Investing in Insurance Companies

A Focus on Chubb Insurance

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Insurance Businesses - Not the Most Exciting

Insurance businesses, in the fast changing, ever innovative technology era are not the most attractive to purchase. Many consider insurance businesses to be not exciting, and rightfully so. However, this could also mean that many investors may be skipping past many insurance businesses and that there are many undervalued gems that have yet to be discovered.

The Business Model of Insurance

The insurance companies conduct 2 core operations to make money - charging premiums & investing the premiums. Customers pay insurance companies premiums because they expect a payout from the insurance companies. However, customers usually only receive a payout far into the future and therefore, insurance companies hold onto the premiums paid for by the customer, until it has to be paid out. We call it **float**. Float is the money held by the insurance company that does not belong to the company because it will have to be paid out in the future.

However, the insurance companies will need a way to make money with the float, because it does not belong to the insurance company. Therefore, the insurance companies will invest the float into interest generating assets, until when claims are made in the future and have to be paid out.

If we think about it, we will realize that insurance companies work similarly to how a bank company would. The bank company uses your deposited money to generate income through investments, and payout in the future when you withdraw your deposits, similar to what the insurance companies do with your premiums.

The Cost of Float

Sometimes, not all the premiums paid by the customer gets paid out. If the risks the customer is paying for does not occur, or occur infrequently enough that only a fraction of the premiums collected gets paid out, we call it an underwriting profit. When the inverse is true, we call it an underwriting loss.

The cost of underwriting is the cost of holding the float. Just like how paying interests on the deposits in the bank are costs to holding the deposits. However, for a bank, it is straightforward. We know clearly the costs of holding the deposits in the bank - it is the interests that it pays on the deposits. For an insurance company, it is not so straightforward, but why? Because most insurance companies insure risks like accidents and catastrophe and the payout amounts often depend on the frequency and scale of such risks which are very hard to predict.

Calculating the Cost of Float

The cost of float is always changing every year, depending on the rate and scale of accidents and catastrophes of that year. However, we can calculate the cost of float in hindsight which can give us an insight to the underwriting discipline of the company. Let us look at a an annual report filed in 2023 by Chubb as an example:

North America Commercial P&C Insurance

The North America Commercial P&C Insurance segment comprises operations that provide P&C insurance and services to large, middle market, and small commercial businesses in the U.S., Canada, and Bermuda. This segment includes our North America Major Accounts and Specialty Insurance division (large corporate accounts and wholesale business), and the North America Commercial Insurance division (principally middle market and small commercial accounts).

				% Change	
(in millions of U.S. dollars, except for percentages)	**2023**	2022	2021	2023 vs. 2022	2022 vs. 2021
Net premiums written	**$19,237**	$17,889	$16,415	7.5 %	9.0 %
Net premiums earned	**18,416**	17,107	15,461	7.7 %	10.6 %
Losses and loss expenses	**11,256**	10,828	10,015	4.0 %	8.1 %
Policy acquisition costs	**2,515**	2,313	2,082	8.7 %	11.1 %
Administrative expenses	**1,250**	1,113	1,052	12.4 %	5.7 %
Underwriting income	**3,395**	2,853	2,312	19.0 %	23.4 %
Net investment income	**3,017**	2,247	2,078	34.3 %	8.1 %
Other (income) expense	**22**	17	31	27.4 %	(45.9)%
Segment income	**$ 6,390**	$ 5,083	$ 4,359	25.7 %	16.6 %
Loss and loss expense ratio:					
CAY loss ratio excluding catastrophe losses	**60.2 %**	61.3 %	62.7 %	(1.1) pts	(1.4) pts
Catastrophe losses	**3.8 %**	5.6 %	7.2 %	(1.8) pts	(1.6) pts
Prior period development	**(2.9)%**	(3.6)%	(5.1)%	0.7 pts	1.5 pts
Loss and loss expense ratio	**61.1 %**	63.3 %	64.8 %	(2.2) pts	(1.5) pts
Policy acquisition cost ratio	**13.7 %**	13.5 %	13.4 %	0.2 pts	0.1 pts
Administrative expense ratio	**6.8 %**	6.5 %	6.8 %	0.3 pts	(0.3) pts
Combined ratio	**81.6 %**	83.3 %	85.0 %	(1.7) pts	(1.7) pts

