FLOAT AND INTRINSIC VALUATION OF INSURERS

This is a detailed study of insurance float and its role in the valuation of insurance stocks. Buffett made insurance float famous using it to turn Berkshire into an insurance and investment powerhouse. In doing so he has detailed its importance in understanding Berkshires insurance business valuation though much of his teachings around float has been lost outside of Berkshire. However, his process remains highly applicable to mainstream insurance analysis, particularly in the determination of intrinsic value.

The report will explore the application of his principles to Australian insurance companies with a focus on successful valuation and stock-picking. Importantly, readers will learn why conventional valuation techniques can be flawed resulting in a shift in how analysts should think of valuing insurance stocks within a value investing framework. The key issues I cover include:

- What is float and how analysts should think about it
- How to value an insurance company using float-based valuation
- Why the traditional WACC is incorrect for an insurance company
- Why DCF's are systemically mispricing insurers
- How to think about the insurance cycle in a float-based context
- Stock Analysis – How it works in practice, Intrinsic value case studies for IAG, SUN, QBE, NHF, GMA + CGF
- Investing - what is the right price to buy an insurance stock, and expected returns

WHAT IS FLOAT?

Float is most commonly understood as the pool of funds an insurer holds between receiving premium and paying claims while collecting the investment income in the interim. Float can be considered similar to debt in that there is a funding cost, however, it is different in two ways being (1) if the insurer does not shrink and is a going concern it will be permanent to the capital structure and not be repaid and (2) the funding cost is typically less than the risk-free-rate, and for profitable underwriters it has a negative cost – that is you get paid to hold it!

Buffett frequently refers to insurance float in his annual letters as having the following characteristics:

1. Other people's money - *"money we temporarily hold in our insurance operations that does not belong to us"* (2007)
2. Little or no funding cost - *"the float is 'free' as long as insurance underwriting breaks even"* (2007)
3. It is enduring - *"if we break-even [on underwriting], our investments can be viewed as an unencumbered source of value for shareholders"* (2007)
4. Economic value is different from the accounting value - *"though float is shown on our balance sheet as a liability, it has a value to Berkshire greater than an equal amount of net worth would have had"* (1997). *"the true value of this liability is far lower than the accounting liability"* (2011)

The table below shows IAG's balance sheet with the key ingredients to the capital structure. Readers should be aware there are three key providers of funding for a typical insurance business:

- Debt
- Equity
- Policyholder float aka. Other People's Money (OPM). The components which would be used in estimating float are highlighted in yellow – key ingredients are the insurance liabilities (outstanding claims and

unearned premium) net of reinsurance recoveries, deferred costs and premium debtors. It is also known as net insurance liabilities or technical reserves. It is worth noting that float is quite large relative to equity and debt – and hence very important to understanding insurance.

IAG Balance Sheet	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Investments	12,122	10,783	11,029	12,433	12,686	12,953	14,010
Receivables	1,206	1,207	887	1,084	560	449	526
Reinsurance recoveries	1,346	1,043	1,411	1,071	3,904	3,928	2,858
Premium debtors	2,045	2,046	2,126	2,046	2,081	2,502	2,712
Deferred acquisition costs	789	758	733	688	683	753	795
Deferred reinsurance expense	224	308	268	258	371	493	542
Other assets	3,878	3,235	2,861	2,866	2,638	4,054	3,416
Total Assets	**21,610**	**19,380**	**19,315**	**20,446**	**22,923**	**25,132**	**24,859**
Borrowings → Debt	2,017	1,401	1,053	1,450	1,377	1,659	1,620
Outstanding claims	8,562	7,827	7,816	8,253	10,783	11,709	10,474
Unearned premium → OPM	4,213	4,097	4,072	4,207	4,355	4,942	5,145
Other liabilities	1,986	1,704	1,538	1,880	1,828	2,298	2,632
Total Liabilities	**16,778**	**15,029**	**14,479**	**15,790**	**18,343**	**20,608**	**19,871**
Equity → Equity	**4,832**	**4,351**	**4,836**	**4,656**	**4,580**	**4,524**	**4,988**

While the cost of debt and equity are well understood concepts, the cost of float is less well understood. Float costs money if the business makes underwriting losses as it is called upon to pay claims expenses. The cost of float is 'free' if underwriting is break-even and the cost is negative if underwriting margins are positive.

Below is the outcome of a study which highlights Buffett's long-term funding cost of float. In years' of profitable underwriting the float is considered free, and in years where it has cost him money it was only 2.2% which was 480bps below the average 10 year bond yield. This is an incredibly cheap source of funding in the overall capital structure.

EXHIBIT 1 Buffett's Cost of Leverage: The Case of His Insurance Float

	Fraction of years with negative cost	Average cost of funds (truncated)*	Spread over benchmark rates				
			T-Bill	*Fed Funds Rate*	*1-Month Libor*	*6-Month Libor*	*10-year Bond*
1976–1980	0.79	1.67	–4.59	–5.65			–5.76
1981–1985	0.20	10.95	1.10	–0.27			–1.28
1986–1990	0.00	3.07	–3.56	–4.61	–4.80	–4.90	–5.30
1991–1995	0.60	2.21	–2.00	–2.24	–2.46	–2.71	–4.64
1996–2000	0.60	2.36	–2.70	–3.10	–3.33	–3.48	–3.56
2001–2005	0.60	1.29	–0.82	–0.96	–1.05	–1.19	–3.11
2006–2011	1.00	-4.00	-5.84	–6.06	–6.29	–6.59	–7.67
Full Sample	0.60	2.20	–3.09	–3.81	–3.69	–3.88	–4.80

* In years when cost of funds is reported as "less than zero" and no numerical value is available, cost of funds is set to zero.

Data from: Frazzini, A., Kabiller, D., and Pedersen, L.H., "Buffett's Alpha," (May 3, 2012). The data are hand-collected from Buffett's comment in Berkshire Hathaway's annual reports. Rates are annulaized, in percent.

Profitable insurance underwriters are natural Ponzi schemes

Some readers may realise that an insurer's float is akin to a Ponzi scheme. The accountants and actuaries would be correct in suggesting insurance liabilities are real liabilities if the insurer is in run-off, and ultimately they will

need to be paid from float. However, if an insurer can generate an accident year underwriting profits over long periods of time and not shrink its float, then it is economically equivalent to a Ponzi scheme.

To be clear, we are not suggesting anything negative by the Ponzi label – only that this is a truer representation of the economic reality over the accounting view of the world. Perhaps a more legitimate description would be 'revolving fund' rather than Ponzi scheme. How much is a revolving fund worth if it doesn't shrink and you get paid to keep it as a going concern?

The extracts below for IAG demonstrates the revolving nature of insurance liabilities – money-in largely offsets money-out for the premium liability and outstanding claims liability highlighting its Ponzi characteristics. The investment balances generated by these 'liabilities' are therefore a permanent feature of the capital structure of an insurance company that is a going concern.

NOTE 14. UNEARNED PREMIUM LIABILITY

		CONSOLIDATED 2013 $m	2012* $m
A. RECONCILIATION OF MOVEMENTS			
Unearned premium liability at the beginning of the financial year	money in	**4,942**	4,355
Deferral of premiums on contracts written		**4,981**	4,425
Earning of premiums written in previous financial years	replaces	**(4,618)**	(3,976)
Addition through business acquisition		**-**	154
Disposed through sale of business	money out	**(212)**	-
Net premiums earned and written on discontinued operation	= proxy ponzi	**(18)**	(34)
Net foreign exchange movements		**70**	18
Unearned premium liability at the end of the financial year		**5,145**	4,942

II. Reconciliation of movements in discounted outstanding claims liability

	2013			CONSOLIDATED 2012*		
	Gross $m	**Reinsurance and other recoveries $m**	**Net $m**	Gross $m	Reinsurance and other recoveries $m	Net $m
Balance at the beginning of the financial year	**11,709**	**(3,928)**	**7,781**	10,889	(4,010)	6,879
Movement in the prior year central estimate	**(139)**	**(102)**	**(241)**	290	(490)	(200)
Current year claims incurred	**5,948**	**(787)**	**5,161**	6,007	(1,092)	4,915
Claims paid/recoveries received	**(6,551)**	**1,753**	**(4,798)**	(6,483)	2,033	(4,450)
Movement in discounting	**67**	**(33)**	**34**	725	(204)	521
Movement in risk margin	**46**	**(6)**	**40**	238	(59)	179
Disposed through sale of businesses	**(668)**	**280**	**(388)**	(11)	-	(11)
Additional through business acquisition	**-**	**-**	**-**	34	(9)	25
Net foreign currency movements	**182**	**(112)**	**70**	38	(39)	(1)
Net claims charged to discontinued operation	**(120)**	**77**	**(43)**	(18)	(58)	(76)
Balance at the end of the financial year	**10,474**	**(2,858)**	**7,616**	11,709	(3,928)	7,781

VALUING AN INSURANCE COMPANY USING FLOAT

This section is a quick analysis of Berkshires float. While we can calculate the float using balance sheet items, Buffett provides them pre-calculated for readers in his annual letter. In 2013 Berkshire had $77.2bn of float:

Year	*Float (in $ millions)*
1970	$ 39
1980	237
1990	1,632
2000	27,871
2010	65,832
2013	77,240

Furthermore, Buffett provides an overview of how investors should determine the value of Berkshire. He suggests the two components required to determine intrinsic value are: (1) per share investments and (2) per share pre-tax operating earnings from businesses other than insurance and investments. The value of the insurance business is obviously tied up in the first bucket.

