



August 2023

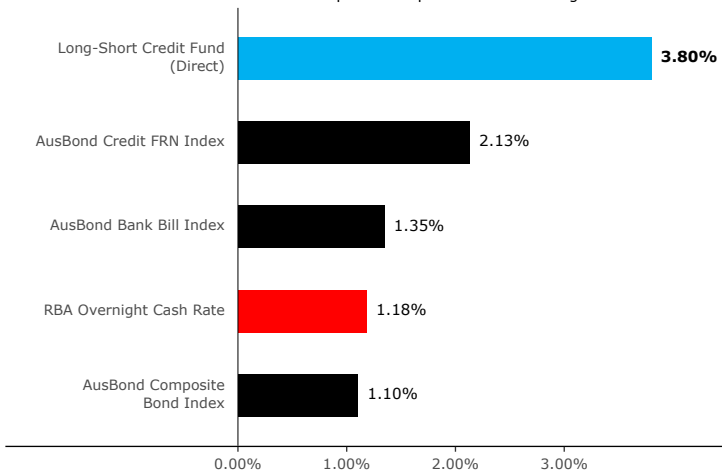
Objective: An absolute return fixed-income strategy focused on exploiting long and short mispricings in credit markets that targets high-yield like returns above the Reserve Bank of Australia (RBA) cash rate plus 4% to 6% p.a. over rolling 3 year periods with volatility of less than 5% p.a. after Management Fees, Administration Fees and Performance Fees.

Strategy: We add value via active asset-selection using a range of valuation models with the aim of delivering superior risk-adjusted returns, or alpha, to traditional hedge funds. We primarily invest in senior and subordinated debt securities, hybrids and derivatives issued by Australian entities domestically, although we can invest in these securities when they are issued overseas, or by overseas entities (into Australia or offshore). The Fund can use gearing and targets holding the majority of its portfolio in investment-grade securities. It is managed by Coolabah Capital Investments.

Period Ending 2023-08-31	Gross Return (Direct)	Net Return (Direct) [†]	RBA Cash Rate	Gross Excess Return [‡]	Net Excess Return (Direct) ^{†‡}
1 month	1.10%	0.87%	0.34%	0.76%	0.54%
3 months	5.47%	4.33%	1.01%	4.46%	3.32%
6 months	8.12%	5.89%	1.92%	6.20%	3.97%
1 year	12.14%	9.28%	3.33%	8.81%	5.96%
3 years pa	5.26%	3.26%	1.24%	4.03%	2.02%
5 years pa	5.82%	3.75%	1.12%	4.70%	2.64%
Inception pa Sep. 2017	5.82%	3.80%	1.18%	4.63%	2.62%

Long Short Credit Fund Returns (Net) vs Comparisons

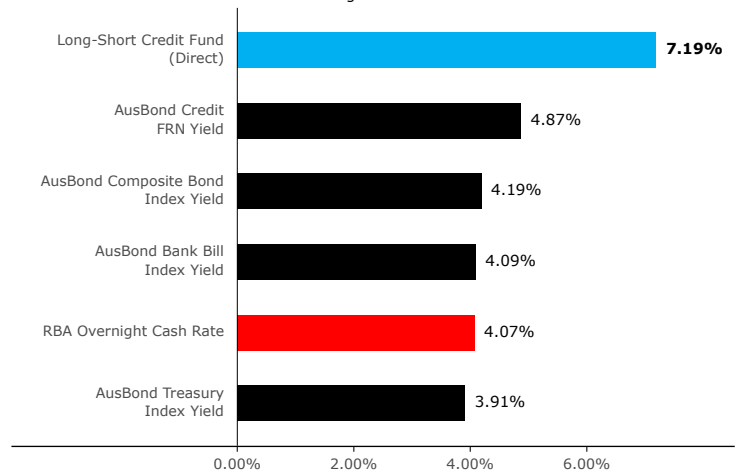
Annualized Total Returns Since Inception in September 2017 to August 2023



Data Source: RBA, Bloomberg, Mainstream, Coolabah Capital Investments

Annualised Yield to Call/Maturity

31 August 2023



Data Source: RBA, Bloomberg, Coolabah Capital Investments

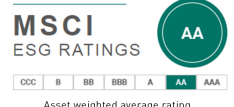
[†] Net returns are calculated from the historic gross returns using the current fee structure as displayed in the Product Disclosure Statement. [‡] The Excess Return columns represent the gross and net return above the RBA cash rate.

Disclaimer: Past performance does not assure future returns. Returns are shown net of all Management and Performance fees unless otherwise stated. All investments carry risks, including that the value of investments may vary, future returns may differ from past returns, and that your capital is not guaranteed. To understand Fund's risks better, please refer to the Product Disclosure Statement available at Coolabah Capital Investments' [website](#).

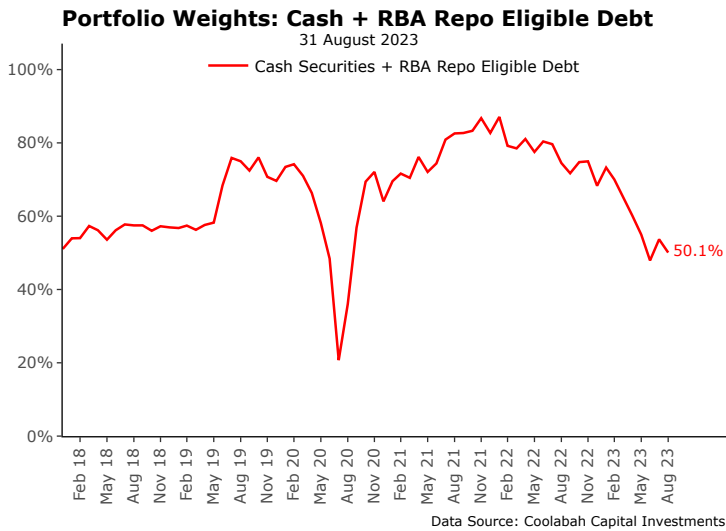
Note: all portfolio statistics other than running yield reported on gross levered value

Net Monthly Returns > RBA Overnight Cash Rate	72%	Modified Interest Rate Duration	0.32 years
Av. Portfolio Credit Rating	A	Gearing Permitted?	Yes
Portfolio MSCI ESG Rating	AA	1 Year Av. Gross Portfolio Weight to Cash	4.2%
No. Cash Securities	20	Gross Portfolio Weight to AT1 Hybrids	0.1%
No. Notes and Bonds	145	Gross Cash Securities + RBA Repo-Eligible Debt	50.1%
Av. Interest Rate (Gross Running Yield)	7.24%	Net Annual Volatility (since incep.)	3.51%
		Awards: FE Alpha Manager 2019: Christopher Joye; Ratings: Lonsec available to advisers; Recommended (Atchison); 'Superior More Complex' (Foresight Analytics)	

