A New Approach to Auto-Enrolled Pensions
An abridged version of Colm Fagan's entry for the Frank Redington Pension Prize 2022

Auto-enrolled (AE) pension schemes enjoy positive cash flows for decades from their introduction, so investments should be chosen to deliver good long-term returns. In the long-term, returns from 'risky' assets ('equities' for short) exceed those from 'safe' assets ('bonds' for short) by a significant margin: otherwise, why take the risk? Future equity outperformance – the equity risk premium (ERP) – was recently[1] estimated at an average 5.5% a year by 1,756 US economists. There will be times, of course, possibly extending into years, when equities fail to deliver the expected outperformance and even give negative returns in absolute terms. Over a contributor's lifetime, however, from date of joining until final pension payment, which could be seventy years or more, the ERP can be relied on to do its job.

What do we find instead? The default investment strategy for most AE schemes is to invest heavily in equities when members are young, aiming to capture the equity risk premium, but to gradually transfer accrued funds and new contributions to 'bonds' as retirement approaches, often starting ten years out. At retirement, members decide individually where to invest their proceeds, usually with help from a financial adviser, who takes account of their personal risk appetite. The normal advice, especially for less affluent retirees, who comprise the bulk of AE members, is to invest cautiously. New retirees are normally advised to invest less than 50% in equities and to reduce the equity proportion further as they get older. At the extreme, annuities mean 100% in bonds.

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At an aggregate level, default investment strategies are a gross waste of resources and of the scheme's potential to earn good returns for members. Great care is taken to record the precise composition of each member's account by asset type, tracking its value to the penny on a daily basis and, as retirement approaches, shuffling assets from 'equities', which are expected to earn high returns, to 'bonds', which are expected to produce considerably lower returns. There is more shuffling at retirement, as personal financial advisers are brought into the picture and funds are transferred out of the low-cost scheme into more costly individual products.

And to what end? All with the aim of reducing volatility of investment returns for older members. The first and biggest drawback of such transfers is that they force members to sacrifice return just when their accounts have their highest earnings power. Other things being equal, the potential return in a single year for a member close to retirement could exceed the total return in the first ten years for a new joiner. Secondly, they presuppose that younger members can suffer the occasional heavy loss with more equanimity than their older counterparts. They cannot. No-one likes to lose money. It always hurts. The only reason why losing might seem to matter less to younger members is because they have less to lose. Thirdly, they increase costs. Costs are particularly high when members leave the scheme at retirement, losing its bulk buying power. The cost of personal advice post-retirement is an ongoing drag on returns. Good advice doesn't come cheap and the cost bears proportionately heavier on pensioners with smaller pots.

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[1] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3861152

Members get 70% better value if their savings are invested entirely in 'equities' from date of joining until death. The 70% estimate assumes an average ERP of 4% a year and compares with an alternative 'lifestyle' strategy of investing 80% in equities until ten years before retirement, falling to 50% by retirement and staying at 50% through retirement. It also assumes lower costs from members remaining in the scheme post-retirement, continuing to enjoy the scheme's bulk buying power.

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My entry for the Redington Pension Prize takes this approach. It proposes a single fund for all members, invested 100% in equities. A key element is that it proposes smoothing of investment returns, to such an extent that pension accounts can be viewed and administered like high-interest savings accounts, allowing members to enjoy equity returns for their entire membership, including all through retirement, at volatility levels close to deposit accounts. Smoothed returns are calculated monthly and each member gets the same percentage return: young or old, active or retired, large or small account.

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Each month, the smoothed fund value is calculated by giving:

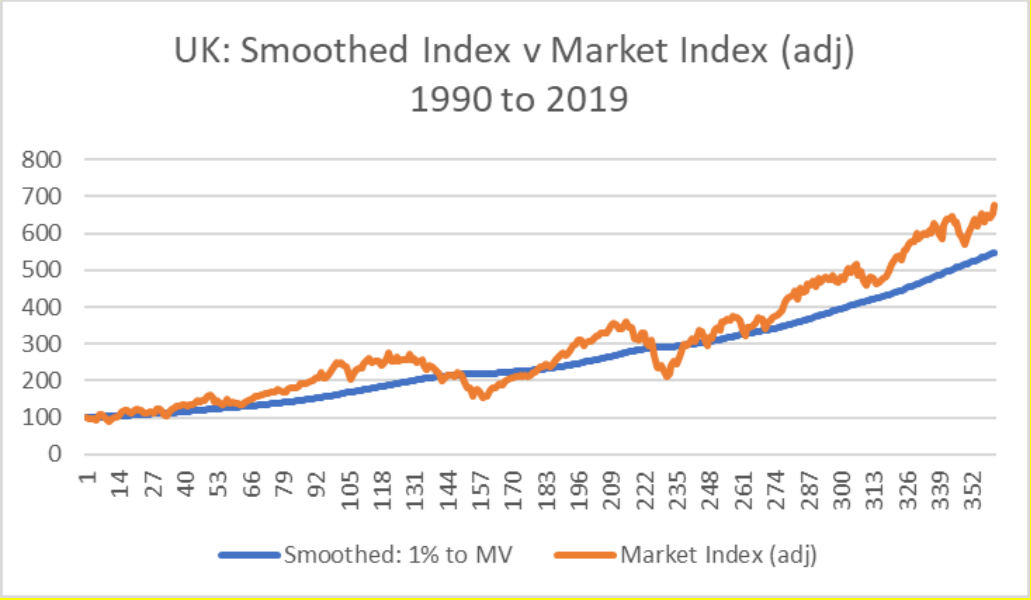
i. a 1% weighting to the current month's market value (excluding current month's cash flow),
ii. a 99% weighting to the previous month's smoothed value increased by one month's expected return at the assumed long-term rate (say 4% a year), and
iii. adding current month's cash flow.

