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THE PRICE EARNINGS RATIO

“...It has every available quality except that of being useful.”

C.S.Lewis,

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“A company with a low price to earnings ratio can be considered a better value stock than a company with a high price to earnings ratio.”

Conventional Wisdom

If you are an investor in the share market, you have probably read the above statement in numerous articles written by well-intentioned journalists, in countless books by equally well-intentioned authors and in research published by professional analysts.

The statement however is misguided and misleading and those who make it may be displaying their ignorance rather than their insight.

In my first analyst role, fresh out of university, I too thought I was really showing off my knowledge, when I could recite the P/E ratios of the companies I had ‘analysed’, those in whose shares I had invested, the aggregate P/E ratio of the broader market or the relative P/E ratios of companies within a sector or of overseas peers.

My acceptance of the P/E ratio is easy to understand. My mentors, my supervisor and every newspaper article written about listed companies, supported my use of the P/E ratio and indeed condoned it. The humble P/E ratio was thus elevated from a rule-of-thumb to a specialist tool for analysts.

Today, managing a more significant amount of money, for clients, shareholders, friends and family, I could not immediately tell you the P/E ratio of any of the companies whose shares we own (sure I could work it out quickly, but I don’t know off hand).

Yet, as my interest in P/E’s has declined, the readiness of commentators, my peers and our brokers to quote the P/E ratio in all its forms remains unyielding but more worryingly, unquestioning.

The P/E or price-to-earnings ratio, is simply the market price of a company’s share divided by the companies earnings per share.

It is widely regarded as a measure of value – a way to determine if a company’s shares are cheap - as the following excerpt from the Financial Review illustrates:

“Its prospective price-earnings (P/E) ratio of 10 represents a discount to the sector average. So, from a valuation perspective there is arguably room for further upside.”

Many commentators also refer to an acceptable level of a P/E ratio as a differentiator between the so-called Value Investors and Growth Investors. Value investors apparently, look for shares with low P/E ratios, as this excerpt from the Australian Stock Exchange's own website in an emailed article entitled *Investing for Value*:

And from the Australian Stock Exchange's own website

"In particular value investors have long considered the price earnings ratio (p/e ratio for short) a useful measure of the relative attractiveness of a company's stock price."¹

Even seminars held for investors by stockmarket software salesmen and people purporting to 'educate' investors – and sell them their software, join the party line:

[Today we'll be] "concentrating on valuations and the value of a stock....going to look at nine different ratios...were going to group them into three areas; value indicators of p/e -price earnings ratio, PEG and the Price to Book Value...This is why the P/E ratio is important, it gives us measure to be able to compare value on the stockmarket."²

And the ubiquitous Dr. Shane Oliver, Head of Investment Strategy and Chief Economist. AMP Henderson Global Investors, refers to the P/E ratio as a measure of value;

"Global and Australian sharemarkets wobbled around a bit over the past week, but they remained above the previous week's lows, and we remain of the view that they are on track to rally into July/August. Valuations are now very attractive with price/earnings (P/E) multiples back to around or below 2003 bear market lows."

Shane Oliver June 23, 2006 Eureka Report

But despite its popularity, sharemarket investors should question any blind faith they have in the P/E ratio. Why? Well first, some of the world's most successful investors say its irrelevant and secondly, we can demonstrate that there is little use for it with some basic arithmetic.

Warren Buffett (someone we like to occasionally quote and more frequently emulate) made this statement some years ago:

¹ www.asx.com.au article: *Investing for Value*.
http://www.asx.com.au/resources/newsletters/investor_update/20041012_ValueInvesting_IE3.htm

² Julia Lee – Hubb/Value Gain Stock Market Software, ASX Investor Hour Tuesday 21st February, 2006

“Irrespective of whether the business grows or doesn't, displays volatility or smoothness in its earnings, or carries a high price or low in relation to its current earnings and book value, the investment shown by the discounted-flows-of-cash calculation to be the cheapest is the one the investor should purchase.”