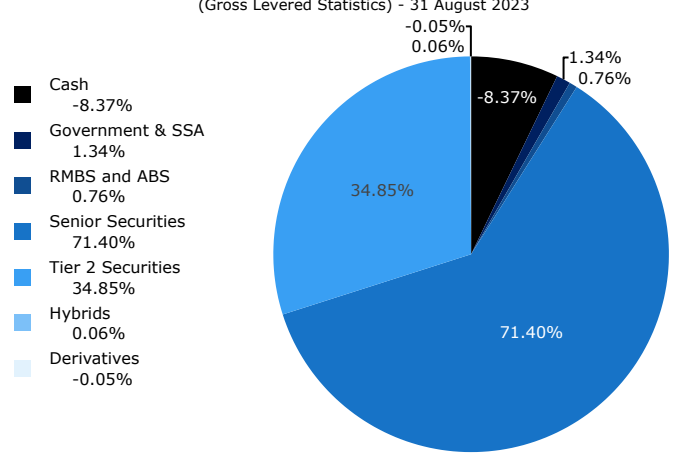
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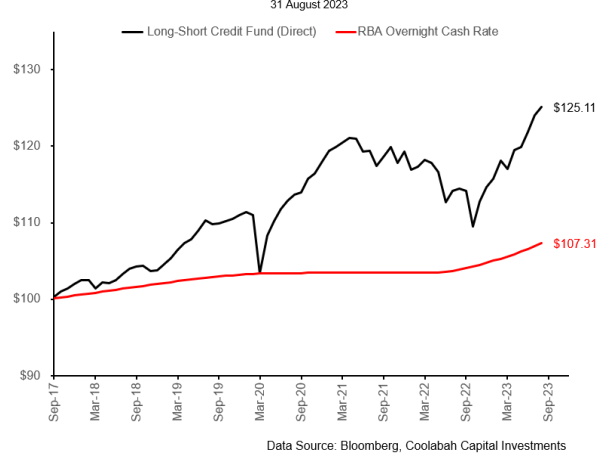
Asset weighted average rating



Long Short Credit Fund Portfolio Composition (GAV)



Value of \$100 Invested since Inception



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The since inception gross (net) return of **5.82% pa gross (3.80% pa net)** is the total annual return earned by the fund since Sep. 2017, including interest income and movements in the price of the bond portfolio after all fund fees (assuming net returns are calculated from the historic gross returns using the current fee structure as displayed in the Product Disclosure Statement). The net return quoted applies to the Smarter Money Long-Short Credit Fund - Direct Investor Class, with quarterly distributions reinvested. Each investor's return will vary depending upon their own investment date and any top-ups and withdrawals they make. The **annualised volatility estimate of 3.51% pa** is based on the standard deviation of net daily returns since inception, which are then annualised, attributable to the Smarter Money Long-Short Credit Fund - Direct Investor Class.

Portfolio Managers	Christopher Joye, Ashley Kabel, Roger Douglas, Dr Nick Campregher (Coolabah Capital Investments)		
APIR Code	SLT2562AU	Fund Inception	31-Aug-17
ISIN	AU60SLT25623	Distributions	Quarterly
Morningstar Ticker	41597	Unit Pricing	Daily (earnings accrue daily)
Asset-Class	Alternatives/Hedge Funds	Min. Investment	\$1,000
Target Return	Net 4.0%-6.0% pa over RBA cash rate	Withdrawals	Daily Requests (funds normally in 3 days)
Investment Manager	Coolabah Capital Investments (Retail)	Buy/Sell Spread	0.00%/0.05%
Responsible Entity	Equity Trustees	Mgt. & Admin Fee	1.00% pa
Custodian	APEX Fund Services	Perf. Fee	20.5% of returns over RBA cash rate + 1.00% pa

Portfolio commentary: The zero-duration daily liquidity Long-Short Credit Fund (LSCF) ended August with an annualised yield to call/maturity of 7.19% pa (assuming current funding costs), a weighted-average credit rating of A, and a portfolio weighted average MSCI ESG rating of AA. In August, LSCF returned 1.10% gross (0.87% net), outperforming the RBA Overnight Cash Rate (0.34%), the AusBond Bank Bill Index (0.37%), and the AusBond Credit FRN Index (0.46%). Over the previous 12 months, LSCF returned 12.14% pa gross (9.28% pa net), outperforming the RBA Overnight Cash Rate (3.33% pa), the AusBond Bank Bill Index (3.37% pa), and the AusBond Credit FRN Index (4.38% pa).

Since the inception of LSCF 6 years ago in September 2017, it has returned 5.82% pa gross (3.80% pa net), outperforming the RBA Overnight Cash Rate (1.18% pa), the AusBond Bank Bill Index (1.35% pa), and the AusBond Credit FRN Index (2.13% pa). While LSCF's return volatility since inception has been low at around 3.51% pa (measured using daily returns), as a daily liquidity product with assets that are marked-to-market using executable prices, volatility does exist. This contrasts with illiquid credit (eg, loans and high yield bonds) wherein assets that have very high risk can appear to have remarkably low volatility, which is, in fact, just a mirage explained by the inability to properly value these assets using executable prices.

Strategy commentary: August was another strong month performance-wise for Coolabah's strategies, which continued to generate robust risk-adjusted excess returns, or alpha, as they have done since June 2022. Key drivers included very active primary and secondary market participation in government bonds and high-grade credit, which was juxtaposed against anodyne spread movements in the month.

Amongst Coolabah's zero interest rate duration, or floating-rate, solutions, the Long Short Credit Fund led the way with a 1.10% gross return (0.87% to 0.90% net) in August, followed by the Floating-Rate High Yield Fund, which returned 0.76% gross (0.68% to 0.70% net), and Coolabah's lowest volatility RBA cash + 1% and RBA cash 1.5% products, the Smarter Money Fund and the Smarter Money Higher Income Fund, which returned 0.56% gross (0.51% net) and 0.57% gross (0.50% net), respectively. All of these solutions materially outperformed the RBA cash rate (0.34%), the AusBond Bank Bill Index (0.37%), and the AusBond Floating-Rate Note (FRN) Index (0.46%).

Coolabah also manages BetaShares' Active Hybrid ETF product (ASX: HBRD), which returned 0.13% net of fees in August, materially outperforming the Solactive Major Bank Hybrids Index, which lost 0.54% as hybrid spreads widened (see more below).