Net Catastrophe Losses and Prior Period Development

(in millions of U.S. dollars)	**2023**	2022	2021
Net catastrophe losses	**$ 710**	$ 961	$ 1,112
Favorable prior period development	**$ 494**	$ 562	$ 762

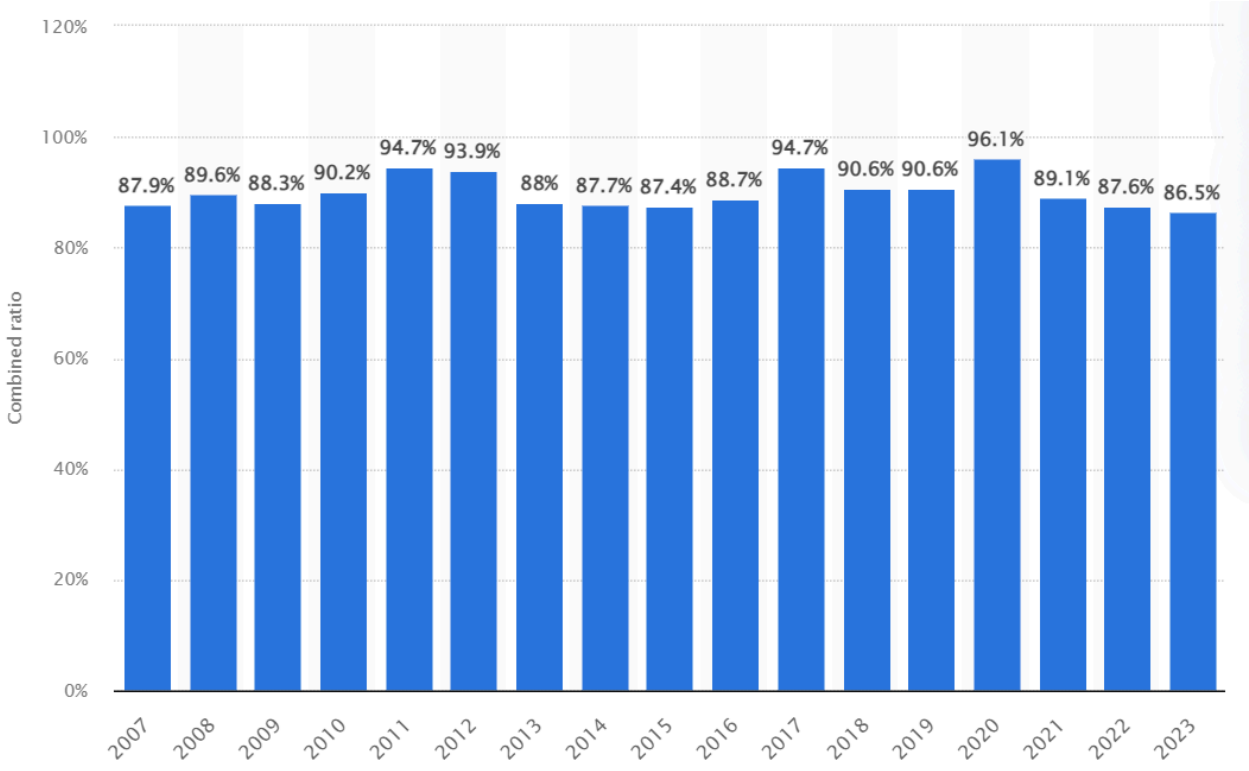
Taken from Page 115 of Chubb's 2023 Annual Report

Let us focus on the **North America Commercial Property and Casualty (P&C) segment** for the year 2023. In 2023, the net premium earned by Chubb is $18.4b. After subtracting all the expenses incurred, Chubb made an underwriting income of $3.3b. So what does that mean? That means that the cost of holding the float in 2023 for Chubb is actually negative - they are getting paid to hold that money. That is amazing, but how much are they getting paid to hold that money exactly? If we were to express everything in % terms, we get a combined ratio of 81.6%. The combined ratio tells us how much an insurance loses for every dollar of premium earned. In the example given above, the combined ratio is 81.6%, therefore, we can conclude that for every dollar of premium Chubb earns, it loses 81.6 cents.