Investors ordinarily take per share investments and add a multiple of operating income to arrive at an intrinsic value - the parameters of which can be deduced from a close study of Buffett's letters over time (around 10-13x pre-tax appears to be an appropriate multiple for non-insurance operating earnings).

Yearend	*Per-Share Investments*	*Period*	*Compounded Annual Increase in Per-Share Investments*
1970	$ 66		
1980	754	1970-1980	27.5%
1990	7,798	1980-1990	26.3%
2000	50,229	1990-2000	20.5%
2010	94,730	2000-2010	6.6%

Year	*Per-Share Pre-Tax Earnings*	*Period*	*Compounded Annual Increase in Per-Share Pre-Tax Earnings*
1970	$ 2.87		
1980	19.01	1970-1980	20.8%
1990	102.58	1980-1990	18.4%
2000	918.66	1990-2000	24.5%
2010	5,926.04	2000-2010	20.5%

Berkshires investment assets largely reflect its surplus capital and insurance float. It should therefore be clear that Buffett interprets the value of his insurance business as being in-line with its per share investment assets – and therefore a dollar of float equates to a dollar of intrinsic value.

In fact, this is likely to be conservative given it does not consider (1) the consistent underwriting profitability which should theoretically be included as operating income and capitalised or (2) any expected future growth in per share float.

Consider these comments from Buffett which lead me to the following conclusions:

- ⇨ A dollar of float has more value than a dollar of equity

"Since our float has cost us virtually nothing over the years, it has in effect served as equity. Of course, it differed from true equity in that it doesn't belong to us. Nevertheless, let's assume that instead of our having $3.4bn of

float at the end of 1994, we had replaced it with $3.4bn of equity. Under this scenario, we would have owned no more assets than we did during 1995. We would, however, have had lower earnings because the cost of float was negative last year. That is our float threw off profits". (1995)

⇨ Float is worth more than its face value if it can grow.

"If I were offered $7bn for $7bn of float and did not have to pay tax on the gain, but would thereafter have to stay out of the insurance business forever – a perpetual non-compete in any kind of insurance – would I accept that? The answer is no. That's not because I'd rather have $7bn of float than $7bn of free money. It's because I expect the $7bn to grow". (1996)

So how much is Berkshire's $77bn of float worth if it can grow? To do that we need to estimate earnings from float, the rate of growth, the cost of float and the discount rate.

Let's assume:

- growth rate of 3% in-line with inflation
- investment returns of 2.15% (US 30 year bond rate at 3.3% taxed at 35%)
- cost of float at 0% (assumes profitable underwriting)
- discount rate of 3.3% (US 30 year bond)

The value of Berkshires $77bn of float is therefore $77 x 2.15% / (3.3% - 3%) = $77 x 7.17x = $552bn

Ok so $552bn of float value is a ridiculous number and is bigger than Berkshires entire market cap of ~$300bn, and we haven't even included the value of the operating businesses.

If we lower the growth rate only 0.5% we get $77 x 2.15% / (3.3% - 2.5%) = $77 x 1.65x= $127bn

And so estimating the floats growth value is very sensitive and possibly foolish. Despite our attempt at conservative assumptions, the growth will likely be higher, returns much better if Buffett is investing the float, cost of float likely negative if underwriting standards are maintained, and what really is Berkshires cost of capital if the 10 year bond is not appropriate (does anyone know the answer to this?) – the mind boggles as to what the float could really be worth. But what we do know the float is worth <u>at least</u> $77bn, and likely a lot more.

Whatever intrinsic value estimate we arrive at will be a static (point-in-time) estimate. The passing of time will see intrinsic value change. If intrinsic value is rising at a good clip (as is the case with growth stocks) purchases at fair-value can turn out very well for investors. On the other hand, if intrinsic value is falling, even extremely cheap stock purchases can turn out to be value traps.

Estimating the rate of growth of float for most insurers is difficult. While Buffett and Munger have stated that book value does not reflect intrinsic value, they do believe that *"<u>growth</u> in book value should occur at about the same rate as <u>growth</u> in intrinsic value"*. Therefore, one can take a few simple approaches to growth to estimate an insurer's future float-based intrinsic value being:

- Use long-term historical float growth rates if it is deemed to be consistent and reliable
- If the company does not pay a dividend, book value growth should approximate the return on equity
- For dividend paying companies book value growth will be the retention ratio times ROE

Simplified example

Now stepping away from Berkshire, to value an insurance business generally, in addition to calculating the float we would then simply add surplus capital. Float combined with shareholder investments forms the investment asset base of an insurer.

Consider this example of a simple insurer with $3 of investments, $2 of net insurance liabilities (float), no debt, and $1 of shareholder equity. Assume that it breaks-even on underwriting every year and does not grow. Profit would simply reflect the investment portfolio return, and assuming this is in-line with market returns, the business would command a valuation of $3 or 3x book.

Note, in practice, any interest bearing liabilities would need to be deducted and the capitalised value of any recurring fee-based income streams or business units added.

This is the basis we will use for calculating intrinsic value for the Australian insurers.

WHY DCF'S CAN LEAD TO PROBLEMS IN VALUING INSURERS

I am of the opinion that most insurance investors have systemic flaws in their DCF valuation models leading to inaccurate and likely mispricing of insurance stocks. Much of this stems from the blind application of capital market theory without due regard to economic reality. Below I will seek to demonstrate why analyst discount rates (cost of capital) to value an insurance company can lead to absurd valuations.

The key to understanding this section goes back to the nature of the capital structure of an insurer, the relative importance of float and and how its' funding differs from a conventional business that uses only debt and equity.

Consider an insurer with $100 of technical reserves (float) and suppose it is invested in a bank account earning a risk-free return of 5%, and let's suppose the WACC equates to 10%.

WACC = x * cost of equity + (1-x) * cost of debt * (1-tax rate)

Where x+y=1

The typical analyst will forecast $100 x 5% = $5 of investment income on technical reserves after which taxed at 30% equals $3.50 and then discount this income stream at the cost of capital of 10% resulting in $3.50/10% = $35 of intrinsic value. And so the analyst values $100 of cash (other people's money in a revolving fund) at 65% below its face value – this seems to fly in the face of Buffett's comments which suggest $1 of float should have at least $1 of intrinsic value – and so the WACC is not working properly. But why?

Recall the technical reserves (float) does not belong to debt-holders or equity-holders, so why are we discounting it using the weighted average cost of capital? I mean, it's not funded by equity nor is it funded by debt. The reality is it is funded by policyholders, the silent party to the insurer capital structure.

The primary issue is the WACC is incomplete and only focuses on the cost of debt and equity, I will label this WACC as version 1 (v1), and mark it with an "X" as it is insufficient to use given it failed us in the example above.

☒ WACC (v1) = x * cost of equity + (1-x) * cost of debt * (1-tax rate)

The apparent adjustment which remedy's this first flaw should therefore include all three sources of funding in determining the cost of capital to allow for the unique party of three capital structure. So let's try this:

☑? WACC (v2) = x * cost of equity + y*cost of debt * (1-tax rate) + ***(1-x-y)*cost of float***

Where x+y+z=1

If the insurer is breaking even on underwriting (technical reserve income = insurance profit) then we can consider the cost of float to be 0% (zero) – and so the third term falls away and we are left with what appears to be our original WACC formula but with different weights for (x, y) resulting in WACC2 < WACC1.

To further support the WACC's absurdity, consider the impact of changes in the cost of float:

- If the insurer makes an underwriting profit, the cost of holding float will be less than 0% and this would therefore reduce the WACC. It is possible for an extremely profitable insurer that this may cause the WACC to go below risk free rates or even zero!
- Another peculiarity is that the discount rate (WACC) is dependent on the underwriting profitability – valuations can benefit from the double whammy of higher profits and at the same time lower discount rate, and vice-versa of lower underwriting profit and high discount rate. This would result in manic-depressive style DCF valuations as underwriting trends swing around. The reliance of WACC on underwriting is truly odd.

And so the WACC could be unreliable in valuing P&C insurance businesses and therefore should not be used to value the investment income stream on float.

If you are not convinced, I would consider the above comments in the context of Buffett and Munger's response to a shareholder question below, simply replace Berkshire by the name of your favourite insurer:

Shareholder: What is Berkshire's cost of capital?

Buffett: That question puzzled people for thousands of years. So I'll let Charlie handle it…

Munger: I find the way that subject is taught at most business schools incoherent. I'm usually the one who asks that question and gets incoherent answers. I don't have a good answer to what I consider a stupid question.

Buffett: We're better at stupid answers to good questions.

And so Buffett and Munger cannot make sense of the WACC / discount rate issue either – and we are probably on the same page (I hope) – the 'right' WACC probably does not exist. There are some important takeaways here:

- It is OK to try and forecast investment income to generate earnings forecasts
- It may not be OK to try and discount forecasts in determining value – this could be silly

This is a huge problem for sell-side analysts because (1) they must forecast earnings, which is fine, but (2) this naturally gets aggregated with other profits and discounted into what they think is an accurate DCF valuation at the WACC - legitimised only by modern financial theory. The latter step is a big issue for investors relying on DCF's.

My unwilling recommendation to DCF junkies is to value the float by discounting (if you must) at the risk-free rate rather than the traditional WACC. It just seems to make more sense. That way, if $100 of technical reserves earns 5% and the government bond rate is 5% it will value it at $100 (same result as float-based value with no growth). If it earns 7%, that $100 is worth $100*7%/5% = $140. These numbers at least appear more reasonable.

