

American International Group:
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Structure of AIG

In its 10K and annual report, AIG reports operating results in four major segments: General Insurance, Life Insurance, Financial Services, and Asset Management.

General Insurance is dominated by U.S. P&C insurance. Although it writes common commercial businesses and personal lines businesses, most of its earnings are in its traditional stronghold - specialty insurance.

Life Insurance is dominated by traditional life written outside the US. Only 10% of its life insurance is in the U.S., much of the domestic business was acquired with SunAmerica.

Financial Services is dominated by ILFC, International Lease Financing Corporation, which is the largest aircraft financing company in the world.

Asset Management includes mutual funds and hedge funds for retail and institutional investors.

Overview of Valuation

In a typical advisory assignment, Seabury Insurance Capital LLC (Seabury) would analyze the value creation of the segments within a company by calculating the segments' income and risk contribution. Future income contribution is calculated using internal financial projections. Our Enterprise Risk Model (ERM), a Value-at-Risk (VaR) based model, measures the risk contribution and capital allocation (within a company) based on a detail of the company's segments with respect to each segments' assets, liabilities and operating risks.

Due to the lack of data, Seabury did not push the analysis any further than to be able to draw broad conclusions about the value of the entire organization in comparison to a number of its peers. As a consequence, Seabury valued AIG by observing the revenue, book value, income and growth of income in each of its four major segments and sub-segments. We benchmarked each of the four major segments to a suitable peer group. Suitability is established by observing that each peer has a similar business make-up to that of the AIG entity being valued. For example, Chubb and Markel are suitable peers for AIG's domestic P&C business. Chubb has a standard commercial business providing all the standard commercial and personal lines businesses, but both companies are also the leading providers of "specialty coverages" that include such lines as: Directors and Officers, Errors and Omissions, kidnap and ransom, etc.

The idea behind this valuation method is that investors will tend to value companies-that are in the same types of businesses, similarly while making adjustments between

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companies for risk and growth disparities. This basis of valuation is entirely consistent with the basic shareholder value formula expressed here:

Formula 1:

$$\frac{\text{Market Value}}{\text{Book Value}} \cong \frac{\text{Return on Equity}}{\text{Required Return} - \text{Earnings Growth}}$$

Based on this equation, there are several ways to compare the value of two companies:

Comparing Profitability (Return on Equity):

If one company's earnings are double that of another company, all other factors being the same, the first company's ROE and market value will be double that of the other company. The ROE is determined in the numerator of the equation since ROE is equal to Net income/capital.

Comparing Financial Leverage (Required Return):

If two companies are in identical businesses but one company has twice the capital of the other, we would discount the earning of the more leveraged company by a discount factor that is adjusted to reflect the differential of the two companies' financial leverage. There is a standard market method for making the risk adjustment for financial leverage. The Capital Asset Pricing Model (CAPM) is one such method, which together with the Modigliani & Miller (MM) Theorem provides a framework for assessing how financial leverage affects firms' cost of capital, or required return (RR)

Comparing Growth (Earnings Growth):

All the factors in the shareholder value model are observable (net income, capital, and the required return is determined using CAPM) except for the long-term growth. But we can deductively solve for a publicly traded company's long-term growth by solving for long-term growth as the only unknown variable. There is only one value for long-term growth that results in the company's observed market value.

One cautionary note, to compare companies using this method, values must be put in the shareholder value model (for ROE, RR and growth) simultaneously as these values are order dependent in the model.

Valuing Segments Within AIG:

At this point, we have assumed the non-trading company (in this case, the P&C division of AIG since we are valuing it independently of the rest of AIG), has the same growth rate as the average of the publicly traded peer companies that we are using for the valuation. This may not be accurate but it is the best way to get started. After we have arrived at a value for AIG based on making the adjustments of financial leverage and assuming it has the same long-term growth as the average of its peers, we can test the veracity of the growth assumption. We would do this by looking at the past growth rates of AIG's P&C lines in comparison to the peers. If we were retained by AIG to do this, we would also obtain the financial projections on all of AIG's lines of P&C business. This is where the judgment element in valuation enters. If AIG has historically grown

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twice as fast or only fifty percent as fast as its peers, the analyst has to assess the growth prospects of the company relative to its peer group and be able to support that judgment.

