betashares

Enhancing Australian fixed income indexing

ASX: OZBD Australian Composite Bond ETF

Contributors

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Introduction

For many Australian investors, traditional fixed income is a challenging asset class to navigate, which has led to an over-reliance on broad, simplistic market indices that are arguably inefficient as an investment strategy or for performance benchmarking.

The two main culprits causing the inefficiencies in these traditional benchmarks are liability-weighted indexing and the inclusion of bonds with less than one year to maturity.

Firstly, with liability-weighted indices, issuers can increase their own weights in the index by issuing more debt, and through their issuance patterns, they can influence the resulting composition of the index. Over time, issuers with larger borrowing requirements creep up in weight. However, unlike equities, bonds do not provide potential upside based on the issuer's financial condition. Therefore, the increase in issuer weight is not financially justified and serves only to introduce additional risk due to the escalating cost of servicing an increasingly larger debt burden.

The second major inefficiency arises from the inclusion of bonds with maturities of less than one year. These bonds generally offer insufficient compensation and incur transaction costs. Investors would be better placed in alternative investments such as bank bills or cash deposits for this segment of the curve (see Chart 6).

Active bond managers have tended to prefer liability-weighted benchmarks for performance benchmarking. By capitalising on these inefficiencies, they can systematically harvest risk premiums, such as credit[1] and term premiums[2] to potentially generate outperformance. However, investors have historically been left with the suboptimal choice of either investing in low-cost funds that track inefficient benchmarks or paying away fees to active managers that exploit these inefficiencies.

This paper discusses a more 'balanced' approach to investing in Australian bonds which seeks to elevate the standard of benchmark indexing.

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[1]Asvanunt, A. A. & Richardson, S. R., 2017. The Credit Risk Premium. The Journal of Fixed Income, 26(3), pp. 5-22.
[2]Bank for International Settlements, 2007 Quarterly Review: The bond market term premium: what is it, and how can we measure it?

The Bloomberg Australian Enhanced Yield Composite Bond Index

In partnership with Bloomberg, the world's leading provider of fixed income indexing, Betashares has co-developed the Bloomberg Australian Enhanced Yield Composite Bond Index (Bloomberg code I36601) (Enhanced Index), which the Betashares Australian Composite Bond ETF (ASX: OZBD) seeks to track (before fees and expenses). We assert that this index provides a superior and more optimised solution for benchmarking fixed-rate bonds denominated in Australian dollars (AUD). Our rationale for this approach is outlined in three sections:

1. **The Enhanced Index methodology** – an understanding of the design and objectives of the index.
2. **The asset allocation of the Enhanced Index–** an examination of how the index has optimised asset allocation across varying market conditions.
3. **The performance attribution of the Enhanced Index** – an analysis of how the optimisation has enhanced yield and delivered superior risk-adjusted returns.

Please note that, in this paper, any return or performance information for the Enhanced Index does not take into account OZBD's management fee and costs (0.19% p.a.).

Enhanced Index methodology

The Enhanced Index is derived from the Bloomberg Australian Aggregate 100mn Index (Bloomberg code I31101), referred to as the "Parent Index", and seeks to enhance it by applying optimisation techniques designed to increase portfolio yield while largely preserving the risk characteristics of the Parent Index[3].
It is important to note that, for comparative purposes, the Bloomberg AusBond 0+ Yr Index (Bloomberg code BACM0), commonly known as "AusBond Composite", exhibits risk and return characteristics that are largely aligned with those of the Parent Index referenced in this paper. As demonstrated in Table 1, the AusBond Composite and the Parent Index have shown a correlation and Beta close to 1 over the ten years to 31 December 2024. In fact, the Parent Index has demonstrated slightly superior risk-adjusted returns, thereby presenting a more 'demanding' benchmark for analysis in this paper.

Table 1: Bloomberg PORT calculated 10-year statistical summary of the Parent Index vs. AusBond Composite (as at 31 December 2024)

Statistic	Parent Index	AusBond Composite Index
Beta (ex-post)	1.00	
Correlation	1.00	
Jensen Alpha	0.01	
Information ratio	0.02	
Total return	21.77%	21.59%
Annualised return	1.99%	1.97%
Standard deviation	4.08%	4.12%
Sharpe ratio	0.08	0.07

Source: Bloomberg. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

[3]Bloomberg Australian Enhanced Yield Composite Bond Index methodology. Available at: https://assets.bbhub.io/professional/sites/27/Bloomberg-Index-Publications-36601_20240827.pdf

Eligibility rules for securities in the index

The Parent Index employs stringent eligibility criteria to select constituents, ensuring that only high-quality, liquid securities are included. Key rules include:

- **Credit ratings**: Bonds must be rated investment grade (Baa3/BBB-/BBB- or higher).
- **Currency denomination**: Only bonds denominated in AUD are eligible.
- **Issuance size**: Bonds must have a minimum issuance size of AUD 100 million for domestic issues and AUD 300 million for global issues (AUD bonds issued outside Australia).
- **Maturity requirements**: Bonds must have at least one year until maturity. Fixed-to-floating rate bonds are excluded one year prior to the conversion date.

Index optimisation

An optimiser, as described in the Bloomberg Fixed Income Optimisation Methodology, is applied monthly to all eligible securities in the Parent Index and seeks to maximise yield to worst while adhering to predefined constraints.