However, the best bet is to avoid DCF's altogether and use float-based valuation techniques that simplify things and gets around this major issue of discount rates. It is more accurate than a DCF approach and my stock analysis (later in the report) will show it is a very reliable value anchor, and assists greatly with stock-picking in a value investing context.

Following the above conclusions on WACC, I sense there are some broader implications that may need to be explored. The first is that discount rates should be generalised/expanded to allow for the key providers of funding in the overall capital structure with a careful analysis of the economic nature of the funding. Other industries that may have this issue is banks. Deposit holders are providers of capital in banks and they would also have a funding cost – are their similar discount rate issues for Banks as there are for insurers?

FLOAT-BASED VALUATION OF AUSTRALIAN INSURERS

Using float explicitly in determining intrinsic value for an insurer is rare in investment markets, particularly in Australia. This is despite the approach being highlighted by Alice Schroeder in 1999 (later to become Buffett's biographer in 'The Snowball'). I am not entirely sure why it is not widely used especially given the approach has been stylised by high profile value investors. I will speculate on a number of possible reasons why this is the case:

- That the proliferation of actuaries and accountants on buy and sell-sides has resulted in views that fail to diverge too far from accounting rules and actuarial principles which do not reflect economic reality. Professionals may not willing to promote company valuations premised on Ponzi theory and revolving funds of other people's money. Would you be ridiculed for going against conventional accounting wisdom? Can you avoid doing a DCF valuation? How can you not have a WACC?
- That investors believe the multiple to book value metrics adequately allow for the valuation and quality of the float, allowing for the possibility of weaker profitability and reserve strengthening.
- That analysts have shied away from the approach as determining whether the future cost of float will be free or not to warrant valuing the float is too harder judgement call.
- That Buffett's interpretation of float is unique to Berkshire and does not apply to other insurers. This is because Berkshire wholly owns its insurance business and Buffett has investment control over the float. In my view, this is simply not a true read-through – and any stable insurer with profitable underwriting warrants a float-based intrinsic value. The difference with Berkshire is that control over the investment float simply makes it much more valuable as superior investment returns will enable higher float growth – it does not make the approach itself irrelevant outside of Berkshire.

As my thinking has evolved, I believe float based valuations to be a more reliable indicator of intrinsic value. Importantly, it is based on fewer input parameters comprising historical data with very few elements requiring significant forecast judgement. In my view, it is far superior to earnings and projection based methods used by professional investors (P/E, DCF, P/B et al).

I will explore float-based valuations for Australian listed insurers (IAG, QBE, SUN, NHF, CGF, GMA). Based on this analysis I will provide a view on which insurers appear good values at current share prices, and which look fairly priced or expensive and should be sold. Noted, as this note is focussed on float, the analysis will largely be ignorant of operational trends and other factors which an investor may consider relevant. The approach is flexible enough to allow estimation of a range of strategic scenario valuations (ie what-if scenarios) if the analyst so wishes to perform stress-tests on intrinsic value or take a risk-adjusted view.

The analysis suggests float-based valuations historically serve as an accurate valuation anchor over time, however market pricing sees investors go through significant periods of under and over capitalisation of underwriting profitability relative to this value anchor – above 100% of intrinsic value and below 60% - these points appear to be historically reliable buy and sell signals for insurance stocks. The accuracy is surprising, despite buy/sell signals being based on known historical data at the time – balance date information is assumed to be known at the end of the reporting month (ie 31st Dec balance at Feb 28th and 30th June balance at Aug 31st).

I also analyse the characteristics of float between insurers, and assesses the quality of float with respect to its 'cost of carry' and growth which concludes that health insurer float appears the more 'valuable' than traditional P&C insurer float, albeit it is a smaller component of its overall intrinsic value relative to P&C insurers where it is more significant.

Some thoughts on insurance cycles in a float context

While I expect most readers will be aware of the insurance cycle – I explain it below, but in a different way - framed around the idea of float:

1) At the bottom of the cycle when underwriting is poor, a float-based intrinsic value is difficult to justify by the market. If underwriting margins are negative, then the float has a cost (positive cost of carry) and so the float's value is impaired ($1 of float is worth less than $1 of intrinsic value). The insurer can therefore trade at a substantial discount to its float. Investors who believe the insurer can return to positive underwriting profit can buy the stock cheaply with a large margin of safety.

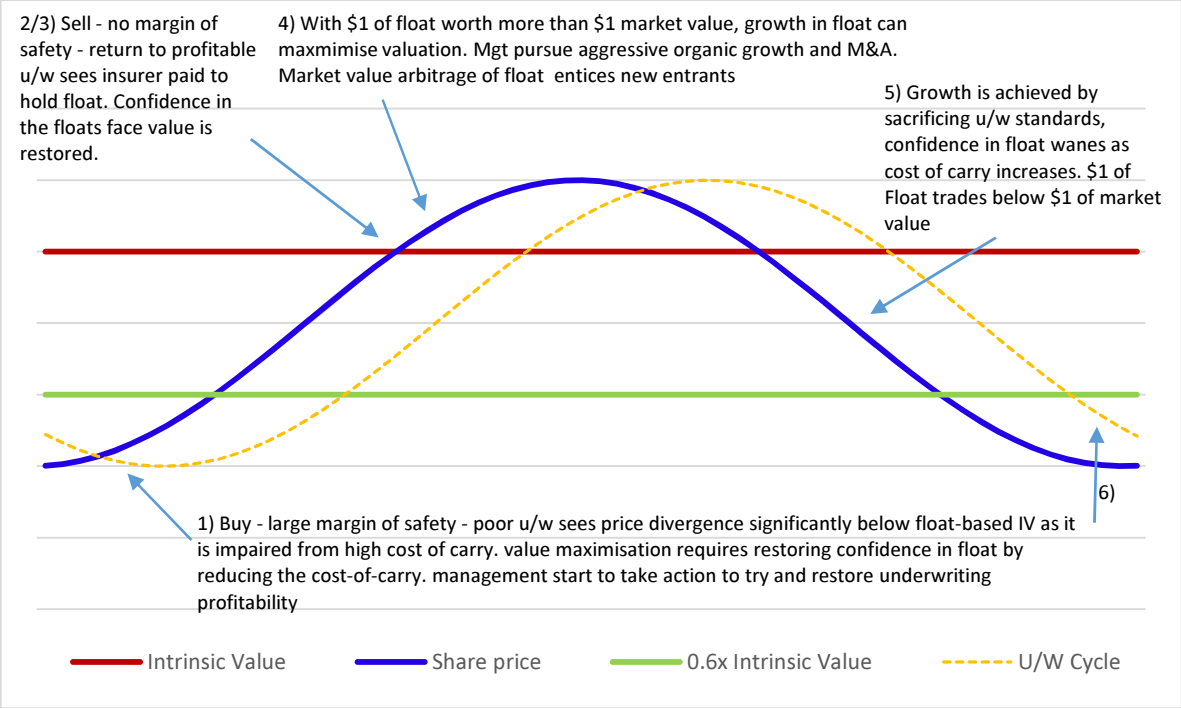
2) In order to maximise intrinsic value of float, the management team must reduce its cost of carry, in order to unwind the impairment of its value. The impairment of float value that needs to be unwound is so large, they must raise prices and can even justify reducing the level of float by walking away from poor business. That is, rather than have $1 of float with a positive cost of carry resulting in 60c of intrinsic value, it might be better to reduce business volume and have 80c of float at <0% carry and worth its face value of 80c.

3) Over time, as underwriting improves, confidence in the value of float is restored and the impairment is un-wound - a $1 of float is now worth $1 of market value. This is a good selling opportunity as there is little margin of safety left.

4) With float worth at least its face value in the stock market, the share price can be maximised by collecting more float – this can be done by chasing new business or acquiring float of other insurers – and hence the silliness starts to begin. Insurers can afford to pay more than $1 for $1 of float given the premium awarded for so doing in the stock market. New entrants enter the market and take advantage of the float valuation arbitrage offered in the stock market.

5) After achieving growth in float, with its valuation premium, insurers worried about reducing float (and hence value), must now continue writing new business at increasingly unprofitable rates. As underwriting profitability falls, the confidence in the intrinsic value of float starts to wane and the market starts to price $1 float at <$1 of market value.

6) The float's intrinsic value is now significantly impaired in markets that action must be taken to restore its value. The cycle repeats.



Some accounting differences

There are a number of nuances that make float-based valuation method slightly different for Australian insurers compared to US P&C businesses – most readers may wish to skip over these technical comments (seriously).

The differences are that (1) US reserves are undiscounted whereas Australian reserves are discounted and (2) US reserves do not contain risk margins, whereas Australian reserves do. For simplicity, we assume that reserve discounts largely offset risk margins and that reported insurance liabilities (and hence technical reserve assets) are a good proxy for estimating the size of the float.

The more accurate approach would be to make adjustments to the reported insurance liabilities by stripping out the risk margin and adding back the discount. The table below shows the difference this would make to the estimate of float - around 1% for QBE, 3-4% for IAG and about 3% for GMA.

The impact on intrinsic value calculations makes no difference as total investment asset value is not fungible and these adjustments only change the split between what should be considered float versus shareholder investment assets. Anyone replicating the analysis may wish to make these fuller adjustments (or not).

