

A Capital-Backed Decumulation Framework for Defined Contribution Retirement

OLTIP as a Structured Proposal for Discussion and Critique

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Defined contribution pension systems have made substantial progress in accumulation but remain structurally weak at decumulation. This note presents OLTIP — a capital-backed, rule-based income framework — as a possible contribution to the search for a more coherent post-retirement design in defined contribution systems. The framework uses a smoothed capital base to govern payouts, an explicit payout ceiling, and a conditional override during capital stress. It is offered here not as a finished product, but as a design proposal for discussion, critique, and potential empirical testing.

1. The Problem: DC Systems at the Payout Threshold

Defined contribution pension systems have solved one problem and exposed another. Decades of reform have produced increasingly effective accumulation architectures — contribution defaults, pooled investment vehicles, and scalable governance. What they have not consistently produced is a credible structure for converting accumulated capital into post-retirement income.

The decumulation problem is not simply a question of withdrawal rates. It is a design problem. Retirees do not experience retirement as an abstract optimisation exercise. They experience it as a need for regular income, a fear of depletion, and deep uncertainty about what level of spending can be sustained when markets are volatile and longevity is unknown. Yet most defined contribution arrangements still treat the payout phase as an individual choice to be solved ad hoc.

Existing approaches each carry clear trade-offs. Full annuitisation provides income certainty but at the cost of flexibility, capital access, and — in many markets — participant acceptance. Pure drawdown preserves flexibility but exposes retirees to sequencing risk, behavioural error, and income volatility that many find unmanageable. Hybrid approaches may improve outcomes but often remain operationally complex or too costly for large-scale deployment.

In practice, many retirees either withdraw too cautiously, suppressing their living standards unnecessarily, or withdraw too aggressively, increasing the risk of later shortfall. Neither outcome reflects good system design. The deeper weakness is not that DC systems expose retirees to risk — some risk is unavoidable — but that they have too often failed to decide what kind of income and capital continuity they are actually trying to produce.

2. Design Objectives

Any proposed improvement in DC decumulation must satisfy several objectives simultaneously. A technically elegant solution that participants cannot understand, providers cannot administer, or regulators cannot assess is unlikely to gain institutional traction.

The framework proposed here is evaluated against five criteria:

- **Income stability.** Retirees organise their lives around regular spending commitments, not portfolio values. A credible system must not mechanically transmit market volatility into monthly income.
- **Capital discipline.** Income and capital are not independent. A credible system must maintain a transparent and rule-governed relationship between the two.

- **Comprehensibility.** A framework must be explainable to ordinary participants. Opacity generates mistrust, disengagement, and dependence on costly advisory support.
- **Institutional scalability.** To be relevant in DC contexts, a framework must be deployable across large participant populations at low marginal cost.
- **Continuity.** The framework does not begin from the assumption that retirement capital is meant to be gradually consumed to exhaustion. It begins from the possibility that disciplined capital can serve simultaneously as a source of retirement income and as a continuing family asset. In that sense, capital continuity is not treated as a residual by-product, but as a legitimate design objective in its own right.

3. The OLTIP Framework: Operating Logic

OLTIP is conceived as a rule-based framework for converting accumulated DC wealth into retirement income while retaining — and where conditions allow, growing — an invested capital base across time. It is neither a guarantee nor a drawdown product. Its purpose is to impose a more stable and disciplined structure on the payout phase than ordinary drawdown typically achieves, without the cost or opacity of embedded insurance.

3.1 The Core Insight

The value relevant for setting retirement income should not be identical to the portfolio’s current market value. Live valuation matters, but if income is determined directly from it, retirees face payout changes that are too frequent, too abrupt, and too closely tied to temporary market conditions. OLTIP therefore separates the income-setting function from day-to-day portfolio fluctuation.

3.2 Mechanism

The framework operates through three linked rules:

SMOOTHING Payout is anchored to a long-horizon smoothed net asset value (NAV), not to current market price. Short-term volatility is absorbed rather than transmitted into monthly income.

PAYOUT CAP Monthly income is subject to an explicit upper boundary linked to the smoothed NAV. This prevents distributions from exceeding what the capital base can sustainably support.

OVERRIDE (CPO) A Capital Preservation Override activates when the smoothed NAV falls materially below its prior peak. During the override, payouts are reduced. The override deactivates only upon recovery to a new smoothed peak — not on the basis of discretion.

Taken together, these rules are intended to produce an income path that is more stable than ordinary drawdown and more transparent than many hybrid retirement income structures. Crucially, all three rules are pre-specified. Once parameters are set, operation requires no ongoing discretionary judgement.

