The use by investment managers of tactical asset allocation overlays, even at moderate skill levels, can add worthwhile returns to portfolio performance provided positions of sufficient size are taken, writes WILSON SY.

However, he says, TAA has had relatively little effect on portfolio performance in Australia in the past several years because of the low level of risk taken.

Tactical asset allocation (TAA) is really a fancy name, in the portfolio management context, for old-fashioned "market timing". TAA consists of short-term asset allocation shifts around a long-term strategic asset allocation. The time horizon for investment strategies is usually set at five years but may extend to seven.

A TAA overlay refers to the management of asset allocation shifts separately from the management of the underlying strategic portfolio. It consists of positive and negative exposure shifts relative to the strategic asset allocation in the various asset classes. The TAA overlay exposure shifts net out to zero across all asset classes, because total exposure overweights relative to the strategic asset allocation are balanced exactly by total exposure underweights.

Because of the property of zero net exposure, a TAA overlay can be applied separately "on top of" any portfolio without "over-exposing" or "gearing" the overall portfolio and without needing to disturb the underlying physical portfolio. A specialist overlay manager operates separately and externally from the manager of the physical assets. Futures are the predominant instruments, but other derivatives such as options are sometimes used and longer-term TAA may employ cashflows and physical securities.

A common reason for using TAA is to protect portfolio performance from fast-moving events such as the October 1987 sharemarket crash, the Gulf war and the European currency crises. Since most such events are isolated and infrequent shocks, an additional motivation is to add value continuously to the underlying portfolio through the ups and downs of a typical economic cycle.

This article describes recent beginnings in TAA overlays in the Australian superannuation funds industry and discusses the potential value which might reasonably be expected from a TAA overlay service. Some practical issues such as performance measurement, derivatives and compliance are examined.

INITIAL DEVELOPMENTS
For large superannuation funds – for example, those with total asset values exceeding $200 million – there is a strong industry trend towards using purpose-designed configurations of specialist sector managers. One of the reasons driving this development is the need for a greater degree of control of a fund’s strategic asset allocation to better reflect its investment objectives. Another reason is the opportunity to pick the best sector managers for each asset class.

Strategic asset allocations are usually set with a five to seven-year time horizon. This is about the duration of an economic cycle and is rather long in relation to financial market fluctuations. Historically, while the strategic asset allocation is regarded as the best way to achieve fund objectives over the long term, there have been periods, from weeks to years, where the strategic asset allocation would have been sub-optimal in a risk/reward sense.

Tactical asset allocation overlay is a controlled attempt to take advantage of shorter-term market fluctuations to enhance performance of a diversified fund which uses specialist sector managers – without disturbing those underly-

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ing managers and without losing sight of a fund’s position relative to its investment strategy.

Advocates of TAA have been active in the US for more than 20 years and in some cases funds have been managed for almost that long with impressive results. The use of TAA overlays by superannuation funds in Australia has been a relatively recent development, becoming more common as more large funds adopt the specialist-sector approach.

Not counting quasi-TAA overlays, such as TAA trusts or managed futures funds often run by commodity trading advisers, there are several individual TAA arrangements in operation, managing several hundred million dollars.

**POTENTIAL VALUE ADDED**

If you had achieved index returns from the best performers in Australian shares, Australian fixed interest or cash each month since 1970, you would have had an average annual return of 47.5%. This far outstrips 11.0% or 9.5% or 11.2% you would have achieved from “buying and holding” the respective asset classes.

Obviously, the objectives and constraints of TAA are more complex than this simple example suggests, but the source from which potential value can be added is the same. Clearly, if one could capture even a fraction of that large potential reward, significant value could be added.3

The potential value added by TAA depends on a number of factors:
- the timing skill of the TAA manager;
- the level of activity in terms of the frequency of switching between markets;
- the average level of risk tolerated in terms of bet sizes of the TAA shifts; and
- the differential returns between markets and asset classes at different stages of the economic cycle.

