uncorrelated. The whole point is that they are heavily correlated, and that's why matching is the (often understated) focus of financial economics. By extension, no financial economist would claim zero variance of  $L$  at a future time  $t$ , but they would look to achieve zero variance of  $A-L$ .

Quite what Mr Truslove's concept of liabilities being 'at call' is (and its relevance) still eludes us. It could just mean that the liabilities are not in payment yet, which seems a variant on saying "it'll all work out in the long term". However, it misses the point that whilst pension fund liabilities are not traded on an open market like shares, they are traded as part of corporate transactions. Consequently, proper market values for them are required, and as a complement to this come 'zero investment risk' strategies.

Ultimately, for proper liability valuation, everything reduces to just considering the shape of asset and liability proceeds.

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