Clime Asset Management Pty Ltd
Private Portfolio Managers

Managing Director
Roger J. Montgomery

Questions of Value

Conventional Wisdom in Intelligence

August 2004

"I like to look at these periods from the view of climbing a mountain. On the upside, the challenge and opportunity are invigorating. Optimism grows as the ascent continues. Greater and greater resources are brought to bear, as the summit appears to be within reach. Confidence grows in one's capabilities to deal with all challenges. Whether it is in an operating company or in the stock market, the drive and the sureness of success are very similar. As the business cycle reaches a peak, both corporations and the majority of investors are supremely confident in their abilities to forecast the future. It is on the downside of this proverbial mountain that they come to realize the shortcomings of many of their strategies. They are soon to experience the pain of excess. The magnitude of their overconfidence and pushing beyond the limits of good judgment will begin to become clear to them. When the realization sets in, it generally is too late."

UCLA Anderson School of Business - Distinguished Speakers Program
Speech by Robert Rodriguez

*This note is designed for information purposes only and is not a solicitation to purchase or dispose of any security or financial instrument, derivative or managed investment scheme. Past performance is not a guarantee of future investment returns. No return of capital can be guaranteed or implied. Investment return and principal value of an investment will fluctuate so that the ultimate return may be more or less than the original cost. Interested parties should refer to the Financial Services Guide and specific service agreements for description of risk factors associated with our services and the financial instruments we invest in and/or trade. This document has not taken into consideration the financial needs and circumstances of the investor and is not intended to cause the purchase or sale of any financial instrument whatsoever. For specific advice related to your own needs, please speak to a financial adviser. The Clime Discrete Portfolio Service and ClimeActive are services offered by Clime Asset Management Pty Limited, a holder of Australian Financial Services Licence #221146. Clime Asset Management Pty Ltd 1300 136 225.

Preface

The market value of Clime's shareholding in Fleetwood was recently boosted by a research report entitled *Fleetwood Corporation Limited – Trailer Park Treasure.* As Clime is a client of the firm that produced the report, we can highly recommend their research to investors and the services of their adviser. As owners of Fleetwood Corporation Limited we declare ourselves great fans of MD Greg Tate. Further, it would not be sensible to be anything but enthusiastic advocates for the company's products. We therefore encourage all readers who intend to caravan around Australia to take a good look at the excellent workmanship of the Coromal and Windsor caravan ranges as well as considering the value for money offered.

We have almost no disagreement with the analyst's examination of the company's potential or hurdles and are impressed with the broader industry data they have collated.

The analyst however used a 2-Stage DCF model to arrive at one of the valuations, which we have recently been questioning the popularity of. This note simply puts the popular 2-stage 'valuation' model up for closer scrutiny.

At Clime our own valuation is materially lower than the analyst's and the difference is due not to any divergence in our respective understanding of the business but solely to the calculation approach adopted and the discount rate employed to produce the valuation. Throughout this discussion however it is important to remember that all such calculations, while imbued with an appearance of accuracy, are merely estimates, the quality of which are based largely on forecasts and educated guesswork. By definition, estimates are never meant to be accurate, merely guidance calculated in support of John Maynard Keynes' notion that "*it is better to be approximately right than exactly wrong*".

Value Investing

It is relatively common in funds management to seek to 'value' a company on a per share basis and purchase those shares at a discount to that valuation. While we agree with this philosophy and adopt it ourselves, our questioning of conventional wisdom has led to a disagreement with this method of calculating 'value'. As the quote at the beginning of this note suggested, in a rising market – one that lifts all boats - any calculation, no matter how erroneous, can be used with some success. It is only on the other side of the mountain that the disappointment sets in and an examination of the errors occurs.

No single broker or analyst uses exclusively the DCF model adopted in Figure 1 below to 'value' Fleetwood. It is a 2-stage model, well-known and popular amongst sell-side analysts, fund managers and corporate finance executives. The model was even attributed to Warren Buffett by Robert Hagstrom in his text *The Warren Buffett Way* but given some of the possible weaknesses of the model, which we will outline in a moment, we doubt very much someone of Buffett's ability would adopt such an approach.