The long-term growth rate in the shareholder value model contemplates the average growth over a time period of about 25 years. Why 25 years? It depends on the rate of discount that investors perceive is required given the investment environment. The current market value of a company represents investors' expectations of the firm's future growth discounted back to the current time frame. The long-term growth horizon will vary depending on such factors as the risk-free bond yield curve and investors' expectations about risk among other factors. Microsoft's stock implies it has a long-term growth rate of about 9%. This does not mean that the market expects these companies to grow each year by these amounts. Some years may be very high (over 20%) and some years may be negative. The market expects the average growth for Microsoft to be about 9% over the next 25 years. We know from our past work that standard P&C business in the US (for the entire industry) has a long-term growth of about 2% to 3%.

We applied this method to each of AIG's four principal segments that are set forth in the beginning of this document. We used the following peer companies to value each of these segments:

Exhibit 1	
	Peers
General Insurance Operations:	Chubb Markel
Life Insurance: These life peers were observed to have life exposure throughout the globe. All of them had exposure in Asia.	Nationwide Financial Services Sun Life of Canada Canada Life Prudential of UK
Financial Services	We could not identify any stand-alone public peers for this business. We used the following assumptions: Market-to-Book ratio of 3, Price-earnings ratio of 25
Asset Management	Blackrock Alliance Capital

These peer companies are among the best companies in class of each of the designated segments. The financial performance and leverage of each of these peers relative to AIG can be observed below in Exhibit 2:

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Exhibit 2	P&C			Life			Asset Mgt		Total AIG
	CB	MKL	SLC	CLU	NFS	PUK	BLK	AC	
Market Value	\$ 12,200	\$ 1,710	\$ 10,500	\$ 4,780	\$ 5,990	\$ 24,400	\$ 2,600	\$ 13,300	\$ 189,700
Book Value	\$ 6,982	\$ 752	\$ 4,363	\$ 2,052	\$ 2,998	\$ 5,738	\$ 368	\$ 4,134	\$ 39,619
Asset	\$ 25,026	\$ 5,473	\$ 68,106	\$ 21,311	\$ 93,179	\$ 221,168	\$ 537	\$ 8,271	\$ 306,577
Revenue	\$ 7,252	\$ 1,095	\$ 10,558	\$ 4,864	\$ 3,170	\$ 20,520	\$ 477	\$ 2,522	\$ 42,426
Premium	\$ 6,146	\$ 939	\$ 5,937	\$ 3,362	\$ 1,527	\$ 20,520			\$ 31,017
M/B	1.75	2.27	2.41	2.33	2.00	4.25	7.06	3.22	4.79
P/E	17.07		20.10	19.06	13.77	25.78	29.75	19.89	32.20
P/Rev	1.68	1.56	0.99	0.98	1.89	1.19	5.45	5.27	4.47
BV/Asset	0.28	0.14	0.06	0.10	0.03	0.03	0.69	0.50	0.13
Revenue/BV	1.04	1.46	2.42	2.37	1.06	3.58	1.30	0.61	1.07
Income growth	9%	NA	15%	109%	20%	-7%	77%	36%	19%
Revenue growth	6%	34%	11%	9%	12%	11%	77%	34%	13%

This exhibit also reveals the trading value of the peer companies in terms of market to book (M/B), price to revenue (P/R) and price to earnings ratio (P/E). The reader will observe that the financial performance, reputation and leverage of the peers are very comparable to that of AIG in each of the segments. This is an important observation since we are using the peer companies trading values as a proxy for the value of each of AIG's segments. If we were selecting peers that had financial performance significantly worse than AIG's, or companies without very good reputations, Seabury's valuation could be argued to be negatively biased.

In each segment, Seabury has used the average of the peer's M/B, P/R and P/E as a proxy for assessing the M/B, P/R and P/E of each of AIG's segments as if they were independently traded entities. For example, Chubb has a M/B of 1.8 and Markel 2.27 for an average of 2.04 which is the M/B that we use for assessing M/B of AIG's General Insurance Operation segment. The calculation would be 2.04 x AIG P&C's book value (AIG's P&C book value is determined using the peers' average capital) equals AIG's market value.