Thus, Chubb nets 18.4 cents for every dollar of premium earned just for holding the money, which is impressive.

A Consistent Performance

One year of underwriting profit does not mean much. We have to look at long periods of time to determine how disciplined the insurance company's underwriting actually is. We will continue to use Chubb as an example. Let us obtain a quick summary on Chubb's consolidated P&C underwriting performance for the past 17 years:



Obtained from Statista

Chubb has been a consistent disciplined underwriter, making an underwriting profit for the past 10 years. If an insurance company does not make a consistent underwriting profit for a long period, it could be a warning sign.

The Importance of Disciplined Underwriting

Disciplined underwriting is important. But why? Let us imagine a scenario. If an insurance earns money on the float that it holds, it would only be logical that it would earn more money if it has more float. So if I were an irresponsible insurance company that is attempting to grow its float fast, I would write policies with cheap premiums to attract as many customers as possible.

But there would be a problem - the premiums collected are way too low for the risks that I am insuring. My dumb actions might not be evident for years until a large-scale catastrophe hits. When it hits, I would then realize the premiums I have charged are too low and are insufficient to cover my payouts, and therefore, will go bust.

As the legendary investor Warren Buffet would say, *"you don't find who's been swimming naked until the tide goes out"*

An Intangible Green Flag

As an investor, I like to read annual reports. I would love to see how the CEO of the company feels about his or her own company. And especially for insurance, I would hope to see in the annual report on what he/she thinks of the potential dangers of poor underwriting disciplines. Let us take a look again, at Chubb's annual report; A quote that has really made me feel confident about the business:

> "At times, shedding revenue when we can't make a profit is a strength and, in fact, leads to improved profit margins and income growth for Chubb. In this business, choosing to shrink at the right moments is a strength."

Taken from Page 8 of Chubb's Annual Report

When premiums chargeable to customers are brought down to a risk-adjusted, unprofitable price, due to increased competition in the insurance space, the only right approach is to not write the premiums. This would mean that revenue decreases, this would mean that the float shrinks, but this also guarantees that the insurance company will stand when others fall.

When the CEO of the insurance company is able to communicate to me that he/she puts great importance in maintaining the discipline of the underwriting, it makes me feel confident about the company.

The Magic of a Cost-Free Float

Now we know why disciplined underwriting is important because it allows insurance companies to borrow money for free, even better yet, get paid for it. However, there will be times that are catastrophe ridden, and that would inevitably result in an underwriting loss, no matter how disciplined the underwriting is.

Therefore, it is also important to put that cost-free float to work, by investing in interest paying assets. This could boost the earnings of the company during times of profitable underwriting, and cushion the company during times of underwriting losses.

Financially Strong

The fastest and quickest way to gauge the financial strength of an insurance company is to find out the ratings awarded to the company by different credit rating agencies. Once again, we will use Chubb for an example:

When we look at AM Best's rating of Chubb, we can see that it has rated the financial strength of Chubb as **A++**, which is the highest rating that AM Best can award. When we take a look at the disclosure report in detail to find out why Chubb can be awarded such a high rating, there are 2 points we can focus on:

1. **Strong Balance Sheet**
   Strong risk-adjusted capital strength with prudent loss reserve and uses comprehensive reinsurance programs.

