Distribution reinvestment – at what price?

Automatic reinvestment of unit trust distributions is a well-accepted practice, but as **DALE McMENAMIN** points out, pricing for this reinvestment is not as simple as it might seem.

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Most Australian unit trusts allow unitholders to automatically reinvest their distributions back into that same trust. In principle this concept appears simple, but the decision as to what price should be used for reinvestment is not necessarily straightforward.

The three main prices associated with a unit trust are:

- Net asset value (NAV) price (i.e. the net market value unit price which has not been adjusted by transaction cost factors or buy/sell margins);
- Entry price (i.e. the unit price which is calculated by adjusting the NAV price by an entry transaction cost factor or buy margin);
- Exit price (i.e. the unit price which is calculated by adjusting the NAV price by an exit transaction cost factor or sell margin).

[Transaction cost factors are the recommended terminology of IFSA Standard No. 8.]

In this article it is argued that the entry price and the NAV price are inappropriate for use as the reinvestment price, and that the exit price should be used.

CURRENT PRACTICE

Anecdotal evidence indicates that for many if not most Australian unit trusts, reinvestment occurs at the NAV price. However, some managers require that reinvestment occurs at the entry price for the trust. One manager has recently justified this latter practice by stating: "If this buy/sell spread was not in place, the cost to buy the additional assets (as a result of our investors' choice to reinvest their distributions) would be borne by other investors in the Fund who have opted not to reinvest their distributions."

In practice the trust manager will know the proportions of distribution-reinvesting (DR) unitholders and non distribution-reinvesting (NDR) unitholders before the distribution occurs. The cash required to effect the distribution will be only an amount required to pay NDR unitholders.

This cash requirement may be met by selling assets, or by using cash that has built up in the trust (e.g. from uninvested unitholder inflows, stock dividends, interest). There is no need to generate cash for the DR portion of the total distribution: the DR distribution can remain invested, thereby avoiding any selling and buying costs.

If assets must be sold to generate cash to pay the NDR unitholders' distribution, theoretically for a forward-priced trust the manager should sell

the assets at the close of the day the distribution is effective (also assumed to be the day the distribution reinvestment is effective), to ensure that the trust is not geared and performance is not affected. In practice the manager may do all or part of the selling after the distribution's effective day, but before the day the cash distribution is sent to NDR unitholders.

PRINCIPLES FOR CHOOSING THE 'CORRECT' PRICE

The 'correct' price to use for reinvestment is one that is 'fair/equitable' to both DR unitholders and NDR unitholders. In this article, 'fairness/equity' will be assumed to be present if the distribution payment does not disadvantage DR unitholders relative to NDR unitholders, and vice versa.

Specifically, the 'fair/equitable' price will be chosen so that the investment returns from immediately pre-distribution to immediately post-distribution are equal for both DR unitholders and NDR unitholders. The return will be calculated as the percentage change in value of unitholdings plus cash, valuing units at the exit price (in line with the methodology of IFSA Standard No. 6) and the distribution cash at its face value.

APPLYING THE PRINCIPLES FOR CHOOSING THE 'CORRECT' PRICE

As an example, assume a unit trust with the following characteristics:

- Net asset value (NAV) of $100 at 29 June
- Number of units: 100 at 29 June
- NAV price: $1.00 at 29 June
- Entry transaction cost factor (buy margin): 1%
- Exit transaction cost factor (sell margin): 1%
- Distribution: $0.10 per unit, effective 30 June
- 70% of the units belong to DR unitholders, and 30% to NDR unitholders
- Distribution cash required (for NDR unitholders): $3
- The assets of the trust have zero performance from close of 29 June to close of 1 July
- Trusts fees are zero.

Scenario 1

- Sufficient assets are sold on 30 June to generate all the cash required to pay NDR unitholders; and
- Asset-selling percentage actual costs are 1% (i.e. equal to the trust's exit transaction cost factor).

Appendix A shows the calculation of the two-day return from close of 29 June to close 1 July using different reinvestment prices, for DR unitholders and NDR unitholders. The results are summarised in the Table 1:

TABLE 1: **SCENARIO 1**

Reinvestment price	DR unitholder return	NDR unitholder return
Entry price	–0.06%	0.14%
NAV price	–0.03%	0.07%
Exit price	0.00%	0.00%

Scenario 2

- Sufficient assets are sold on 1 July to generate all the cash required to pay NDR unitholders; and
- Asset-selling percentage actual costs are 1% (i.e. equal to the trust's exit transaction cost factor).

The results are summarised in the Table 2:

TABLE 2: **SCENARIO 2**

Reinvestment price	DR unitholder return	NDR unitholder return
Entry price	–0.06%	0.14%
NAV price	–0.03%	0.07%
Exit price	0.00%	0.00%

Scenario 3

- Sufficient assets are sold on 30 June to generate all the cash required to pay NDR unitholders; and
- Asset-selling percentage actual costs are zero (i.e. not equal to the exit transaction cost factor which is related to normal or average selling costs).

Or alternatively:

- No assets need to be sold because the cash distribution can be funded from cash built-up in the trust.