Exhibit 3	P/C AIG's Peers	US P/C	
		CB	MKL
M/B	2.01	1.75	2.27
P/E	17.07	17.07	
P/Rev	162%	168%	156%

AIG P/C Value Based on Peers' Average (\$M)	
M/B	\$34,081
P/E	\$44,268
P/Rev	\$32,676

We then apply the same procedure using the P/E ratio and Price-to-Revenue ratio and then we take the average of the three values to arrive at the value that we assign to a

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specific segment. If we wanted to make this analysis more exacting, we would not use the average peer value. We would identify the specific financial attributes that differentiate peer valuations and we would identify how AIG performs along those particular gradients. We would then adjust AIG's value to reflect these observations rather than simply using the average peer value. ***The method that we have used, however, is a very good first approximation of AIG's value.***

Summary Conclusions – Valuation By Segment

We have applied the aforementioned methods of valuation to each of AIG's four segments and arrived at Seabury's estimated market value for AIG:

General Insurance Operations	\$37.0 Billion
Life Insurance	\$31.3 Billion
Asset Management	\$ 6.4 Billion
Financial Services	\$22.7 Billion
Total	\$97.4 Billion

However, we know that by looking at AIG's share price that it has a market value of about \$189 Billion for a discrepancy of about \$92.6 billion, so what could be wrong?

The first thing to consider is the growth factor. One of the biggest drivers in the shareholder value formula is growth. We have assumed that AIG's growth will be the average of its peers over the next 25 years. It would appear that investors may believe that AIG's growth will be substantially larger than its peers.

A second consideration would be risk. While the peers that we used for AIG's different segments match very nicely against AIG's capital strength, these peers are, for the most part, significantly smaller than AIG. AIG is a much larger and more diversified company than any of the peers that we have used so far. Could it be that AIG has significantly less risk than its peers owing to all this diversification? Is it possible that the market may pay a premium for highly diversified and/or large companies?

Let's begin with the second consideration. Financial theory is quite clear that investors will not pay a premium for a company's diversification. Investors will not pay a company to accomplish a task (diversification) that they can perform for themselves (by diversifying their own portfolio) at a fraction of the cost. However, that diversification reduces risk is a true statement all things being equal. Could it be that AIG is actually a much less risky company than the peers we have used? To explore the veracity of this consideration, we identified three diversified financial/insurance conglomerates that look very much like AIG: AXA, Allianz and Zurich Re. See below for a comparison of their vital statistics:

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Exhibit 4	Total (\$Mil)			
	AIG	AXA	AZ	ZFSVY
MV	\$ 189,700	\$ 50,300	\$ 70,700	\$ 27,900
BV	\$ 39,619	\$ 21,488	\$ 31,454	\$ 20,674
Asset	\$ 306,577	\$ 419,309	\$ 388,722	\$ 231,363
Revenue	\$ 42,426	\$ 88,696	\$ 67,895	\$ 37,431
Premium	\$ 31,017	\$ 70,264	\$ 44,091	\$ 24,760
Net Income	\$ 5,891	\$ 2,870	\$ 4,185	\$ 2,430

	AIG	AXA	AZ	ZFSVY
ROE	15%	13%	13%	12%
M/B	4.79	2.34	2.25	1.35
P/E	32.20	17.53	16.89	11.48
P/Rev	4.47	0.57	1.04	0.75
BV/Asset	0.13	0.05	0.08	0.09
Revenue/BV	1.07	4.13	2.16	1.81
Short Term Income growth	19%	11%	-2%	-27%
Short Term Revenue growth	13%	-16%	13%	-7%

	Valuation Parameters	
	AIG's	Peers Average
M/B	4.79	1.98
P/E	32.20	15.30
P/Rev	4.47	0.78

From these comparative statistics, we can see that AIG is clearly the superior company from an earnings and growth perspective. The question is: is AIG so much better than these companies that it should trade at so large of a market premium over and above these companies. ***Using the average of these peer companies M/B, P/E and Price-Premium ratios to apply to AIG's performance statistics reveals a price for AIG of about \$67 billion. Once again, this price assumes that AIG's growth is the average of these peers and that its risk is comparable to that of its peers.***