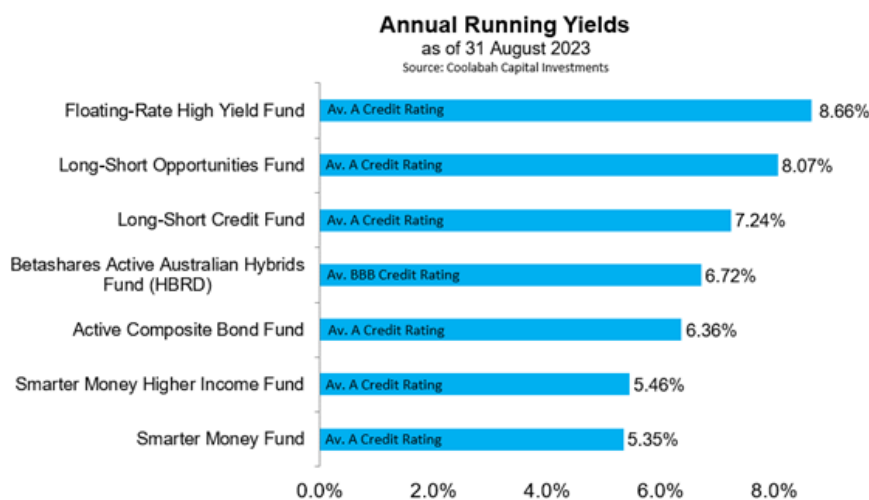
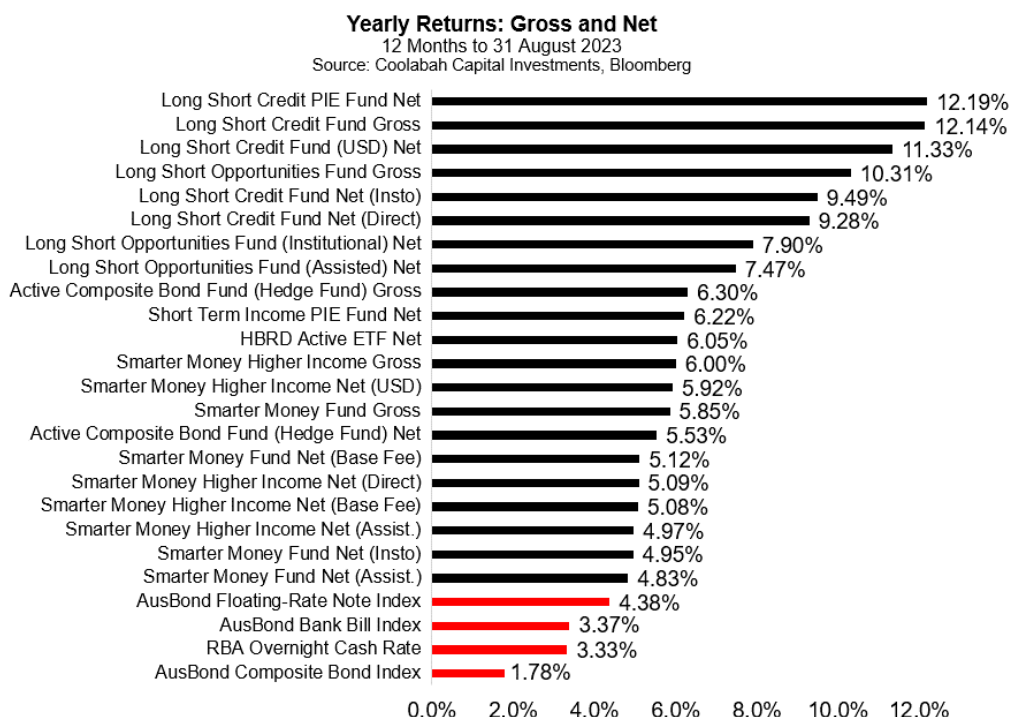
Over the last 12 months to 31 August, the Long Short Credit Fund, which has an average A rating and a current gross running yield of 7.2%, has returned 12.1% gross (9.3% to 9.5% net). Since its launch in December 2022, the Floating-Rate High Yield Fund, which has an average A rating and a current gross running yield of 8.7%, has returned 10.5% gross (9.7% to 9.8% net) on a non-annualised basis.

Coolabah's cash plus solutions, the Smarter Money Fund and the Smarter Money Higher Income Fund, which have average ratings of A and gross running yields of 5.4% and 5.5%, returned 5.85% gross (5.1% net) and 6.00% gross (5.1% net) over the last year.

The floating-rate full capital structure strategy, HBRD, which is currently about half invested in Aussie bank bonds and half invested in ASX hybrids, has returned 6.1% net of fees on a franked basis over this period, outperforming the Solactive Major Bank Hybrids Index. HBRD currently has an average rating of BBB and a gross running yield of 6.7%.

(Note that the Smarter Money Higher Income Fund is being launched as a dual unlisted fund and active ETF under the Chi-X ticker "FRNS" in September and will be renamed the Coolabah Short-Term Income Fund.)

Strategy commentary cont'd:



Over August, US 10-year government bond yields rose from 3.96% to 4.11% (down sharply from an intra-month peak of 4.34%), extending a sell-off in fixed-rate bonds (higher yields) that commenced in April 2023. US 5-year yields appreciated somewhat more modestly from 4.18% to 4.25% over the same period (the intra-month peak was 4.49%). The late August decline in yields was a function of investors reassessing their rate expectations as a result of benign macro data.

The price action in risk-free fixed-rate bonds in Australia diverged with the 10-year government bond yield compressing slightly from 4.06% to 4.03% while the 5-year yield fell from 3.85% to 3.79%. After the Aussie-US 10-year government bond spread topped-out at 27 basis points (bps) in June (ie, Aussie rates above US rates), it has fairly monotonically declined to negative 9bps since.

The relatively dovish movements in Aussie interest rates helped power the performance of fixed-rate bonds, or interest rate duration exposures, in August. Coolabah's long duration Active Composite Bond Fund (ETF: FIXD) delivered 1.11% gross (1.03% net) in the month, outperforming the AusBond Composite Bond Index's 0.74% return by 0.29% net.

Strategy commentary cont'd: Over the 12 months to 31 August 2023, the Active Composite Bond Fund (ETF: FIXD) has outperformed all known peers, returning 6.30% gross (5.53% net) compared to the Composite Bond Index's 1.78% (ie, FIXD has provided 3.76% of net alpha over the index).

Since its inception in March 2017, the Active Composite Bond Fund (ETF: FIXD) has beaten the Composite Bond Index by 1.1% per year after all retail fees and all known peers. The chart below shows FIXD's since inception returns and since inception Sharpe Ratio, or risk-adjusted return (higher is better), relative to all peers and the Composite Bond Index. FIXD has the highest Sharpe Ratio and Sortino Ratio in its sector.

Investors have become increasingly interested in adding fixed-rate interest rate duration exposures to their portfolios as long-term government bond yields have soared from less than 1% in 2020 to around 4% today. The downside insurance protection afforded by duration – when bond prices rally as yields decline in anticipation of central banks cutting rates as global growth weakens – is self-evidently much more attractive at these elevated yields.