Optimisation occurs by re-weighting the following eight sub-sectors based on issuer type and time to maturity. While the weights of each sub-sector relative to others may increase or decrease during optimisation, each sub-sector is subject to a minimum weight of 5%. The security-level weights within each sub-sector remain unchanged, ensuring that extreme re-weighting of any individual security is avoided. The eight sub-sectors are:

Government Bonds (Australian Federal, State, and Territory issuers):

- Australian Aggregate 100mn Government 1-5 Year
- Australian Aggregate 100mn Government 5-7 Year
- Australian Aggregate 100mn Government 7-10 Year
- Australian Aggregate 100mn Government 10+ Year

Non-Government Bonds:

- Australian Aggregate 100mn Non-Government 1-5 Year
- Australian Aggregate 100mn Non-Government 5-7 Year
- Australian Aggregate 100mn Non-Government 7-10 Year
- Australian Aggregate 100mn Non-Government 10+ Year

The risk profile of the Enhanced Index is kept in line with the Parent Index through the following constraints:

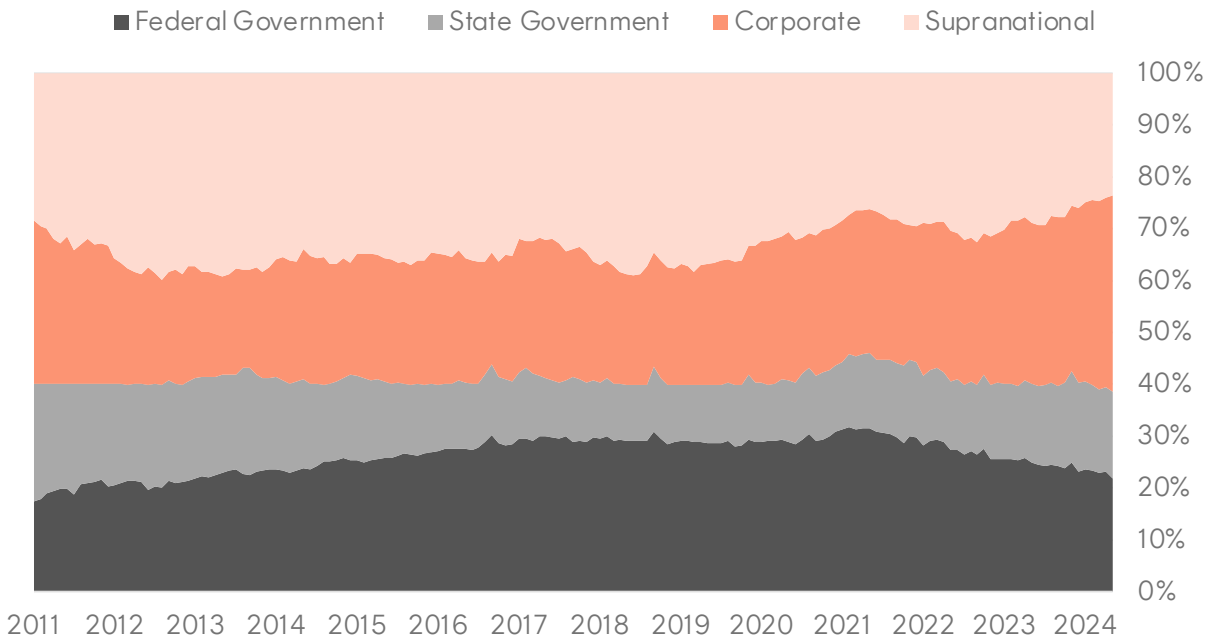
1. Option-adjusted duration (OAD) must remain within one year of the Parent Index.
2. Total exposure by weight to the government sub-sectors must be within 40% of the Parent Index.
3. Total OAD contribution from government sub-sectors must remain within 40% of the Parent Index.
4. Total option-adjusted spread duration (OASD) contribution from non-government sub-sectors must remain within 3 years of the Parent Index. OASD contribution refers to the total OAD contribution from non-government sub-sectors.
5. A two-way turnover constraint of 5% is applied to each monthly optimisation. However, should the optimiser fail to find a feasible solution due to all the constraints, this turnover constraint can be relaxed by 0.5% per iteration of optimisation until a feasible solution is found. The maximum relaxation cap for the turnover constraint is set at 25%.

These constraints collectively seek to ensure that the Enhanced Index does not assume excessive rates or credit risk in comparison to the Parent Index, while also keeping turnover and trading costs to a reasonable level.

Enhanced Index asset allocation

This section explores how the Enhanced Index optimisation leverages balanced sector allocation and dynamic yield curve adjustments to address inefficiencies in market-capitalisation weighted indices, such as the Parent Index. While market conditions may shift and the allocation is expected to evolve gradually over time, the optimiser ensures that the yield objective is consistently met within the parameters of the benchmark-relative constraints, giving the Enhanced Index the potential to deliver superior long-term, risk-adjusted returns.

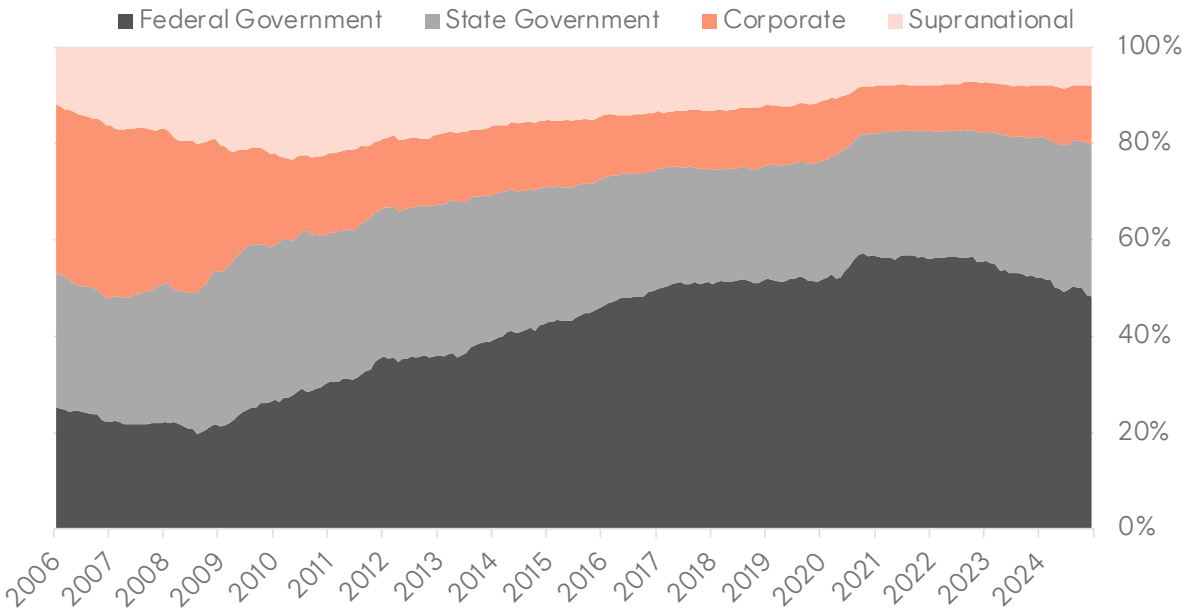
Chart 1: Historical Enhanced Index weights by issuer types (sectors), from 31 January 2011 – 31 December 2024



