

ASSET ALLOCATION

RESEARCH PAPER

## Home bias in equity allocations

By David Brown, Manager Investment Policy, QIC

*Often described as home bias, an enduring feature of strategic asset allocations in Australia and abroad is a relatively high weight to domestic assets. This paper analyses whether a home bias to Australian equities can be justified, and concludes that, on the basis of evidence from historic outcomes, investors with very long investment horizons should have held most if not all of those equities in global portfolios (probably hedged), regardless of the share of equities in the total portfolio. However, such an extreme portfolio decision would have disappointed over many short – and even medium-term periods. On balance, on the evidence presented in this paper, it would appear prudent to lean towards investing at least 50% and perhaps up to 60%-70% of a portfolio's total equity exposure in international equities.*

In the years before 2001, a steady flow of market commentary urged change, with high profile investors pronouncing their intention to increase international equity weightings above 50% of their total equity exposure. Despite this, we saw only a slight drift away from the long-held practice of roughly a 60% domestic, 40% international equities split.

Instead, the gentle rise in absolute international equity weights since the middle 1990s was part of a broader increase in growth assets and is not connected with a substitution or corresponding reduction in money allocated to Australian equities. As few funds actually carried through with the rhetoric, any move to now reduce the domestic asset preference places an investor at the vanguard of industry opinion, and would also edge out on a limb against common industry practice.

Short of the obvious reasons of familiarity or loyalty to a 'home' market, it is difficult to explain the preference shown by investors to domestic equities.

In some countries, including Australia, tax structures provide an incentive for local (tax paying) investors to hold domestic equities. However, this does not explain such decisions for non tax payers and for fixed interest investors. Possibly pressure not to be too different to competing funds, or the difficulty in managing overseas assets, has influenced this pattern.

Matching Australian dollar liabilities is sometimes given as a motivation to hold domestic equities. However, as equities, both domestic and overseas, form part of the same 'growth' component of assets, the mix between Australian and foreign is just a question of getting the right balance between return and diversification.

The 'currency' that falls out of this decision represents something different. Currency in this sense (falling out of another asset class) is not an 'investment', rather it is a risk to be appropriately managed. Through hedging, any proportion of the portfolio, including the foreign assets, can effectively have only A\$ exposure.

The case for increased allocations to international equities is two-fold:

- pursuit of a broader opportunity set; and,
- increased potential for diversification.

The former relates to compositional differences between the Australian equity market, dominated by financials and a minority resources sector, and US and European markets which offered greater exposure to technology, consumer goods and healthcare. Although compositional difference was to insulate Australian investors in the years from 2001 to 2003, it was a cause for underperformance in the late 1990s. The turn in fortunes for the Australian market may explain the absence of discussion on home bias in recent years. However, these sectoral differences are sure to re-exert influence on returns in the future. Depending on whether these are positive or negative influences, we can again expect further discussion on the home bias issue.

The later issue of increased diversification seems true judging by this study, but is clouded by whether the exposure is hedged or unhedged.

- Looking simply at returns over the past 18 years and inferring from these a pattern for the future, an increased weighting to international equities could be justified, but not clearly argued.
- During that period, a (hedged) international equity weighting equal to or greater than 50% of all equity holdings would have resulted in a higher return with lower volatility. An unhedged international equity weighting would have resulted in lower volatility, but poor return.
- All-Australian or all-international exposure (for equities and fixed interest) generally suffered from sustained periods of adverse performance. Moderate mixes between Australian and international assets seemed generally to provide more reliable results.

### Analysis

Comparing the index return from Australian equities

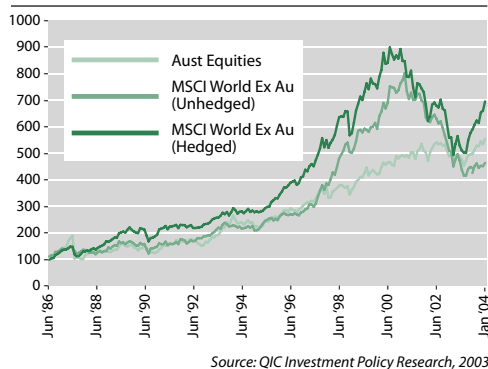


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**Figure 1: Comparative equity returns 1986 - 2004**



**Figure 2: Rolling average comparative performance Jan 1986 - Dec 2003**

	HEDGED WORLD EQUITIES	UNHEDGED WORLD EQUITIES	AUSTRALIAN EQUITITES
Average 12-month return %	12.8	11.1	11.0
Standard deviation (of 12m returns) %	18.2	19.9	17.5
% of periods when best	38	29	33

Source: QIC Investment Policy Research, 2003

and international equities<sup>1</sup> (hedged and unhedged), it is clear hedged world equities show the highest long-term cumulative return since 1986 (refer Figure 1).

There seems to be a break in June 1997 when a gap opened between the performance of Australian equities compared to those of the global market. This gap has closed following the difficult markets of the last three years.