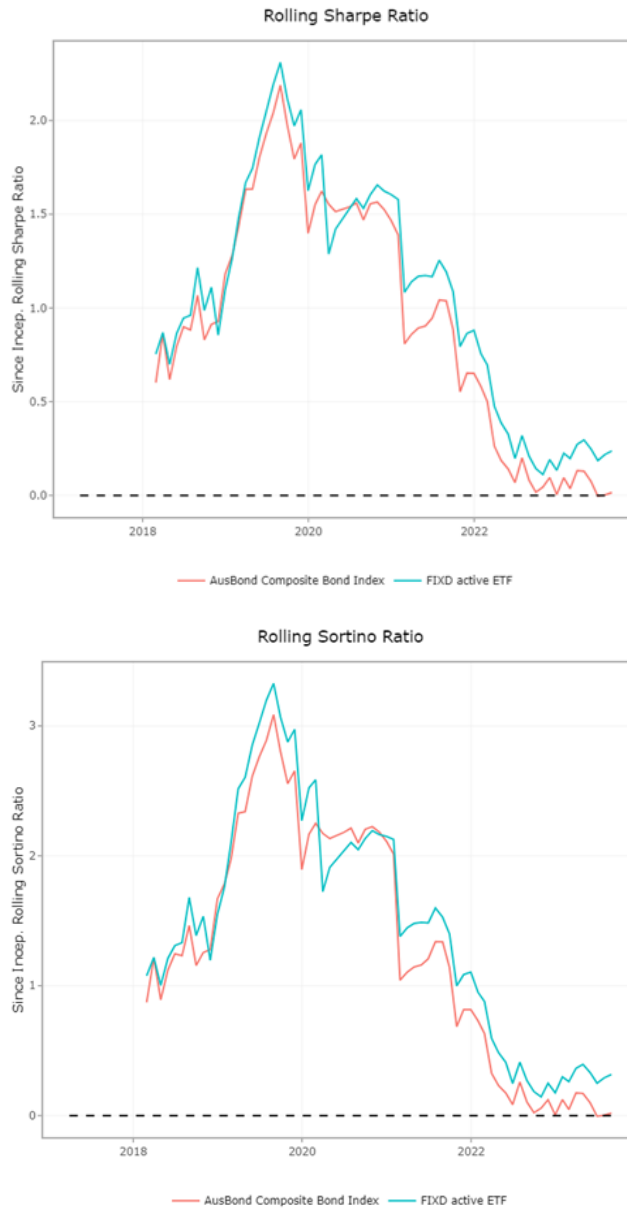
Coolabah's Active Composite Bond Fund (ETF: FIXD) is a unique solution insofar as it fixes its interest rate duration exposure such that it mirrors that held by the Composite Bond Index. Fund managers have historically underperformed the Composite Bond Index as a result of their active interest rate duration bets.

Coolabah believes that the listed (exchange traded) interest rate futures/derivatives markets are immensely price efficient given their transparency and the highly competitive nature of this opportunity set, which is contested by all global bank treasury teams, macro hedge funds, and many active bond investors.

Coolabah believes that the decision to add interest rate duration to a multi-asset-class portfolio is ultimately best determined by asset-allocators, which is why the Active Composite Bond Fund (ETF: FIXD) has been designed to deliver investors with a certain and clearly defined interest rate duration profile that matches that of the main benchmark (ie, the Composite Bond Index).



Strategy commentary cont'd:



Coolabah’s extremely active asset-selection approach is the key driver of alpha or outperformance over the index, and focuses on mispricings in the underlying government, bank and corporate bond markets, which are priced on a relatively inefficient basis in an opaque, over-the-counter setting. These securities are not listed on exchanges and are characterised by highly non-transparent price discovery, as Coolabah’s 11-year track-record has demonstrated. Exploiting this opportunity requires a very large investment team, which comprises almost 40 global staff situated in London, Sydney and Melbourne, including 12 traders/portfolio managers and 12 analysts.

In August, there were very modest movements in credit spreads. The European benchmark credit default swap (CDS) index for investment-grade corporate bonds, iTraxx Main, increased slightly in spread terms from 68bps to 70bps. In the US, the benchmark CDX IG CDS index was unchanged at 63bps. In Australia, the iTraxx IG CDS index moved wider from circa 72bps to 78bps over the month in sympathy with weaker Asian CDS markets that softened a result of China’s economic woes.

Strategy commentary cont'd: It was a more constructive story in cash markets. In USD and EUR, both high-grade senior and Tier 2 financial spreads contracted over the month. In AUD, 5-year major bank senior spreads declined from 90bps to 89bps over the quarterly bank bill swap rate (BBSW). The major banks' 5-year major bank Tier 2 bond spreads also fell slightly from 200bps to 198bps over BBSW.

In the ASX-listed Additional Tier 1 (AT1) hybrid market, spreads pushed somewhat wider over August, rising from 271bps to 295bps over BBSW as a result of new issuance from NAB, which printed a \$1.25bn, 7-year hybrid (ASX: NABPJ) at a historically tight 280bps spread over BBSW that had limited appeal. We expect ongoing ASX hybrid issuance given tight spread levels and the fact that there are no less than seven major and regional bank maturities in 2024, which issuers will doubtless want to get ahead of by launching in late 2023.

There was other interesting action in the primary, or new issue, markets. In USD and EUR, August was a relatively quiet month given the summer holidays, although deals that attracted our interest included a Barclays senior issue, a Tier 2 transaction from Svenska, a senior trade from Mizuho, and a social ESG senior bond from Swedbank, amongst others.

In the AUD domain activity was much more intense with ANZ, CBA and Westpac all issuing chunky 3-year senior bonds at a 75bps spread over BBSW. ANZ and CBA also printed 5-year senior deals at 93bps and 95bps respectively. The ANZ and CBA multi-tranche transactions attracted record demand in excess of \$7.5bn. In Tier 2 bond markets, we saw Westpac issue NZ\$600m in the NZD market while Lloyds came to the AUD market with a \$750m, 5-year issue that printed at 290bps over BBSW.

Zombie Companies Are Dropping Like Flies

The commercial real estate market, and the non-bank lenders that finance it, face burgeoning liquidity crises. This echoes similar dynamics playing out in the commercial property and sub-prime corporate lending sectors overseas.

Valuers are not properly marking to market these illiquid assets, with the big active real estate investment trusts (REITs) [trading at enormous, 30% discounts](#) to their claimed net tangible asset backing even after recent official write-downs of these NTAs.

Institutional investors believe official NTAs, and the miserly yields they imply, are not remotely high enough to attract capital. And that is because official NTAs do not offer an acceptable return premium over the risk-free government bond yield of 4.0%, term deposit rates around 5%, and/or major bank bonds paying north of 6%.

Accordingly, investors are compelling active and passive REITs to trade at 20% to 30% discounts to their NTAs, [in line with this column's previous arguments](#) that commercial property valuations would have to decline by this quantum to offer the minimum required 3% to 5% return premium above the cash rate.

Investors say many unlisted property trusts are now being frozen as investors rush for the exits, while the fund managers that operate these trusts are reluctant to sell the underlying assets to liberate their clients' money because they know the prices they would obtain for these properties would be miles below their inflated NTAs.

A derivative issue is that a 20% to 30% reduction in official NTAs would force many properties' loan-to-value ratios to leap to levels that would threaten to breach these funds' internal leverage targets and their lenders' debt covenants, which could precipitate defaults and forced sales, driving prices down even further.

Similar challenges have emerged in the US and European commercial real estate and non-bank lending markets. Brand-name REITs have gated investor withdrawals. And large global fund managers are defaulting on their commercial property loans.

Even in the ostensibly strong US economy, characterised by a historically low 3.5% jobless rate, robust GDP growth and brisk wages, bankruptcy filings are on track for their worst year since the global financial crisis.

As corporate defaults soar, the recovery rate on non-bank loans to these companies, known as "leveraged loans", has plunged to the worst level on record.

Strategy commentary cont'd: “In previous default cycles, leveraged-loan providers would expect to get 70% to 80% of their cash back from failing companies,” Bloomberg has reported. “Those days are over.”

“While some investment banks hope for a softer economic landing than feared, the crash in leveraged-loan recoveries is ominous for lenders.”

“[Bank of America’s] strategists estimate recoveries from bankrupt companies are running at 25% on average this year – based on loan prices 30 days after a default – and they predict 50% in the long term.”

The problem is that loans to zombie companies were advanced based on valuations that were over-inflated by the presumption of a perpetually cheap money paradigm. And as those zombie firms start dying, lenders are suddenly discovering that their loan-to-value ratios were actually much higher than they assumed when they extended this money.