These factors can combine and interact in a complex way over time to produce an outcome in terms of value added. For example, a manager’s timing skill may be more effective over one part of the economic cycle than another. Or, a manager may be wrong more often than right, but has larger bets when right.

**ESTIMATION MODEL**

Even though any given outcome may result from a complex process, there are nevertheless important parameter boundaries and useful insights which can be obtained from simple modelling.

Consider a portfolio consisting only of Australian shares, Australian fixed-interest securities and cash, where the benchmarks are the ASX All-Ordinaries accumulation index, the Commonwealth Bank all-maturities bond index and 90-day bank bill index. These asset classes have reliable data going back more than 25 years and their combined exposure weight is now typically 70% of total exposure for most diversified portfolios.

In this model, it is assumed that if the strategic asset allocation had at least 20%

<table>
<thead>
<tr>
<th>Monthly bet size (%)</th>
<th>Accuracy (%)</th>
<th>Turnover times (pa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.05</td>
<td>0.75</td>
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<td>3</td>
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<table>
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<tr>
<th>Quarterly bet size (%)</th>
<th>Accuracy (%)</th>
<th>Turnover times (pa)</th>
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<td>5</td>
<td>0.18</td>
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<tr>
<td>20</td>
<td>0.73</td>
<td>8.37</td>
</tr>
</tbody>
</table>

Table 1: Potential value added per annum from monthly switches

Table 2: Potential value added per annum from quarterly switches

**Table 1**: Potential value added per annum from monthly switches

**Table 2**: Potential value added per annum from quarterly switches
in each asset class, then the maximum TAA bet size, as defined by the percentage (of total portfolio exposure) shift from the strategic asset allocation weight, would be 20%. In other words, the weight of any asset class can be reduced to zero and the 20% exposure available can be added to another asset class.

Consider a TAA manager taking constant-size bets each month since 1970 in trying to correctly overweight the best-performing asset class and underweight the worst. Assume an average transaction cost (including market impact) of 0.05% per unit exposure bought or sold. The transaction cost incurred in any month can vary from 0% for no shifts to 0.2% for two buy/sell shifts times the bet size.

Table 1 gives estimates of the potential value added per annum (net of transaction costs but gross of fees) for various levels of accuracy in monthly timing.

The first observation from these estimates is how important bet size is in determining the potential value added. With monthly TAA, a 5% bet size would have led to an average turnover of 1.47 times pa. Even with perfect foresight, the value added would have been only 3.76% pa. If the timing accuracy were only 60%, then the bet size would have to be approaching 10% on average to get more than 1% value added pa.

If the manager were less active, being inclined to take longer-term positions, say making quarterly instead of monthly decisions, then either the accuracy would have to increase or the potential value added decrease. This is shown in Table 2, which is a quarterly version of Table 1.

Hence with a longer TAA time horizon, either the accuracy would have to increase towards the 80% level for a 5% bet size or the bet size would have to increase to about 15% at an accuracy of 60%, in order to achieve about 1% value added pa.

MARKET ENVIRONMENT

The potential value added from TAA also depends on the market environment. The above estimates have been calculated from averages taken over more than 25 years of data. In any given period, the potential to add value depends on return differentials of the asset classes which the markets happen to provide over that period.

To show how the TAA value-adding potential has changed over time, Figure 1 charts the rolling annual value added for perfect foresight monthly TAA at a 10% constant size bet.

So far, the 1990s have provided fewer TAA value-adding opportunities than the 1970s and the 1980s. In this decade, significant bear markets for equities, where TAA has historically added most value, have not yet occurred. There may also be a permanent structural change in globalised financial markets, where discrepancies may not be allowed to build up to the gross proportions of earlier years before they are arbitrated away. Or it may simply be that we have been living in a benign interest-rate environment.