	December 31, 2023	
(in millions of U.S. dollars, except for percentages)	Fair Value	% of Total
U.S. Treasury / Agency	$ 3,590	3 %
Corporate and asset-backed securities	42,830	37 %
Mortgage-backed securities	22,058	19 %
Municipal	2,929	3 %
Non-U.S.	38,937	34 %
Short-term investments	4,551	4 %
Total [1]	$ 114,895	100 %
AAA	$ 12,669	11 %
AA	34,312	30 %
A	27,674	24 %
BBB	20,810	18 %
BB	10,270	9 %
B	8,580	7 %
Other	580	1 %
Total [1]	$ 114,895	100 %

Taken from Page 132 of Chubb's 2023 Annual Report

When we look at the fair values of the fixed investments that Chubb is investing in, we can see that Chubb has 83% of its portfolio in investment grade investments (BBB and above). This indicates the majority of Chubb's portfolio has less than a default rate of 1%, which is extremely assuring.

2. **Strong Operating Performance**
   As stated earlier, Chubb has been performing impressively in terms of underwriting, with more than 10 years of profitable underwriting. Even with recent years of higher catastrophe count and the impact of Covid-19, Chubb has still managed to generate a strong underwriting profit, which further re-assures the A++ rating

Calculating the Float

Float is the magic of insurance companies because of how they can invest it. We know that a float is money that an insurance company holds but isn't theirs, but what exactly is a float's composite? To calculate it, we need to take a look at the balance sheet and use the general formula below:

Float = *unpaid losses + loss adjustment expense + unearned premium + other policyholder liabilities - premium balance receivable - loss recoverable from reinsurance ceded - deferred policy acquisition costs - deferred charges on reinsurance - related deferred income tax*

**red highlight indicates liabilities and green indicates assets*

Remember, there is no one formula that fits all in investing. Always make the adjustments you deem necessary. The above formula only is the general formula for float. Now, we will calculate Chubb's float:

We will calculate the liabilities that make up Chubb's float first.

Liabilities		
Unpaid losses and loss expenses	$	80,122
Unearned premiums		22,051
Future policy benefits		13,888
Market risk benefits		771
Policyholders' account balances		7,462
Separate account liabilities		5,573
Insurance and reinsurance balances payable		8,302
Securities lending payable		1,299
Accounts payable, accrued expenses, and other liabilities (includes VIE balances of $18 and nil)		8,332
Deferred tax liabilities		1,555
Repurchase agreements (includes VIE balances of $1,009 and nil)		2,833
Short-term debt		1,460
Long-term debt		13,035
Trust preferred securities		308
Total liabilities		166,991

Taken from Page 168 of Chubb's 2023 Annual Report

We will add up the **unpaid losses and losses expenses**, **unearned premiums** and **Policyholders' account balances** to get the liabilities equation for float, which sums up to be approximately $110B

Then, we will need to subtract the values from the asset side:

(in millions of U.S. dollars, except share and per share data)	December 31, 2023	
Assets		
Investments		
Short-term investments, at fair value (amortized cost – $4,551 and $4,962) (includes variable interest entities (VIE) balances of $217 and nil)	$	4,551
Fixed maturities available-for-sale, at fair value, net of valuation allowance – $156 and $169 (amortized cost – $111,128 and $93,355)		106,571
Fixed maturities held to maturity, at amortized cost, net of valuation allowance – nil and $34 (fair value – nil and $8,439)		—
Private debt held-for-investment, at amortized cost, net of valuation allowance – $4 and nil		2,553
Equity securities, at fair value (includes VIE balances of $1,078 and nil)		3,455
Private equities (includes VIE balances of $21 and nil)		14,078
Other investments (includes VIE balances of $3,773 and nil)		5,527
Total investments		136,735
Cash, including restricted cash $172 and $115 (includes VIE balances of $117 and nil)		2,621
Securities lending collateral		1,299
Accrued investment income		1,086
Insurance and reinsurance balances receivable, net of valuation allowance – $53 and $52		13,379
Reinsurance recoverable on losses and loss expenses, net of valuation allowance – $367 and $351		19,952
Reinsurance recoverable on policy benefits		280
Deferred policy acquisition costs		7,152
Value of business acquired		3,674
Goodwill		19,686
Other intangible assets		6,775
Deferred tax assets		1,741
Prepaid reinsurance premiums		3,221
Investments in partially-owned insurance companies		191
Separate account assets		5,573
Other assets (includes VIE balances of $33 and nil)		7,317
Total assets	$	230,682

