PERFORMANCE OF AUSTRALIAN HIGH YIELD PORTFOLIOS

We analysed the performance of high yield investing in Australian-listed stocks over 41 years from July 1982 to May 2023. We computed real pre-tax returns, including imputation credits, based upon the average returns from one to four high yield portfolios, contingent upon data availability. In aggregate, the high yield portfolio earned an annualised return of 2.3 per cent above the market. Imputation credits and a pure yield premium contribute approximately equal amounts to the total return premium.

High yield investments have below-average market risk but above-average interest rate risk: A one per cent increase in the 10 year bond yield is associated with a minus 0.6 per cent return to the high yield portfolio. Relative performance varies by time period. Across six economic regimes with spans of three to eleven years, relative performance to the high yield portfolio was as high as 4.7 per cent (from the introduction of the cash rebate for imputation credits on 1 July 2000 to the peak of the U.S housing market in July 2006), and as low as minus 2.3 per cent (from the end of June 2013 to the onset of the COVID-19 pandemic in January 2020). Since January 2020 the annualised yield premium has been 1.6 per cent.

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Jason is the co-founder of Hamilton12 and lecturer in finance at the Ross School of Business, University of Michigan. Hamilton12 launched the Australian Diversified Yield Index in November 2020, computed by Standard & Poor's. Hamilton12 launched the Hamilton12 Australian Shares Income Fund in September 2022. The index and fund are designed to optimise the Australian equities allocation for Australian resident investors. Jason's research into value-based investing, analyst earnings forecasts, and the value of dividend imputation credits is the basis of stock selection for the portfolio. Over two decades, Jason has studied imputation credits using prices of ordinary shares, options and hybrid securities. In addition, he has derived expected share market returns from analyst earnings forecasts; measured analyst forecast accuracy; quantified the risk-reward implications of industry sector rotation; and modelled retirement income streams for superannuation investors. Jason completed his PhD in finance at The University of Queensland and is a CFA charterholder.

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Introduction: High yield stocks have historically outperformed low yield stocks in the United States, Hong Kong and globally, but returns are sensitive to interest rate fluctuations

Standard and Poor's (S&P) estimates that $3.6 billion is invested in Australian-listed exchange-traded funds (ETFs) with a high yield strategy, a figure which has grown at an annual rate of 21 per cent over ten years.[1] In the United States (U.S.), 51.5 years of returns data ending December 2014 has established an annual return premium of 1.3 per cent from an annual rebalanced portfolio which holds stocks ranked from the 50th to 95th percentile of dividend yield, over stocks in the bottom half.[2] But high yield stocks do not beat low yield stocks in every time period. Morningstar reported that, in the U.S., high yield portfolios outperform during periods of falling interest rates and underperform during periods of rising interest rates.[3]

The long-term outperformance of high yield strategies appears to be independent of differential tax rates on dividends and capital gains. In Hong Kong, in which neither dividends nor capital gains are taxed, a portfolio of the top 30 per cent of stocks ranked by dividend yield outperformed a portfolio of the bottom 30 per cent to the tune of 6.1 per cent annually over 29.5 years ending December 2010.[4]

The yield premium applies globally. Walkshäusl (2016) reports a monthly return difference of 0.30 per cent between the top and bottom equal-weighted quintile portfolios formed on the basis of net payout yield, after controlling for other value-based characteristics like market capitalisation, book-to-market ratio, return on equity and asset growth. This is from a sample compiled from over 5,200 companies in 20 countries over 20 years ending June 2014. Net payout yield is of interest because, since the introduction in 1982 of the safe harbor rule by the Securities and Exchange Commission (SEC) that facilitated stock buybacks, U.S.-listed companies have substantially increased the proportion of shareholder return associated with stock buybacks versus dividends. With share repurchases being a normal form of shareholder distribution, and companies conducting regular equity raising, a sole focus on dividends can mask the value signal of net payout. However, this is less important in Australia because the imputation system encourages companies to pay high dividends rather than conduct on-market buybacks.