Clearly, global equity and bond markets offer many more opportunities to add value by TAA, since the dispersion of returns can be greater. There is evidence that some managers have exploited this potential in the global sectors. However, most Australian balanced portfolios have less than 25% in offshore assets. Hence, even though TAA contribution to returns of offshore asset classes can potentially be greater, it is an enhancement of a much smaller part of the total portfolio.

RETURN AND VOLATILITY

In the language of dealing rooms, TAA is essentially trading spreads or, loosely speaking, arbitraging, where one goes “long” one market and “short” another. Such position-taking has much less risk than taking an outright directional position, but requires much larger offsetting exposures to make any significant amount of money. This is a fact which may tempt anybody who wants to get rich quick to abandon spread trading in favour of outright position-taking. (The Singapore-based Barings trader Nick Leeson may provide clues to one likely outcome.)

In practice, most TAA managers would
target about 1% value added pa over a three to five-year period. At 60% to 70% accuracy, with a quarterly time horizon, the manager would have to continually take bets of about 10% of the total portfolio.

Would TAA add to overall volatility of portfolio returns? The answer is "no". Market timing per se does not increase volatility of portfolio returns. Also, at the level of risk currently considered, TAA has little impact on overall portfolio volatility one way or another. The reason is that since a typical diversified portfolio has about 10% return pa, a 1% fluctuation on top of this normally has negligible impact.

What happens when the TAA manager makes several right or wrong "calls" in a row? Obviously, there would be some increase in volatility of the manager's performance. Computer simulation of some of the variables gives an idea of what to expect.

In Figure 2, both the bet sizes and the TAA accuracies are simulated using beta probability density functions, but actual market index data are used to produce three random examples of rolling annual return from TAA.

Evidently, TAA returns on a rolling annual basis can be quite volatile, with a significant probability of negative returns in some periods. However, over the long term, a manager with actual TAA skills will add the expected level of value as seen in Figure 3, where the cumulative returns annualised since inception in 1970 are shown for the corresponding three simulated cases.

Such simulation studies caution against making hasty judgments based on short-term performances. On the other hand, they provide a guide to the likely extent of noisy fluctuations and what represents a significant departure from expectation.

CONTRIBUTION OF TAA

Finally, potential TAA value added needs to be placed in perspective, relative to all other portfolio value-adding endeavours. Consider a typical diversified portfolio with a moderately aggressive strategic asset allocation for a time horizon of five to seven years. Setting performance targets for each major asset class, we can compare what active excess returns may be targeted and what the indicative management fees may be for a large portfolio.
Some assumptions have been made in constructing Table 3:

- Performance targets have been set at upper-quartile performances of specialist sector managers relative to typical sector benchmarks for the past five years.
- For offshore assets, discretionary currency management is assumed, with offshore shares having an unhedged benchmark and offshore bonds having a 50% hedged benchmark.
- The property sector is assumed to have 50% direct investments and 50% listed shares. The direct component has no expected outperformance, since a benchmark is difficult to define.
- Management fees have been assumed to be around the median fees for large funds. For individually managed sector funds, this implies fund sizes greater than $100 million. That is, the asset value of the whole portfolio exceeds about $500 million.
- The management fee charged for TAA depends on how the decisions are implemented and it can be a flat fee or a performance-based fee. An estimate has been made from recent submissions for TAA mandates.
- Relative to a static benchmark asset allocation with index sector performances, active management may target up to about 3% of value added, of which roughly a third may be contributed by a TAA overlay. About a third is expected also to come from Australian shares through stock selection.

It is interesting that the median annual fee for individually managed balanced funds or diversified growth funds is about 0.45%. When this is compared with the fee estimates above, it looks as though TAA service has been thrown in almost for nothing!

If half of the performance targets are achieved, then about 1.5% pa of outperformance could be expected on a continuing basis. If passive management fees were about half of active management fees, then a fund is risking an extra 0.3% pa of net performance in paying active fees for a possible reward of 1.5% pa in the long term.