It's the part where Buffett says “*irrespective of whether the business carries a high price or low price in relation to its earnings*” that is relevant to this discussion. Buffett is declaring that P/E ratios are virtually irrelevant in the determination of a great value-investing opportunity.

I recently asked Fiona Tyndall, a journalist and reporter with the Financial Review, why the popularity of the P/E ratio was so entrenched. Her response supported the notion that all of us, as human beings, tend to follow a path of least resistance. The P/E ratio, she noted, was easy to calculate and because of its wide use, was relevant to the paper's readers.

But, as Buffett says, it doesn't matter whether the P/E ratio is high or low.

Think about this: Price is what you pay and Value is what you get. Your job as an investor (as opposed to speculator) is to buy assets for less than what they are worth. If Benjamin Graham, who said; “in the short run the market is a voting machine, but in the long run it is a weighing machine”, was correct, then, by acquiring businesses at below their long-term worth, the market will eventually recognise and reflect that worth.

We have seen this occur in Australia, far too many times to disagree with Ben Graham and so have become avid proponents of the rational approach to value investing.

But the P/E ratio has nothing to do with true value investing.

The Price earnings ratio compares *price* to earnings, and *price* is **not** *value*. As value investors, we are interested in the comparison between *price* and *value*, and only then can we identify whether a companies share are truly a bargain or not.

There are two ways to demonstrate the problem with the P/E ratio.

- 1) Through a demonstration of its irrelevance in determining return to an investor
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- 2) Through demonstrating the lack of importance of earnings per share and earnings growth in determining both attractiveness and value.

The remainder of this note seeks to do both.

Any chef knows that if you add chocolate chips, you don't get a lemon meringue. It's the same with valuation formulae. If price is an input, you don't get value as an output. Conceptually that is easy to understand. A couple of tables should help cement it.

Table 1 is a company that generates a normalized rate of return on equity of 5% - a mediocre retailer for example and retains all its earnings, paying no dividends.

Table 1

INPUTS			Year 1	Year 2	Year 3	Year 4	Year 5
Equity per Share	<input type="text" value="\$1.00"/>	Beginning Equity	\$1.00	\$1.05	\$1.10	\$1.16	\$1.22
Return on Equity	<input type="text" value="5.00%"/>	Earnings	\$0.05	\$0.05	\$0.06	\$0.06	\$0.06
Payout ratio	<input type="text" value="0.00%"/>	Dividends	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
P/E	<input type="text" value="10"/>	Equity at End	\$1.05	\$1.10	\$1.16	\$1.22	\$1.28
OUTPUT							
IRR	<input type="text" value="5.00%"/>	P/E	10	10	10	10	10
		Price	\$0.50	\$0.53	\$0.55	\$0.58	\$0.61
		IRR	-\$0.50	\$0.00	\$0.00	\$0.00	\$0.61

Assuming the shares are purchased and sold at the same price earnings ratio, the internal rate of return (IRR) to the shareholder will be equal to the company's rate of return on equity. In this case 5%. Given this rate of return on equity is lower than can be obtained elsewhere it appears rational that the company should not retain its earnings but pay them out. The P/E ratio of 10 however is silent on these issues.

In Table 2 the company also has \$1.00 of equity, generates a 5% return on equity, but management is rational in the face of inferior returns on equity and pays all its earnings out as a dividend. As a result there is **no** growth in the earnings. Regardless of the fact that the company has no growth in earnings, the shareholder now achieves a higher return (an IRR of 10%), buying and then selling five years later at the same price earnings ratio.

Comparing the two rates of return from Table 1 and 2, it is evident that for every dollar the company retains, 50 cents of shareholders wealth will be destroyed.

