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AFTER-TAX INVESTING: ONE SIZE DOES NOT FIT ALL!

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This paper highlights various issues that should be considered by Australian share investors on different tax rates, including the proper management of tax lots and the preference of different investor types for particular types of income. Investors on a low marginal tax rate prefer franked dividends and are not as averse to realising capital gains. They also gain by participating in off-market buybacks. In contrast, high-tax investors do not have the same strong preference for franked dividends, and should be conscious to limit the realisation of capital gains, particularly short term gains. High-tax investors should also seek to realise capital losses to offset their capital gains. Lastly, suggestions are made for how funds should be created and managed, so that managers optimise the after-tax return for all investors. Funds should be set up separately for each investment tax clientele, so that decisions can be made to optimise the after-tax return for all investors. Using the example of off-market buy-backs, it is shown how tax considerations influence the decision to participate (low-tax investor funds can participate, in contrast to high-tax investor funds).

Introduction

Tax is an important issue that all investors need to consider. Many previous studies document a significant difference between pre and post-tax performance. As investors are becoming more tax aware, this issue is starting to influence the way investment funds manage their portfolios. Bergstresser and Poterba (2002) find that mutual fund inflows in the US are more sensitive to prior after-tax performance rather than gross returns, even though US mutual funds were not required to disclose after-tax performance during the period of their study (1993-1999). Similarly, Barclay et al. (1998) show that

funds with large unrealised capital gains (i.e. capital gains overhang) experience lower fund inflows compared with other funds. These studies show that investors are becoming more knowledgeable about the "true" (after-tax) return of investments, potentially leading the investment industry itself. Only this year, the Australian Superannuation Funds Association (ASFA) and FTSE Group have combined to build after-tax Australian share benchmarks, which is the first step in the proper reporting of after-tax returns (ASFA, 2009). There is some debate within the investment industry whether fund managers do currently manage their portfolio on an after-tax basis based on the average tax rate of their investors. Dunstan (2006) argues that because active fund managers are not evaluated on after-tax returns, taxes are neglected. In contrast, Wright (2006) documents the argument of active fund managers that the norm over the past three years is for Australian equity managers to carefully monitor turnover with respect to tax considerations.

Tax management is particularly important for investors paying a higher rate of tax, but it is also important for investors who pay no tax, due to the dividend imputation system employed by Australia. While tax paying investors can use franking credits to offset tax obligations, non-tax paying Australian investors can claim back the value of franking credits from the Australian government. In order to more accurately measure effective fund performance, franking credits should be added on to net stock performance in order to calculate the post-tax return to Australian-domiciled investors. These gains may often not be taken advantage of by investment managers due to the misalignment of interests as managers are judged on their pre-tax performance whereas investors actually achieve an after-tax return on their investments. Secondly, funds may include multiple investors who pay different rates of tax, resulting in a sub-optimal outcome for fund investors as managers are not able to take advantage of opportunities which would benefit one class of taxed investors because these would be to

the detriment of another class of taxed investors. Ideally, managers should have different funds for each investor tax rate, so that optimal after-tax outcomes can be achieved for all investors.

The aims of this paper are to highlight various issues that should be considered by investors with different tax rates. Pension funds and charities do not pay capital gains tax, thus turnover is unimportant unless it results in excessive transactions costs. They also receive back the value of the franking credits in full. Superannuation funds have similar incentives to non-tax-paying investors, in receiving most of the value of franking credits, although more care is needed to reduce short term capital gains as these are taxed at a higher rate than long term capital gains. At the other end of the spectrum, individuals on high marginal tax rates receive a large penalty (up to 23.3%) on realising short term gains, hence great care is needed to reduce where optimal the early realisation of winners. With regard to off-market buybacks (which are not much of an issue in the current market environment, but which we expect to come back into favour in the future), these can be very profitable for pension and superannuation funds to participate in, but can be detrimental to the performance of high-tax investors. This further highlights the benefit of setting up specifically targeted funds for low-tax investors so that these profit opportunities may be fully utilised.

In this paper, Section 2 introduces a number of issues that need to be considered by managers and then in Section 3 some suggestions for how the industry could be better structured to maximise after-tax return for all investors. Section 4 concludes.