	FY12			FY13		
QBE	**Aust. basis**	**US basis**	**Difference**	**Aust. basis**	**US basis**	**Difference**
Undiscounted Central Estimate	18,243	18,243		18,122	18,122	
Discount	-1,164	0		-1,479	0	
Risk margin	1,333	0		1,565	0	
Outstanding claims liability	**18,412**	**18,243**	**-0.9%**	**18,208**	**18,122**	**-0.5%**
Unearned premium	8,559	8,559		8,184	8,184	
Deferred insurance costs	-2,606	-2,606		-2,221	-2,221	
Net premium liability	**5,953**	**5,953**	**0.0%**	**5,963**	**5,963**	**0.0%**
Net insurance liability (float)	**24,365**	**24,196**	**-0.7%**	**24,171**	**24,085**	**-0.4%**

	FY12			FY13		
IAG	**Aust. basis**	**US basis**	**Difference**	**Aust. basis**	**US basis**	**Difference**
Undiscounted Central Estimate	9,979	9,979		9,979	9,979	
Discount	-2,217	0		-2,217	0	
Risk margin	2,712	0		2,712	0	
Outstanding claims liability	**10,474**	**9,979**	**-4.7%**	**10,474**	**9,979**	**-4.7%**
Unearned premium	4,942	4,942		5,145	5,145	
Deferred insurance costs	-1,368	-1,368		-1,337	-1,337	
Net premium liability	**3,574**	**3,574**	**0.0%**	**3,808**	**3,808**	**0.0%**
Net insurance liability (float)	**14,048**	**13,553**	**-3.5%**	**14,282**	**13,787**	**-3.5%**

	FY12			FY13		
GMA	**Aust. basis**	**US basis**	**Difference**	**Aust. basis**	**US basis**	**Difference**
Undiscounted Central Estimate	266	266		212	212	
Discount	0	0		0	0	
Risk margin	36	0		29	0	
Outstanding claims liability	**302**	**266**	**-12.0%**	**241**	**212**	**-12.0%**
Unearned premium	1,023	1,023		1,124	1,124	
Deferred insurance costs	-217	-217		-222	-222	
Net premium liability	**806**	**806**	**0.0%**	**902**	**902**	**0.0%**
Net insurance liability (float)	**1,108**	**1,072**	**-3.3%**	**1,143**	**1,114**	**-2.5%**

AUSTRALIAN INSURANCE CASE STUDIES

OK, so we are now going to throw most of the usual accounting and actuarial toolkit out of the window. Let's forget about premium rates, volumes, claims frequency and severity, insurance trading profits, duration matching, diversification, reserve strengthening, probability of adequacy etc. While useful to know typically this array of information is riddled with patchy or lagging information, unknowns and unknowables and draws too much attention away from more credible information embedded in historical business performance and known balance sheet information. Insurance company earnings are inherently volatile, and therefore any earnings based approach is likely to succumb to simply riding the ups and downs of the insurance cycle.

Understanding float value helps to anchor ones views away from the crowd, instead focussing on economic reality, statistical cheapness and margin of safety as the driver for returns and I will show it can assist in identifying more appropriate entry and exit opportunities in insurance stocks. I will go through 5 insurance stocks – IAG, QBE, SUN, NHF, GMA and provide some additional comments on CGF.

CASE EXAMPLE 1: INSURANCE AUSTRALIA GROUP (IAG)

IAG is an Australian listed P&C insurer with operations in Australia, New Zealand and Asia. It is largely a mature business with dominant market shares in Australia and NZ and fledgling but growing Asian operations.

The table below highlights IAG's underlying trends:

- Underwriting consistency – IAG has had positive underlying underwriting profitability in 7 out of the last 8 years (+88%) which includes a full market cycle
- Cost of float - IAG has averaged an underlying underwriting profit (ex volatile items) of +2.5% since FY06 and around 4.7% since FY09. Expressed in terms of the size of the insurance float, this equates to a negative cost of carry of around 4%pa - it gets paid that to hold float. On average since FY09 this cost of carry is a whopping 8.5% spread below the 10 year bond.

	1H09	2H09	1H10	2H10	1H11	2H11	1H12	2H12	1H13	2H13	1H14	Avg
NEP	3,683	3,550	3,643	3,489	3,710	3,647	3,581	3,765	4,095	4,223	4,320	
Reserve float	8,000	8,000	7,900	8,782	8,100	8,300	9,000	9,400	9,100	9,400	9,300	
Float / NEP	1.1x	1.1x	1.1x	1.3x	1.1x	1.1x	1.3x	1.2x	1.1x	1.1x	1.1x	
Immunised Underwriting %^	-0.5%	0.1%	6.7%	-8.0%	5.8%	-2.4%	3.2%	8.4%	12.9%	9.7%	12.6%	**4.4%**
Underlying Underwriting %^	-0.1%	0.6%	4.3%	4.1%	3.7%	2.6%	5.5%	5.2%	7.4%	8.2%	9.8%	**4.7%**
Cost of Carry (CoC)												
- immunised basis	0.5%	-0.1%	-6.2%	6.4%	-5.3%	2.1%	-2.5%	-6.7%	-11.6%	-8.7%	-11.7%	**-4.0%**
- underlying basis	0.1%	-0.5%	-4.0%	-3.2%	-3.4%	-2.3%	-4.4%	-4.2%	-6.6%	-7.4%	-9.1%	**-4.1%**
10 year bond	4.1%	5.7%	5.5%	5.2%	5.5%	4.8%	3.9%	3.0%	3.5%	3.7%	4.0%	**4.4%**
- CoC spread (immunised)	-3.6%	-5.8%	-11.6%	1.2%	-10.8%	-2.7%	-6.4%	-9.7%	-15.1%	-12.4%	-15.7%	**-8.4%**
- CoC spread (underlying)	-4.0%	-6.2%	-9.4%	-8.4%	-8.9%	-7.1%	-8.3%	-7.2%	-10.1%	-11.1%	-13.1%	**-8.5%**
Total Investments	10,317	10,602	11,500	12,028	11,800	11,900	12,700	13,000	13,100	13,600	14,800	
Debt	1,360	1,053	1,586	1,450	1,380	1,377	1,627	1,659	1,572	1,620	1,696	
Intrinsic value	8,957	9,549	9,914	10,578	10,420	10,523	11,073	11,341	11,528	11,980	13,104	
Share count	1,888	2,071	2,079	2,079	2,079	2,079	2,079	2,079	2,079	2,079	2,079	
IV per share	**$4.74**	**$4.61**	**$4.77**	**$5.09**	**$5.01**	**$5.06**	**$5.33**	**$5.46**	**$5.55**	**$5.76**	**$6.30**	

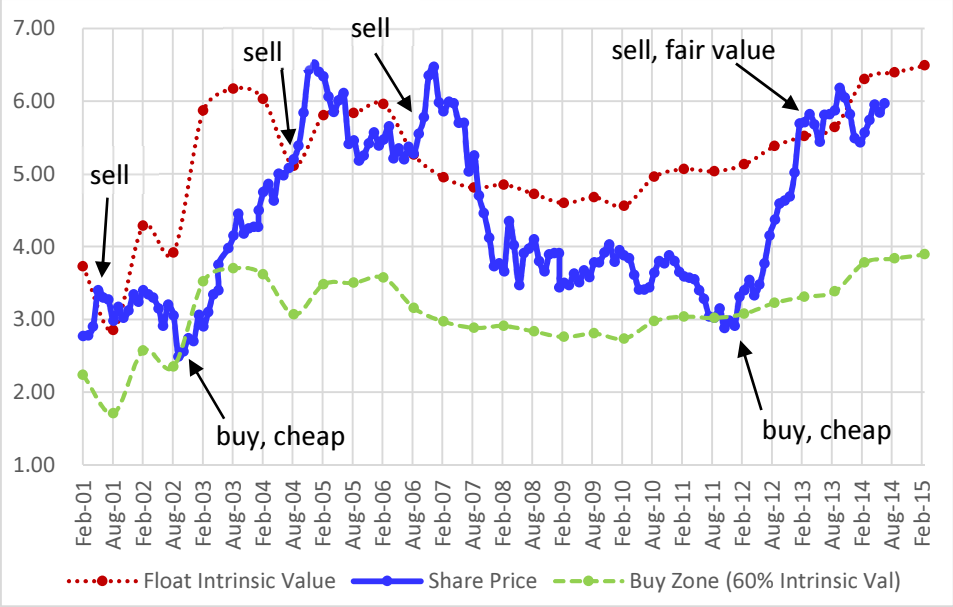
^ immunised removes the impact of changes in discount rates, underlying normalises further to an accident year basis and strips out excess natural peril costs, credit spreads and reserve releases

IAG's consistent underlying underwriting track record warrants a float-based valuation. The red line in the chart below represents the per share investments (insurance float + shareholder investments) less borrowings at the end of the reporting month (Feb/Aug). The blue line represents the monthly share price. The green line is 60% of intrinsic value – buying at this level incorporates a large margin of safety and should yield an internal rate of return of 10-20%pa+ plus dividends assuming the discount to intrinsic value closes in 3-5 years – an appropriate return for a patient investor.

