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Cash-flow Driven Investing – Not quite investing like an insurer

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Cash-flow Driven Investing

Not quite investing like an insurer

Introduction

- Talks about CDI often start with “this is not new, it is what insurers have been doing for a long time”.
- Then an investment strategy is presented that:
 - Bears only superficial resemblance to what insurers actually do
 - Fails to address a number of key risks
- For example, reliance on selling assets. That is NOT a cash-flow matching strategy!
- From an insurer perspective, neither are the following:
 - Only matching the first few years of cash flows and then using swaps and other derivatives to the hedge rates and inflation sensitivities for longer duration liabilities. This is LDI.
 - Investing in credit assets that have uncertain cash flows, eg High Yield bonds, which are both at material risk of defaulting, and also are typically callable so there is no contractual certainty either.

Why should pension professionals care?

- Pension schemes don't have the regulatory constraints of insurers (particularly annuity providers running a Matching Adjustment), so why shouldn't there be a wider range of "flavours" for them to choose from?
 - At a basic level, if the risks involved in CDI are better understood then different approaches can be compared.
 - If a pension scheme is at the point where it can afford to implement CDI, then it should not be taking unnecessary risks. For example:
 - Because they are not understood or appropriately quantified
 - Because they suit the skill set of the manager or adviser selling the solution!
- **This presentation looks at what insurers do, and why they do it.**

Key insurance principles for CDI

- Avoid market risk and forced selling of assets
- Target *best estimate* liabilities
- Link the yield on the assets to the discount rate for the liabilities
- Understand and quantify all the risks and incorporate them in how the discount rate is set
- Understand how credit performs through the cycle, particularly in severe downturns, and capitalise an appropriate reserve
- Set holistic performance measures
- Be holistic in terms of governance, performance, and portfolio management

Which cash flows to target?

- Strip out actuarial prudence (on longevity and inflation) to get to best estimate cash flows
- Be aware of basis/model risk
- Avoid spurious accuracy on deferred member liabilities

“Prudence” in cash flows does not work

- When a bond defaults there is a gap in the cash flow profile.
- You need to fill it, but you have nothing to sell, because the prudent approach to setting cash flows may mean that there are no excess assets!
- It is difficult to justify reducing prudence in order to free up some assets, since there has just been a default.
- Even if you do free up some assets by releasing prudence, you then need to sell small amounts of assets across all liabilities in order to buy the missing cash flow
 - inefficient
 - introduces the market value risk that CDI was intended to avoid.

Discounting

Fundamental point:

- Safely discounting liabilities at a matching adjustment is hard!
 - Need to minimize all other risk, particularly interest rate risk, otherwise MV movements will swamp movements due to credit spread changes.
- Dangerous to run a pensions CDI strategy where the discount rate is NOT dynamically linked to credit spreads
 - MV movements in funding position will be huge
- Can't you simply allow for mean reversion in a recovery plan!?
 - Confidently separate credit MV movements from everything else?
 - Apply prudence in a wide spread environment?
 - Satisfy TPR?
- High risk for the sponsor of needing to put more money into the scheme!
 - At precisely the point where affordability may be low.