Issues for investment managers to consider

The issues that an investment manager should consider when managing portfolios in a tax effective manner include (a) Management of tax lots; (b) Tax rates across investors; (c) Capital gains tax realisation; (d) Diversification and taxes; (e) Realisation of tax losses; and (f) Franking credits.

a) Management of tax lots³

For all tax-paying investors, the management of tax lots is the most straightforward way to increase after-tax portfolio performance. In order to do this, investors need adequate record-keeping tools to re-

tain the lot-by-lot price, quantity, date and commission costs of all investments. This is in the interests of investors as it allows them to specify which specific lot was sold. Hence, in the case where multiple purchases are made of the same security, investors can minimize the current recognition of gains by choosing those tax lots with the least associated tax liability. Where adequate records are not kept, investors are required to use the first-in-first-out (FIFO) method of tax lot identification, where the security lot that was acquired first is deemed to have been sold.

b) Tax rates across investors

Table 1 summarises the different rates of taxation across Australian investors and demonstrates the importance of incorporating both the investor's tax rate and the type of investment return when implementing an investment strategy. As well as summarising the rates of taxation for different investor classes, Table 1 also provides the effective after-tax value of income received from each form of possible Australian share form of return. For example, a fully franked dividend is worth 142.9% of its nominal before tax value to a pension fund or charity, whilst a realised short term capital gain is only worth 53.5% of its nominal value after-tax for an individual on the highest marginal tax rate (including the normal Medicare levy).

A common optimal strategy across all investor groups does not exist. For example, whilst a pension fund or charity is indifferent to whether a stock pays an unfranked dividend or makes a capital gain, all other types of investors prefer long term capital gains. A high-tax (46.5% marginal rate) investor is almost indifferent between a long term capital gain and a franked dividend. In contrast, a pension or superannuation fund values a franked dividend substantially more highly than a long term capital gain. As a result, the likely franked and unfranked yield of stocks should be considered by investment managers in conjunction with the class of investor in their fund.

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Table 1: Investor tax rates and investment returns

This table presents the income and long term capital gains tax rates (short term capital gains are calculated as income) in the 2nd and 3rd columns for different investor types. In columns 4-7, the effective after-tax return as a proportion of pre-tax return is presented.

Investor	Statutory income tax rate	Long term cap gain rate**	EFFECTIVE AFTER-TAX RETURN			
			Fully franked dividend	Unfranked dividend	Long term gain	Short term gain
Charity/Pension	0%	0.0%	142.9%	100.0%	100.0%	100.0%
Super	15%	10.0%	121.4%	85.0%	90.0%	85.0%
Individual	15%	7.5%	121.4%	85.0%	92.5%	85.0%
Individual*	31.5%	15.8%	97.9%	68.5%	84.3%	68.5%
Individual*	38.5%	19.3%	87.9%	61.5%	80.8%	61.5%
Individual*	46.5%	23.3%	76.4%	53.5%	76.8%	53.5%

* Including the 1.5% Medicare Levy, tax rates for FY2011

** Long term is classified as sales made more than 12 months after the purchase date.

tween a long term capital gain and a franked dividend. In contrast, a pension or superannuation fund values a franked dividend substantially more highly than a long term capital gain. As a result, the likely franked and unfranked yield of stocks should be considered by investment managers in conjunction with the class of investor in their fund.

The following example provides more evidence of how the type of return is important in evaluating the after-tax return from an individual stock in an investor's portfolio. There are three stocks whose equal before-tax return is broken up in the following way:

Stock A:
10% return = 4% Franked Dividend + 6% Capital Gain

Stock B:
10% return = 4% Unfranked Dividend + 6% Capital Gain

Stock C:
10% return = 10% Capital Gain

This equal before-tax return results in the following after-tax return (calculated by investor type) :

Superannuation Fund

- Stock A = 4% X 121.4% + 6% x 90% = 10.2%
- Stock B = 4% x 85% + 6% x 90% = 8.8%
- Stock C = 10% x 90% = 9.0%

Charity/Pension Fund

- Stock A = 4% X 142.9% + 6% x 100% = 11.7%
- Stock B = 4% x 100% + 6% x 100% = 10.0%
- Stock C = 10% x 100% = 10.0%