We recently updated our “zombie laboratory”, which tracks the proportion of global listed companies that do not produce enough income to pay the interest on their debts. This update expanded our analysis to include all companies’ data for the 2022 financial year, which notably misses a big chunk of the recent interest rate increases.

We found that the share of listed zombies in Australia, the US, Europe and Britain has surged over the past decade from about 4-5% to 10-15% of all companies. After the record interest rate increases, these numbers would be even higher today.

The industry sectors with the highest proportion of zombies were real estate, healthcare, technology, communications and energy. And across the globe, zombies tended to be smaller listed firms. This implies that one would find an even higher proportion of zombies among unlisted private companies, which are much smaller relative to their listed peers.

The chief financial officer of a commercial property group wrote to relay his own anxieties about his industry and the non-banks that finance it.

“I have been concerned for a number of years that investors in funds [lending to commercial property] are not being adequately compensated for the risk they are taking,” he wrote.

“My view is that this is further increased by concentration risk as often these loan books and associated businesses are not diversified and heavily overweight residential property developers and commercial property (similar to the industry-specific exposure of Silicon Valley Bank).

“A number of these funds are currently experiencing liquidity issues due to severe construction delays, which are delaying settlements on residential projects and the subsequent repayment of [their] loan facilities.”

“The problem downstream is that these non-bank lenders have unfunded commitments on other development projects as they were expecting to be able to recycle these loan repayments. As these trusts are not APRA regulated, diversified, and do not hold sufficient liquidity buffers, they are not adequately capitalised and have been approaching large family offices for emergency funding.”

We have heard similar stories from sophisticated clients: non-bank funders of commercial and residential property have been seeking emergency liquidity due to a combination of investors pulling money while borrowers are failing to repay their loans on the originally agreed due date.

The latest inflation data signal that interest rate relief is unlikely to bail out zombie borrowers. Our analysis of the July monthly inflation release suggests that underlying inflation has picked up slightly and is tracking above the Reserve Bank of Australia’s forecast trajectory.

Our chief macro strategist, Kieran Davies, says “inflation ex-volatile items/transport rose at a slightly faster rate in July, climbing 0.5% after a 0.3% increase in June”.

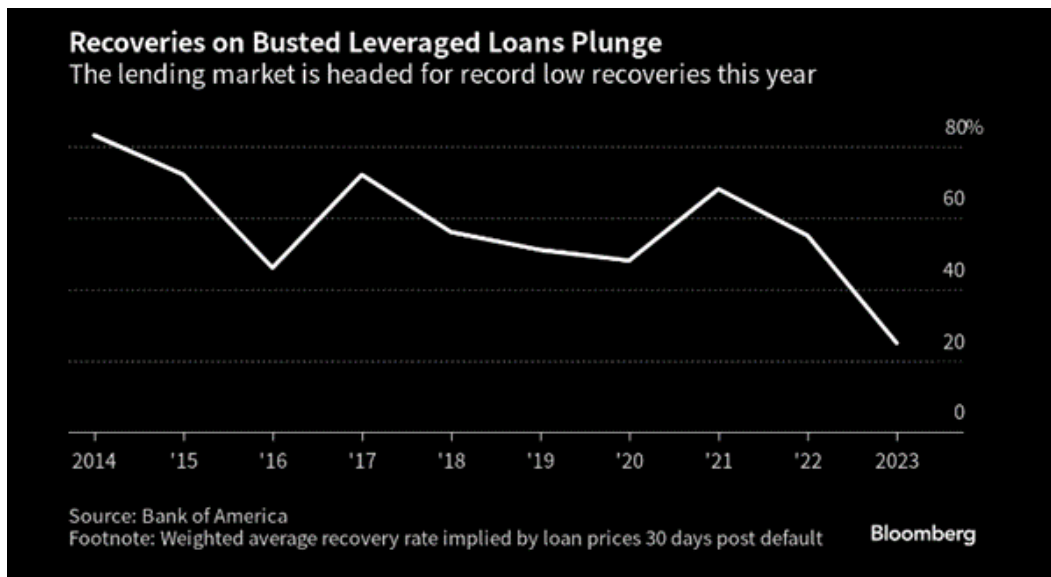
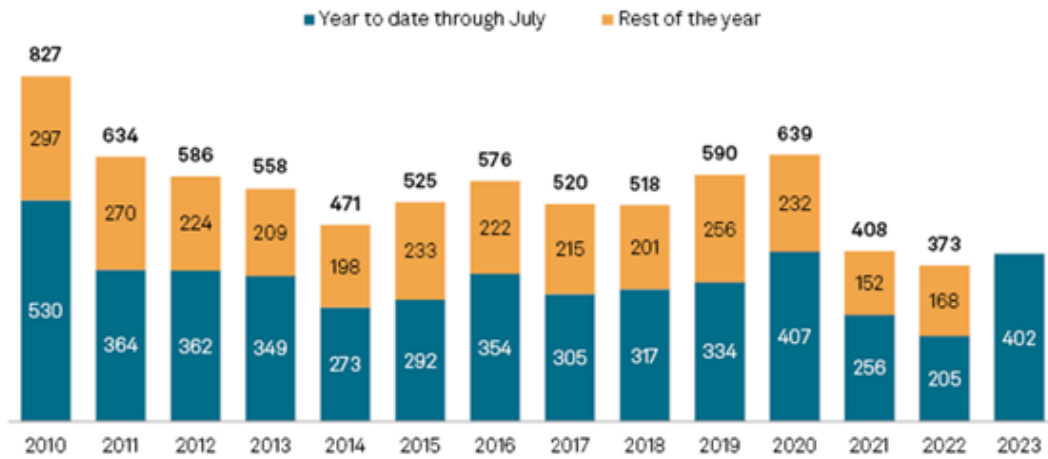
Strategy commentary cont'd: “This meant that the rolling annualised three-month growth rate pick up from 4.1% to 4.5%, which compares with an annualised trimmed mean inflation rate of 3.6% in the second quarter that is a touch above the interpolated RBA forecast of 3.5% for the third quarter.”

The most recent inflation data showed that the overall deceleration in the headline CPI has been driven by supply side-influenced goods prices: annual goods inflation has slowed from a peak of about 10% last year to 4.4% in July as supply chains have normalised. In contrast, demand side services inflation, which is powered by wages costs, has been persistent, running at an annual 5.6% pace in July.

Globally, central banks are signalling that interest rates are likely to remain high for a number of years, with the risks skewed to further increases rather than the short-term cuts priced into markets. One worry is that markets are not pricing in any real prospect of an extension of this tightening cycle, assuming that the inflation-fighting job is largely done.

For all the talk of soft landings, high interest rates are like a python slowly asphyxiating the life out of the economy, with the most vulnerable sectors being the first to expire. In our portfolios, we are avoiding like the plague cyclical industries and illiquid assets that are stuck in a quagmire replete with valuations predicated on the perpetually cheap money paradigm.

US bankruptcy filings by year



Strategy commentary cont'd: Road-testing the "Fed" Model of Valuing US Stocks

The widely-used "Fed" model of the equity risk premium currently suggests US stocks are significantly overvalued relative to bonds. Our analysis suggests that the forecasting ability of this measure of the premium rests with the price-earnings ratio, such that it is simpler to use the latter to value stocks. The most robust long-term valuation tool is still the cyclically-adjusted price-earnings ratio, where an extremely high ratio points to poor real returns over a ten-year horizon.