Evaluating the Risk of AXA, Allianz and Zurich Re Compared to AIG

We believe that it is a safe bet that these peers are perceived by the market to have marginally more risk than AIG. Superficially, it appears that AIG may have less risk. Exhibit 4 above reveals that AIG has a higher capital to asset ratio than its peers, i.e., BV/assets, and it is less leveraged in terms of Revenue/BV. However, without a much closer look, these observations may be nothing more than ratio distortions caused by such factors that AIG has more asset intense businesses (i.e., life business tends to be more asset intense than P&C because of its longer term. Aircraft leasing and finance requires enormous capital investment). This may be an issue that we will want to check into further. However, another indicator that is very influential in determining a company's cost of capital and risk is it's rating as received by the major rating agencies. This

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supports our view that the risk of AIG is similar to that of these peers are the senior debt and claim paying ratings of the companies. Note that they are very comparable:

Senior Debt Rating

	AM Best	S&P	Moody's
AIG	unavailable	AAA	Not published (NP)
Allianz	aaa	AA+	NP
Axa	unavailable	A+	NP
Zurich Re	unavailable	AA	Aa2

Claim Paying Rating:

	AM Best	S&P	Moody's
AIG	A++	AAA	NP
Allianz	A++	AA+	NP
Axa	A+	AA	NP
Zurich Re	A+	AA+	NP

There is another measure of financial risk, called “beta.” Beta measures the systematic or market risk of a company, i.e., the degree to which a company’s value is sensitive to market movements. Beta, as a measure of financial risk, falls primarily between 0 and 2, with the market average being 1.0. High beta companies present more risk to investors than low beta companies. The beta for these companies is:

	Beta
AIG	0.98
Allianz	0.83
Axa	0.87
Zurich Re	Not Enough Information

Once again, we observe that the market risk of these companies are very comparable--dispelling the notion that AIG has significantly less risk than the peers that we have chosen.

The last issue to focus upon is long-term income growth. We see from Exhibit 4 that AIG is clearly superior to that of these three peers along this dimension. The issue is whether AIG’s growth is so vastly superior that its valuation can be justified to be this much higher than that of its peers. We can be more precise with how we stress this comparison. Returning to the shareholder value formula in Formula 1, we can express with some precision how much faster that AIG’s long-term income will have to grow in order to justify its current valuation. AIG will have to grow its long-term income at 9% versus an average of 5.7% for the three peers. This means that AIG will have to grow 63% faster than the average of these three peers for the next 25 years to justify its current market price. Even if we give AIG credit for being the only S&P AAA company compared to an average of AA for the other three companies, this would have a marginal

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impact on this finding. The impact would be determined by the differential of the borrowing cost between a AAA rated insurance company with that of an AA rated insurance company. This should not be more than one-quarter of one percent.

Final Remarks

In the first part of this valuation, we valued three of AIG's principal segments using three groups of publicly traded peers that have a high similarity to each of AIG's segments. For AIG's fourth segment, Financial Services, we assumed it has a market-to-book of 3 and P/E ratio of 25 due to the fact that we cannot identify a suitable publicly traded peer group. We observed the financial leverage and the short-term growth between AIG and these peers to be sure that valuation disparities could not be attributed to these factors. We then observed that AIG's value would be considerably less (\$97.4 billion) if it were valued by the markets in the same way that its peers are valued.

We then asked the question: is it possible that AIG is perceived to have less risk than these particular peers because it is so much larger than these peers and so much more diversified. To test this hypothesis, we compared AIG to three very large diversified insurance conglomerates that we believe look very much like AIG. When we value AIG using the financial ratios of M/B, P/E and P/R as applied to these three peers, we arrive at a value for AIG of about \$67 billion. We acknowledge that AIG has demonstrated superior growth to these three peers over the past three years. We then conclude that for AIG to justify a valuation of \$189 billion, it would have to grow about 63% faster than these peers for the next 25 years. If investors believe that AIG can sustain this type of performance for that period of time, than AIG is properly valued at \$189 billion.