31.5% Individual

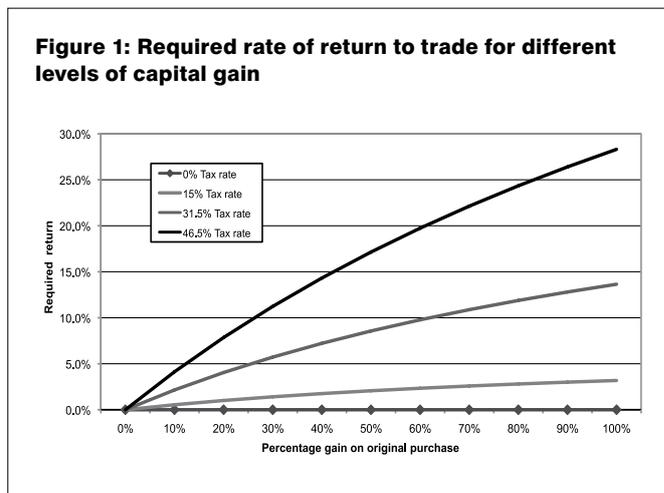
- Stock A = 4% x 97.9% + 6% x 84.3% = 9.0%
- Stock B = 4% x 68.5% + 6% x 84.3% = 7.8%
- Stock C = 10% x 84.3% = 8.4%

46.5% Individual

- Stock A = 4% x 76.4% + 6% x 76.8% = 7.7%
- Stock B = 4% x 53.5% + 6% x 76.8% = 6.8%
- Stock C = 10% x 76.8% = 7.7%

This example shows that in order to optimise after-tax returns it is important to know both the tax rate of your investors as well as the likely break-up of return for individual stocks. Whilst all three stocks have the same before tax return, the after-tax returns vary by up to 1.7% (17% of the pre-tax return) for pension funds and 1.4% for a superannuation fund. If we assume that this likely post-tax return is partially incorporated into stock prices this would result in an increase in the price for franked-dividend-paying stocks, and therefore a decrease in the future expected pre-tax return. Hence, as a result of this partial stock price adjustment, there appears to be a relative benefit for high marginal tax paying investors to hold non dividend paying stocks that are held for 12 months or more, in contrast to low-tax paying investors which have a relative incentive to receive fully franked dividends.

Figure 1: Required rate of return to trade for different levels of capital gain

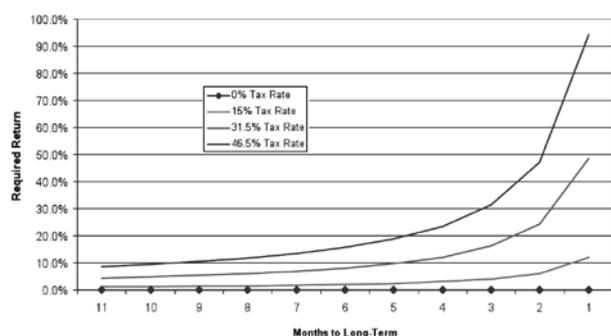


c) Capital gains tax realisation

Table 1 also shows that there is a large disincentive to realise short term gains for investors with a high marginal tax rate. This is particularly true as the holding period of the investment approaches 12 months. To illustrate this, take the example of a security A, which is purchased by an investor who is on the top marginal tax rate (46.5%) at a price of \$1 on the 1st January 2009? If we assume security A appreciates to \$1.20 by 1st July 2009, then the unrealised capital gain tax liability for that investor would be \$0.093. If the investor is willing to wait for another 6 months before realising that gain, the tax payable would drop by \$0.047, a 4.2 percent increase in the effective return of the investor (0.047/1.11). Hence, for it to be optimal for the investor to sell security A on the 1st July in order to purchase security B (the alternate investment), the projected extra return generated by security B over security A would have to be more than 4.2 percent over the next 6 months. This difference in required returns is even greater if we also include the tax-effect of the realisation of security B capital gains. If also realised before a 12 month holding period is reached, the required return on Stock B increases to 7.9 percent. Figure 1 highlights the return required to realise various levels of short term capital gains for a range of different taxed investors, clearly demonstrating the large incentive that exists for higher tax paying investors to delay the realisation of short term capital gains.

