

## MALACHITE AGGRESSIVE PREFERRED FUND

### Monthly Report, June 2002

It was a good month for the Malachite Fund, which achieved a return of +1.67% at a time when equity investments were diving in value amidst worries regarding accounting and terrorism, together with what must be regarded as a continuation of a trend towards a more sensible and sustainable valuation paradigm for tech-stocks. It appears that the NB-50 total return index was again substantially out-performed over the quarter, which is critical to long term excess returns. For the year ended June 28, 2002, the MAPF return of +15.40% compares well with the NB-50 return of +3.41% and with alternative investment vehicles in the “Canadian Dividend Fund” mutual fund group.

Month	MAPF Total Return*	NB-50 Total Return	
July, 2001	+1.40%	+0.48%	<i>The “NB-50” is an index of preferred shares proprietary to BMO Nesbitt Burns. It is composed of 50 issues having good liquidity and credit quality.</i>
August	+1.74%	+1.13%	
September	+4.20%	+0.51%	
October	+1.25%	-0.06%	
November	-0.81%	+0.98%	
December, 2001	-2.54%	-0.14%	
January, 2002	+5.43%	+2.01%	
February	+1.16%	+0.17%	
March	-0.08%	-2.16%	
April	+1.22%	-0.65%	
May	+0.01%	+0.25%	
June, 2002	+1.67%	+0.90%**	
<b>Last 12 Months</b>	<b>+15.40%</b>	<b>+3.41%**</b>	
<i>*MAPF total returns include reinvestment of dividends and are after fund expenses but prior to management fees. They are shown for illustrative purposes only and future returns are not assured.</i>			
<i>**June return data for the NB-50 was not available at time of writing and has been estimated by Hymas Investment. The estimate may vary considerably from the actual number due to differences in issues examined, weighting and calculation methodology.</i>			

Quarter	MAPF Total Return*	NB-50 Total Return
2Q01	+3.50%	-1.59%
3Q01	+7.50%	+2.12%
4Q01	-2.12%	+0.78%
1Q02	+6.57%	-0.02%
2Q02	+2.92%	+0.49%**
<i>*See note to MAPF monthly returns, above.</i>		
<i>**Estimate only. See note to NB-50 June return estimate, above.</i>		

The curve was relatively calm during the month, with the only major shift occurring with spreads for “split-share” corporations and retractable issues. It is tempting to attribute the increase in the premium for retractables to an influx of unsophisticated retail investors fleeing common equity – but this hypothesis is mere speculation. It’s an interesting thought, however, and one which will be noted for future research into the price behaviour of the preferred share market – does a decline in the major indices correlate well with an increase in the premium paid for issues which might be expected to be attractive for unsophisticated investors? No idle observation should be left untested in the quest for excess returns!

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Curve Attribute	May 31, 2002 (After Tax Figures)	June 28, 2002 (After Tax Figures)
Base Rate	3.41%	3.39%
Short Term Premium	-3.60%	-3.60%
Short Term Decay Time	5.4 Years	5.1 Years
Long Term Premium	1.61%	1.60%
Long Term Decay Time	19.5 Years	20.0 Years
Interest Income Spread	0.61%	0.62%
Cumulative Div. Spread	-0.42%	-0.31%
Split-Share Spread	0.48%	0.56%
Retractability Spread	-0.49%	-0.62%
Floating Rate Spread	-1.33%	-1.31%
2 <sup>nd</sup> Tier Credit Spread	0.63%	0.52%
3 <sup>rd</sup> Tier Credit Spread	1.26%	1.17%
“High” Credit Spread	-0.29%	-0.39%
“Low” Credit Spread	0.00%	0.00%
<i>Note: Figures for May have changed somewhat from the previous report. This is due to additions of data.</i>		