Defining the "Fed" model of the equity risk premium.

The "Fed" model of the equity risk premium – where the premium is the additional return that investors demand for taking on the risk of investing in stocks compared to a risk-free investment such as government bonds – is a widely-used method of valuing equities.

The idea behind relying on an equity risk premium to value shares is simple. Broadly speaking, if the equity risk premium is low, then stocks are overvalued, and if the premium is high, then stocks are undervalued.

In general terms, the equity risk premium equals the expected return on equities less the risk-free rate, where there are many ways to measure expected equity returns, including estimates based on:

- Realised equity returns;
- Dividends;
- Earnings yields;
- Surveyed returns; and
- Modelled returns.

The "Fed" model relies on the earnings yield, which is the inverse of the price-earnings ratio. The earnings yield can be calculated using either actual ("trailing") or, more usually, forecast ("forward") earnings, where there is a long history of actual earnings and a short history of forecast earnings.

As for the risk-free rate, it is approximated by either the 3-month government bill yield or, more commonly, the 10-year government bond yield.

However, the decision whether to use the nominal or real risk-free rate depends on the choice of expected equity returns.

For example, an equity risk premium based on surveyed investor expected returns would be matched with a nominal risk-free rate.

In the case of the "Fed" model, the earnings yield is a real concept, which means that a real government bond yield should be used, even though many market participants rely on a nominal government bond yield.

There are different ways to demonstrate that the earnings yield is a real concept, but in simple terms the earnings yield equals both nominal earnings divided by the nominal stock price and real earnings divided by the real stock price. [1]

There is no actual research paper that spells out the "Fed" model, but the common mistake of using the nominal bond yield likely stems from the fact that the Federal Reserve's [first reference](#) to this measure of the premium compared the earnings yield with the nominal bond yield.

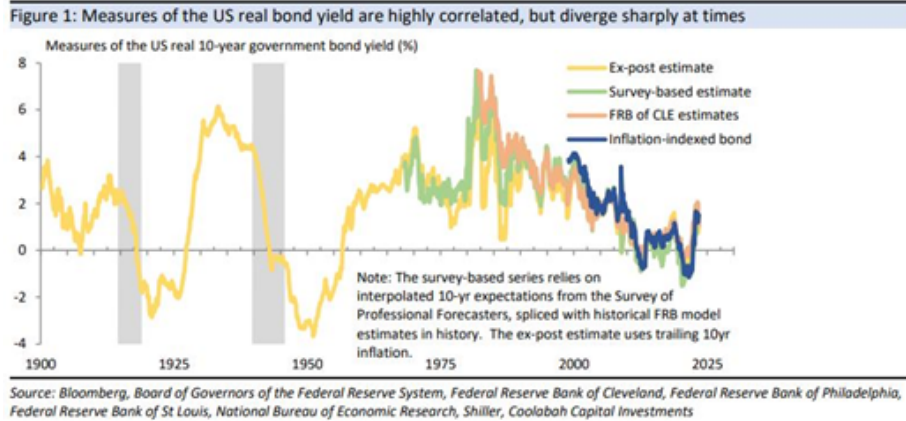
In recent years, though, the Federal Reserve has consistently compared the earnings yield with the real bond yield (see, for example, the latest published [briefing papers](#) for the Federal Open Markets Committee and the most recent [Financial Stability Report](#)).

The real government bond yield can be measured on either an ex-ante or ex-post basis:

Strategy commentary cont'd:

- Ex-ante measures have relatively short histories and can be difficult to obtain. They involve deflating the nominal interest rate using either surveyed, modelled, or swap market pricing of expected inflation, or relying on inflation-indexed bond yields.
- Ex-post measures are easy to construct and have long histories, involving deflating the nominal interest rate using actual inflation over a set horizon.

These different measures broadly track each other, but can diverge sharply at times, contributing to the variation in estimates of the equity risk premium.

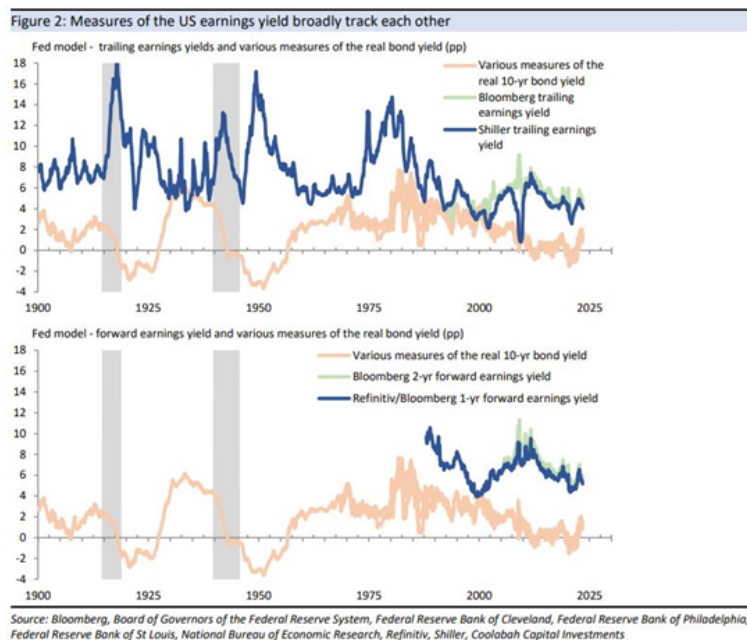


Measures of the US real bond yield are highly correlated, but diverge sharply at times

The "Fed" model version of the equity risk premium suggests the S&P500 is overvalued.

Using the available data for the S&P500, we constructed a range of earnings yields using both trailing and forward earnings.

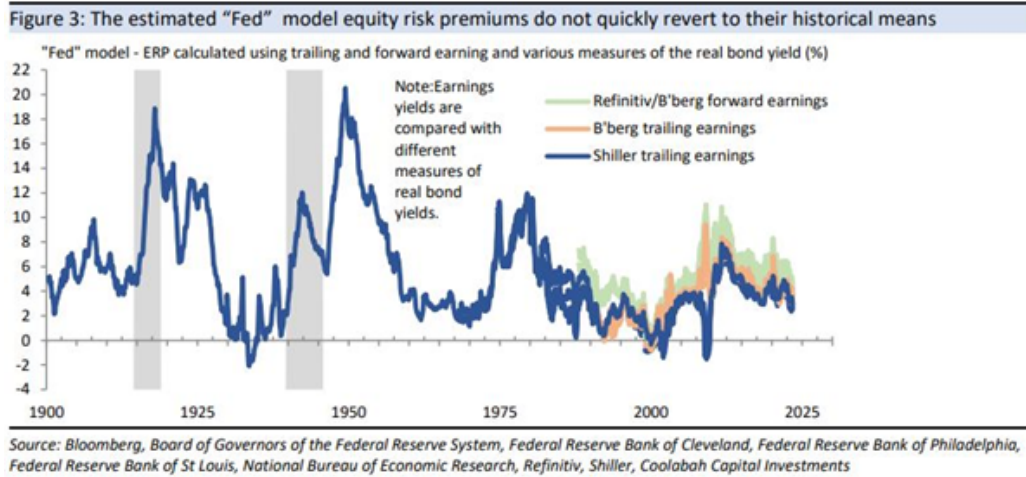
- The trailing earnings yields are highly correlated, but diverge sharply at times, most notably in the global financial crisis.
- The forward earnings yields cover a 1- and 2-year forecast horizon are also highly correlated, albeit where the history of the 2-year-ahead forecasts is very short.