For the same 20% unrealised short term capital gain, the hurdle return would be a more reasonable 1% for a superannuation fund and 4% for a 31.5% taxed individual, whilst there is no penalty at all for zero tax rate investors. For a security that has doubled in less than a year, the hurdle return rises to 28.3% for a high-tax investor, 13.6% for a 31.5% taxed investor and 3.2% for a superannuation fund.

Now the required hurdle returns in Figure 1 simply reflect the extra return required to trade, irrespective of the time horizon. As security A's holding period approaches 12 months, the difference in annualised expected returns required for it to be optimal to trade increases significantly for taxed investors. Figure 2 depicts the annualised required return for various holding periods and tax rates, and again highlights the large incentive that exists for investors paying a high marginal tax rate to delay the realisation of gains until after the 12 month holding period. At a holding period of 6 months the annualised required return for a high-taxed investor is 15.7% (2% for a superannuation fund and 8.1% for a 31.5% tax rate investor) which rises to 94.2% (12.1% and 48.5%) as the holding period rises to 11 months.

Figure 2: Annualised required rate of return to trade as holding period approaches 12 months for a unrealised 20% short term capital gain.

These incentive differences suggest that some strategies, such as short term trading strategies, would be less profitable for high-tax compared with low-tax investors. Managers should understand the tax rate of their investors before undertaking particular investment strategies. Fong et al. (2009) show that subsequent to the change in Australian taxation which reduced the tax rate on long term capital gains, active fund managers significantly increased the proportion of long term capital gains realised, particularly for large capitalisation stocks, but less for more volatile stocks. They document an overall saving of 17.6% in capital gains tax liabilities for a top tax-bracket investor, showing that on average managers have delayed capital gains realisation.

Delaying the realisation of any capital gains taxes, even the (lower) long term capital gains tax, can also be attractive for investors paying a high marginal rate of tax. This is because investors must pay taxes on realised, but not unrealised gains. These unrealised capital gains tax liabilities can be considered as a free loan from the government. Due to the expected long term positive return from equities, the value of this “free loan” is not insignificant. Consider the following example.

Suppose an investor on a marginal tax rate of 46.5% purchases security A for \$1, which then appreciates to \$1.50 after two years. The investor expects security A to perform in line with the market, growing at roughly 8% each year. However, there exists another security B, which our investor expects to outperform the market over the next 2 years. Upon selling A, the manager has to pay the government 11.6c in tax; hence their investment in security B is immediately lower than that in security A (albeit with a lower unrealised capital gains tax liability). In this simulation we assume the investor has a new stock idea each 2 years, such that they would be trading and thus realising capital gains every 2 years.

The value of A upon liquidation (assuming a 20yr horizon) pre-tax:

$$VA = 1.5 \times (1.0820) = 6.99$$

The value post-tax:

$$PA = VA - (VA - 1) \times 0.2325 = 5.6$$

If the manager trades, then after 2 years the value of B is:

$$VB2 = 1.384 \times (1 + 0.08 + r)^2$$

where r is the expected alpha of security B over the market over the next 2 years.

The value post-tax:

$$PB2 = VB2 - (VB2 - 1.384) \times 0.2325$$

To compute the value of B after 20 years, we perform this calculation each 2 years for 20 years.

If we solve for r to make $PA = PB20$ we find $r = 1.34$ percent. This 1.34% alpha per annum for the next 2 years is moderate to overcome the cost of capital gains tax realisation. Table 2 displays the alpha required to justify trading for various investor tax rates where investors trade either each year, or each 2 years. We can observe that as the rate of tax and trading frequency increases, so does the required alpha. This is because each time an investor trades, they have to realise a capital gain (assuming generally increasing stock prices), which results in them not having the benefit of the “free loan” from the government. Thus, extra alpha is required to offset this.

Table 2 – Alpha required as trade frequency changes

This table measures the annual alpha required in order to justify trading, rather than utilising a buy-and-hold strategy. This is calculated over a 20 year horizon.

Investor tax rate	Trade frequency	
	1 year	2 years
0.0%	0.00%	0.00%
15.0%	0.56%	0.52%
31.5%	0.91%	0.86%
46.5%	1.43%	1.34%

This table measures the annual alpha required in order to justify trading, rather than utilising a buy-and-hold strategy. This is calculated over a 20 year horizon.