**MANAGER PERFORMANCE**

Before the advent of specialist sector management, superannuation fund managers largely offered "balanced" or "diversified" portfolio management. Traditional managers are therefore experienced in making asset allocation decisions as an integral part of their services. Many managers who may be capable of offering TAA overlay services resisted this development. Some of the reasons are:

- performance attribution has not been sufficiently sophisticated to measure accurately the value added by asset allocation. Hence many managers cannot use reliable track records to market their services;
- TAA overlay management may in some respects be more complicated than balanced portfolio management because, unless a master custodian can provide timely information on the underlying portfolio, the TAA manager may have to communicate separately with the underlying sector managers;
- the management fee would be more competitively priced and is likely to be performance-based.

These problems have been resolved overseas, particularly in the US where the TAA overlay concept originated and has been used by large pension funds for several years.

Over time, persistent demand by some large superannuation funds and the fact that offshore TAA managers have been showing interest in the local market have persuaded many Australian managers to look at the potential of this market. Several managers are now offering TAA overlay services, with a few also offering specialist currency overlay services.

**Historical performance**

It is doubtful whether the traditional asset allocation process has consistently added much value. Objective measurements from monthly asset allocation data collected over several years show that only a few managers might have added some value.

Managers who make claims that they have a "track record" to show they have added value in asset allocation would have a hard time proving it. Most fund-management operations are set up in

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**Table 3: Target value added contribution and management fees**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Asset allocation (%)</th>
<th>Sector value target (% pa)</th>
<th>Value added contribution to total (% pa)</th>
<th>Average active fee on total (% pa)</th>
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<tbody>
<tr>
<td>Australian share</td>
<td>40</td>
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<td>20</td>
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<td>Offshore share</td>
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<td>Offshore bond</td>
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<td>Property</td>
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</tr>
<tr>
<td>Cash</td>
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<td>0.01</td>
</tr>
<tr>
<td>TAA</td>
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<td>0.15</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
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<td>2.84</td>
<td>0.59</td>
</tr>
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</table>
such a way that performance measurement of asset-allocation contribution is likely to be ambiguous and inaccurate, particularly for an active manager. One of the advantages of a TAA overlay is that it offers an unambiguous way to measure value added.

In addition, there is the problem of specification of the strategic asset allocation benchmark by which TAA contribution is measured. Some managers have no explicit benchmarks; others change their benchmarks every year. You can score as many goals as you like if you are allowed to shift the goalposts. A few managers gave high strategic asset allocations to direct property at the start of the property crash in 1990, but then held low tactical weightings in that asset class for a few years following, as the impact of the crash came through. This would artificially boost the measured TAA value added.

**TAA bet sizes**

In this paper, we take the average asset allocation of an asset class over the past six or seven years as the asset allocation benchmark. In most cases, one would over-estimate TAA shifts, since the actual asset allocations would normally be closer to benchmark allocations. The data show that most managers simply did not take large enough bets to make much difference to overall portfolio performance.

Intech has collected monthly asset allocation information from 35 “balanced” or “market-linked” pooled funds since 1989. Taking the average asset allocation over this period to be the strategic asset allocation, it is possible to infer some upper limits of the tactical asset allocation shifts of the managers. The allocation to Australian shares over time has been about 38% for the average manager, but this has ranged from about 28% to 46%. For short periods, the allocation range stretched from about 20% to almost 60%.

Clearly, the Australian share sector gets the lion’s share of allocation for most Australian diversified portfolios. It usually has the widest asset allocation ranges in absolute terms, as a percentage of the total portfolio. Investment policies commonly allow tactical deviations from long-term strategy of about 15%. Up to 25% is possible but rare.

Figure 4 shows the actual maximum excursions of the group of managers. One manager, who incidentally has been highly successful as a balanced manager,
has never departed more than about 4% from its strategy. At the other extreme, another manager has had up to 20% shifts from strategy. The median maximum deviation has been about 11%.