Taken from Page 168 of Chubb's 2023 Annual Report

Total Reinsurance Recoverable + Deferred Policy Acquisition Cost + Deferred Tax Assets = $29.1B

Chubb's Float: 110b - 29.1b = 80.9b

So after calculation, Chubb's float is valued at approximately **$81B**. The calculation of the float will be handy when calculating the fair value of Chubb.

Liquidation Value

A quick way to approximate the fair value of an insurance company is to calculate its tangible book value. But why isn't a fair value of a company determined by its earnings and not book value? That would be correct.

However, most financial companies like insurance and banks are like a holding company. It earns by holding many interest earning investments and they are often recorded at fair value on the balance sheet. Therefore, we can approximate the present value of the insurance companies by looking at how much it is worth after liquidating all its assets and paying off all of its liabilities. That would lead us to the tangible book value of the company

Tangible Book Value = Equity - Goodwill - Intangible Assets

Again, we will use Chubb as an example:

Commitments and contingencies (refer to Note 14)		
Shareholders' equity		
Common Shares (CHF 0.50 and 24.15 par value; 431,451,586 and 446,376,614 shares issued; 405,269,637 and 414,594,856 shares outstanding)		**241**
Common Shares in treasury (26,181,949 and 31,781,758 shares)		**(4,400)**
Additional paid-in capital		**15,665**
Retained earnings		**54,810**
Accumulated other comprehensive income (loss) (AOCI)		**(6,809)**
Total Chubb shareholders' equity		**59,507**
Noncontrolling interests (includes VIE balances of $2,705 and nil)		**4,184**
Total shareholders' equity		**63,691**
Total liabilities and shareholders' equity	**$**	**230,682**

Taken from Page 168 of Chubb's 2023 Annual Report

The equity is calculated for us at 63.6B in the balance sheet. Now we will subtract the intangible assets and goodwill.

(in millions of U.S. dollars, except share and per share data)	December 31, 2023
Assets	
Investments	
Short-term investments, at fair value (amortized cost – $4,551 and $4,962) (includes variable interest entities (VIE) balances of $217 and nil)	$ 4,551
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Total assets	$ 230,682

Taken from Page 168 of Chubb's 2023 Annual Report

So the tangible book value of Chubb is:

Tangible Book Value = 63.6B - 19.6B - 6.7B = **37.3B**

Now, we will need to factor in taxes, at around 21%. After all, we want to find out the present value of the insurance company. If we were to sell off all its assets now, we would have to pay taxes.

Therefore, at 21% taxes, the after tax tangible book value would be approximately **29B**.

So Chubb Tangible Book Value is approximated at 29B. However, does this mean Chubb is only worth 29B? That is only true if Chubb is liquidated. However, as a company that is still operating, we need to include one more factor.

A Liability? Or Something Special

Float, as iterated before, is a money that the company holds but isn't theirs. Doesn't that mean that it is a liability? It depends. For a strong insurance company, it is not a liability. Let us assume that you are running an insurance company that practices strong underwriting. This means you would be able to borrow money at no costs and

essentially, get paid for borrowing the money. To put the concept into picture, let us use an example given by Warren Buffet during his 1998 Berkshire's shareholder meeting:

Let us assume your float is valued at about 50B. If someone were to pay you in cash *(which is essentially equity)* in exchange for your float and, as a condition, you would have to stay out of the insurance business forever, would you do it?

If you were to accept it, that would mean that you would have less going for you in future because you are no longer able to borrow money at a negative cost by staying out of the insurance business. In my opinion, it would not be smart to exchange 50B of float for 50B of equity.

Therefore, from the example above, even though a float is recorded as a liability on the balance sheet, we can conclude it actually has the worth of an equity. That would not be the case if you obtain the float at a high cost. But if you are able to obtain the float at no cost, or even better, negative cost, the float becomes very valuable.