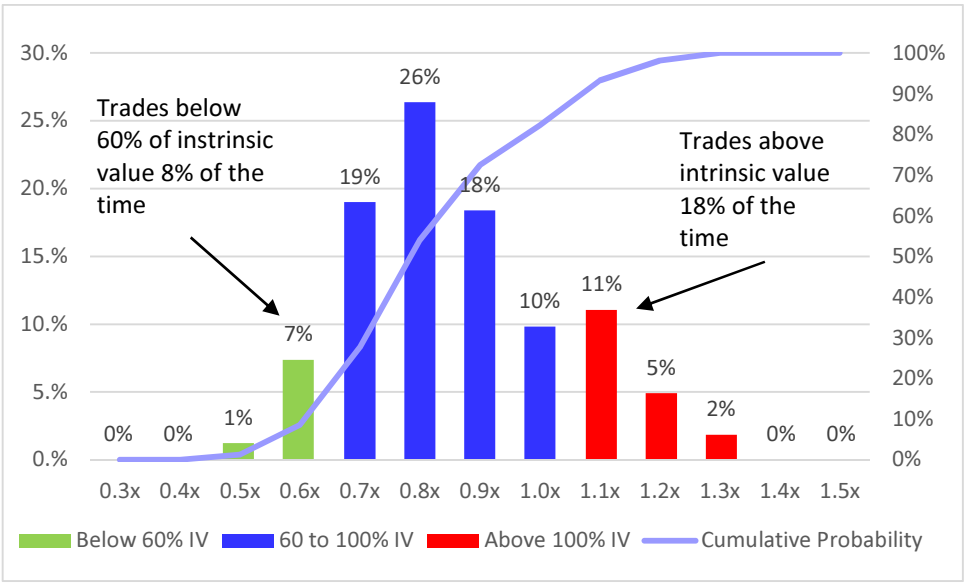
Based on this analysis:

- IAG was fair value in late 2001 – a sell indicator
- IAG was cheap in late 2002 – a buy indicator
- IAG was fair value from late 2004 through early 2007 (overvalued)– a sell indicator
- IAG was cheap in early 2012 – a buy indicator
- IAG has been fair value since early 2013 – a sell indicator

I am surprised by its accuracy in negotiating reasonable entry and exit points in the stock.



Below are the statistics that describe IAG's share price with respect to its float-based intrinsic value over the last 13-odd years. Buying opportunities at 60c in the dollar of intrinsic value have occurred 8% of the time - odds are 12.5-to-1 that you will do okay buying at these levels. The stock has traded above intrinsic value 18% of the time which is a good selling opportunity given the odds are 5.5-to-1 that you will do poorly if you hold on. The median price to float-based intrinsic value range for IAG is around 0.85x

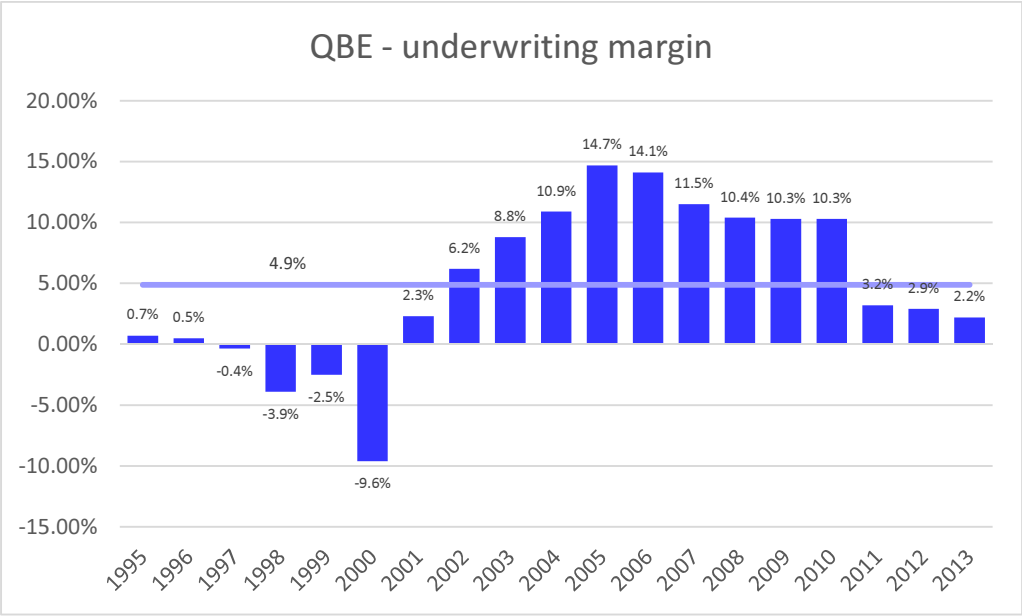


Looking forward, with IAG's current float-based intrinsic valuation of ~$6.30/share and a current price of ~$6/share there is very little margin of safety and I expect future returns are likely to be relatively poor. Caveat, I have not considered the impact of its recent Wesfarmers insurance acquisition, which could involve a step change in the per share metrics as additional float has been acquired with equity. This could change the conclusion of value – my feeling is it wasn't bought cheaply, and therefore the original view should hold up.

CASE EXAMPLE 2: QBE INSURANCE (QBE)

QBE is an Australian listed global P&C insurer with operations in Australia, USA, Latin America, UK/Europe and Asia.

- Underwriting consistency:
  - 6 out of the last 6 years had positive underlying underwriting profitability (+100%)
  - 16 out the last 20 years had positive reported underwriting profitability (+80%)
- Cost of float – QBE has a consistent track record of positive underwriting profitability
  - average reported underwriting profit of 3% over the last 3 years
  - average reported underwriting profit of 6% over the last 5 years
  - average reported underwriting profit of 9% over the last 10 years
  - average reported underwriting profit of 5% over the last 20 years
- Cost of carry – Reserve float to NEP is 1.3x – using the average of the last 20 years underwriting profit at 5% implies an average cost of carry of -3.8%. Underlying profitability over the last 6 years has averaged 7.5% to FY13 implying an average -5.8% cost of carry. QBE has historically been paid very well to hold float.



Reported underwriting trends have been depressed of late with FY11-FY13 at 2-3% but still noting it is in the black. Accident year underwriting trends over the same period were a much stronger 7.6%, suggesting the current underwriting issues appear temporary. This is also reflected in the FY14 guidance outlook of a 93% COR implying 7% on underwriting.

Thus far, QBE's recent reserving issues have not seen its COR rise above 100%, so despite all the problems, it has not had to call on its float to fund claims costs and its float has therefore been unencumbered.

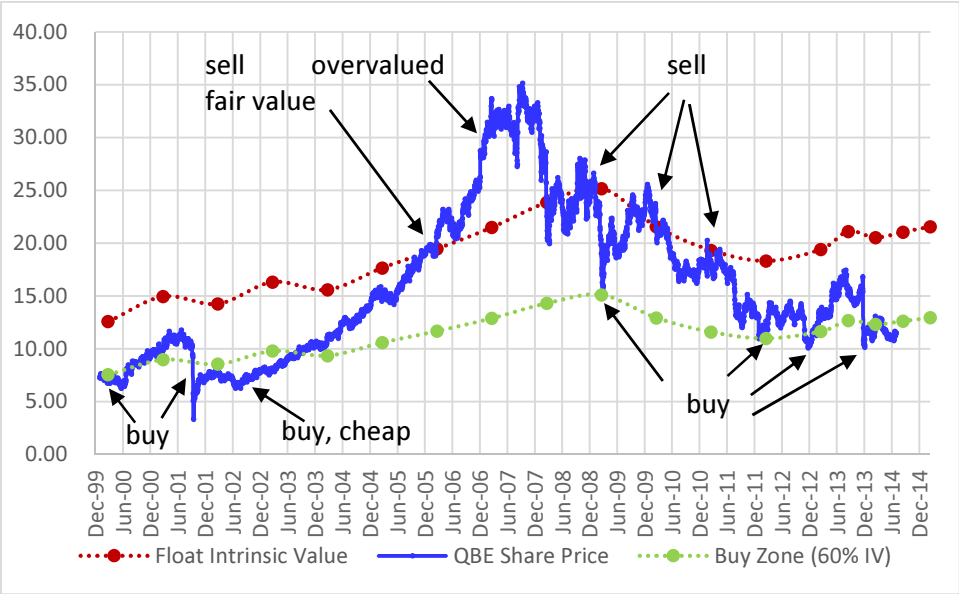
There is little evidence to suggest that QBE's underwriting performance will fall sustainably below 0% and therefore given the strong track record and positive underwriting margin outlook a float-based valuation can be warranted.

In the chart below, the red line represents the per share investments (insurance float + equity) less borrowings at the end of the reporting month (Feb/Aug) in A$. The blue line represents the A$ share price. Looking at the chart:

- QBE was cheap in early 2000 - a buy indicator
- QBE was cheap in late 2001 through to mid 2003 – a buy indicator
- QBE was fair value in early 2006 - a sell indicator
- QBE remained over valued to fair value from 2006 through to late 2009 – a sell indicator
- QBE was cheap in early 2009 (buy) and fair value in early 2010 (sell)
- QBE has remained cheap since Feb 2012 – a buy indicator

Again, I continue to be surprised at how this approach negotiates profitable entry and exits points in QBE stock.