Let's begin with a description of the model. The first 'stage' of the model seeks to arrive at a series which represents the future free cash of a company over an explicit period. This free cash flows (perhaps an equivalent to what Buffett refers to as 'owners earnings'), falls out of EBITA. As the model provides no mention of dividends but simply calculates free cash flow as EBITA – Tax + Depreciation – Changes in working capital - capex, we must assume the free cash flow is retained and compounded. That is, unless the free cash flow figure represents dividends to the owner, it is business cash flow retained and compounded. This causes the first problem: In order for all of the free cash flow to be considered investment earnings - cash flow to the owner - it must all be distributed by way of dividends. Yet no mention is made of the dividend component and yet the free cash flows described by Stage 1 of the model are valued by discounting them back to the present as if they *are* received. If this was the case however the cash flow cannot be counted twice, once distributed to the owner and then twice, retained and capitalised which is an aspect of Stage 2 to be discussed in a moment.

Discount Rate for Stage 1

The analyst typically selects from 5 to 10 years for Stage 1. The resulting stream of cash flows is then discounted back to the present using a risk-adjusted rate of return. This required rate of return may be arbitrarily chosen or, as is more often the case, the weighted average cost of capital is employed, as it is believed that the Capital Asset Pricing Model (CAPM) will accurately determine the rate of return that investors want. Because one of the CAPM inputs however is

Figure 1. DCF valuation ($ in millions, except per share data.)

Year ending 30 June	FY02A	FY03A	FY04E	FY05E	FY06E	FY07E	FY08E	FY09E	FY10E	FY11E	FY12E	FY13E
Sales	**158.4**	**188.5**	**270.0**	**305.2**	**364.2**	**397.3**	**433.6**	**455.3**	**478.1**	**497.2**	**517.1**	**537.8**
EBITA	**14.5**	**20.1**	**33.1**	**40.2**	**51.6**	**58.3**	**65.9**	**69.2**	**72.7**	**75.6**	**78.6**	**81.8**
Tax paid	-0.9	-6.8	-9.4	-11.5	-15.2	-17.4	-19.8	-20.8	-21.8	-22.7	-23.6	-24.5
NOPLAT	**13.6**	**13.3**	**23.6**	**28.7**	**36.3**	**41.0**	**46.1**	**48.5**	**50.9**	**52.9**	**55.0**	**57.2**
Depreciation	-4.6	-4.7	-7.4	-8.5	-8.4	-8.8	-9.0	-9.0	-9.3	-9.6	-9.9	-10.2
Δ in Wkg Cap	6.9	-0.1	-4.2	-4.0	-6.7	-3.8	-4.1	-2.5	-2.6	-2.2	-2.3	-2.3
Capex	-13.1	-20.4	-25.8	-17.0	-12.5	-11.0	-11.2	-11.8	-12.4	-12.9	-13.4	-13.9
Free Cash Flow	**13.4**	**-1.1**	**1.1**	**16.2**	**25.5**	**35.0**	**39.7**	**43.2**	**45.2**	**47.4**	**49.3**	**51.2**
Forecast Key Value Drivers												
Sales Growth	38.2%	19.0%	43.2%	13.1%	19.3%	9.1%	9.1%	5.0%	5.0%	4.0%	4.0%	4.0%
EBITA margin	9.1%	10.6%	12.3%	13.2%	14.2%	14.7%	15.2%	15.2%	15.2%	15.2%	15.2%	15.2%
Wkg Cap % of Sales	-13.2%	7.7%	5.1%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%
Cap. % of Sales	8.3%	10.8%	9.5%	5.6%	3.4%	2.8%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%