Table 2

INPUTS			Year 1	Year 2	Year 3	Year 4	Year 5
Equity per Share	\$1.00	Beginning Equity	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Return on Equity	5.00%	Earnings	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
Payout ratio	100.00%	Dividends	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
P/E	10	Equity at End	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
OUTPUT							
IRR	10.00%	P/E	10	10	10	10	10
		Price	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
		IRR	-\$0.50	\$0.05	\$0.05	\$0.05	\$0.55

You will notice that the investor's rate of return (IRR) is higher when a company with a low ROE pays all its earnings out as a dividend. This is rational behaviour on the part of management who 'think like owners'. They wouldn't invest their bonus payments and other incentives at 5%, given the risk of running a business, so they shouldn't invest the funds of the owners/shareholders at the same rate.

Uninhibited earnings should only be retained when there is a good possibility (use history as a guide) that capital retained will produce incremental earnings at a rate that is equal to or higher than returns produced by alternative investment options.

The above Tables assist in the understanding of the misguided trust placed in the P/E ratio as a measure of 'value'. Both companies, had a P/E ratio of 10, both generated a return on \$1.00 of equity of 5% and in the first year therefore, both could be purchased at the same price. But the company in Table 2, produced a return to investors that was double that from the company in Table 1. So what use is the P/E ratio of 10, or of 12 or 13 or any other number for that matter?

Over the years, a never-ending stream of commentators has attempted to encapsulate a definition of 'value investing'. Many refer to the P/E ratio, suggesting that low prices compared to earnings are an indication of whether 'good value' is being presented.

For example in the Australian BRW magazine, fund manager Philip Pepe from Platypus Asset Management said

"...market p/e's are reasonable. The prospective p/e for the S&P/ASX300 is around 13, which represents good value."³

Such conclusions however are erroneous because absolute value cannot be determined this way. As we have just demonstrated, its not the P/E that determines whether a share

³ BRW August 3-9, 2006 pg 70

investment represents good “value”, it is the rate of return on equity of the underlying business, the rate of distribution versus retention and the investor’s desired rate of return that will establish whether a share is overvalued or undervalued for that investor.

A Rational Alternative for Genuine Value Investors

Because price is what you pay and value is what you get, the only way to estimate a rational price is to adopt a valuation model where no input is derived from price; not the P/E ratio, beta or the weighted average cost of capital.

We have also seen plenty of software that claims to be “consistent with the investment principles of Warren Buffet” and “will tell you the right price to pay for a stock” but, because they contain price earnings ratios or some other derivative of price as an input, they are flawed conceptually and mathematically.