Performance of dividend yield investing in Australia

Result 1: High yield investing has generated a return premium above the market of 2.3 per cent on a real pre-tax basis including imputation benefits

We investigated the performance of portfolios that target yield with reference to Australian-listed companies over 41 years from July 1982 to May 2023. A number of indices are formed from high yield stocks. We analysed monthly returns from three of those indices, plus data compiled by Professor Ken French of Dartmouth College[5], compiling average returns for one to four data sources, contingent upon data availability in each month. The averaging is to smooth out the idiosyncratic contribution of each particular index's portfolio formation rules. We computed pre-tax returns plus imputation benefits, stripped out inflation and compared

[1] Ye and Wang (2023)
[2] Conover, Jensen and Simpson (2016). Kang, Kim and Oh (2019) provide consistent evidence reporting that a 1 per cent increase in the dividend yield is associated with an increase in return of 2.3 per cent, based upon returns of approximately 3,800 U.S.-listed companies from 1970 to 2015.
[3] Johnson (2022). Early research by Chance (1982) reached the opposite conclusion using data from January 1968 to February 1980.
[4] Lemmon and Nguyen (2015)
[5] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#International accessed on 27 June 2023

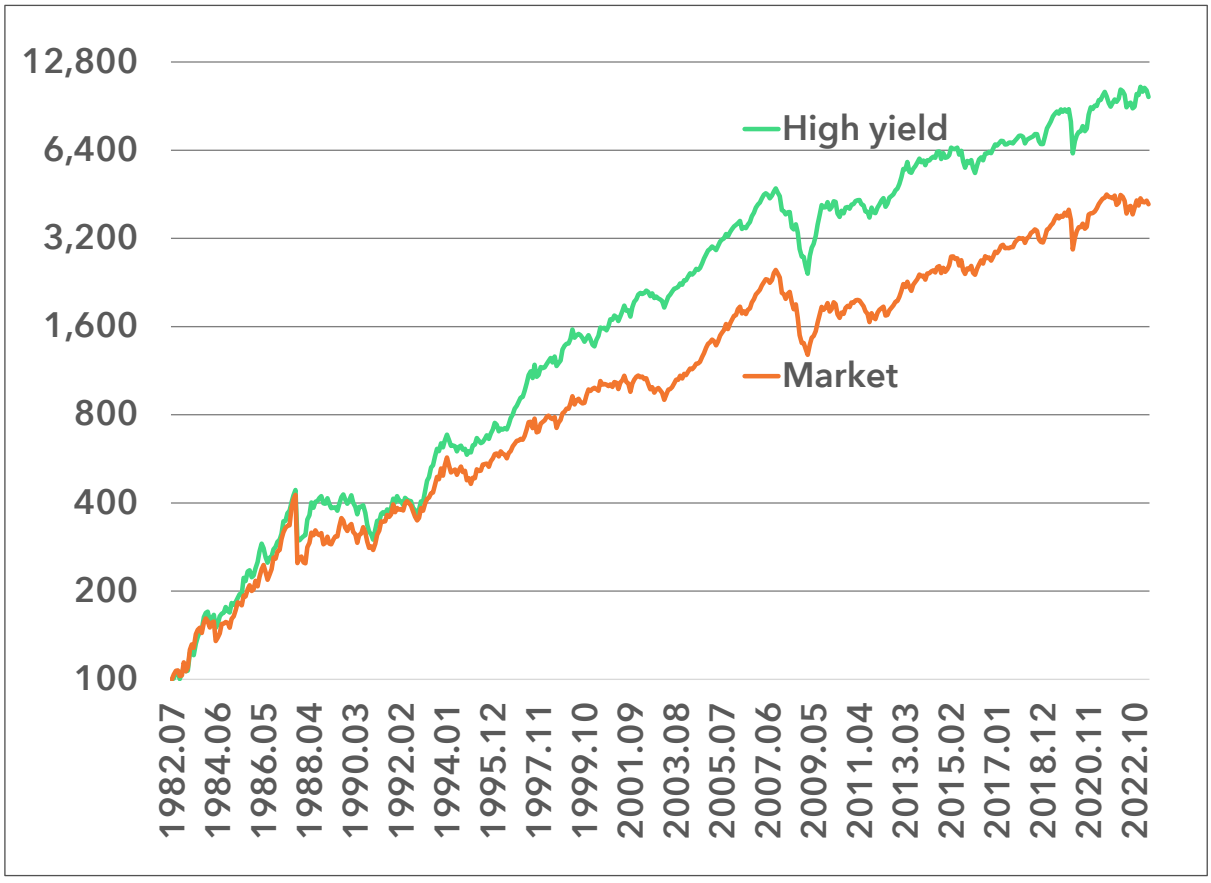
performance to the broader market. From May 1992 the market index is the S&P/ASX 300 Index and in earlier months the market index is the MSCI Australia Index.[6] The table below shows the return months and indices used to compile returns to a high yield portfolio.