Source: Bloomberg, Betashares.

Unlike the Parent Index, which is weighted based on the issuance size of each issuer, the Enhanced Index's optimisation systematically harvests risk premiums, such as the credit risk premium[4] and the term premium[5], by maintaining a more balanced allocation and strategically increasing exposure to higher-yielding sectors like Supranational and Sovereign Agency (SSA) and Credit, or to the segments of the yield curve that are more attractive.

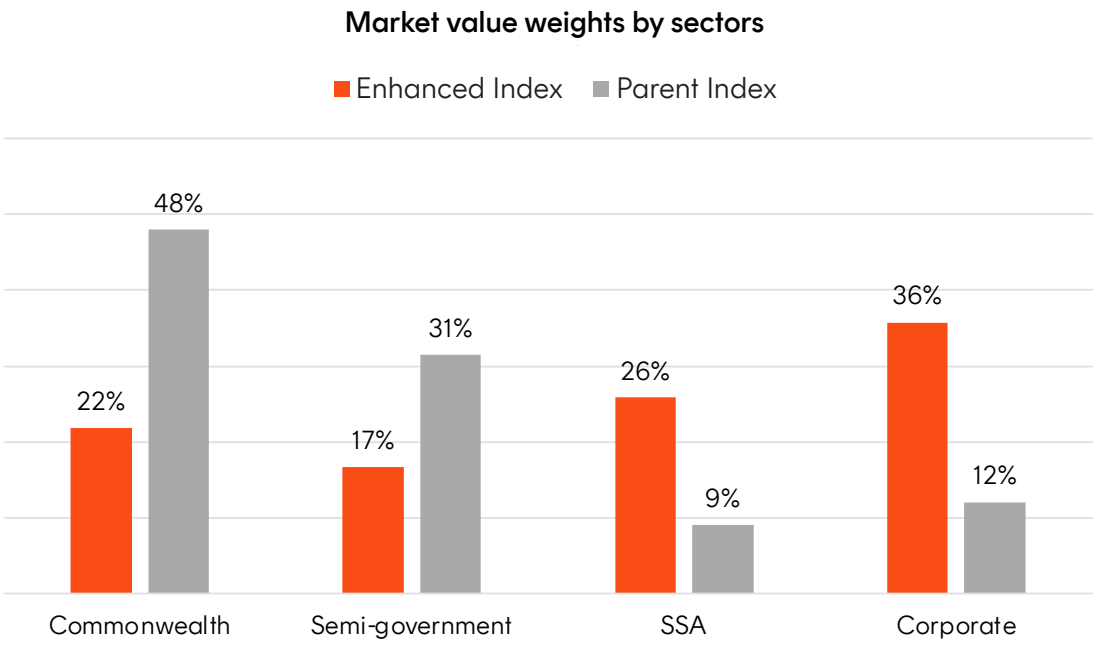
Chart 2: Historical Parent Index weights by sectors, from 31 January 2011 – 31 December 2024



Source: Bloomberg, Betashares.

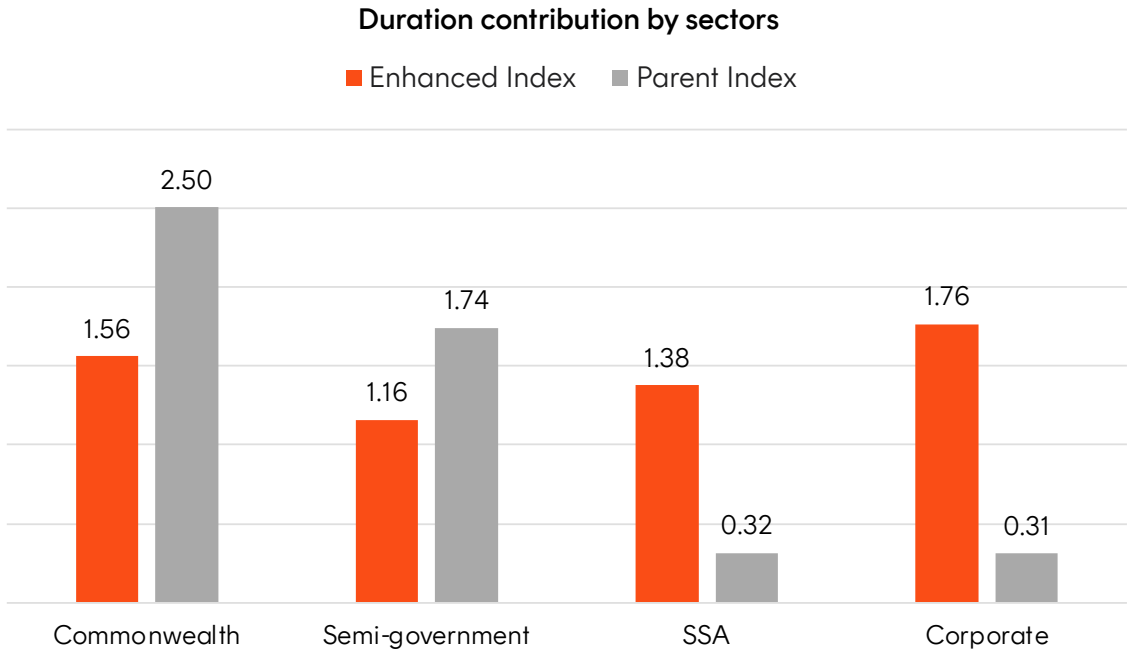
A major issue with the Parent Index is the rampant issuance of government bonds over the past decades. Despite the "Aggregate" label for the Parent Index, a current allocation of around 80% towards the government sector effectively makes this index a "treasury" index, arguably providing an inefficient exposure for investors seeking broad fixed-income investments. It's also worth noting that the Parent Index does not perform free-float adjustment for RBA holdings of Australian government bonds, therefore making the weight of government bonds in the index even more exaggerated than their true free-float weight. The Enhanced Index optimisation recognises this shortcoming and utilises its risk budget to bring government allocation down to around 40%, therefore achieving a more balanced allocation. The reduced government weights result in an uplift in weights for SSA at 26% and Credit at 36% (as at 31 December 2024), allowing potential for the Enhanced Index to harvest additional credit risk premium and maintaining a higher yield over the long term. Chart 3 shows the current sector allocations of the Enhanced Index compared to the Parent Index. More importantly, Chart 4 shows the sector duration contributions of the Enhanced Index compared to the Parent Index as at 31 December 2024. While the Parent Index allocated a non-trivial weight of 12% to the Credit sector (a quarter of its Commonwealth Government allocation), the Credit component only contributed 0.31 years of duration, which is 1/8th of Commonwealth's sector duration contribution. This is because government bonds tend to have much longer maturities compared to corporate bonds and it shows, from a risk perspective, investors tend to be more exposed to government bonds than they might expect.