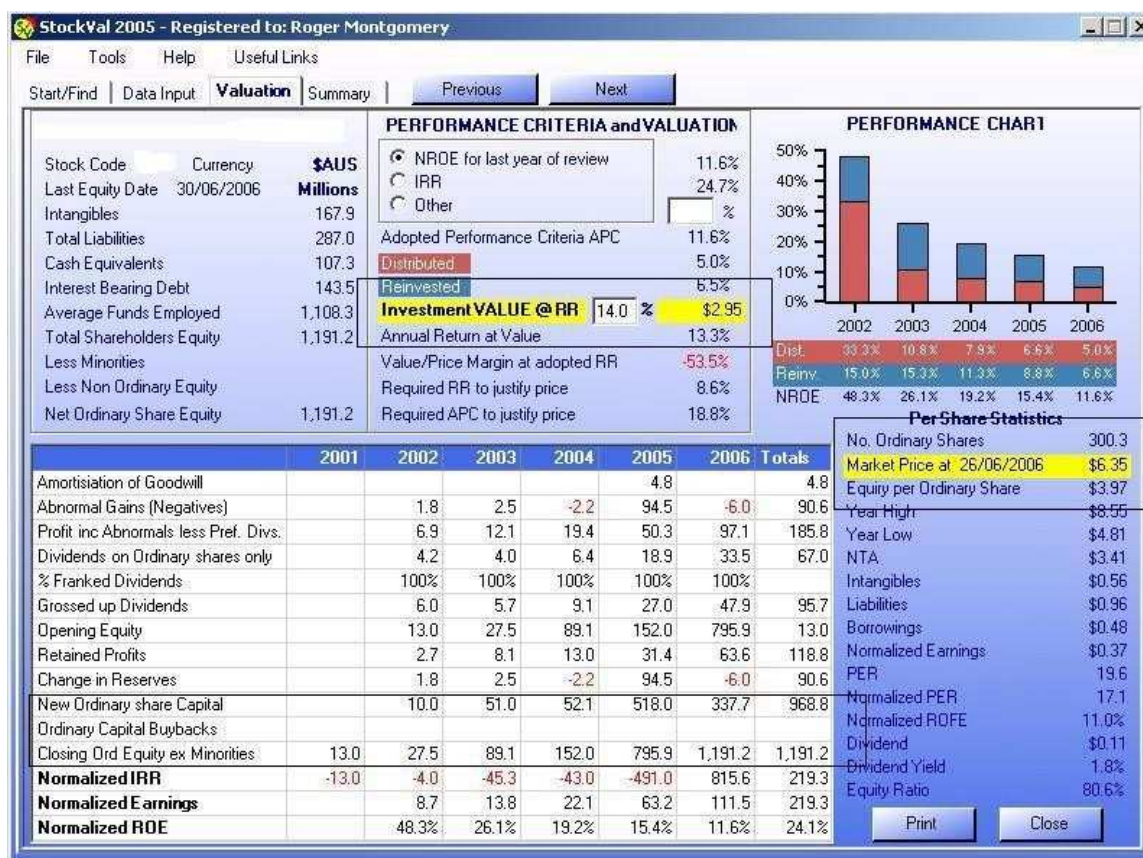
To best understand how to intelligently value a business, we will use an example of a company whose earnings growth has been terrific, a company whose fund managers cannot seem to throw enough money into and whose ‘story’ is excellent – great demographics, selling into supply shortages, aggressive overseas expansion etc. etc.

Take a look at the screenshot below of an Australian child-care company. Reported Earnings for this company has grown at an average annual rate of 86% in the four years since 2002, from \$6.9 million in 2002 to \$97.1 million in 2006 – a significant reason for the company’s share price appreciation from \$2.39 to over \$8.35 recently. But should shares in the company be purchased and at what price? Let me warn you that it is not enough that its earnings are stable and growing, that the P/E is below its peers (if indeed it is) and that its various capital management and balance sheet ratios are adequate. You simply don’t pay any price - even for a good company - and to avoid paying the wrong price, you need to learn how to value a business intelligently.

To correctly estimate the value of this business and therefore the level below which an acceptable entry price exists, one needs to understand how much equity is required to produce the reported profit. While earnings have grown at 86% per year, balance sheet equity has grown at an even more staggering rate of 146% per year. This is due to the company raising just shy of \$1 billion from shareholders in the four years to April 2006. Our rocking chair principle comes into effect here; one would certainly expect earnings to rise if you inject an additional \$1 billion into a business – why, even a person sitting in a rocking chair would earn more interest by injecting an extra billion into their bank account!

For the company illustrated, you can see that profits have totaled \$185.8 million for the last five years, if a forecast \$97.1 million is adopted for 2006. Of this, \$67 million has been paid out in dividends to shareholders and a staggering \$968.8 million has been raised from them.

Looking at the screenshot below, imagine for a moment that you started a business in 2001 by injecting \$13 million (beginning equity). In 2002, the business earned \$6.9 million and paid you a dividend of \$4.2 million. You'd be quite content. You received a \$4.2 million dividend and the business earned you 53% on the money you invested. But what if I now told you that management called you and asked for another \$10 million for new stores? You now pay your tax on the dividend you received and then give back that \$4.2 million dividend and an additional \$5.8 million (total \$10 million). So you have not banked any cash yet from this business, merely injected more and paid some tax on the dividends received. Fast-forward to today and you have still received nothing on a net basis, but have paid tax and injected over \$1 billion! If your reference point was still that rate of return in the first year, you might be in for a nasty surprise. Your \$1 billion is not generating a 53% return any more. It is now generating just 11%p.a. See the Return-on-Equity chart at the top right. It is declining – fast!