Table 1. High yield return indices

Index	Return months
MSCI Australia High Dividend Yield Index	January 1999 to May 2023
S&P/ASX Dividend Opportunities Index	August 2002 to May 2023
Hamilton 12 Australian Diversified Yield Index	October 2000 to May 2023
Ken French top 30 per cent, value weighted	August 1983 to December 2022

Over 41 years, holding a portfolio of high yield stocks generated an annual real pre-tax return including imputation benefits of 11.9 per cent (Figure 1). This represents a 2.3 per cent premium over the 9.6 per cent return on the broader market. Imputation credits matter. The tax benefits of imputation contributed 1.2 per cent to the 2.3 per cent outperformance, with the remaining 1.0 per cent attributed to a pure yield premium.

Figure 1. Real pre-tax investment value including imputation benefits



Result 2: Returns are sensitive to interest rate movements, but annual outperformance after accounting for market risk and interest rate risk exceeds 3 per cent

Consistent with U.S. evidence, returns are sensitive to interest rate movements. We considered four drivers of returns: aggregate market returns, changes in 10 year bond yields, the level of 10 year bond yields, and real percentage changes in the RBA commodity price index (given that a high yield portfolio will necessarily have exposure to the large mature

[6] S&P reports returns inclusive of the benefit of imputation tax credits from 1 July 2005 onwards for the S&P/ASX 300. Prior to 1 June 2005 we assume that dividends are franked at 77 per cent, which is the average franking from 1 July 2005 onwards. We incorporate time-varying Australian corporate tax rates.

mining companies of BHP Group, Rio Tinto and Fortescue Metals Group). There are three key results.

- A 1 per cent increase in the 10 year bond yield is associated with a minus 0.6 per cent return to a high yield portfolio, after controlling for aggregate market movements.
- The coefficient on overall market returns is 0.85, well below the benchmark of one, meaning that high yield portfolios are defensive with respect to market risk. In other words, high yield portfolios have below-average market risk but above-average interest rate risk. The high yield portfolio is no more volatile than the market: the respective standard deviations of monthly returns are 4.5 per cent and 4.6 per cent.
- After controlling for market risk and interest rate risk, the monthly outperformance is 0.31 per cent, which represents annual outperformance of approximately 3.7 per cent.[7]

Result 3: High yield return premium varies over time

The relative performance of high yield investing varies over time. We split the 41 years of returns into six economic regimes of approximately three to eleven years based upon changes in economic regimes, tax law and the onset of the pandemic (Table 2). The regimes illustrate the continual decline of the 10 year government bond yield to a low of about 1 per cent, and its subsequent recovery to 3.6 per cent, approximately the level of 10 years prior. Across the first four regimes ending in June 2013, the annual return from the high yield portfolio exceeded that of the market by 1.5 per cent (prior to the RBA implementing an inflation target) to 4.7 per cent (subsequent to the introduction of cash rebates for imputation credits and up to the peak of the U.S. housing market). In the seven years prior to the onset of the COVID-19 pandemic, the high yield portfolio underperformed the market by an annual rate of 2.3 per cent. But in the most recent 40 months, yield has again earned above-market returns. The current regime has seen low equity returns in general (2.9 per cent for the high yield portfolio and 1.3 per cent for the market), in large part because of high inflation. Recall that the return shown are inflation-adjusted.