Chart 3: Enhanced Index and Parent Index weights by sectors (as at 31 December 2024)



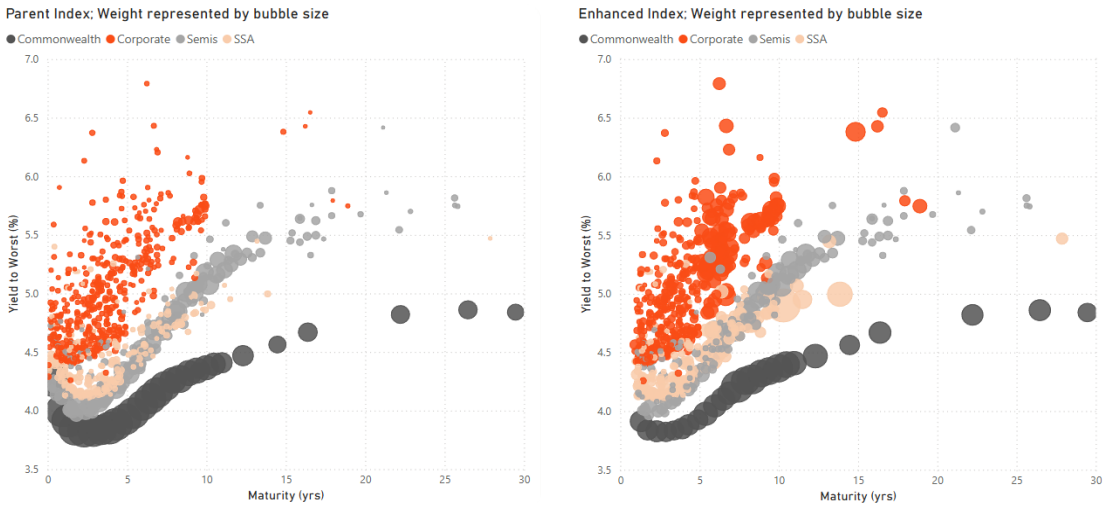
Source: Bloomberg, Betashares.

Chart 4: Enhanced Index and Parent Index duration contribution by sectors (as at 31 December 2024)



Source: Bloomberg, Betashares.

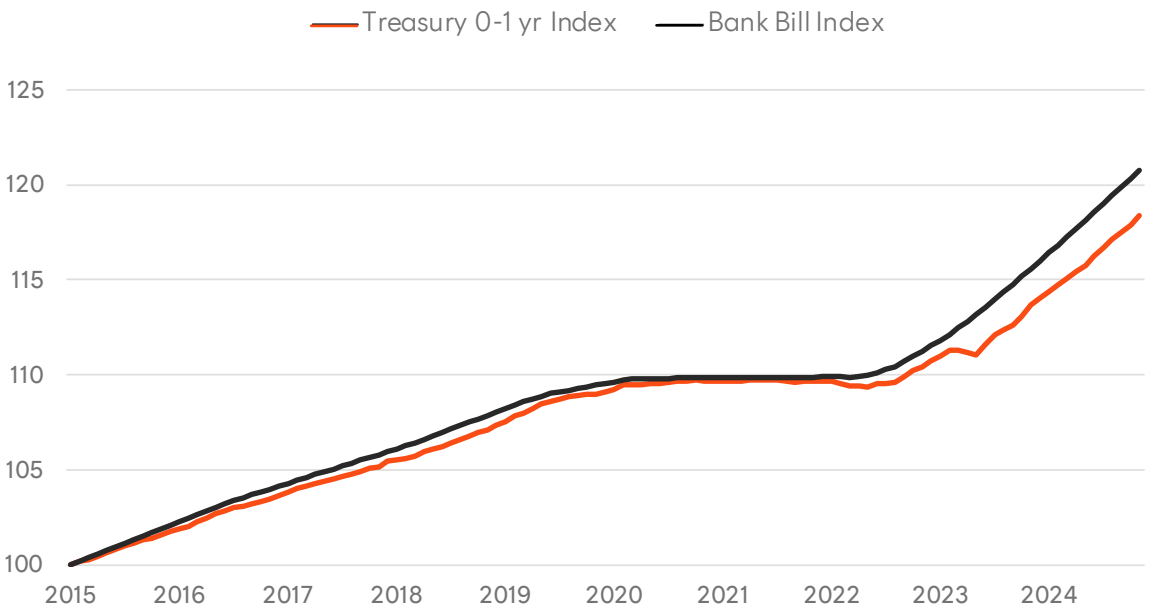
Chart 5: Bubble charts showing Parent Index and Enhanced Index weights by issuer types (as at 31 December 2024) ('Commonwealth' is the Australian federal government, 'Semis' are Australian state governments)



Source: Bloomberg, Betashares.