3.3 What OLTIP Does Not Do

OLTIP does not pool longevity risk. It does not provide a guaranteed payout. It does not require an insurance wrapper or the pricing logic associated with guaranteed income products. These are deliberate design choices, not omissions. The framework is intentionally capital-backed rather than promise-backed, and its trade-offs are made explicit rather than concealed within product pricing.

What the framework does instead is impose a durable operating logic on the relationship between a household and its long-term capital. Income is extracted according to transparent rules; the capital base remains invested; and the framework is designed to continue functioning across time horizons that extend beyond a single retirement — not by promising a specific outcome, but by maintaining the discipline that makes a continuing outcome possible.

In this respect, the framework shares some features with an endowment-like logic, although it is applied here in a very different institutional context. The analogy is imperfect — endowments operate at institutional scale with different governance and liquidity constraints — but the underlying logic is similar: capital governed by explicit rules, income governed with a view to preserving the capital base where conditions allow, and the preservation of the capital base as a first-order objective alongside, not subordinate to, the income function.

4. Potential Advantages

A framework of this type may offer several advantages over conventional DC payout arrangements.

Reduced income volatility. Because payout tracks smoothed rather than live capital, retirees are less exposed to having monthly income shaped by temporary market dislocations. This may improve both financial usability and psychological resilience, particularly in the early retirement years when sequencing risk is most consequential.

Capital continuity. Unlike annuitisation, OLTIP preserves the participant's connection to invested capital. Assets remain visible, potentially growing, and capable of supporting longevity, contingency, or intergenerational transfer.

Institutional tractability. Because the approach is rule-based and does not require individual configuration, it may be more suitable for large-scale DC deployment than solutions dependent on continuous advice or bespoke product construction.

Structural simplicity and cost efficiency. Because the framework relies on a limited set of transparent operating rules rather than embedded guarantees, insurance layers, or complex product engineering, it may be capable of implementation with unusually low structural cost. In long-duration retirement settings, that feature may be institutionally significant rather than merely incremental.

5. Trade-offs and Limitations

Any serious discussion of a decumulation proposal must address its limitations directly.

OLTIP does not eliminate risk. It is capital-backed, not guarantee-backed. In sufficiently adverse conditions, payouts will be reduced. This should not be treated merely as a communication issue. It is a structural feature of the framework and would need to be explained clearly to participants from the outset.

The smoothing mechanism that stabilises income may also delay recognition of genuine capital deterioration. That is by design — the framework is intended to avoid overreaction to short-term volatility — but the calibration of smoothing horizons requires careful empirical attention, particularly under sustained adverse conditions rather than temporary shocks.

Participant understanding remains a live challenge. A framework may be simpler than most alternatives and still require careful explanation. Participants must understand why income does not rise immediately in strong markets, and under what conditions the override may reduce their payments. Without that clarity, even a well-designed system may suffer from mistrust.

Institutional implementation also raises governance questions: how parameters should be set and reviewed, what disclosures are appropriate, how the framework integrates with local regulation,

advice regimes, and tax treatment. The design logic does not answer those questions by itself; it only clarifies what questions need to be answered.

6. Research Agenda

- Simulation across historical market environments, including severe adverse entry sequences and prolonged low-return periods.
- Comparative analysis against alternative payout structures: simple drawdown rules, annuity combinations, and target-date income pathways.
- Behavioural research into how participants perceive income smoothing, the payout ceiling, and conditional reductions during the capital preservation override.
- Jurisdictional and governance fit: how parameters should be set and reviewed, what disclosures are required, and how the framework integrates with local DC regulation, advice regimes, and tax treatment.

7. Conclusion

Defined contribution systems have made substantial progress in the accumulation phase. The decumulation phase has not kept pace. In many systems, participants are still expected to convert capital into income with limited structure, limited support, and limited protection against the consequences of poor timing or behavioural error.

This note has presented OLTIP as a structured proposal, not a finished solution. It is a design framework for converting accumulated DC wealth into more stable post-retirement income, grounded in invested capital and governed by a small number of transparent rules. It is offered here to invite critique, empirical testing, and debate — not to claim a resolved answer to a problem that remains genuinely open.

If defined contribution pensions are ultimately to be judged not only by how effectively they accumulate assets, but by how well they support life after work, then the payout phase deserves considerably more deliberate design than current DC practice typically allows. OLTIP is offered in that spirit: not as a finished solution, but as a structured post-retirement design that may help clarify what defined contribution systems should be trying to achieve once the saving is done.

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