Previous studies have also documented the importance of turnover on a fund’s after-tax performance. Mawani et al. (2003) show portfolio turnover can cost up to 5% p.a. for a U.S. mutual fund. Hamson (2007) finds that for an investor paying the top marginal tax rate to use active managers with 100 (60) percent turnover, breakeven net alpha of approximately 2.6 (1.3) percent p.a. is required to overcome the tax burden caused by higher turnover relative to a passive index strategy. However for a superannuation investor, the breakeven net alpha required to offset taxes associated with 100 (60) percent turnover is only about 0.6 (0.3) percent p.a. High-tax investors and their managers have a greater incentive to reduce turnover, particularly turnover that causes the realisation of short term gains. Managers may accomplish this by utilising long term signals for alpha generation, rather than short term strategies which would be comparatively more favourable for those investors paying a lower rate of tax.

An important issue for superannuation funds is that when a member retires, thus causing their fund to graduate to pension fund status, no taxes are payable. Any unrealised capital gains earned whilst in the superannuation phase of investment become tax-free. As a result, as the member approaches retirement, they would benefit by reducing the realisation of any capital gains where optimal.

d) Diversification and Taxes

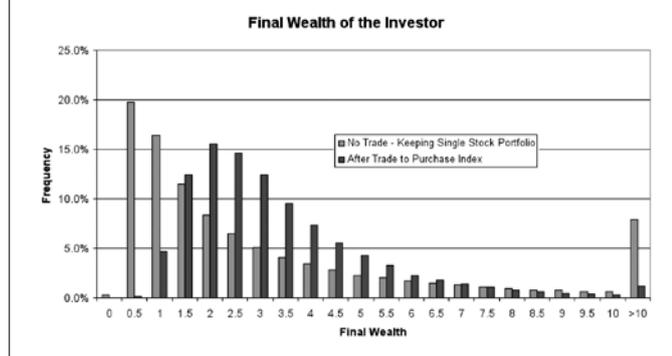
In general, tax efficiency for an investor on a high marginal tax rate requires a long term buy-and-hold strategy that avoids capital gains realisation. However, sometimes this can result in less than optimal risk outcomes due to overly concentrated portfolios. This can be caused by the outperformance of particular securities resulting in

their larger weight in the portfolio. Unfortunately, these outperformers are the very securities that would result in the most capital gains being realised.

If we consider an extreme case where an investor on the highest marginal tax rate of 46.5 percent holds one asset, which was purchased for \$0.20 more than 12 months ago, but is now worth \$1. Hence, the unrealised capital gain is \$0.80, yielding a potential tax bill of $\$0.80 \times 23.25\% = \0.19 . Should this investor diversify by purchasing the index despite this initial cost?

Assuming an investment horizon of 20 years, an annual stock and index return of 8% p.a., a single stock volatility of 30%, and an index volatility of 15%, we simulate the return with and without trade. The final wealth of the investor averages \$3.62 after-tax with no trade; however the final wealth distribution is highly skewed (as can be seen in Figure 3). The chance of ending up with less than \$1 is nearly 40%. If the investor was to diversify their investment by selling their existing position and purchasing the index, their average final wealth drops to \$3.10, however this is much more consistent. The chance of ending up with less than \$1 reduces to just 4.8%, which is perhaps a much more palatable strategy. From this analysis, we can conclude that in certain cases the realisation of capital gains might be advantageous in order to diversify one's investments, thereby reducing risk.

Figure 3 – Probability Distribution of After-Tax Liquidation Value



e) Realisation of tax losses

The realisation of tax losses can provide an important way of reducing the amount of tax paid by investors. Managers should be cognizant of the potential benefits of selling out of securities in loss. These losses can be offset against gains made elsewhere in the investor's portfolio, thereby reducing the tax bill. This strategy can consistently add to the after-tax returns of investors, and requires no stock-picking skill whatsoever. However, at the same time, one must be careful not to fall into the Australian Tax Office's (ATO) definition of tax avoidance (see Part IVA of the ITAA, 1936).