The results are summarised in the Table 3:

TABLE 3: **SCENARIO 3**

Reinvestment price	DR unitholder return	NDR unitholder return
Entry price	–0.03%	0.17%
NAV price	0.00%	0.10%
Exit price	0.03%	0.03%

For the above example, for all scenarios use of the exit price only as the reinvestment price equates DR unitholder and NDR unitholder returns. In each case use of the NAV price as the reinvestment price is the second-best option. Use of the entry price as the reinvestment price is always the worst option.

In the above example, use of the entry price as the reinvestment price leads to a relative return differential of up to 0.20%. If the exit transaction cost factor and asset-selling costs had been 3% (e.g. for a property trust), the relative return differential would be up to 0.62%.

It should be noted that if all unitholders were DR unitholders, then any price could be used as the reinvestment price.

FORMULA FOR THE 'CORRECT' PRICE

The results above seem to indicate that use of the exit price as the reinvestment price always exactly equates DR unitholder and NDR unitholder returns. In fact, this is not strictly true. If the assets to generate the cash distribution are sold before or on the distribution date, the formula to derive the theoretically 'correct' reinvestment price can be shown to be:

'Correct' reinvestment price =
A + [B x C x D]

where:

A = Exit price (ex-distribution) on distribution date
B = Distribution per unit
C = NDR unitholders' percentage on distribution date
D = Exit transaction cost factor

Under normal circumstances the square-bracketed term will be very small, and probably not significant enough to justify calculating a special price for reinvestment, i.e. use of the exit price is close enough.

EXPLAINING THE RESULTS

The above results are based on modelling and formulae. Can they be explained in a more non-mathematical way?

It would seem reasonable that reinvestment be allowed at the NAV price — even though DR unitholders are reinvesting their distribution, they do not cause the trust any asset-buying costs since the monies are already invested.

It may seem counter-intuitive that reinvestment be allowed at lower than the NAV price. One way of looking at the problem is to think of DR unitholders as being involved in a two-stage process:

- In the "distribution payment stage" they receive a cash distribution in the same fashion as NDR unitholders;
- In the "distribution reinvestment stage" they instantaneously reinvest the cash back in to the trust.

If the "distribution reinvestment stage" were to occur at the NAV price, this would allow for not incurring any asset-buying costs. However, in the "distribution payment stage" the distribution is the same for all unitholders, irrespective of whether asset-selling costs have been incurred (for NDR unitholders) or not incurred (for DR unitholders), i.e. the asset-selling costs are effectively spread equally over all unitholders.

Thus, reinvestment at a price lower than the NAV price is necessary to offset the "favourable" distribution treatment obtained by NDR unitholders (who cause all the selling costs but then share the costs) relative to DR unitholders

APPENDIX A: SCENARIO 1

Data	
Entry transaction cost factor	1%
Exit transaction cost factor	1%
Distribution per unit	$0.1000
% of total No. of units which are DR unitholders	70%
% of total No. of units which are NDR unitholders	30%
Distribution cash required (for NDR)	$3.0000

REINVESTMENT AT 30 JUNE ENTRY PRICE (EX-DISTRIBUTION)				
Item	**29-Jun**	**30-Jun before distribution**	**30-Jun after distribution**	**1-Jul**
Total trust				
Net asset value (NAV)	$100.0000	$99.9697	$96.9697	$96.9697
No. of units	100.0000	100.0000	107.6949	107.6949
NAV price	$1.0000	$0.9997	$0.9004	$0.9004
Entry price	$1.0100	$1.0097	$0.9094	$0.9094
Exit price	$0.9900	$0.9897	$0.8914	$0.8914
% Transaction costs on assets sold to generate distribution cash		1%		
Assets sold to generate distribution cash (excl. transaction costs)		$3.0303		
Transaction costs on assets sold to generate distribution cash		$0.0303		
DR unitholders				
No. of DR units	70.0000	70.0000	77.6949	77.6949
DR reinvestment price = Entry price (ex-distribution)			**$0.9097**	
No. of new units for DR unitholders			7.6949	
DR unitholders' valuation @ exit price	$69.3000	$69.2790	$69.2578	$69.2578
DR unitholders' return (incl. distribution)		–0.03%	–0.03%	0.00%
DR unitholders' cumulative return (incl. distribution)		–0.03%	–0.06%	**–0.06%**
NDR unitholders				
No. of NDR units	30.0000	30.0000	30.0000	30.0000
NDR unitholders' valuation @ exit price	$29.7000	$29.6910	$29.7422	$29.7422
NDR unitholders' return (incl. distribution)		–0.03%	0.17%	0.00%
NDR unitholders' cumulative return (incl. distribution)		–0.03%	0.14%	**0.14%**