Strategy commentary cont'd: *Measures of the US earnings yield broadly track each other*

Comparing these earnings yields with a range of real government bond yields, the measured equity risk premiums broadly track each other, but there are large and sometimes persistent deviations.

The other feature of the estimated risk premiums is that they do not quick revert to their historic averages, which means that there are long periods where equities are either overvalued or undervalued relative to bonds.



The estimated "Fed" model equity risk premiums do not quickly revert to their historical averages

The "Fed" model estimates of the equity risk premium currently suggest that:

- **Stocks are perhaps fairly valued using trailing earnings.**

The current median value of the trailing earnings estimates of the premium calculated using a range of different real bond yields is 3.1%, which compares with a median calculated over all observations of 3.7% and an interquartile range of all observations of 2.2 to 5.1%; versus

- **Stocks are expensive using forward earnings.**

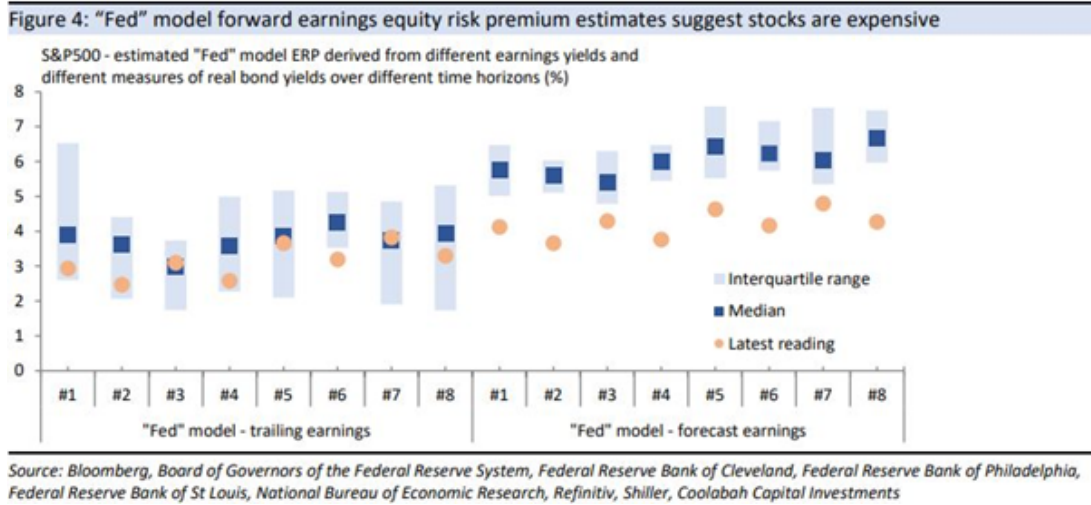
The current median value of the forward earnings estimates of the premium, again calculated using a range of different real bond yields, is 4.2%, which compares with a median calculated over all observations of 5.5% and an interquartile range of 4.5 to 6.5%.

Judging which of these two valuations to place more weight on, a simple regression suggests that forward earnings are the better choice, which points to stocks being overvalued.

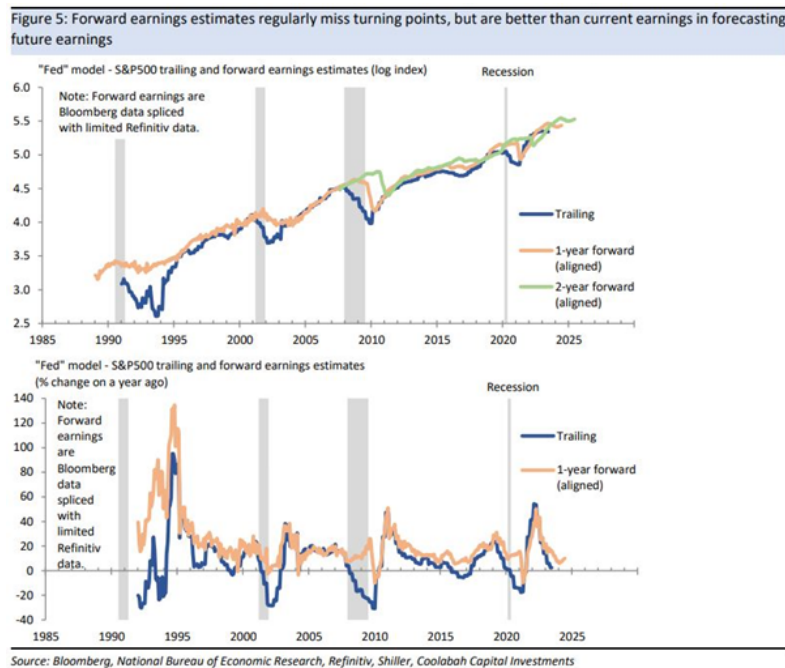
That is, while forward earnings regularly fail to miss turning points by a large margin, they are better than the current level of earnings in predicting earnings.

Keeping in mind that the estimated forward earnings premiums can persistently diverge from "fair value" historical averages, this suggests that shares are about 30% overvalued relative to bonds.

Strategy commentary cont'd:



"Fed" model forward earnings equity risk premiums suggest stocks are expensive



Forward earnings estimates regularly miss turning points, but are better than current earnings in forecasting future earnings

The predictive power of the "Fed" model estimates of the equity risk premium rests with the price-earnings ratio, with a high price-earnings ratio pointing to poor returns over the long term.

Given the forward earnings version of the "Fed" model suggests that stocks are overvalued, we tested how well it does in forecasting real equity returns compared with the common alternative of price-earnings ratios.

This horse race involved estimating a set of simple regressions from the early 1990s to now to judge how much of the variation in future equity returns was explained by these different stock market indicators over 1-, 5- and 10-year forecast horizons.

The results showed that both the equity risk premium and most measures of the price-earnings ratio helped forecast real equity returns over the medium to long term, but performed poorly as short-term valuation tools.

Strategy commentary cont'd: The Shiller cyclically-adjusted price-earnings ratio (aka CAPE) and the forward price-earnings ratio both explained more of the variation in future returns than the different measures of the forward earnings risk premium, although the risk premium still did well over the longer term. [2]

Figure 6: Like price-earnings ratios, estimates of the forward earnings "Fed" equity risk premium help forecast real equity returns over the medium to long term

(R-bar-squared)	Real total return over different time horizons:		
	1 year	5 years	10 years
Price-earnings ratios			
- Shiller cyclically-adjusted PE ratio	0.11	0.53	0.57
- Shiller trailing PE ratio	0.00	0.00	0.00
- Bloomberg trailing PE ratio	0.08	0.05	0.32
- Bloomberg/Refinitiv 1-year forward PE ratio	0.08	0.43	0.60
Equity risk premiums			
- 1-year forward PE versus			
: ex-post real bond yield	0.06	0.23	0.46
: FRB CLE estimated real bond yield	0.04	0.21	0.51
: survey-derived real bond yield	0.04	0.23	0.51

Note: Estimated from 1991 to 2023.