Prudence in the discount rate

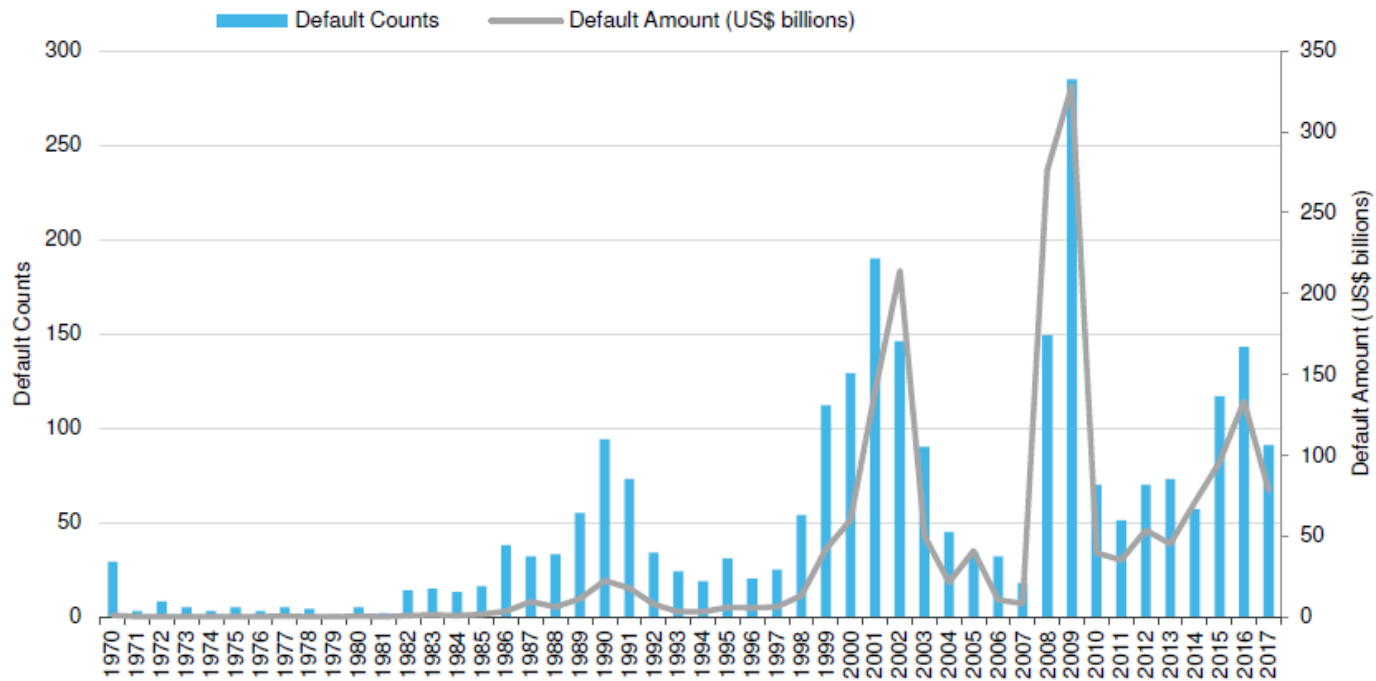
- Annuity providers often have relatively high discount rates (compared to mature pension schemes)
 - Making them (ironically) seem less prudent
- However, the *build-up* of that discount rate is more prudent, with more risks quantified and accounted for by haircuts to the weighted average spread
 - Defaults
 - Downgrades
 - Trading costs
 - Reinvestment
 - Hedging (FX and Inflation)
 - Investment Management fees

CDI – not just about the assets



A reserve is not optional

Unexpected losses are expected!



Source: Moody's Annual Default Study: Corporate Default and Recovery Rates, 1970 – 2017



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How big a reserve?

Stating the obvious

- Make sure your reserve is big enough to cover the economic downturns that occur periodically in financial markets
- The more risky your assets, the bigger the reserve you will need
- The longer the maturity of the liabilities the larger the reserve needed

And not so obvious

- The size of the reserve depends on the investment strategy
- The reserve needs to be funded (at least in part)

Cash flow matching tests

- The PRA has 3 cash flow matching tests that it requires firms using Matching Adjustment to employ.
- What are they?
- Why are they needed?
- Unsurprisingly they are about risk:
 1. The risk of running out of cash and having to rely on selling assets to meet liability payments
 2. The risk of moves in rate, inflation, or FX damaging the solvency position

Cash flow matching tests

Test 1: Accumulated Cash-flow Shortfall Test

- project best estimate liability cash flows in the MA portfolio;
- project cash flows from assets after adjusting for probability of default;
- accumulate cash flow surpluses and shortfalls at the risk free rate;
- **Threshold:** The maximum accumulated shortfall in any year of the projection should not exceed 3% of the present value of liabilities calculated at the risk free rate.