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Risk Factor	Returns for “True” (Pre-Tax)	Returns for “False” (Pre-Tax)
Retractable	+1.25%±2.89%	+0.42%±3.39%
Split Share Corp	-0.20%±3.12%	+1.09%±3.10%
Cumulative Dividends	+0.78%±3.93%	+1.10%±1.37%
Payments are Dividends	+0.72%±3.20%	+2.94%±1.33%
Floating Rate	+0.86%±4.93%	+0.92%±2.30%
Credit Class 2	+1.44%±2.83%	+0.38%±3.33%
Credit Class 3	-1.84%±3.67%	+0.92%±2.30%
Credit Class Modifier “High”	+0.07%±2.94%	+1.08%±3.14%
Credit Class Modifier “Low”	+0.99%±2.87%	+0.80%±3.43%

As may well have been expected from the spread behaviour of the yield curve, retractable issues outperformed substantially in June, while split-share issues substantially underperformed. The divergence in returns between

credits in the second tier with those of the third tier is interesting, but relates more to the inhomogeneity of the groups than to a definite shift in the structure of the yield curve, as may be seen from the yield curve analysis.

Last month’s notes on option pricing and the Black-Scholes model thereof brought some queries regarding duration – this due to the graph displayed of duration vs. price, printed in order to show the derivation of negative convexity in the calculations Hymas Investment makes in the process of valuing shares.

There are two classes of duration – Macaulay Duration and Modified Duration, the latter being derived from the former and usually having more utility in the analysis of fixed income products. Macaulay Duration, M, is calculated as  $M = \sum P(i)T(i) / \sum P(i)$ , where P(i) is the present value of the i'th payment of the issue and T(i) is the time until the i'th payment is received. Note that  $\sum P(i)$  is the present value of all payments, which will be the fair-value of the instrument at the interest rate used for calculating the present-values.

Modified Duration, D, is derived from Macaulay duration by  $D = M / (1 + (r/f))$ , where r is the yield-to-maturity used in the discounting process and f is the number of discounting periods per year (e.g., 4 for an issue that pays quarterly).

Modified Duration has the very useful (in preliminary fixed income analysis, at any rate!) property that  $\Delta P/P \times 100 = -D\Delta Y$ , where  $\Delta P/P$  is the percentage change in price (including accrued interest, if any) and  $\Delta Y$  is the change in yield.

Thus, we may say that if instrument A has a modified duration which is double that of instrument B, then the same change in yield will result in A's price changing by a proportion double that of B's...provided we accept the theory! Problems with the theory:

- The yield curve is assumed to be flat (having the same yield for all cash flows)
- Changes in the yield curve are assumed to be parallel
- Changes in yield are assumed to be small and instantaneous

These problems are well-illustrated by this month's graph, in which the Modified Duration of the "worst-case" for each issue is plotted against its price volatility – a measure developed by Hymas Investment to specify the degree of price-fluctuation in preferred shares after accounting for trends in price and for the effect of dividend ex-dates. The "R<sup>2</sup>" of the regression is only 0.15 – thus, only 15% of the variance has been captured by this measure, even after accounting for the different credit classes. Clearly, the concept of Modified Duration is a useful tool in the management of preferred share portfolios – but cannot be used exclusively.

TSE Ticker Symbol	Total Return, June, 2002	Remarks (Valuation commentary based on Ontario's highest marginal tax rate)
BT.PR.E	-12.27%	Credit class 3, low volume
GT.PR.A	-9.12%	Credit class 3, low volume
YLD.PR.B*	-8.54%	Low volume
BNF.PR.A	-5.63%	Credit class 2, Floating Rate, low volume, attractive at \$17.30
MMF.PR.A	-4.52%	Credit Class 2, low volume
...	...	...
BNN.PR.T	+4.84%	Credit class 2, interest-paying, expensive at \$25.75
ENB.PR.B	+5.34%	Credit Class 2, interest-paying, expensive at \$26.00
NTL.PR.G*	+7.58%	Helped by issue of new equity in June
NTL.PR.F	+15.31%	Helped by issue of new equity in June
BNN.PR.A	+18.75%	Credit class 2, virtually untradable.

\*indicates that the issue was also on last month's best/worst performers table

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# Universe Properties as of 2002-06-28

Tax Identifier: 7

X-Axis: Modified Duration - YTW

Y-Axis: Flat Bid Price - volatility