Therefore, if you are analyzing a strong insurance company, the float should be treated as an equity, not a liability. However, to emphasize, this would not be the case if the insurance company has a poor underwriting discipline and often makes underwriting losses to obtain the float.

A Loan from the Government

There is also one more liability that is recorded on the insurance company's balance that is of benefit to the company - deferred tax liabilities. When we look at Charlie Munger's 1998 Wesco Shareholder letter, this is what he thinks about deferred tax liabilities:

"The foregoing $312-per-share book value approximates liquidation value assuming that all Wesco's non-security assets would liquidate, after taxes, at book value. This assumption is probably too conservative. But our computation of liquidation value is unlikely to be too low by more than two or three dollars per Wesco share, because (1) the liquidation value of Wesco's consolidated real estate holdings 7 (where interesting potential now lies almost entirely in Wesco's equity in its office property in Pasadena) containing only 125,000 net rentable square feet, and (2) unrealized appreciation in other assets (primarily Precision Steel) cannot be large enough, in relation to Wesco's overall size, to change very much the overall computation of after-tax liquidating value.

Of course, so long as Wesco does not liquidate, and does not sell any appreciated assets, it has, in effect, an interest-free "loan'' from the government equal to its deferred income taxes on the unrealized gains, subtracted in determining its net worth. This interest-free "loan'' from the government is at this moment working for Wesco shareholders and amounted to about $127 per Wesco share at year end 1998.

However, some day, perhaps soon, major parts of the interest-free "loan'' must be paid as assets are sold. Therefore, Wesco's shareholders have no perpetual advantage creating value for them of $127 per Wesco share. Instead, the present value of Wesco's shareholders' advantage must logically be much lower than $127 per Wesco share. In

the writer's judgment, the value of Wesco's advantage from its temporary, interest-free "loan'' was probably about $30 per Wesco share at year end 1998."

Obtained from Page 7-8 of Charlie Munger's 1998 Wesco Shareholder Letter

There are a few things to take note from what Charlie Munger has said. We should treat deferred tax liabilities as an interest free government loan. However, there will come a day when the asset held by the company will have to be liquidated and therefore, it has no perpetual advantage to its shareholders.

Let us use Chubb as an example again:

Liabilities		
Unpaid losses and loss expenses	$	80,122
Unearned premiums		22,051
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Taken from Page 168 of Chubb's 2023 Annual Report

Chubb has a deferred tax liability of approximately $1.5b. Just like what Charlie Munger has mentioned, we should treat this deferred tax liabilities as an interest free loan, almost like a float. However, it differs from a float as it will have to be sold some day in the future, whereas a float of a strong insurance company will grow overtime.

However, as he stated, the deferred tax liabilities is not worth the full $1.5b because it has no perpetuity advantage unlike the float. Therefore to calculate the current value of the deferred tax liabilities that bring to the company conservatively, we will use 25% of the value.

So the value that is added by the deferred tax liability is approximately **375m**.

A Fair Value

Now, when we connect the dots, a fair value of an insurance company can be calculated as such:

Fair Value = After Tax Tangible Book Value + Float + Present Value of Deferred Tax Liabilities.

So when we use that formula to calculate Chubb:

Fair Value = 29B + 81B + 0.375B

Which is equal to **110.375B,** which works out to be approximately **$266** per share. The intrinsic value of Chubb is worth much more than $266 per share when you factor in the growth of the float in the future and the ability to earn even more with profitable underwriting. However, when investing, we would like to purchase a piece of the business at a margin of safety, therefore, when paying **$266** per share for Chubb, you would be buying it at a sufficient margin of safety.

In Summary

Investing in insurance companies, like any other companies, focuses more on the qualitative factors instead of its quantitative. If an insurance company often makes poor judgment on their underwriting practices and takes on more risks than justified to grow its float, it wouldn't matter how cheap its stock is - because the chances of it going bust some time in the future is high.