An example of smoothed and market returns in the first six months of 2020 on the above formula is shown below. It assumes a scheme start date of 1 January 2020 and cash flows increasing arithmetically as the scheme is rolled out, i.e., 1 in January; 2 in February; etc.:

Month	Jan 2020	Feb 2020	Mar 2020	April 2020	May 2020	June 2020
Market return:	**-3.3%**	**-8.9%**	**-15.1%**	**+4.9%**	**+3.4%**	**+1.5%**
Smoothed return:	**+0.3%**	**+0.2%**	**+0.1%**	**+0.2%**	**+0.3%**	**+0.3%**

Monthly smoothed returns over the six-month period vary by just 0.2%, between +0.1% and +0.3%, one hundredth of the 20% range for unsmoothed returns over the same period, from -15.1% to +4.9%.

Smoothed and market return for the UK market for the 30 years 1990 to 2019, on the same formula, are graphed below:



Smoothed returns, blue line, are positive every month for the entire period; market returns, orange line, fall about one month in three. On 10 occasions over the 30-year period market values fell by more than 8% in a month. Of course, there is no guarantee that smoothed returns won't be negative occasionally, but the long averaging period, the long-term confidence in the ERP and the stabilising influence of positive cash flows minimise the risk. What happens when cash flows turn negative will be discussed later. The fact that negative returns are allowed eliminates the risk of the sponsor being on the hook for guarantees.

Smoothing is possible because the unique features of auto-enrolment can be used to prevent members from selecting against the scheme. Contributions will be a fixed percentage of reckonable earnings – no AVC's - so workers will not be able to contribute more when smoothed value is less than market value or less when it exceeds market value. Ceasing contributions entirely when smoothed value exceeds market value doesn't make sense in the short-term because it means losing the benefit of the employer's contribution. Longer-term, an alternative employer-sponsored scheme poses a bigger challenge, but one that can be overcome. Similarly, opportunities to bring forward or delay retirement to take advantage of smoothed value exceeding market value are limited, especially for the lower paid. Retiring members will be obliged to take 25% cash, the other 75% on a gradual basis during their retirement, removing another possibility for selecting against the scheme. Transfers in and out will be prohibited. As a final comment under this heading, retired members will be allowed to vary the regular 'pension' withdrawal for personal demographic or economic reasons, e.g., take less if working part-time; take more if a son or daughter is still in college; but not for financial reasons.

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Some critics claim that the smoothed approach to AE is just a version of with-profits. The objectives are the same, to enable members to enjoy the benefits of equity investment while protecting them from the associated volatility. There are key differences, however. The smoothed approach to AE keeps the good parts of with-profits and removes the bad parts. Unlike with-profits, the trustees have no discretion on 'interest rates' credited to members' accounts. They are determined by a formula that is tamper-proof. Secondly, trustees have no discretion on asset allocation: 100% is

invested in 'equities', always. In the past, with-profit companies were sometimes accused of acting against policyholders' long-term interests by moving assets pro-cyclically from equities to bonds when markets fell. There is no such risk with the smoothed approach to AE. Thirdly, there is no need for an 'estate'. A 'buffer account' will be needed when cash flows eventually turn negative, expected sometime after year 30, to pay the excess (if any) of smoothed value over market value for net exits. Similarly, the buffer account will be credited whenever market value exceeds smoothed value for net exits when cash flows turn negative. The buffer account will be funded from margins in the management charge, which will emerge from around year 15. Projections indicate that the buffer account will be more than adequately funded by the time cash flows turn negative.

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In conclusion, the smoothed approach to AE meets the brief for the Redington Pension Prize of delivering a low-cost affordable pension to the majority of the population, and of ensuring that investment managers take a long view on investments, one conducive to investing sustainably.

The full entry can be found at https://actuaries.org.uk/media/q42dthzb/colm-fagan.pdf