Stein and Narasimham (1999) find the value of tax-loss harvesting to be 70-100bps a year, whilst Arnott and Berkin (2001) find that tax-advantaged investing can add roughly another 60bps (80bps) p.a. of after-tax alpha for an investor on a 35 (50) percent tax rate. Arnott and Berkin (2001) use the phrase "good turnover" to describe turnover which reduces the tax burden by realising a capital loss, whereas "bad turnover" involves the realisation of a capital gain, especially a

short term capital gain. They find, through the use of a Monte Carlo simulation, that tax-harvesting adds more to after-tax returns in the early years of an investment period than in the later years (as capital gains have built up, so there is less scope for realising losses). However, due to the cumulative effect of the "interest-free loans from the government", the returns are still significant in the later years.

f) Franking credits

The discussion in the last three sections has concentrated on the benefits to investors paying a high marginal rate of tax by reducing their capital gains tax burden. However, there are also benefits to be made by low-tax investors in the Australian market, by correctly valuing franking credits. Table 1 showed that franked dividends are beneficial for low-tax investors, whereas high-tax investors are indifferent between franked dividends and long term gains. For low-tax investors, it is likely to be beneficial to realise short term gains in order to receive franking credits as the value of franking credits are far higher than the cost of short term capital gains tax.

This issue is important to consider for companies making their dividend payout policy, as based on a purely rational framework, our findings on investor preference from Table 1 suggests that companies should only pay out dividends when they have franking credits to accompany those dividends. When they wish to return capital to shareholders above the level of their franking credits, it is optimal to engage in share buybacks for all Australian tax clienteles. Green and Hollifield (2003) find that for the U.S. market which does not have a dividend imputation system, a firm can reduce its cost of capital by approximately one percent through the use of repurchases relative to dividends. However, there may be investor behavioural biases that result in a preference for unfranked dividends rather than through stock buybacks. Hsieh and Wang (2008) find that when companies have large insider ownership, personal tax preferences do affect corporate payout decisions.

Off-market buybacks also present a way for low-tax investors to increase after-tax returns, and provide a way for companies to use the franking credits they have accumulated to optimally benefit shareholders. Off-market buybacks involve investors selling their shares back to the company where the buyback price is composed of both fully franked dividends and capital with the majority of the buyback price normally in the form of a fully franked dividend. Buybacks provide a means for low-tax investors who highly value franking credits to bid for them in the off-market tender process. Normally the tender price for these types of buybacks is below the current market price, reflecting the value of the franking credits to low-taxed investors. High-tax shareholders do not generally participate in these buybacks as they do not value franking credits as highly, but they do indirectly benefit from the buyback process because shares bought back below the normal market price result in an accretion in EPS (and therefore price) to non-participating shareholders.

To provide an example of the mechanics of an off-market buyback for the various investor classes, we will examine the BHP buyback which was announced in February 2011. During the pricing period in the week preceding the completion date, 11th April 2011, the BHP share price averaged \$47.50, and the tender price for the off-market buyback went off at \$40.85, of which \$40.57 was deemed to be a fully-franked dividend and \$0.28 was capital. In the case of a Pension Fund or Charity, they also receive the full value of the frank-



The quote

Managers should have separate funds for each major investor class, so that all pension fund and charity clients are in the one fund.

ing credit which is equal to \$17.39, providing them an after-tax return on 22%. For a superannuation fund, taxed at 15%, they receive most of the value of the franking credits, but also receive a tax credit (used to offset capital gains, which we assume in this case to be a long term gain) equal to the tax rate multiplied by the difference between the deemed capital value of \$9.31 and the purchase price (assumed to be the price on the announcement day, \$46.58, which is a generous assumption, which, if a lower price is assumed, may reduce the return to taxed investors). The after-tax return to superannuation funds from participating in this buyback is 12.3%. Similar calculations are made in Table 3 for investors at the medium and high tax rates of 31.5 and 46.5%, showing that it would have been unprofitable for those investors to participate in this buyback. The break-even purchase price for high-tax (46.5%) investors was \$50.45, such that if the investor purchased BHP shares below that value, then the off-market buy-back becomes unprofitable.

Table 3 – Return earned from the BHP off-market buyback in Feb-Apr 2011

This table calculates the return that can be made or lost by various investor classes by participating in an off-market buyback.