REINVESTMENT AT 30 JUNE NAV PRICE (EX-DISTRIBUTION)				
Item	**29-Jun**	**30-Jun before distribution**	**30-Jun after distribution**	**1-Jul**
Total trust				
Net asset value (NAV)	$100.0000	$99.9697	$96.9697	$96.9697
No. of units	100.0000	100.0000	107.7804	107.7804
NAV price	$1.0000	$0.9997	$0.8997	$0.8997
Entry price	$1.0100	$1.0097	$0.9087	$0.9087
Exit price	$0.9900	$0.9897	$0.8907	$0.8907
% Transaction costs on assets sold to generate distribution cash		1%		
Assets sold to generate distribution cash (excl. transaction costs)		$3.0303		
Transaction costs on assets sold to generate distribution cash		$0.0303		
DR unitholders				
No. of DR units	70.0000	70.0000	77.7804	77.7804
DR reinvestment price = NAV price (ex-distribution)			**$0.8997**	
No. of new units for DR unitholders			7.7804	
DR unitholders' valuation @ exit price	$69.3000	$69.2790	$69.2790	$69.2790
DR unitholders' return (incl. distribution)		–0.03%	0.00%	0.00%
DR Unitholders' cumulative return (incl. distribution)		–0.03%	–0.03%	**–0.03%**
NDR unitholders				
No. of NDR units	30.0000	30.0000	30.0000	30.0000
NDR unitholders' valuation @ exit price	$29.7000	$29.6910	$29.7210	$29.7210
NDR unitholders' return (incl. distribution)		–0.03%	0.10%	0.00%
NDR unitholders' cumulative return (incl. distribution)		–0.03%	0.07%	**0.07%**

REINVESTMENT AT 30 JUNE EXIT PRICE (EX-DISTRIBUTION)				
Item	**29-Jun**	**30-Jun before distribution**	**30-Jun after distribution**	**1-Jul**
Total trust				
Net asset value (NAV)	$100.0000	$99.9697	$96.9697	$96.9697
No. of units	100.0000	100.0000	107.8678	107.8678
NAV price	$1.0000	$0.9997	$0.8990	$0.8990
Entry price	$1.0100	$1.0097	$0.9080	$0.9080
Exit price	$0.9900	$0.9897	$0.8900	$0.8900
% Transaction costs on assets sold to generate distribution cash		1%		
Assets sold to generate distribution cash (excl. transaction costs)		$3.0303		
Transaction costs on assets sold to generate distribution cash		$0.0303		
DR unitholders				
No. of DR units	70.0000	70.0000	77.8678	77.8678
DR reinvestment price = exit price (ex-distribution)			**$0.8897**	
No. of new units for DR unitholders			7.8678	
DR unitholders' valuation @ exit price	$69.3000	$69.2790	$69.3007	$69.3007
DR unitholders' return (incl. distribution)		–0.03%	0.03%	0.00%
DR unitholders' cumulative return (incl. distribution)		–0.03%	0.00%	**0.00%**
NDR unitholders				
No. of NDR units	30.0000	30.0000	30.0000	30.0000
NDR unitholders' valuation @ exit price	$29.7000	$29.6910	$29.6993	$29.6993
NDR unitholders' return (incl. distribution)		–0.03%	0.03%	0.00%
NDR unitholders' cumulative return (incl. distribution)		–0.03%	0.00%	**0.00%**

(who don't cause any selling costs but share the costs).

The preceding explanation seems reasonable if there actually were asset-selling costs incurred to generate the cash for the NDR unitholders — but what if there were no asset-selling costs, as assumed in Scenario 3 above? The Scenario 3 modelling results suggest that even if there are no asset-selling costs, the reinvestment price should be the exit price — but in this scenario doesn't the "distribution payment stage" argument above break down?

The answer to this problem is that DR unitholders are really involved in a three-stage process. The first two stages are as outlined above, but a further "reinvested distribution redemption stage" occurs when DR unitholders some time in the future get cash equal to the distribution by selling their "distribution" units.

If in the "distribution reinvestment stage" reinvestment were to occur at the NAV price and the resultant "distribution" units are then instantaneously valued at the exit price (as per the return valuation methodology adopted above), DR unitholders would suffer an instantaneous loss in value.

This loss in value reflects the fact that in the "reinvested distribution redemption stage" DR unitholders will sell their "distribution" units in the future at an exit price which includes an allowance for implicit selling costs (either actual or assumed) at that future time, even though in this particular scenario no selling costs have been incurred to pay cash to NDR unitholders at the current time.

If one believes that DR unitholders should bear implicit selling costs when they sell their "distribution" units in the future (whether at that time there actually are selling costs or not), then the NAV price would be appropriate for use as the reinvestment price for this particular scenario.

However, there would seem to be a stronger argument that "fairness/equity" requires that DR unitholders be treated similarly to NDR unitholders, i.e. DR unitholders effectively should not bear implicit selling costs when they sell their "distribution" units in the future (whether at that time there actually are selling costs or not).

Reinvestment now at a price lower than the NAV price would achieve this similar treatment by effectively "compensating" DR unitholders now; it can be viewed as offsetting the "favourable" distribution treatment obtained by NDR unitholders (who for this particular scenario don't cause any selling costs now, and thus bear no costs) relative to DR unitholders (who will bear implicit selling costs in the future, even if there are no selling costs).

Conclusion

To ensure "fairness/equity" between automatic-reinvesting unitholders and non-reinvesting unitholders, under normal circumstances reinvestment of unit trust distributions should be at the trust's exit price. J