Another issue with the Parent Index is the concentration of holdings in the front end of the yield curve, especially within the 0–1 year maturity band, which has averaged around 8% each year over the 5 years to 31 December 2024. Performance of sub one-year maturity bonds have historically been below that of short-dated money market securities (see Chart 6). Therefore, inclusion of these bonds in the Parent Index has tended to reduce performance whilst increasing risk.

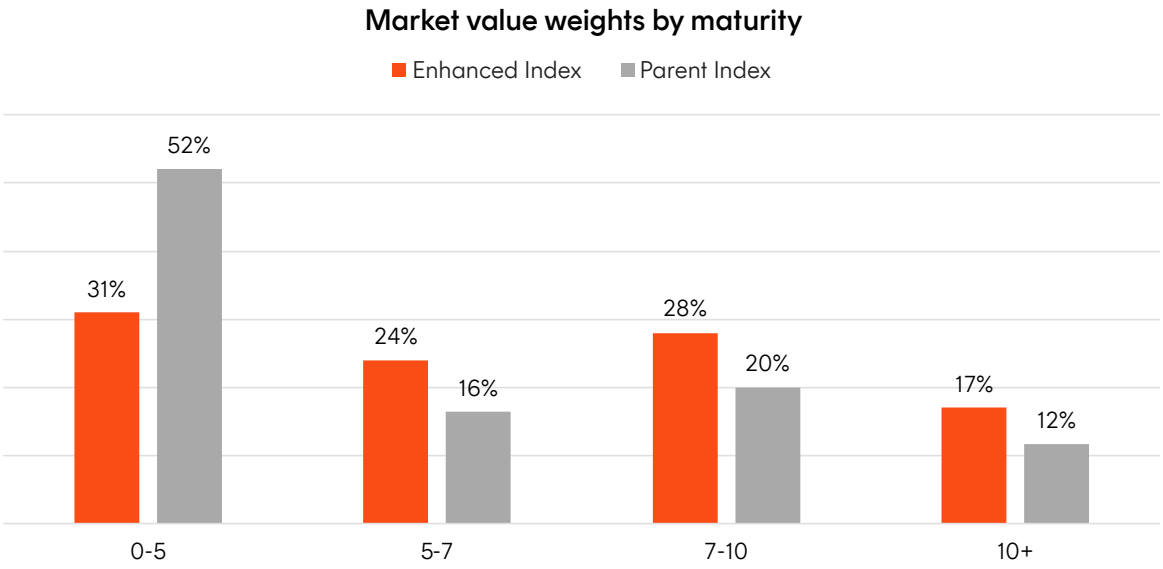
Chart 6: Historical performance of Bloomberg Treasury 0-1 Yr Index vs. Bloomberg Bank Bill Index starting at 100 on 28 Feb 2015 (as at 31 December 2024)



Source: Bloomberg, Betashares. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

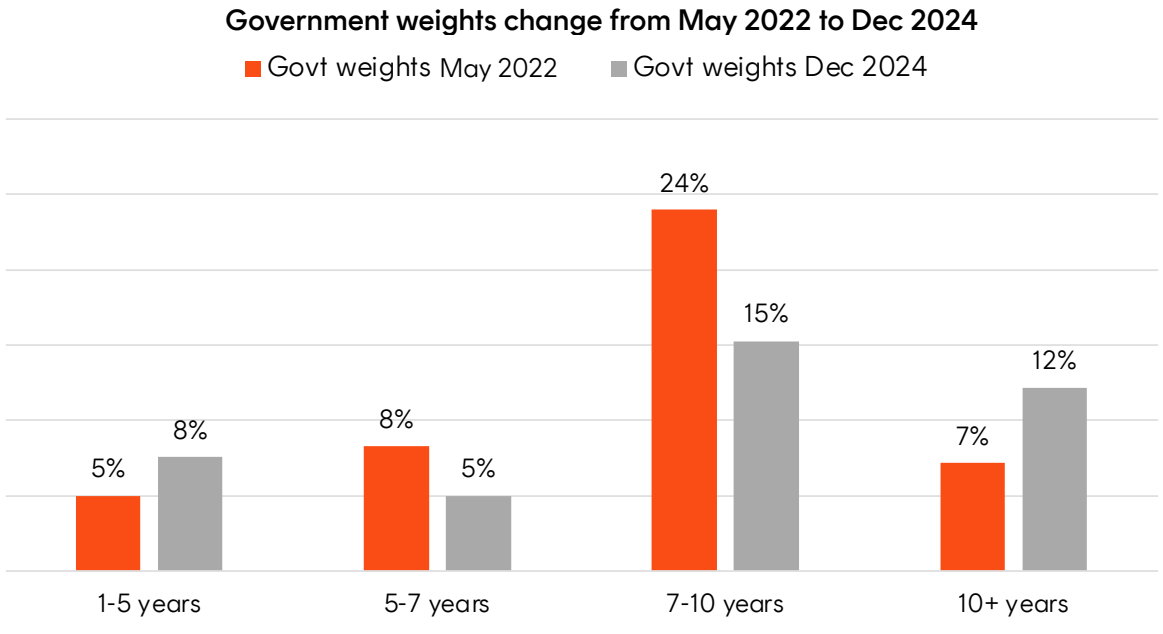
The Enhanced Index optimisation dynamically adjusts allocation in response to yield curve changes within government and non-government sectors, achieving a more balanced yield curve distribution while benefiting from carry and roll-down effects in longer maturities (see Chart 7). The design of benchmark-relative constraints ensures the optimiser prioritises relative yield shifts over absolute levels while maintaining overall risks in alignment with the Parent Index. For example, since February 2022, the global bond market has experienced one of the most rapid monetary policy tightening cycles in recent history. The government yield curve shifted up significantly, steepening on both the front end and long end. This curve shape resulted in the Enhanced Index being anchored around 7–10-year bonds in the government sector, while gradually increasing 10+ year bonds to help maintain the Parent Index duration. However, in the non-government sector, where better yield opportunities arose due to higher cash rates and widening credit spreads on the short end, the allocation gradually shifted from 5–7-year bonds to 1–5-year bonds. Charts 8 and 9 shows the allocation shift between 2022 and 2024 corresponding to yield movements.