Investor	Buyback Price	Capital Component	Fully Franked Dividend Component	Tax Credit (Cost) of Fully-franked Dividend	Tax-Credit (Cost) of Capital Gains Loss	After-tax Buyback Return
Pension Fund/Charity (0% Tax)	40.85	0.28	40.57	17.39	0.00	22.6%
Superannuation Fund (15% Tax)	40.85	1.28	39.57	8.69	3.73	12.3%
31.5% Tax-paying Individual	40.85	2.28	38.57	-0.87	5.97	-3.2%
46.5% Tax-paying Individual	40.85	3.28	37.57	-9.56	8.67	-15.5%

Fund implications

So far in this article, we have highlighted a number of areas that should be considered by investors, advisers and managers in order to maximise their after-tax returns. In this section we make various suggestions on how funds should be created and managed, so that the after-tax returns are optimised.

Our first suggestion is for managers to have separate funds for each major investor class, so that all pension fund and charity clients are in the one fund, superannuation funds in another and high-tax paying individuals in another. The advantage of this method is that due to the similar tax paying status of all investors in each fund, decisions can be made to optimise the after-tax return for all fund investors. When investors who pay different rates of tax are incorporated into the same fund, then it is not possible for managers to act in the best interests of all their clients. Thus it is advantageous for separate funds to be created for each different investor class. It raises the question of how managers make decisions when all different classes of investors are in their fund. Do they discover the average tax rate paid by all their clients (if it is possible to calculate this)? Or more likely, do they optimise their portfolio based on client's before-tax re-

turns, which means that no clients receive their optimum after-tax return?

Given the separation of clients with different tax statuses outlined in the previous paragraph, we now suggest how zero-tax paying investors, superannuation funds and high-tax paying investors should act to optimise after-tax returns.

For pension funds and charities which pay no tax, managers should not try to reduce capital gain realisation at all, as tax is not paid on capital gains. Hence, short term trading strategies can be undertaken (as long as they are profitable after trading frictions such as transaction costs are included), without regard for turnover. Stocks paying franked dividends should be preferred given similar before tax returns, due to the value attached to franking credits by zero-tax paying investors. Off-market buybacks should be taken up where available and even sought after where possible. Finally, managers should be evaluated on their post-tax performance, including franking credits.

Superannuation funds have similar incentives to pension funds and charities, however, particular strategies cannot be undertaken to the same extent and most will need to be evaluated on a case-by-case basis (i.e. short term strategies, off market buybacks). Whilst tax rates are still low, excess tax (5%) is still paid upon the realisation of short term gains, and long term gains are also taxed at 10%. Hence, capital losses should be realised to offset realised capital gains by fund managers where reasonable and appropriate. As a result of these low-tax rates, stocks paying franked dividends should generally be preferred even if this involves extra turnover. Tax lots should also be managed so that tax can be minimised. Once again, managers should be evaluated on their post-tax performance, including franking credits.

For individuals paying either the mid or the top marginal tax rate, managers should be very careful when realising capital gains. Thus managers should employ relatively longer-term investment strategies for these investors. Investors and advisers should examine investment managers carefully to determine the level of turnover, and the resultant after-tax performance that result from their investment strategies. Certain managers may achieve attractive pre-tax performance but this may translate into unattractive after-tax performance when the realisation of capital gains is taken into account. Clients should also direct investment managers to realise tax losses where appropriate. Due to the importance of tax for these investors, it may not be advantageous to employ multiple managers who are not aware of each other's actions, or to invest via a fund which may generate capital gains purely through other fund investors moving money. Rather, it may be better to employ a single core manager who manages the entire portfolio on a tax-efficient basis as an individual mandate.

In order for investors to be able to evaluate managers on their after-tax performance, methodologies need to

be agreed upon in order to measure after-tax performance of funds and benchmarks in a consistent manner. ASFA/FTSE now publish after-tax benchmark returns for multiple investor classes, incorporating into returns both the franking credits attached to dividends and off-market buybacks as well as including the tax treatment on the capital gains attached to off-market buybacks. These benchmarks, while an improvement, ignore other capital gains taxes due to the investor specific nature of capital gains due to uncertainty around the commencement time of the investment and on the specific time of capital gain realisations. Warrakirri employ a more complicated investor specific method of accounting for capital gains, where unrealised capital gains are assumed to be taxed at the long term capital gains tax rate, so that included in portfolio valuation is an unrealised tax liability on these unrealised capital gains. This method does not discriminate between investors with different commencement dates. This system is not perfect in its accounting for capital gains, as ideally the tax liability should incorporate not the total unrealised capital gains tax liability, but rather the net present value of the future realised capital gains tax liability. However, despite this imperfection, this methodology provides investors with a good approximation of the after-tax performance of benchmarks and funds. A related issue concerns how companies themselves assess their own performance. It is common practice for Australian companies to measure their Total Shareholder Return by combining share price appreciation with dividends reinvested. Given that franking credits are valuable, we believe incorporating franking credits into the Total Shareholder Return calculations would provide a fairer measure of relative performance of Australian shares.