Valuation		**Assumptions**	
Value of Explicit Cash Flows	204.9	Tax rate	30.0%
Terminal Value	287.0	Risk free rate	6.0%
Value of Cash Flows	492.0	Borrowing margin	1.0%
Less Net Debt	19.2	Market risk premium	5.0%
Value of Equity	472.8	Equity beta	1.00
PV per Share	**$10.19**	Terminal growth rate	3.0%
Prem. (Disc.) to Share Price	26%	WACC	10.6%

Stage 1

Stage 2

Beta (a variable whose value is determined by examining the volatility of share prices over a subjectively selected period) the CAPM model immediately becomes an exercise in futility. We

have no problem with many aspects of CAPM particularly the idea that debt promotes discipline amongst managers; it's just the 'cost of capital' element that we find difficult to comprehend. How can you have a derivation of price (beta) as an input and expect to get 'value' as an output. Value and price are two entirely different things. Price is what you pay and value is what you get. As Numeraire.com correctly and eloquently observes:

> *"The beta coefficient is the sole explanatory investment risk factor in the conventional academic capital asset pricing model. The use of the beta factor is not valid in a valuation model. This is not merely a semantic distinction. The difference between price and value, referred to as the safety margin, is the raison d'être of models that estimate intrinsic value of common stocks and other investment assets."*

Growth: Unrelated to Equity (divided by) Retained Earnings?

Another useful observation is that the growth rate used may be unrelated to the retained return on equity – the real growth rate. Free cash flow in these models is derived from EBIT profits with adjustments made for increasing working capital and capex as well as depreciation and amortisation. The profits in turn are derived from growth in revenues. But earnings can only grow through the retention of previous earnings, then re-employment of those earnings and exiting equity or through higher rates of return on existing equity. That is, growth must be related to equity and the proportion of earnings retained and or paid. The 2-Stage model however, when used in isolation, does not offer analysts the opportunity to establish the real growth of the business and so the growth rate applied may or may not be related to reality.

There is another way of examining the growth rate issue and at the same time, reaching some conclusions about the model: If all the cash flow is assumed to be investment cash flow – that is, dividends (and it appears they are treated as such by virtue of the fact each year is discounted to the present and summed in Stage 1) - the dividends could only grow by the assumed rate, if Return on Equity itself grows by the same rate see Table 1 below. That is, because all earnings are being distributed as dividends, there are no retained earnings, so the equity does not grow. Therefore the only way to generate higher dividends is if the return on equity increases on the static equity. It is unlikely that users of the 2-Stage model want to adopt such unrealistic expectations or assumption and so it is therefore reasonable to conclude that those same users are perhaps mistakenly treating the cash flow as if it was retained as well (they would be acting irrationally otherwise i.e. assuming the ROE is growing at their assumed growth rate) and therefore valuing it twice – once as investor cash flow in Stage-1 and then again as contributing to rising equity for the terminal value in Stage-2.

Table 1

YEAR	1	2	3	4	5	6	7	8	9	10	Growth
EQPS - Beginning	$100	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	ROE
ROE	10.00%	11.50%	13.23%	15.21%	17.49%	20.11%	23.13%	26.60%	30.59%	35.18%	15.00%
EPS	$10.00	$11.50	$13.23	$15.21	$17.49	$20.11	$23.13	$26.60	$30.59	$35.18	
POR	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	Dividend
Dividend	$10.00	$11.50	$13.23	$15.21	$17.49	$20.11	$23.13	$26.60	$30.59	$35.18	15.00%
EQPS - End	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	

Table 1 reveals that the only way you can grow investor cash flow by an assumed rate (say, 15%) when all cash flow is distributed, is if the return on the resultant static equity rises by the same rate as that assumed for the investor cash flow. So ROE has to rise by 15% per annum to generate free cash flow growth of 15% if it is all distributed.

Stage 2

In Stage-2, the free cash flow in the final year+1 is capitalised to arrive at a terminal value. This may be done a number of ways. Most users of the model will simply divide the future free cash flow by the discount rate minus the terminal growth rate (Gordon Growth Model – which has its own separate issues such as being generally suited to stable businesses like utilities). If the discount rate is 12% and the terminal growth rate is 4%, then the capitalisation rate is 8%. This is no different to simply multiplying the final year+1 cash flow by a cash flow multiple of 12.5. The result is then discounted to the present. One does wonder if the final year+1 cash flow is not related to the performance/growth of the equity in the business over the previous 10 years, why not just multiply current cash flow by a multiple, say 12.5 and save all the time and guesswork?

