Using the Z-Score as a Tool to Analyze Health Entities Capital Risks under the Affordable Care Act

By Pat Tracy, Alex Quasnitschka, and Jan Moenck

An article authored by Pat Tracy and Margaret Spencer was published in the Fall 2003 Examiner explaining how the Z-Score could be utilized to analyze accident and health companies at the holding company level. This powerful tool could be very helpful to regulators as solvency risk may increase under the Affordable Care Act and the Z-Score focuses on liquidity risk which could be a problem before RBC action levels are triggered. This article serves to update the information from the 2003 article and provide insight into the use of the Z-Score to analyze both capital and liquidity strain under the Affordable Care Act (ACA).

The Z-Score is a way to measure and monitor financial performance by analyzing specific financial ratios for a given company. Developed as a bankruptcy prediction model in the 1960's, it is widely used by banks and consultants (like Risk & Regulatory Consulting) to evaluate companies and perform objective financial analysis.

Risk & Regulatory Consulting (RRC), and its predecessor firms, has been using this tool for over 30 years to analyze companies in many industries.

Working Capital is King

Working capital, current assets less current liabilities, is the key piece of information needed to use this tool. Currently the NAIC calculates working capital from the filed annual statement in order to calculate the Z-Score. This method of calculation makes assumptions that all investments are long term, and therefore does not (in most cases) accurately reflect the true working capital of the Company. By adjusting the NAIC Z-Score to include quality long term investments as current assets, the benchmarks we will discuss in this article can also be used at the individual statutory entity level.

Why so much discussion about working capital? Ed Altman, the developer of the Z-Score, studied 22 financial ratios and found that working capital is, in fact, one of the leading indicators of insolvency. The Z-Score is designed to predict insolvency before it becomes painfully obvious. When a company experiences financial difficulties, working capital will fall more quickly than total assets or capital and surplus. Working capital is the only source to pay policyholder obligations or any other bills. It is very possible for an insurance company to have significantly more capital and surplus than working capital.

The most successful companies manage their working capital positions very carefully. Even Life and P&C companies must manage working capital. Asset/liability matching tries to assure that companies without classified balance sheets can meet their obligations when they are due. The Z-Score provides a sophisticated method to focus in on this important liquidity measure for A&H companies.

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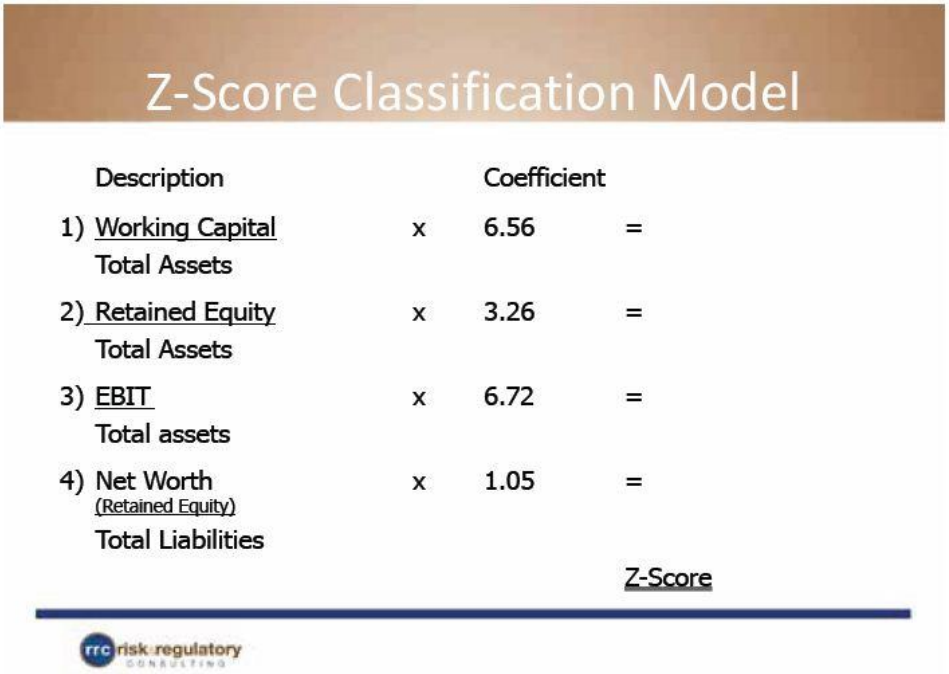
In addition to working capital, the Z-Score also puts a heavy weight on the "earnings before interest and taxes" (EBIT)/total assets. This calculation is also commonly referred to as Return on Assets (ROA). This measures the basic profitability of the company in relation to its assets. Ed Altman's study proved that decreases in ROA are also highly correlated with insolvency. It is important to note that both working capital and ROA, the two most critical metrics in the Z-Score, do not currently receive much scrutiny by insurance regulators. This is why we believe the Z-Score can provide significant additional insight to the regulatory process.