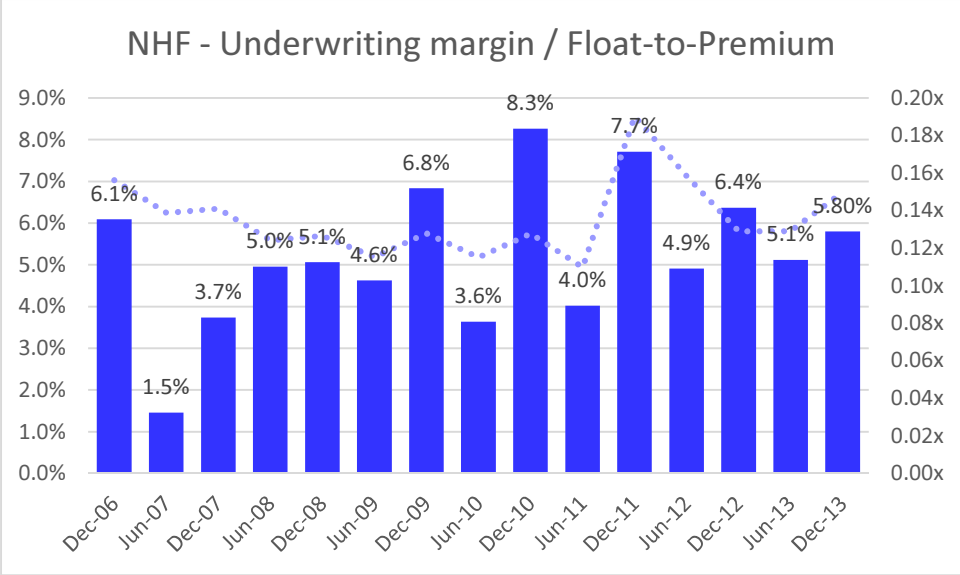
Looking forward, with QBE's current float-based intrinsic valuation of ~$20/share and current price of $11.50/share there is a substantial margin of safety and I expect patient investors will do well buying at current levels.



CASE EXAMPLE 3: NIB HOLDINGS (NHF)

NHF is an Australian listed health insurer operating in Australia and New Zealand.

- Underwriting consistency - 7 out of 7 years had positive underlying underwriting profitability (+100%)
- Cost of float - NHF has averaged an underwriting profit of 5%+ from FY07 to FY13. It gets paid well to hold float. Net margins have risen over time suggesting improving quality of float (as cost of carry becomes more negative).
- Cost of carry – Reserve float to NEP of 0.15x implies a cost of carry of close to -34% assuming a 5% net margin. This means while float is relatively small in size, it is hugely valuable, and particularly so if it can be grown. With such a large negative carry meaning a small probability of float being called upon (or encumbered), we can further capitalise the value of underwriting profits in our calculation of intrinsic value.



A float based intrinsic value calculation for NHF is a little more complicated than that for IAG or QBE given it is a growing as opposed to mature business and that underwriting profitability is consistent with low annualised volatility – this stems from health insurance being very short tail along with the ability to reprice out of underwriting problems. We therefore calculate two intrinsic values based on (1) the assumption of no growth and (2) assuming conservative future growth in premium and float. In addition we capitalise the value of underwriting profits (we use the trailing 12 month net margin with a 5% cap). This is a unique difference for health insurers as with P&C insurers we consider underwriting profitability too volatile and unpredictable over short-periods to warrant capitalisation in a conservative valuation estimate.

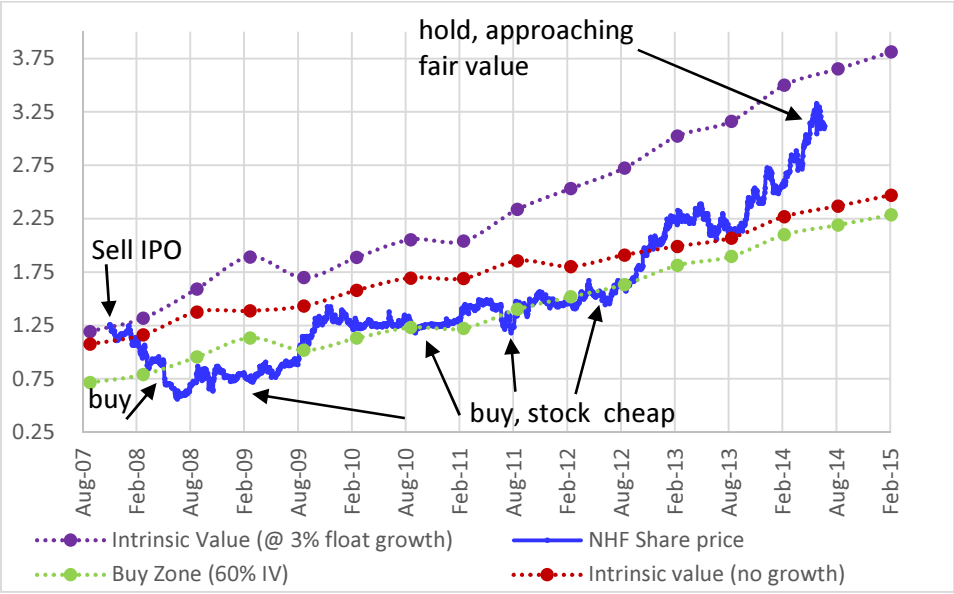
1) For our no growth valuation we assume a 7x pre-tax multiple on underwriting profits, plus investments less debt. This is shown by the red line.
2) For our growth valuation we assume a 9x pre-tax multiple on underwriting, plus shareholder investments, plus insurance liabilities adjusted for 3%pa growth relative to the 10 year bond. This is shown in the purple line.

   So for a hypothetical $100 of insurance liabilities and a 5% 10 year bond yield, we would assume the value of float at 100*5%*(1-30%)/(5%-3%) = $175 – it might sound high but remember it is money you get to keep, has a large negative capital cost (you get paid to keep it) and grows and is therefore extremely valuable. We also collar the 10 year bond in the denominator at 4% to avoid valuing the float at nonsensical levels when bond yields drop precipitously close to our growth assumption.

The chart below shows:

- NHF became very cheap by early 2008 and remained so through to August 2012 trading below float-based intrinsic value with zero growth assumptions – a long stretch of buying opportunity
- And hence was extremely cheap and in-line with 60% of its intrinsic value, when factoring in conservative growth assumptions
- NHF is currently not expensive but is approaching levels near fair value – however, the passing of time should see the intrinsic value rise and could warrant continuing to hold the stock.

- If an investor takes the view that NHF's growth has matured, the appropriate valuation line (in red) should be used. On this basis NHF would be currently overvalued. I do not believe that this is currently the case given private health sector growth and improving market share trends.



The approach appears to identify a sell signal on the IPO, with only buying opportunities thereafter. The sell on IPO signal turned out timely followed by a subsequent buy, however, it's arguable that selling was probably a poor long-term call (you would have had to wait a long time to break-even though). Given the information known at the time, it was statistically the right call.

Looking forward, having bought well, the approach suggests continuing to hold NHF. While the margin of safety is neither small, nor large, the expected future growth in the intrinsic value over time would see the stock become progressively cheaper at current prices – it's too early to sell.

CASE EXAMPLE 4: SUNCORP GROUP

Suncorp is an Australian listed financial services business – primarily a P&C insurer with a small bank and life insurer.

- Underwriting consistency - In the P&C (general insurance) business, underlying underwriting trends are fairly similar to that discussed for IAG. I have estimated an underlying underwriting profit of >5% between 2010 and 2013. With insurance float to NEP of around 1.2x suggests a cost of carry of -4.5%

Because of Suncorp's multiple business units, the calculation of intrinsic value is a little trickier. For the Bank I use NTA and shareholder fund assets for the Life business. Surplus capital held at Group needs to be added to arrive at an intrinsic value. The table below highlights the calculation for recent periods.

	Feb-12	Aug-12	Feb-13	Aug-13	Feb-14
Insurance					
-Float	8,122	8,661	8,467	9,097	9,130
-Shareholder Funds	3086	3024	3504	3345	3318
-Debt	-713	-723	-711	-720	-730
Insurance value	10,495	10,962	11,260	11,722	11,718

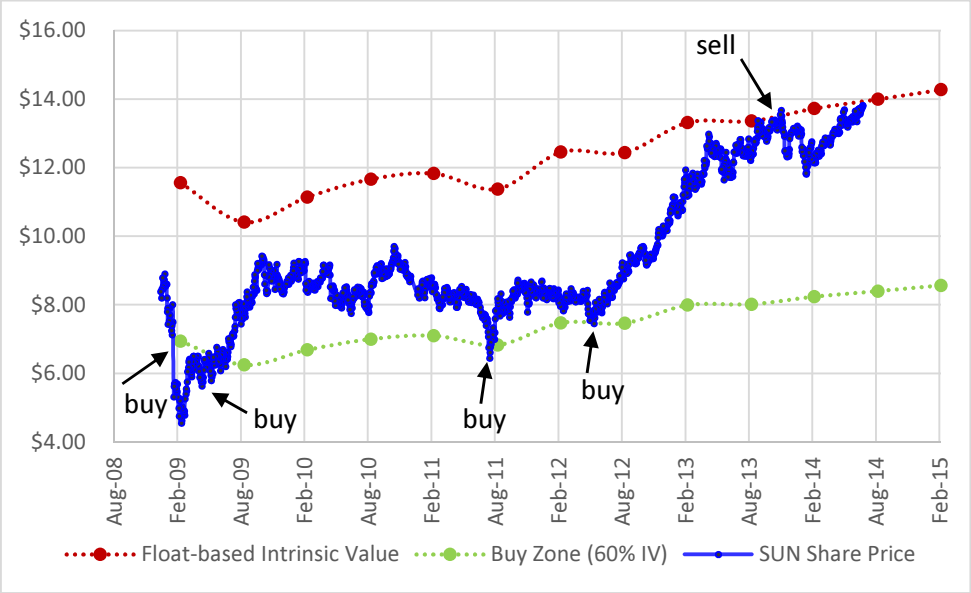
Bank NTA	2,924	2,714	3,184	3,114	3277
Life SHF	1,427	1,544	1,419	1,444	1296
Surplus capital	1,182	792	1,273	800	1257
Intrinsic value	**16,028**	**16,012**	**17,136**	**17,080**	**17,548**
Share count	1,287	1,287	1,287	1,278	1,278
IV per share	$12.46	$12.45	$13.32	$13.36	$13.73

The intrinsic value (buy and sell) ranges and share price for SUN are shown in the chart below:

- From early to mid 2009 SUN was trading below 60% of intrinsic value – a buy signal
- In August 2011 SUN fell below 60% of intrinsic value – a buy signal
- In mid 2012 SUN fell below 60% of intrinsic value – a buy signal
- In early 2014 SUN reach intrinsic value – a sell signal

I am again surprised at how this approach negotiates excellent entry and exits points in SUN stock.