The two Present Values from Stage-1 and Stage-2 are then summed, an adjustment for debt (subtraction) may be made and the result is divided by the number of shares on issue to arrive at the 'valuation' per share.

The model can generally be summarised thus: (note present debt has not been subtracted)

$$V_0 = \sum_{t=1}^{t=n} \frac{D_t}{(1+R)^t} + \frac{D_{n+1}}{(1+R)^n (R2 - G2)}$$

Definition of the variables should be obvious and do not require repeating here. Whether one adopts dividends or free cash flow, the inconsistency we have alerted readers to in this note remains.

The major problem with the model is as we briefly mentioned several times already; that if the owners don't receive the free cash flow it cannot be counted twice, having both a present current value and a terminal value. And, if they do receive the cash flow, it cannot be counted twice either. If the free cash flow is received than the terminal value is being given too much weight and if the free cash is not received but retained then discounting the stage 1 cash flows should not be conducted as the following bond example demonstrates.

Here we examine the present value of a bond issued at $1000, paying 10% that did not distribute its interest but retained and compounded it at the same 10% rate. The future value of the bond in year 10 is simply $1000 x (1 +10%) ^ 10 = $2593.74. The future value and cash flow profile is reproduced in Table 2 below.

Table 2.

	Bond Value	Income (reinvested)
0	$1,000.00	
1	$1,100.00	$100.00
2	$1,210.00	$110.00
3	$1,331.00	$121.00
4	$1,464.10	$133.10
5	$1,610.51	$146.41
6	$1,771.56	$161.05
7	$1,948.72	$177.16
8	$2,143.59	$194.87
9	$2,357.95	$214.36
10	**$2,593.74**	$235.79
11	$2,853.12	**$259.37**

By capitalising the 11th year cash flow of $259.37 (If it seems strange to call it "cash flow' when we know it is being reinvested, you can see our problem with the model already. You cannot value the free cash flow if you are not receiving it, but the model does; it values it as if it is being received - which it isn't - and then values it again in the terminal value as if it was received previously) at say 7%, $259.37 / 0.07, the terminal value is $3705.35. Discounted back at an RR of 10.6% gives a present value of the terminal value of $1352.94. If the annual, compounding, non-distributed cash flow in years 1 to 10, that caused the value of the bond to increase is also discounted back by 10.6% the present value sum is $1087.58. This amount is added to the $1352.94 to produce a total Present Value of $2440.52. By paying $2440.52 instead of the present value of the terminal value ($1352.94), the yield is 4.26% not even half of the 10.6% requested by the user when using a 10.6% required return.

Clearly the issue with the model is the apparent double counting of the cash flow, once treated as investment cash flow received and then twice as if it has been retained to increase equity and produce a terminal value. It cannot be both.

The model sometimes produces results that are close to those produced by a more logical model but on many occasions the results can be misleading and if generating a real return of less than half the required return, financially calamitous. A simple approach is to remember that if a company produces a return on equity of 10.6% and all earnings are retained, the growth rate of the shareholders equity will be 10.6%. If a 10.6% rate is also adopted as the required return the appropriate price to pay for the shares is the equity per share. Often however, companies pay dividends and so the equity grows not by the full return on equity but only by that portion of the return that is retained and as a result, the equity grows at a slower rate (unless the dividend paid are replaced by new capital) than the return on equity. If no going concern-value were placed on future equity, it would always be the case that a premium over the current equity per share would only be justified if the discount rate used were lower than the retained return on equity. This final point is very significant for investors and builders of intrinsic value models.

Sincerely
Roger Montgomery
Chairman – Clime Capital Limited (ASX: CAM)