It is important to note that TAA is not about having the occasional big asset allocation swing or about having a high level of trading activities. Rather, the impact of TAA on investment performance depends on how often and how sustained the shifts are from the strategy. In other words, the size of the TAA shifts averaged over time is more important than the range of TAA shifts.

Figure 5 shows the average TAA shifts in Australian shares for the group of managers. The median average shift has been about 3.5%. For Australian bonds and cash, the respective shifts have been about 4% and 5%.

**TAA processes**

Most Australian managers effectively “transplant” their asset allocation process to clients’ TAA mandates. Asset allocation decisions are made for a model “balanced” portfolio, in the first instance, without reference to TAA overlay clients. A TAA portfolio manager then has the responsibility of “translating” the decisions made on the model portfolio to construct a set of asset allocation shifts for the clients’ portfolio, taking into account range constraints in the various asset classes.

Given the level of risk-taking required to add (or subtract) value, it is highly likely that TAA has had little impact on balanced fund performance in the measurement period since 1989. Actual performance calculations from collected data confirm this. There may be several explanations for the apparent inertia in asset allocation:

Traditional fund managers have overstated the importance of the asset allocation process, in the sense that they overvalue the contribution a modest TAA shift can make to overall performance.

The typical asset allocation process is committee-driven. The larger the committee, the nearer its opinion is likely to be to the consensus of the markets and the less its inclination to take big bets.

Large fund size would have low mobility and higher transaction costs from market impact, which are strong disincentives to activity. To change a 10% exposure in Australian shares for a $10 billion fund, one would have to transact $1 billion of Australian equity exposure. The average total turnover in all physical and derivative equity markets is around $1 billion a day. Even if you trade 10% of all trades, it would still take more than 10 trading days to complete a TAA shift. How many times could you do this in a month? How many times do you want to do this in a year?

Some managers have recognised some of these problems and have considered TAA overlay as a separate specialist product and not just a “spin-off” of a “proven” process. They devote dedicated resources to the service and, more important, they track and measure the value added.

In some cases, the decision process takes into account the client’s strategic asset allocation from the beginning and seeks to outperform the benchmark optimally, relative to specific risk tolerances.

Managers differ considerably in the mix of judgment and quantitative modelling they apply to their processes. From US experience, quantitative approaches have tended to produce better results.

**PERFORMANCE MEASUREMENT**

Most managers give performance measurement and attribution a relatively low priority. Trying to get the outperformance itself, rather than understanding historical performances, is usually given more importance. Accurate performance measurement is particularly relevant, however, if a manager’s fee is based on that measured performance. The lack of precise performance attribution, coupled with certain misunderstandings about “established” research, has allowed the value of TAA to be grossly exaggerated in many investment houses.

Performance measurement of TAA relies on performance attribution of the overall return of a diversified portfolio. Performance attribution of a portfolio with reasonably active asset allocation is likely to be ambiguous and inaccurate at the existing level of sophistication.

Two key sets of data for performance attribution are sector weights and sector returns, both of which are likely to be inaccurately measured for an active manager. Sector shifts are complicated by cashflow problems associated with delays in settlement. Measurement of sector weights must take into account derivative exposures, which is not simple when options are used. Measurement of sector returns is complicated by potentially very large cashflows into and out of a particular sector.

One of the practical attractions of a TAA overlay is that value added may be much more clearly and unambiguously measured. There is no need to measure volatility sector weights and sector returns. Unfortunately, unless the TAA mandate is properly designed, the measurement is not always completely straightforward. Practical realities which can sometimes muddy the measurement process include:

- **Cashflows.** A TAA manager could have large cashflows if he or she doubles as a cash manager. A fund which does not use a master custodian can sometimes rely on the TAA manager to direct cashflows to and from the underlying managers.

- **Portfolio rebalancing.** A TAA manager may be required to rebalance the underlying portfolio to strategic asset allocation in the absence any active TAA views. If one market has run up much harder than others, it will be overweight
relative to the benchmark. Unless that market is expected to continue to outperform, it should be brought back to benchmark weight.