Conclusion

Investors are increasingly becoming more tax aware, and are making decisions based on the post-tax returns achieved by investment managers. This paper highlights various issues that should be considered by investors on different tax rates. We discuss the importance of the proper management of tax lots for taxable investors. We also document the preference of different investor types for particular types of income. Investors on a low marginal tax rate prefer franked dividends and are not as averse to realising capital gains. They also gain by participating in off-market buybacks. These investors would be well-suited to short-term trading strategies, and should not be averse to stock turnover (as long as it is profitable). In contrast, high-tax investors do not have the same strong preference for franked dividends, and should be conscious to limit the realisation of capital gains, particularly short term gains. High-tax investors should also seek to realise capital losses to offset their capital gains. High-tax investors should prefer managers who utilise long-term investment strategies and thus have lower levels of turnover. Interestingly, the least or equal least preferred form

of income for all tax clienteles is unfranked dividends. So from the point of view of maximising after tax returns to their shareholders, Australian companies should reconsider whether they pay any unfranked dividends at all.

Lastly, suggestions are made for how funds should be created and managed, so that managers can optimise the after-tax return for all investors. Funds should ideally be set up separately for each investment type, so that decisions can be made to optimise the after-tax return for all fund investors. Using the example of off-market buybacks, it is shown how tax considerations influence the decision to participate – low-tax investor funds can participate, in contrast to high-tax investor funds. Appropriate after-tax benchmarks need to be agreed upon so that the performance of managers can be correctly evaluated.



The quote

Funds should ideally be set up separately for each investment type, so that decisions can be made to optimise the after-tax return for all fund investors.

Notes:

1. *These studies include Arnott et al. (1993, 2000). Dickson and Shoven (1993) and Mawani et al. (2003) also argue that the relative ranking of funds vary significantly when using before-tax and after-tax assessment criteria.*
2. *Table 1 summarises the relevant tax rates for all Australian investors.*
3. *Each stock purchase an investor makes is classified as a separate tax lot, with an attached purchase date and price.*
4. *To keep the analysis simple we only report numbers for these four tax clienteles from here on in this paper. The results for a 15% individual tax rate are very similar to those of a superannuation fund, whilst the 39.5% individual results are approximately half way between the 31.5% and 46.5% individual tax rates. Superannuation funds will be denoted by the 15% tax in all following figures and charts. Information on 15% Individual and 39.5% individual tax rates are available by request to the authors.*
5. *The post-tax return expectation would not be fully incorporated into stock prices, as not all investors gain from franking credits to the same extent. For example, if fully-franked dividend stocks were to fully adjust to reflect the post-tax benefit for pension funds, then high-tax investors would sell those stocks, and purchase non dividend paying stocks, thereby reducing the price of fully-franked dividend stocks. Thus, in a competitive market made up for various investors paying different tax rates, there is no marginal investor, and thus only a partial stock price adjustment would result.*
6. $=(\$1.2 - \$1) \times 46.5\%$
7. $=(\$1.2 - \$1) \times 23.3\%$
8. *This example is similar to that shown in Stein (2001).*
9. *Some investors prefer yield, even though studies show that investors can easily replicate yield by selling their securities.*
10. *If the tax loss can be used to offset short term capital gains then the value of the tax loss will be higher for taxed investors, whilst if the investor has no current year tax gains to offset the losses, the tax losses can be carried forward to a future tax year and the value of the tax losses will be lower due to the time value of money.*
11. *If the investor has no capital gains to offset, the gain to Superannuation Funds from participating in the buyback is 4.5 percent.*
12. *This ignores the unrealised tax liability which has been removed by selling the security.*

13. In the case of some buybacks, there remains a period after the buyback is announced where investors can buy the stock and still be eligible for the buyback with the benefit of the franking credits.

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