It is also noticeable that the lines cross at various points and that different sub-periods show varying results. To analyse how period-specific these returns are, Figure 2 summarises the 206 rolling 12-month periods<sup>2</sup> between January 1986 and December 2003. We can see a moderately more attractive, but similar pattern of returns from hedged world equities than in either of the other two series.

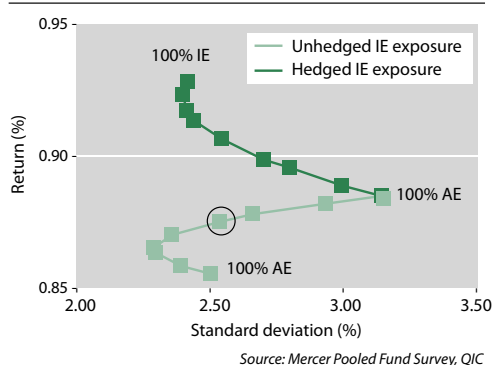
Hedged world equities enjoy a higher average return and greater frequency of out-performance. Although the difference in average return does not test statistically significant, the F-test shows that the variance is significantly different between Australian

equities and the two international equity series. Australian equities produced the best performance in 33 per cent of the 206 twelve-month periods.

These figures represent 18 years of history. In spite of this, it is striking how small the differences are between the three alternatives. It is therefore not clear that maintaining an overweight position in Australian equities has been sub-optimal for Australian investors. Similar average returns and, over this period, lower volatility does not point to a strong reason for reversing the home bias.

The above analysis relates only to a simple choice between asset classes – either Australian or international equities. Looking at such a bilateral trade-off can be overly simplistic for an investor, who, in reality, places these choices within a multi-asset investment strategy (balanced or stable, etc). Interaction effects among a variety of asset classes make the level of home-market weighting a more complex decision involving assessment of the whole fund and its total diversification.

**Figure 3: Balanced fund outcomes 1986-2003**



**Figure 4: Balanced fund outcomes 1986-2000**

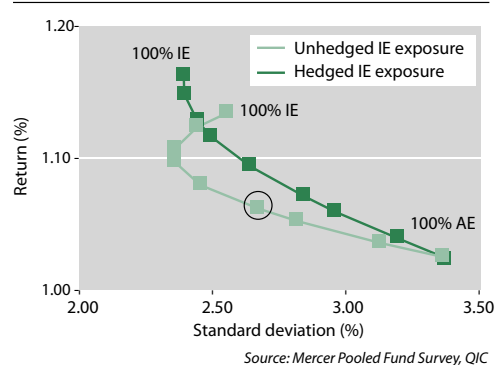


Figure 5: Efficiency of balanced fund portfolios in Figures 3 and 4

IE (Hedged) /AE exposure	Ranked "best" (top quartile)	Ranked "top half"	Ranked "inter-quartile"	Ranked "worst" (bottom quartile)	IE (Un-hedged) /AE exposure	Ranked "best" (top quartile)	Ranked "top half"	Ranked "inter-quartile"	Ranked "worst" (bottom quartile)
100/0	33%	50%	33%	34%	100/0	23%	33%	21%	55%
90/10	31%	52%	49%	21%	90/10	24%	37%	29%	47%
75/25	32%	45%	33%	15%	75/25	24%	41%	39%	37%
67/33	7%	42%	81%	12%	67/33	12%	43%	59%	29%
50/50	8%	43%	86%	6%	50/50	13%	38%	73%	15%
33/67	5%	46%	92%	2%	33/67	12%	32%	88%	0%
25/75	4%	45%	71%	25%	25/75	6%	40%	84%	9%
10/90	16%	33%	42%	42%	10/90	9%	31%	51%	39%
0/100	21%	30%	26%	53%	0/100	21%	30%	26%	53%

The following analysis places these decisions within a whole-of-fund context.

Figures 3 and 4 compare the standard deviation of monthly returns (volatility or risk) between January 1986 and December 2003 (and the same comparison as at December 2000) with the average monthly returns achieved by balanced (70/30)<sup>3</sup> funds. Using reported asset allocations at each month and index returns, we show how a typical fund would have behaved under various hypothetical mixes of Australian and international equities.

The best outcome (denoted by a square dot top left) represents the typical balanced fund were it to have had no Australian equities. That is, the entire equity allocation is invested in hedged world equities. The other series represents the same relationship for unhedged world equities.

The two charts show how things can change in such a short period of time. The analysis done in 2000 (Figure 4) showed a very different picture to that shown at the end of 2003 (Figure 3).

In both graphs, mixes tested within the equity allocation of the balanced funds range from 10% (of the total equity allocation) as Australian equities, 25%, 33%, 50%, 66%, 75%, 90%, and the two lines converge with 100% of the equity allocation invested in Australian equities. The circled squares denote the conventional industry portfolio – that is, the most common mix used by Australian institutions over the period, being 2/3 Australian equities and 1/3 international (unhedged) equities. The conventional industry portfolio is clearly sub-optimal in these cases.