Table 2. Returns in different economic regimes

Event	Start	End	10 yr bond start	10 yr bond end	Months	High yield	Market	High yield – Market
1 Pre inflation targeting	Jul 82	Mar 93	17.1%	8.0%	128	15.8%	14.2%	1.5%
2 RBA targets inflation	Mar 93	Jun 00	8.0%	6.3%	87	18.1%	13.6%	4.4%
3 Imputation cash rebate	Jun 00	Jul 06	6.3%	5.9%	73	13.7%	9.0%	4.7%
4 U.S. housing peak	Jul 06	Jun 13	5.9%	3.8%	83	6.5%	2.7%	3.8%
5 Mid-point of regime 4 & 6	Jun 13	Jan 20	3.8%	1.0%	79	7.9%	10.2%	-2.3%
6 Pandemic	Jan 20	May 23	1.0%	3.6%	40	2.9%	1.3%	1.6%
All	Jul 82	May 23	17.1%	3.6%	490	11.9%	9.6%	2.3%

[7] 0.31 per cent × 12 = 3.7 per cent. The empirical regression is: Real pre-tax return including imputation benefits to the high yield portfolio = 0.31% – 0.63 × change in the 10 year bond yield + 0.85 × real pre-tax return including imputation benefits to the market – 0.004 × 10 year bond yield – 0.06 × real percentage change in the RBA commodity price index. The R-squared is 80.1 per cent. In later years there is a positive correlation between the relative performance of the high yield portfolio and the market and the RBA commodity price index.

Conclusion

High yield investments are associated with above-market returns in Australia, with imputation benefits and a pure yield premium contributing approximately equal amounts to a 2.3 per cent annual premium. High yield investments have below-average market risk exposure, which is offset by above-average exposure to interest rate risk. A 1 per cent increase in the 10 year bond yield is associated with a minus 0.6 per cent return to the high yield portfolio. High yield investments are not guaranteed to earn a premium, even over extended time periods. This is generally true of any style-based portfolio formation process. But the typical yield premium is positive and a high yield portfolio carries no incremental volatility relative to the market.

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Appendix: Research summaries in chronological order

Dividend yields and stock returns in Hong Kong by Lemmon and Nguyen (2015)

The researchers examined approximately 126,000 monthly returns on 1,100 Hong Kong-listed companies from July 1981 to December 2010. Each June the sample was split into dividend payers versus non-dividend payers, with the dividend paying companies split into ten deciles and value-weighted portfolio returns computed. The researchers then measured the relationship between dividend yield and excess returns relative to the returns on one-month U.S. Treasury bills after controlling for exposure to size, book-to-market and momentum factors. The results show a 0.51 per cent difference in average monthly abnormal returns to stocks in the top 30 per cent of dividend yield compared to those in the bottom 30 per cent of dividend which, which corresponds to a **6.1 per cent** average annual return premium. The results also show that a 1 per cent increase in the dividend yield is associated with a 0.76 per cent increase in abnormal returns when estimating using dividend-paying companies.

What difference do dividends make? by Conover, Jensen and Simpson (2016)

The researchers examined monthly returns on U.S.-listed companies over 51.5 years from July 1963 to December 2014. Each June the sample was split into dividend payers versus non-dividend payers. The dividend paying companies were split approximately into the lower 50 per cent, middle 45 per cent and upper 5 per cent on the basis of 12 month trailing dividend yield. The value-weighted geometric mean monthly return to the high dividend payers was

0.90 per cent versus 0.80 per cent for the low dividend payers, 0.85 per cent for the extreme dividend payers and 0.77 per cent for the non-dividend payers. This corresponds to an annual return premium for high (but not extreme) dividend payers of **1.3 per cent** over low dividend payers, and **1.7 per cent** over non-dividend payers. Higher returns do not come with excess risk. The standard deviation of monthly returns on the high dividend portfolio was 4.0 per cent, compared to 4.8 per cent for the low dividend portfolio, 7.0 per cent for the non-dividend portfolio and 5.0 per cent for the extreme dividend portfolio. When stocks were split into six styles on the basis of market capitalisation and book-to-market ratio, high dividend portfolios earned higher returns than low dividend portfolios for five of six styles. The exception was mid-cap value, which recorded a monthly return of 1.41 per cent for the low dividend portfolio and 1.38 per cent for the high dividend portfolio.