Source: www.stockval.com.au

The return on equity to the owners (you) appears at the bottom of the screen “Normalised ROE” and the row entitled “Normalised IRR” reveals the cash flows an owner of the business has received or had to inject over the period. If you owned the business outright, it would be all injections at this stage – indeed you’ve injected over a billion dollars and now own a business producing an 11% return on your money – provided you continue working really hard. As an owner, I can assure you, the right questions now would be; if my return is going to continue at 11%, is that satisfactory?

The increase in profits over the years looks attractive for this business and many analysts and investors spend a great deal of time mesmerised by that increase, however the growth is not due to the original subscribed capital, but new capital subscriptions (shareholder’s money) over the years. If the shareholders keep pumping in more money then of course the profit should rise, but so what? Remember our rocking chair principle.

What was once a highly profitable small business is now a mediocre, large business. There is nothing inherently evil or wrong with the business, but the present price cannot be justified on present performance. Future performance will need to improve dramatically to justify the current price.

So what is the right price to pay? If you have a dollar of equity earning, for arguments sake, 10% and you desire a 20% return on your money, the right price to pay, is a discount to the \$1.00 of equity. Referring now to our screenshot, at the top of the screen you can see, in this instance, we assumed adopted a continuation of the current 11.6% return on equity (this may be optimistic) and a Required Return or discount rate - “RR”- of 14%. Obviously if April 2006, equity per share of \$3.97 (see right hand side of screen) were to generate an ongoing assumed, ongoing 11.6% return and we require a 14% return on our investment, the only sensible price to pay for this business, is a discount to the equity per share of \$3.97. And the model indicates a valuation of \$2.95 for every \$3.97 of equity. Therefore, if ground level represents value, a share price for this company hovering around the \$8.00 level represents the stratosphere.

On our metrics the return on equity would have to rise to a sustainable 21.5% to justify the current price and it may still be no bargain.

And what if the price dropped to our valuation or below? Well, unless the appetite for capital raisings fell (its hard to teach an old dog new tricks), we would still be receiving the short straw on dilution.

This 'business owner' approach to investing in the stock market is precisely what Benjamin Graham and later, Warren Buffett espoused and have been advocating for decades. It's the only way to value a company. Beware of irrational, illogical and flawed imitations.

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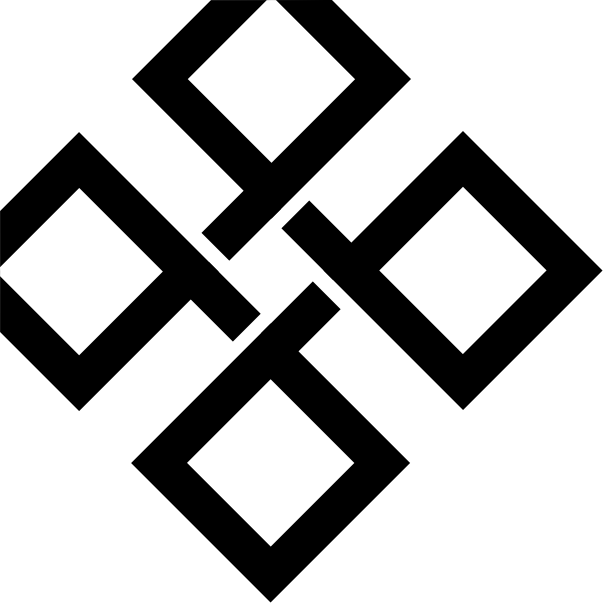
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