Looking ahead SUN is currently trading in-line with intrinsic value – a typical sell signal. I expect investors will do poorly over time buying at these levels, and should sit out and wait for a more attractive entry price.



CASE EXAMPLE 5: GENWORTH MORTGAGE INSURANCE AUSTRALIA (GMA)

Genworth is an Australian listed lenders mortgage insurer (LMI) which recently listed in May 2014.

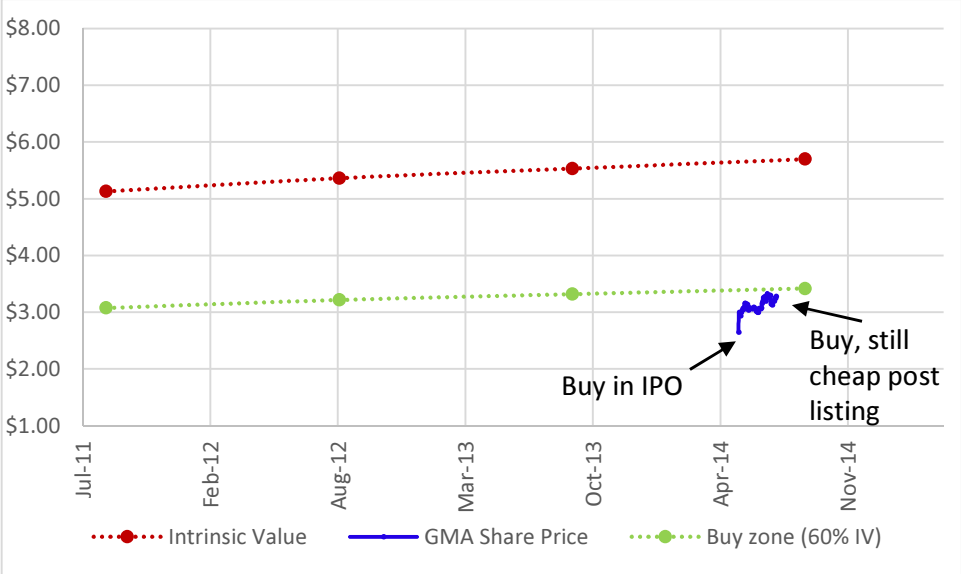
- Underwriting consistency – LMI businesses tend to have feast to famine underwriting performance, with long periods of strong profitability, followed by large losses.
- Underwriting profitability - Based on its prospectus, combined ratios are expected to average 73% between FY11-FY14F (ranging between 57.8% to 98.9%) – on average GMA is paid to hold float.
- Cost of carry is more leveraged to underwriting performance - One factor of note with LMI is that insurance liabilities (float) is very large relative to premium (around 3.7x reserves to NEP). Every 1% underwriting profit results in float having a negative carry of 1%/3.7 = 27bps, providing little safety to

the negative cost of carry if underwriting were to deteriorate rapidly. However, with GMA delivering a 73% COR over the last 4 years and expected 58% in FY14 this is not an immediate issue.

	FY11	FY12	FY13
Outstanding claims	336	302	241
Unearned premium	1023	1124	1249
Float	**1358**	**1426**	**1490**
Net Earned Premium	**368**	**363**	**398**
Float / NEP (x)	**3.7x**	**3.9x**	**3.7x**

My estimates in the table below suggest the $2.65/share IPO was priced at 48% of float-based intrinsic value and the current share price of $3.30/share is at 60% of float-based intrinsic value – note these are on the historical FY13 basis with float growing FY14 intrinsic values should step higher. The market is offering large margins of safety.

LMI businesses are always tricky given the risk of large losses just around the corner. Investors that are bearish on the future mortgage market may well turn out to be correct, however (as we have seen in the previous examples), insurers in a pickle typically still traded at or near 60% of float-based value (assuming the episode is not life threatening to business survival). Therefore, it appears most of the negativity may well have been priced in already with the IPO and current share prices potentially reflecting a bargain. Time will tell whether this turns out to be an accurate or false positive buy signal.



Genworth	FY11	FY12	FY13
Investments ($m)	3,472	3,625	3,735
Debt ($m)	-136	-137	-138
Intrinsic Value ($m)	**3,336**	**3,488**	**3,597**
Num Shares (#m)	650	650	650
Per share value	**$5.13**	**$5.37**	**$5.53**
% IV growth		*4.6%*	*3.1%*
IPO price (15 May 2014)			$2.65

% Intrinsic Value	48%
Current Share price	$3.30
% Intrinsic Value	60%

To further illustrate its statistical cheapness, let's consider a catastrophe scenario (high unemployment, rising interest rates and falling house prices) where the COR is say 200% for three years running, total loss costs would be 6x annual premium and would be funded equally with 3 years of new annual premium and 3x from existing float. The amount funded from float (at 3x premium) for GMA would be ~$1.2bn (3x$400m). If we take GMA's FY13 float and impair this by $1.2bn for a possible mortgage insurance disaster scenario, the pro-forma float-based valuation would then be $3.70/share – therefore, the current share price is at 90% of a hypothetical catastrophe scenario – and so it appears downside risk may largely be already factored into GMA. Furthermore, post any loss scenario, a return to profitability would see the float (and hence intrinsic value) continue to rise above $3.70 post loss.

	FY13	Loss scenario	Pro-forma
Equity	2,245		2,245
Float	1,490	-1194	296
Investments	**3,735**		**2,541**
less debt	-138		-138
Float intrinsic value	**3,597**		**2,404**
per share	**$5.53**		**$3.70**
Share price	$3.30		$3.30
% Intrinsic value	*60%*		*89%*

Looking forward, GMA appears cheap, and with downside risks priced in, it should prove an attractive risk-reward opportunity at current levels. For the record, I am a bear on the housing market. As we have seen in previous examples insurers can trade down to 60% of intrinsic value in bad times, and if a disaster plays out, its possible that GMA could technically trade towards 60%*$3.70=$2.20/share if or when it occurs – this would be a rare and wonderful opportunity to increase holdings. If you got in at the IPO price of $2.65 you have equally bought well.

CASE EXAMPLE 6: CHALLENGER FINANCIAL (CGF)

Challenger is primarily an annuities business with a smaller funds management business. I have been tossing up whether to include this stock, but I have decided to for completeness. The interpretation of float is a little different to the P&C/health insurers mentioned in previous examples. It also serves to highlight that not all float is created equal and differs in quality.

Annuity sales are the primary source of CGF's float. It receives this money upfront and invests in a range of asset classes (fixed income, property, infrastructure and equities) and pays out periodic payments to annuitants.

Below is the balance sheet for CGF's Life business which shows $7.6bn of retail annuity liabilities and $1.0bn of guaranteed index return liabilities (wholesale annuities) – collectively this provides around $8.6bn of "other people's money" that CGF gets to hold. Indeed the balances are enduring and in-fact growing.

Management balance sheet

$m	1H14	FY13	1H13	FY12	1H12
Life balance sheet					
Assets					
Life investment assets					
Cash and equivalents	1,331.5	1,292.7	441.3	556.9	625.5
Asset backed securities	3,425.4	3,397.3	3,593.4	3,160.8	2,652.9
Corporate credit	3,075.3	3,366.8	3,692.1	3,363.0	2,664.0
Other	151.0	162.4	247.4	307.4	426.9
Fixed income and cash (net)	**7,983.2**	**8,219.2**	**7,974.2**	**7,388.1**	**6,369.3**
Australian – Office	657.6	656.8	643.9	781.8	771.6
Australian – Retail	437.4	260.0	131.4	122.1	114.0
Australian – Industrial	134.6	130.6	123.7	125.6	149.8
Japanese	233.9	241.4	235.3	247.4	257.5
REITS and other	488.5	472.3	406.6	262.4	259.2
Property (net)	**1,952.0**	**1,761.1**	**1,540.9**	**1,539.3**	**1,552.1**
Infrastructure (net)	520.9	488.4	426.9	617.5	568.4
Equity and other investments	433.1	318.5	227.7	228.4	219.3
Life investment assets	**10,889.2**	**10,787.2**	**10,169.7**	**9,773.3**	**8,709.1**
Other assets (including intangibles)	490.4	612.4	847.9	874.4	898.1
Total assets	**11,379.6**	**11,399.6**	**11,017.6**	**10,647.7**	**9,607.2**
Life retail annuity book	7,617.2	7,123.3	6,819.6	6,553.0	6,065.0
Guaranteed index return liabilities	1,000.3	1,751.4	1,777.0	1,851.2	1,446.8
Subordinated debt	509.5	510.1	472.3	450.1	460.9
Other liabilities	301.2	149.5	183.7	132.7	155.6
Total liabilities	**9,428.2**	**9,534.3**	**9,252.6**	**8,987.0**	**8,128.3**
Net assets	**1,951.4**	**1,865.3**	**1,765.0**	**1,660.7**	**1,478.9**

Because this is not a risk insurance business, there is no 'underwriting' profit but we still need to assess the funding cost of the float – these costs are the interest payments paid to annuitants and fees and commissions and operating expenses of the life company. The analysis below shows that CGF pays a high cost of carry for the float – while it is improving, at the end of 1H14 it was still ~150bps above the 10 year bond. Recall that Buffett has historically borrowed his float at a negative cost of carry at 480bps below the 10 year bond (in years where he has paid to keep it). With CGF's cost of float at a spread above the treasury rate, the float behaves similar to debt, and therefore in assessing intrinsic value we should treat it more like a liability than as equity.