Comment: a common sense test. Anyone employing CDI should use something similar

Cash flow matching tests

Test 2: 99.5th Percentile Value at Risk (VaR) Test

- calculate the 99.5th percentile 1-year value at risk (VaR) of the MA portfolio for interest rate, inflation and currency risks;

Threshold: the undiversified 99.5th percentile 1 year VaR capital requirement should not exceed 1% of the firm's calculated best estimate liabilities for any of the three risks.

Comments:

- Hedging rates etc. on a PVO1 basis is not good enough when it comes to cash flow matching.
- For example you need to allow for the impact on liability valuation that arises due to the interplay between credit spreads and yield curve movements (parallel shifts, steepening etc)
- Any pension scheme adopting a dynamic discount rate needs to be aware of the above risks to its funding position and consider how to mitigate and manage them.

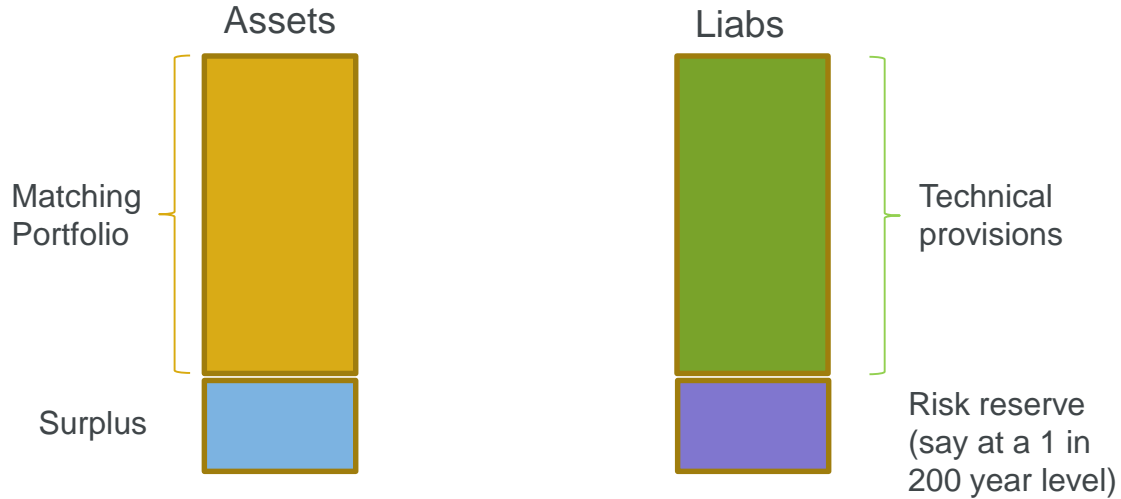
Reality check

- You need a risk budget (and a decision making framework) in order to “maintain” a credit portfolio.
- If a manager or advisor is only allowing a haircut for defaults when they calculate an expected return then, then they probably will be “holding” rather than maintaining the portfolio.
- Allowing portfolios to deteriorate, rather than trading to preserve quality, increases the tail risk
- Most CDI strategies have not been tested during a downturn – the past 10 years have been benign conditions for credit
- The investors who have been operating long-duration, investment grade credit portfolios through economic cycles are life insurers.

Measuring performance

- Large danger of increasing tail risk with passive investment strategies
- But constantly selling to avoid downgrades will also destroy a lot of value
- How should we balance risk and costs?
- A holistic measure of success is crucial
 - One that incorporates expected returns (through the liability discounting) as well as risk
 - Giving the portfolio manager an effective decision making tool.
- Insurers use a Solvency balance sheet
 - Doesn't rely on stochastic projections of returns
 - Captures the risk of credit losses up to a desired confidence limit
- Seems like a useful concept for pension schemes employing CDI

Measuring performance



Every investment decision can be considered in terms of the impact on the left side vs the right side.

Questions

Comments

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