Chart 7: Enhanced Index and Parent Index weights by maturity buckets (as at 31 December 2024)



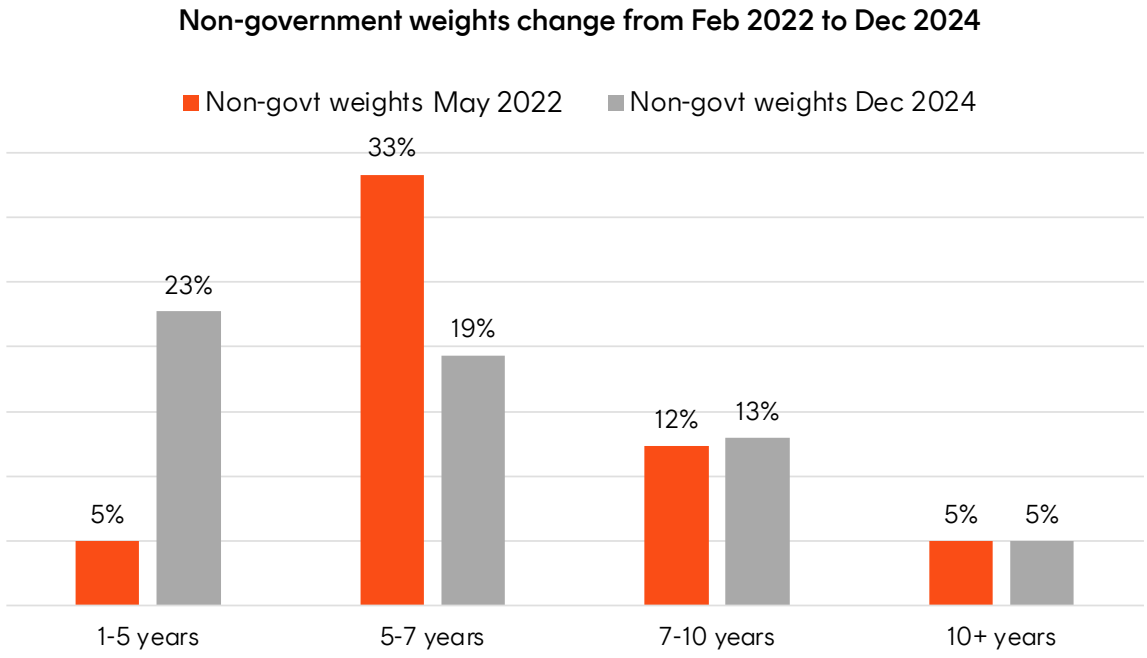
Source: Bloomberg, Betashares.

Chart 8: Enhanced Index government sector weights change from May 2022 to Dec 2024



Source: Bloomberg, Betashares.

Chart 9: Enhanced Index non-government sector weights change from Feb 2022 to Dec 2024



Source: Bloomberg, Betashares.

Enhanced Index performance attribution

Given its higher yields compared to the Parent Index, the Enhanced Index would be expected to outperform in the long run.

This is supported by attribution analysis using Bloomberg's PORT risk system, which shows an annualised excess return for the Enhanced Index of 0.54% over the period from December 2014 to December 2024 (Table 3). Equally important is to ensure that the yield enhancement is not at the expense of significant extra risk. In other words, the returns must be superior on a risk-adjusted basis. To evaluate this, we examined the performance attribution of the Enhanced Index relative to the Parent Index over the decade to December 2024, analysing risk-adjusted returns across various market environments, including periods of rising and falling government yields and credit spreads.

The statistical summary from Bloomberg PORT attribution indicates that the Enhanced Index delivered higher risk-adjusted returns over the 10-year comparison period. The risk/return section highlights superior results in key metrics such as the Sharpe ratio, Jensen alpha and others. This demonstrates that the excess returns have more than compensated for the higher standard deviation and beta. Notably, the correlation between the Enhanced Index and the Parent Index over the period remained close to 1, with an annualised tracking error of 0.9%, confirming close alignment in risk profiles.