• Sector exclusions. Certain sectors such as direct property may be excluded from the TAA overlay process because of lack of liquidity or high transaction costs. These problems can be overcome if the mandate is properly structured to minimise the effect of extraneous factors.

The simplest mandate is one in which the TAA manager does not have to manage cashflows, but is given 5% cash (say) for futures margins and deposits. Range constraints are then placed on the long and short positions the manager can hold in the various futures markets. Portfolio rebalancing of the underlying portfolio to strategic asset allocation is done separately and on a longer time frame.

If a manager were given $5 million for TAA overlay positioning, the average cash rate were 7% in the year and the manager did nothing, then there should be $5.35 million in the TAA fund at year-end.

If the manager had ended with $6 million, then TAA value added would have been $1 million minus the cash benchmark return ($0.35 million), which is $0.65 million or 0.65% value added to a total portfolio of $100 million.

Note that there has been no need to measure volatile sector weights and returns of the underlying portfolio. It remains to ensure that gains had not been ill-gotten and that the TAA manager has acted within the parameters of the mandate.

Compliance and implementation
The TAA manager has to comply with the exposure constraints set out in the management agreement. The preferred way to monitor this is through an external custodian. The Barings debacle would have been averted had an external settlement procedure been used.

While derivatives are the instruments preferred by most TAA managers, they are not without risks in various aspects of their usage, including:

• Operational risks. Consequences can be much more serious from mistakes, malpractice or fraud. An enhanced level of compliance and monitoring is needed, possibly including the use of external custodians.

• Risk of breach of mandate. Portfolio mandates in terms of sector range constraints can be more easily breached with derivative overlays.

• Cashflow risk. TAA may involve hedging in overheated markets, such as that of 1987. Covering costs of hedging may require cashflow injections, any delay in which could prevent proper operation of the TAA overlay.

• Basis risk. Hedging the underlying portfolio using derivatives will have residual basis risks which can be substantial, particularly for portfolios such as the MSCI.

• Liquidity risk. Even though derivatives may be used to change market exposures more quickly and conveniently, there are still liquidity limitations in many derivative markets, particularly for large funds.

For short-term TAA, where over/underweighting a market can be changed in a time frame substantially less than a quarter, a derivative overlay is necessary to minimise the otherwise prohibitive transaction costs. For trustees who do not want to use derivatives, a longer-term TAA where the direction of portfolio adjustments persists for at least a quarter can be used. In this case, asset allocation changes would be gradual and turnover low. Advantage can be taken of cashflows into and out of the fund and implementation can be accomplished through sales and purchases of physical securities.

CONCLUSIONS
Provided an appropriate level of risk is taken, TAA overlays can potentially contribute about one third of total active returns, which is about 1% pa value added to total portfolio performance.

Asset allocation data since 1989 from balanced or diversified funds suggest that the level and extent of TAA risk taken by the managers would not have been sufficient to have much impact on portfolio performance. The best-performing balanced fund manager since 1989, as a matter of policy, had fixed asset allocation. The evidence is that the value has been added almost exclusively from stock selection.

While TAA has the potential to contribute significantly to active returns, the methods of most balanced managers appear unsuited to delivering the TAA performance sought. It seems that the Australian market for TAA overlay services is still at an early stage.

For TAA overlays to have a chance to enhance portfolio returns, it is important to ensure that appropriate and sufficient risk has been taken and that performance is accurately measured. Further, it is essential to ensure that portfolio mandates are satisfied and that care and due diligence are exercised in the use of derivatives.

NOTES
2. See Note 1.
4. For example, saying “80% to 90% of portfolio return comes from asset allocation” is not the same as saying “80% to 90% value added comes from asset allocation”. Most of a portfolio’s return is benchmark return, which is composed of index returns at strategic asset allocation.