CGF	1H12	2H12	1H13	2H13	1H14
Average annuities and GIR	7302	7981	8463	8667	8623
Average sub-debt	470	459	465	491	509
Average funding (float)	7772	8440	8928	9158	9132
Interest expense	-207	-202	-203	-196	-200
Fees and commissions	-13	-11	-13	-12	-15
Operating expenses	-34	-34	-35	-35	-37
Total cost of float	-254	-247	-251	-243	-251
Cost of Carry (CoC)	6.53%	5.84%	5.62%	5.32%	5.51%
10 year bond	3.87%	3.02%	3.46%	3.73%	4.04%
CoC spread	*2.67%*	*2.82%*	*2.16%*	*1.58%*	*1.47%*

Perhaps this is why we haven't seen Buffett foray into the annuities business – P&C insurance structurally remains more attractive and a cheaper source of float than annuities. Equally, Buffett's superior investment returns could make the annuity model very profitable, however, his preference for the marginal dollar of capital to invest should remain focussed on growing P&C float until growth is exhausted and its cost of carry rises.

At this stage, CGF does not warrant a float-based valuation. It could possibly do so if the cost of carry fell below the government bond rate. The cost of carry is certainly improving and there are a number of ways it could

warrant a float based valuation in the future. Growth in new products such deferred lifetime annuities are an example where float can be held for long periods with interest funding costs deferred long into the future. Additionally, writing life risk through mortality swaps can provide a source of underwriting profits to cheapen the cost of float and at the same time provide capital relief given the negative correlation of mortality v longevity risk.

FLOAT QUALITY – NOT ALL FLOAT IS CREATED EQUAL

As we have seen above, each insurer has differing capital structure with respect to float – its size, growth, carry costs all contribute to its quality. From the table below we make the following observations:

1) Float per dollar of equity: The annuity business has the largest float per dollar of equity at 4.4x, outside of this traditional P&C insurers are largest with QBE at 2x. NHF is the lowest at 0.6x owing to the short-tail and capital light nature of health insurance. While GMA's float to equity also appears low at 0.7x this is due to the outsized equity base given the high capital requirements for LMI business.
2) Float relative to premiums: Excluding CGF, these are highest for Genworth's LMI business (long-tail premium liabilities) and lowest for NHF given its short-tail and low risk nature
3) Quality of float: Tragically, CGF has the poorest quality float with a positive cost of carry. All the other insurers have 'quality' float in that strong underwriting profits lead to a large negative cost of carry. NHF's cost of carry is the strongest given the combination of high underwriting margins and low float to NEP.
4) Valuation to float: NHF's is the highest at 4.6x as we include the capitalised value of underwriting profit in the valuation. This is justifiable given the cost of carry is a very strong -34%. We do not include an underwriting multiple for IAG/QBE (with cost of carry at -5%) as the reliability of consistent reported underwriting profits is less than for health insurance. CGF's cost of carry is reliably poor and above risk-free borrowing rates.

	IAG	QBE	NHF	GMA	SUN ^	CGF ^
	1H14	FY13	1H14	FY13	1H14	1H14
Accounting equity	6,280	10,403	350	2,211	8,018	1,951
Float	9,300	20,332	218	1,490	9,130	8,618
Float / Accounting Equity	1.5x	2.0x	0.6x	0.7x	1.1x	4.4x
No growth float valuation	13,104	25,568	1,000	3,597	11,789	1,951
Valuation / Insurance float	1.4x	1.3x	4.6x	2.4x	1.3x	0.2x
Valuation / book equity	2.1x	2.5x	2.9x	1.6x	1.5x	1.0x
NEP	4320	15396	735.4	398	3865	1748
Float / NEP	1.1x	1.3x	0.15x	1.9x	1.2x	2.5x
Assumed long-term UW margin %	4.7%	7.0%	5.0%	15%	5.0%	na
Float cost of carry	-4.4%	-5.3%	-33.8%	-8.0%	-4.2%	5.5%

^ SUN reflects general insurance business only, CGF reflects life only and assumes valuation=net assets and life sales as NEP/flow

THE BUY ZONE - 60C IN THE DOLLAR OF INTRINSIC VALUE

Some readers may question why I chose 60% of intrinsic value as the 'buy' signal. The performance of this point seems a little too convenient at picking up lows and turning points of insurance stocks. For the record, it is not a number that I 'back-fitted' to make the approach work on a historical basis. Even if I selected a higher or lower threshold it would only change the achieved return and frequency of trades in an inverse fashion. That is, lower

than 60c would see few trades but with higher returns, and higher would see more frequent trades with lower returns. Here are some reasons why I think 60c per dollar of intrinsic value is the 'magic' number:

- ⇨ **Buying 60c dollars helps achieve 20%pa returns**– Buffett has compounded money at around a 20% clip over the long-term. Buying a dollar for 60c and assuming a 3 year work-out period results in an 18.6%pa capital gain + a few points from dividends to target 20%+ total returns.

- ⇨ **Buying 60c dollars is well known in value investing circles** – something encouraged by Ben Graham and investors following in his footsteps. I will not elaborate on this any further.

- ⇨ **Buffett would buy-back Berkshires insurance business at around 60c in the dollar** – elaboration is required here…

1) Buffett has well flagged that it would buy back Berkshire stock if it were to fall below 1.2x book value. Berkshires 2013 book value was $224bn implying if Berkshires market cap were to fall below $269bn then Buffett would buy-back stock.

2) Buffett has also indicated that book value significantly underestimates Berkshires intrinsic value. If we take the numbers as provided and calculate the value of book equity plus float (less insurance goodwill as this was the cost to acquire float) we get the following understated value of Berkshire of $268bn which just so happens to also be 1.2x book. This is unlikely to be a coincidence – 1.2x book is a back of the envelope conservative intrinsic value calc (essentially equity + float) to find Buffett's buy-back price.

Berkshire Equity	224.5
+ Insurance float	77.2
- less insurance goodwill	-33.4
Value	268.4
Multiple of book value	*1.195x*

3) So what does this imply about the value of the insurance business? To determine this we need to back out the value of the operating businesses. Whitney Tilson has done some work identifying that Buffett likely uses a 10-13x pre-tax multiple to value the non-insurance operating businesses (higher multiples in the past and lower more recently). The table below show that these multiples imply a 51% to 66% price-to-intrinsic value for the insurance company. An 11x multiple for operating assets suggest a buyback at 1.2x book would be acquiring the insurer for 61c in the dollar. And bingo, that's good enough reason for me to choose 0.6x intrinsic value as a good buying signal.

Implied insurance price-to-intrinsic value implied buy BRK buy-back at 1.2x book				
Buy-back value @1.2x book	269	269	269	269
Group pre tax operating earnings	28.8	28.8	28.8	28.8
less insurance earnings	-17.3	-17.3	-17.3	-17.3
=Non-insurance earnings	11.5	11.5	11.5	11.5
x Multiple	10.0x	11.0x	12.0x	13.0x
=Value of operating businesses	115	126	138	149
Implied buy-back price of insur	**155**	**143**	**132**	**120**
Insurance equity	192	192	192	192
+ float	77	77	77	77
- less insurance goodwill	-33	-33	-33	-33
Insurance intrinsic value	**235**	**235**	**235**	**235**
Buy-back price / Intrinsic Value	0.66	0.61	0.56	0.51

^ All figures 2013 year end values

INSURANCE CONCLUSIONS

- Float and its nature is crucial to understanding the economic dynamics of an insurer.
- Every companies float is a little different with variable quality characteristics.
- A Float-based valuation approach for insurance investing is underrated and simple.
- Traditional methods such as DCF need to be disqualified for bad behaviour.
- Using a DCF will lead to mispricing and poor stock-picking opportunities.
- Buying stocks at 60c per dollar of float-based intrinsic value and selling at intrinsic value works over time
- Current stock picks are Buy (QBE, GMA), Hold (NHF) and Sell (IAG, SUN)
- Other considerations – I have obviously not focussed on other factors which should be considered here – I primarily assume that strong balance sheets pose no liquidity risks, capital intensity remains unchanged, and I have not assessed investment asset quality. The method is largely balance sheet and data-driven and ignorant of return metrics and operational trends other than taking an aggregated and somewhat binary view on long-term underwriting. However, analysts can easily factor in strategic scenarios to sensitivity test float-based intrinsic valuations (see Genworth example of mortgage market meltdown) such that investments can be made with a risk-based approach in mind.

Disclosure: I do not hold any of the securities mentioned above at the time of writing. I may or may not trade these securities in the future. Any recommendations do not constitute investment advice and are purely for learning purposes only. Please do your own research and/or seek professional financial advice.