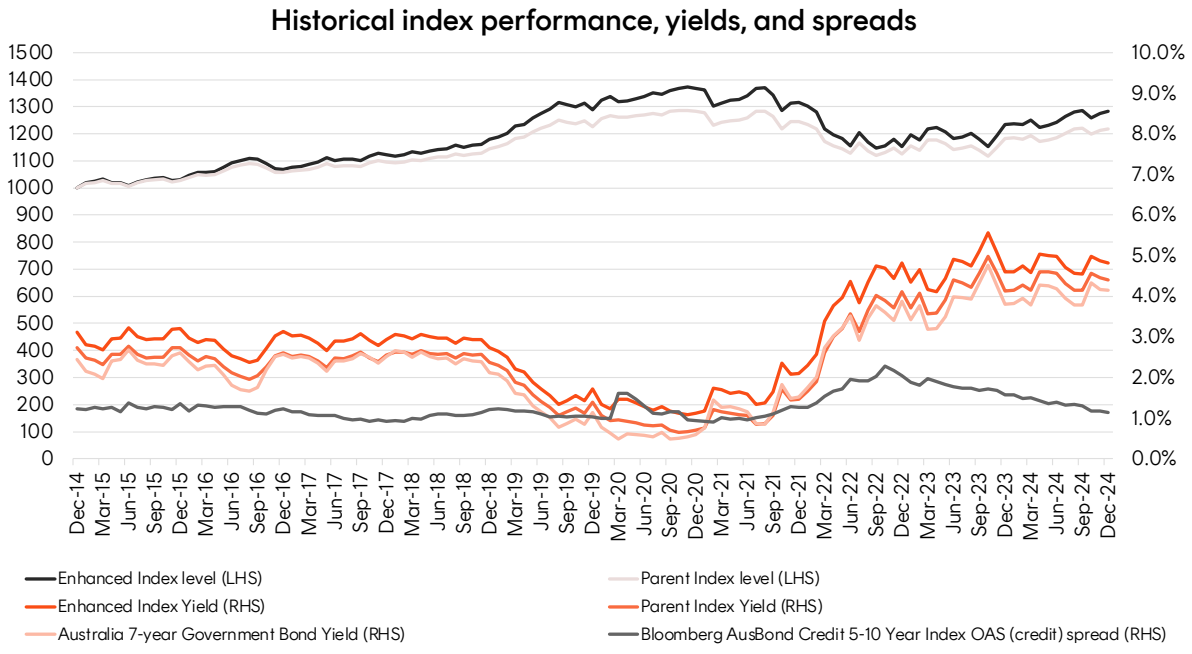
Table 2: Bloomberg PORT calculated 10-year statistical summary of Enhanced Index vs. Parent Index (to 31 December 2024)

Statistic	Enhanced Index	Parent Index
Beta (ex-post)	1.19	
Correlation	1.00	
Jensen Alpha	0.43	
Information ratio	0.55	
Total return	28.37%	21.77%
Annualised return	2.53%	1.99%
Standard deviation	4.97%	4.08%
Sharpe ratio	0.17	0.08

Source: Bloomber. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

Furthermore, as illustrated in Chart 10, the Enhanced Index consistently maintained its enhanced yields over the 10-year period. This can be attributed to its balanced allocation across sectors and maturities, enabling it to consistently capture additional credit, term and liquidity premia. By contrast, the Parent Index yield was often near or even below the government bond yield due to its high concentration of government bond holdings.

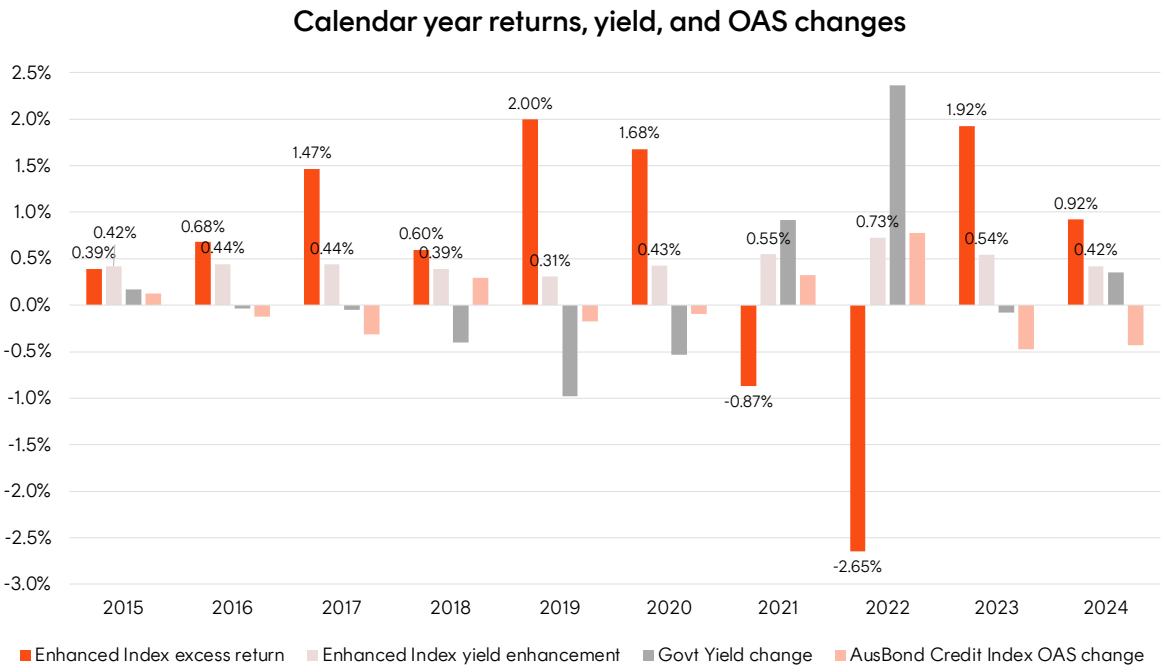
Chart 10: 10-year history of Enhanced and Parent Index performance, AUD 7-year government yield, and Bloomberg AusBond Credit 5-10 year index OAS spread (to 31 December 2024)



Source: Bloomberg, Betashares. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

An analysis of calendar year returns (Chart 11) reveals that in 8 of the past 10 calendar years, the Enhanced Index outperformed its Parent Index. The exceptions were 2021 and 2022, during which both government yields and credit spreads rose significantly at the fastest pace since 1981. Notably, the Enhanced Index still outperformed in 2015 and 2024, when government yields rose modestly, and significantly outperformed in 2017 and 2023, when government yields were relatively stable. The year 2015 is particularly noteworthy, as the Enhanced Index outperformed the Parent Index by 0.39% despite increases in both government yields and credit spreads, largely due to additional carry and roll returns.