Net payout yields and the cross-section of international stock returns by Walkshäusl (2016)

The researcher examined approximately 105,000 monthly returns on 5,200 firms from 20 countries from July 1994 to June 2014.The objective was to measure the relationship between net payout yield and stock returns. The researcher forms equal-weighted quintile portfolios according to net payout yield, rebalanced annually. The analysis shows that the monthly returns difference between the top quintile and bottom quintile portfolios is **0.30 per cent** after controlling for characteristics commonly associated with stock returns (market capitalisation, book-to-market ratio, momentum, return on equity, asset growth, plus country indicator variables).

Dividend yields, stock returns and reputation by Kang, Kim and Oh (2019)

The researchers examined approximately 650,000 monthly returns on 3,800 U.S.-listed companies from January 1970 to December 2015. Their objective was to measure the relationship between dividend yield and stock returns and whether this relationship varied, contingent upon the length of time in which dividends in prior years had been maintained or increased. The researchers found a positive association between dividend yield and monthly stock returns, in which dividend yield was computed as the most recent quarterly dividend multiplied by four and divided by the stock price.

However, the magnitude of the relationship between dividend yield and stock returns was comparatively lower for observations in which the company had maintained or increased quarterly dividends for at least three consecutive years. The results imply that, all else equal, for a company with a track record of maintaining or increasing dividends, a 1 per cent increase in the dividend yield is associated with an increase in returns of approximately 2.3 per cent, a figure which increased to around 3.3 per cent for companies without a three-year track record. The implication is that when companies smooth dividend payments, dividend yields carry less information content about future returns because the most recent dividend is a less reliable information signal of profitability.

Dividend investors: Don't sweat rising interest rates by Johnson (2022)

The researcher examined the performance of non-dividend paying stocks and dividend paying stocks allocated to deciles on the basis of 12 month trailing dividend yield, formed annually and obtained from the website of Professor Ken French. Monthly returns from May 1953 to January 2022 were analysed. The researcher found that the average annualised return on the three high dividend yield portfolios was 12.5 per cent, which decreased to 11.8 per cent for the four middle dividend yield portfolios and 10.9 per cent for the three low dividend yield portfolios. Non-dividend paying stocks earned annualised returns of just 10.0 per cent. So, the dividend yield premium, based upon the top 30 per cent versus the bottom 30 per cent of dividend yield for dividend-paying stocks was **1.6 per cent**.

However, high dividend yield investing underperformed during periods of rising interest rates. The researcher split the sample into "up" periods on the basis of the top 25 per cent of

months of rising interest rates, "down" periods on the basis of the top 25 per cent of months of falling interest rates and "steady" periods for the remaining months.

- During up periods, average annualised returns for the corresponding high, medium, low and zero dividend portfolios were 2.0 per cent, 5.2 per cent, 7.8 per cent and 9.7 per cent, and the dividend yield premium amongst dividend paying companies was – 5.8 per cent.
- In contrast, during down periods, returns across the high, medium, low and zero dividend portfolios were 21.2 per cent, 19.1 per cent, 14.0 per cent and 13.7 per cent, and the dividend yield premium amongst dividend paying companies was 7.1 per cent.
- Finally, in the steady months, returns across the high, medium, low and zero dividend portfolios were 13.8 per cent, 11.7 per cent, 11.0 per cent and 8.3 per cent, and the dividend yield premium amongst dividend paying companies was 2.8 per cent.

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