Australian equities have not offered the same reduced volatility or return as the international asset classes (although unhedged international equities has not produced the desired return). It is therefore not clear as to why Australian equities have remained the favoured assets and why the weightings devoted to overseas equities have remained so stable (at roughly one third of total equity exposure).

We also look at how period-specific this data is.

For each of the 12-month periods between January 1986 and December 2003, we ranked the 'efficiency' of the portfolios represented on the long-term efficient frontier in Figures 3 and 4 (refer Figure 5). By efficiency, we mean the return per unit of risk. This simple 'bang for buck' measure (return divided by standard deviation) gives a quick ratio to analyse if one portfolio is preferable to another.

1. Extreme portfolios (100% or 0% Australian equities) took the largest share of best and worst ranks. This creates short-term win/lose outcomes irrespective of the long-term outcome.
2. Diversified portfolios (moderate mixes between Australian and international equities) were seldom best and just as likely to be worst. They mostly take the position of being middle of the road – or ranked within the inter-quartile range.
3. Those diversified portfolios with more international equities (that is less than or equal to 50% Australian equities) were regularly ranked above average – we would see this as a desirable trade off (on a risk-adjusted basis) for an investor who was seeking long-term wealth creation but needed to maintain stakeholder confidence over short-term reporting periods.

Extreme portfolios offer more risk on two counts. Firstly, the risk of incorrectly forecasting which alternative will prove best over the long term, and secondly, the increased risk that short-term reporting will look poor compared with the long-term trend.

These may be important statistics for advisers depending on the period over which the fund is measured and reported to the stakeholders. For example, if over the past 18 years an investor chose a balanced fund with no Australian equity exposure and 100% hedged international equities, it would have proved the most optimal long-term strategy. However,

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one in three monthly reports in any year would have shown short-term sub-optimal performance (that is, 34% in 'worst' events in Figure 5).

Possibly an investor needs to select the long-term winner and compose a portfolio tilted, but not extremely so, in favour of that winner. The degree of the tilt would be dictated by the confidence the investor has in the winner.

Similar analysis for capital stable and all-equity funds shows the same general patterns. These patterns therefore remain established irrespective of risk tolerance (capital stable to all-equity) and time period (12-months or 60-months)<sup>4</sup>.

## Conclusions

- QIC's prospective view is that Australian equities should match and possibly outperform international equities in the coming 10 years. However, historically the Australian equity market has failed to do this over sustained periods. The test, therefore, is if the investor has confidence that it will do so now.
- On balance, our analysis shows that there is no reason to have less than 50% international equities. The same analysis shows that having no Australian equities can be sub-optimal. Diversification is always sensible in the face of uncertain forecasts and markets.
- Predominantly to secure that improved diversification but also possibly better performance, we generally support increasing international equity weights from typical industry levels. Tending upwards from the current average 60%/40% (domestic/international) to at least the 55%/45% range would place investors with current industry leaders, while the 50%/50% mark would be a reasonable staging ground for most balanced or growth type funds.
- Ultimately (several years out) the weights may finally tip the balance away from Australia and settle at something like 30% Australian and 70% international equities. The timing of this would depend on other circumstances such as tax position, competitive comparison and the nature of each fund.

As with any historical analysis, there is no guarantee that such outcomes and conclusions will persist into the future! 

## ENDNOTES

1. World equity returns are based on MSCI World (Ex Australia) Index which contains approximately 23 countries. It predominantly reflects developed equity markets. January 1986 has been selected

as the starting point representing a 18-year period after financial sector deregulation was undertaken in Australia. The data runs to end December 2003.

2. Although the 206 rolling 12-month periods will demonstrate some serial correlation (that is, each successive figure is 10/12ths the same as the previous), this represents the monthly reporting cycle where, at any month-end, investment advisers explain performance to investors and a common period of comparison is the previous 12 months. In this sense, the comparison is a measure of how confident an adviser can be in presenting performance figures to clients each month.
3. We proxy balanced funds by reference to the Mercer Pooled Fund Survey and its accompanying Pooled Fund Asset Allocations Survey. This reports the monthly returns (and asset allocations) of over 30 balanced funds managed by major investment firms in Australia. Generally they have 70% of the fund in growth assets (mostly equities) and 30% in defensive assets.
4. Detailed results and methodology available on request.

## ABOUT THE AUTHOR

David Brown joined QIC in 2000 as a Senior Fund Manager within the Strategy Division. His responsibilities include developing strategic asset allocation policy, and advising clients how best to respond, implement, monitor and manage the total outcome for investment structures put in place. Prior to this, David spent a decade in the UK where he was an Investment Manager with one of the largest institutional investors in Europe. David has a Master of Science in investment analysis from the University of Stirling in Scotland, and a Bachelor of Commerce from the University of Auckland. He is an Associate of the UK Society of Investment Professionals/AIMR (London), an affiliate of the Securities Institute of Australia, and has a post-graduate diploma from the Chartered Institute of Marketing in the UK.