Chart 11: Return and yield difference between the Enhanced Index and its Parent Index, for the 10 years to 31 December 2024, alongside annual changes in government bond yields and credit spreads



Source: Bloomberg, Betashares. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

Interestingly, the 0.54% excess annualised return of the Enhanced Index (Table 3) closely aligns with the average annual yield difference of 0.47% (Chart 12). This outcome is intuitive, as the carry from higher yield would be expected to be the primary driver of outperformance. However, it is noteworthy that the average annual yield difference does not fully explain the Enhanced Index's long-term outperformance. The remaining 7 basis points are attributed to higher roll-down yields, owing to the Enhanced Index's greater allocation to steeper parts of the yield curve.

Table 3: Total returns of Enhanced Index and Parent Index (Dec 2014 to Dec 2024)

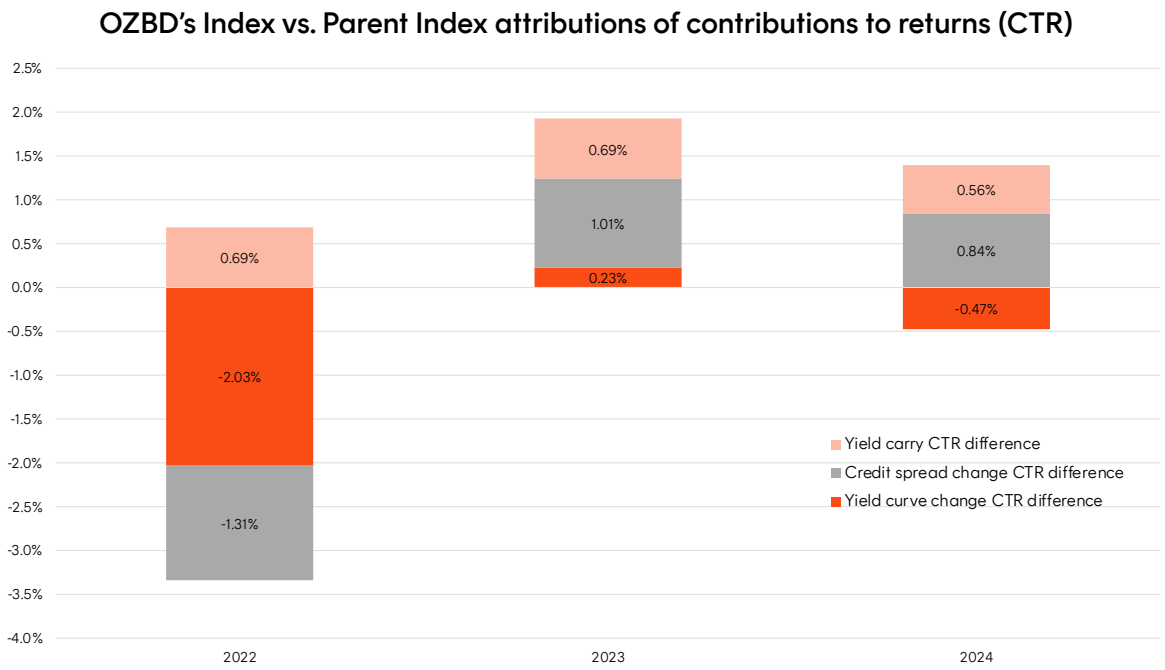
	Total return	Annualised
Enhanced Index	**28.37%**	**2.53%**
Parent Index	**21.77%**	**1.99%**
Difference	**6.60%**	**0.54%**

Source: Bloomberg. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

Comprehensive attribution analysis using Bloomberg PORT for calendar years 2022, 2023 and 2024 provides insights into the underperformance of the Enhanced Index in 2022, the subsequent strong outperformance in 2023, and solid outperformance in 2024. Chart 12 shows that the majority of the 2022 underperformance was attributable to shifts in the (risk-free) yield curve, which can be explained by the average duration overweight of 0.96 years that year. Changes in credit spreads accounted for the remainder of the underperformance, with the higher carry yield partially offsetting the negative returns.

In 2023, the Enhanced Index significantly outperformed while bond yields only declined modestly. This outperformance was predominantly driven by the recovery in credit spreads, with the optimised asset allocation amplifying the benefits of credit spread compression over the year. In 2024, the Enhanced Index demonstrated its ability to achieve substantial outperformance even in an environment of rising government bond yields, once again reaffirming its capacity to efficiently capture risk premia.

Chart 12: Bloomberg PORT attribution of Enhanced Index vs. Parent Index for calendar years 2022-2024; showing return differences from different sources of contributions to returns (CTR)



Source: Bloomberg. Past performance is not indicative of future performance of any index or fund. You cannot invest directly in an index.

Conclusion

The Enhanced Index potentially offers investors a more balanced, efficient and effective investment tool beyond traditional Australian fixed income indices. By systematically optimising sub-index allocations to maximise yields while adhering to intelligent benchmark relative risk constraints, the Enhanced Index has shown its ability to deliver superior long-term, risk-adjusted returns. Its innovative design addresses the inefficiencies of the Parent Index, which is beholden to issuance patterns and highly concentrated in government issuers. As demonstrated in this paper, over the 10-year period to 31 December 2024, the Enhanced Index achieved significantly better risk-adjusted returns through a balanced sector allocation and strategically positioning along the yield curve.

Through comprehensive performance attribution and risk analysis, the evidence highlights the Enhanced Index's capacity to outperform, even during challenging market conditions. While short-term market volatility can cause underperformance, the methodology focuses on well-established fixed income risk premiums, such as credit, term and liquidity, and has the potential to achieve better risk-adjusted return over the long-run.

Therefore, investors looking for a core Australian fixed income allocation no longer have to rely on traditional, 'inefficient' indices. A better option exists in the Bloomberg Australian Enhanced Yield Composite Bond Index, both as an index to gain exposure to (e.g. via a fund), as well as a benchmark to assess active manager performance.

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