Source: Bloomberg, Board of Governors of the Federal Reserve System, Federal Reserve Bank of Cleveland, Federal Reserve Bank of Philadelphia, Federal Reserve Bank of St Louis, National Bureau of Economic Research, Refinitiv, Shiller, Coolabah Capital Investments

Like most price-earnings ratios, estimates of the forward earnings "Fed" equity risk premium help forecast real returns over the medium to long term

Delving deeper to identify what explains the long-term forecasting performance of the forward earnings equity risk premium, we ran an additional set of regressions where the equity risk premium was split into the earnings yield and different measures of the real bond yield.

Figure 7: Further analysis suggests that the information content of the forward earnings "Fed" model of the equity risk premium in forecasting real returns wholly reflects the price-earnings ratio

* p-values in italics (NW adjusted)	Real total return over 10 years:				R-bar-squared
	Coefficient* PE ratio	Coefficient* ERP	Coefficient* Earnings yield	Coefficient* Real bond yield	
Price-earnings ratios					
- Shiller cyclically-adjusted PE ratio	-0.46	..	..	..	0.57
	<i>0.00</i>	..	..	..
- Shiller trailing PE ratio	-0.01	..	..	..	0.00
	<i>0.78</i>	..	..	..
- Bloomberg trailing PE ratio	-0.49	..	..	..	0.32
	<i>0.00</i>	..	..	..
- Bloomberg/Refinitiv 1-year forward PE ratio	-0.90	..	..	..	0.60
	<i>0.00</i>	..	..	..
Equity risk premiums					
- ERP calculated using 1-year forward EY vs					
: ex-post real bond yield	..	1.39	..	..	0.46
	..	<i>0.00</i>	..	..
: FRB CLE estimated real bond yield	..	1.53	..	..	0.51
	..	<i>0.00</i>	..	..
: survey-derived real bond yield	..	1.38	..	..	0.51
	..	<i>0.00</i>	..	..
- ERP split into 1-year forward EY vs					
: ex-post real bond yield	..	..	2.52	-0.16	0.60
	..	..	<i>0.00</i>	<i>0.63</i>	
: FRB CLE estimated real bond yield	..	..	2.44	-0.44	0.61
	..	..	<i>0.00</i>	<i>0.21</i>	
: survey-derived real bond yield	..	..	2.41	-0.36	0.61
	..	..	<i>0.00</i>	<i>0.26</i>	

Note: Estimated from 1991 to 2023.

Source: Bloomberg, Board of Governors of the Federal Reserve System, Federal Reserve Bank of Cleveland, Federal Reserve Bank of Philadelphia, Federal Reserve Bank of St Louis, National Bureau of Economic Research, Refinitiv, Shiller, Coolabah Capital Investments

The ability of the forward earnings "Fed" model of the equity risk premium to forecast returns wholly reflects the price-earnings ratio

Strategy commentary cont'd: This analysis showed that the ability of the risk premium to forecast returns over the long term wholly reflects the earnings yield – or in other words the price-earnings ratio – as the different measures of the real bond yield were not statistically significant.

This means that the "Fed" model equity risk premium does not possess any predictive power beyond the price-earnings ratio, such that it is more straightforward to use measures of the price-earnings ratio as medium- to long-term valuation tools for the stock market.

Comparing the various measures of the price-earnings ratio, the most robust long-term valuation measure with the longest history is the Shiller cyclically-adjusted price-earnings ratio.

This ratio is still extremely high, not far from its highest level in history, which suggests that total real equity returns are likely to be poor over the next ten years.



A near-record high cyclically-adjusted price earnings ratio points to poor real returns over the long term

The current earnings yield seems too low relative to bond yields and bond/stock volatility.

While this analysis suggests that real bond yields – as captured in the "Fed" model of the equity risk premium – do not seem to add value in forecasting stock returns over the medium to long term. this leaves open the question of whether bond yields influence current returns.

This issue was raised in an [AQR research note](#) some years ago, where we have replicated their model of the current earnings yield, which was specified as a function of the nominal government bond yield, realised bond volatility, and realised stock volatility.

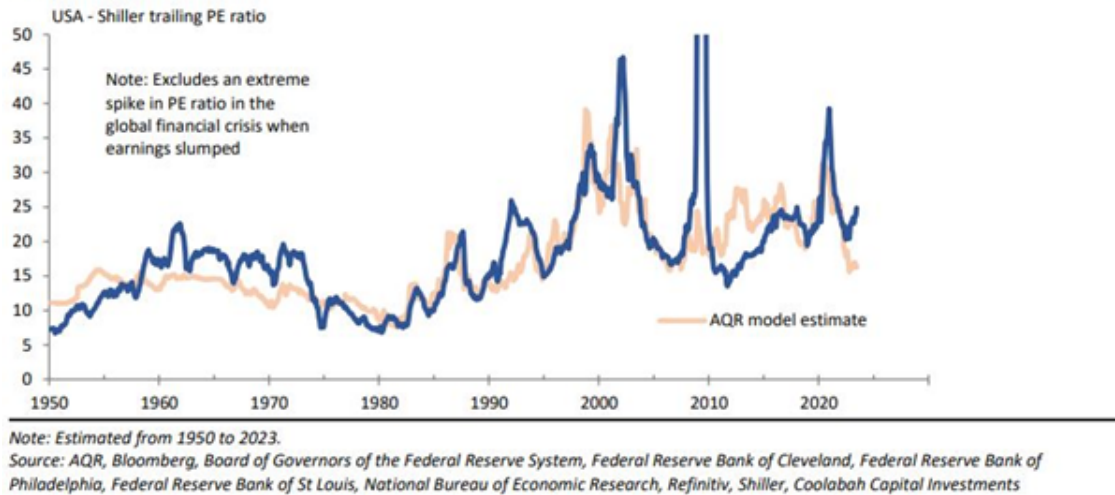
The idea behind this model was that a higher bond yield should have a positive relationship with the earnings yield and hence a negative relationship with the price-earnings ratio.

More volatile stock returns also had the same relationship with the earnings yield, while more volatile bond returns would reduce the earnings yield, equating to a higher price-earnings ratio.

Inverting the model results to derive the price-earnings ratio, it does a reasonable job at estimating the trend in the post-WW2 period.

Strategy commentary cont'd: At present, this yardstick also suggests that stocks are overvalued, with the earnings yield too low and the price-earnings ratio too high based on current bond yields and bond/stock volatility.

Figure 9: The current price-earnings ratio appears high relative to the historical relationship with bond yields and stock and bond volatility



The current price-earnings ratio appears high relative to bond yields and stock and bond volatility

Notes:

- [1] For example, the earnings yield = nominal earnings/nominal price = (real earnings*CPI)/(real price*CPI) = real earnings/real price, where the CPI = consumer price index.
- [2] The price-earnings ratio based on the current Shiller earnings series failed at forecasting returns over any horizon because the ratio spiked during the global financial crisis when there was an extremely steep decline in earnings.



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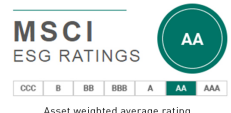
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