The Z-Score has two additional components - retained equity/total assets and net worth/total liabilities. Both of these metrics are traditional balance sheet strength measures which we believe are similar to the RBC approach.

Z-Score Calculation and Benchmarks

The Z-Score model is as follows:



One of the great benefits to using this tool is the ability to relate the total score to the following benchmarks. The company can also quickly be compared to itself and a positive or negative trend can be noted.

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Z-Score Calculation and Benchmarks

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In RRC's opinion, appropriate benchmarks for the following industries are:

	Safe if greater than	High Bankruptcy Risk if less than
Distribution Companies	2.2	1.0
Auto Dealers	2.0	1.0
Service Organizations	2.6	1.1
Manufacturing	2.6	1.1
A&H Companies	2.6	1.1

The above benchmarks are based on Altman's original study (which focused on manufacturing companies) and the work done by RRC and its predecessor firms. In general, the more volatility an industry has in its earnings (ROA) the higher the safe range needs to be. The possibility of losing money quickly requires a stronger balance sheet. The ACA is a game changing event for the health industry, and strong balance sheets going into 2014 greatly mitigate solvency risk created by the uncertainty of what will happen to traditional books of business and the related cash flow.

The Z-Score in Action

We calculated the Z-Score for five major publicly traded health entities using publicly available information.

Working capital is disclosed in the SEC filings for these companies. GAAP recommends classified balance sheets wherever possible. In the case of health entities, the majority of their liabilities are current (will be paid within twelve months). Therefore, these companies report their GAAP results using classified balance sheets.

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Z-Score Calculation and Benchmarks

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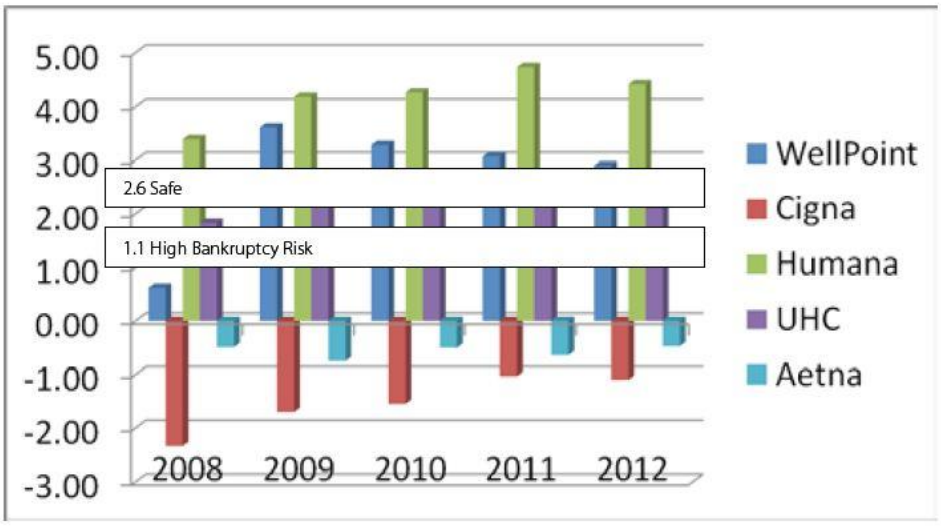
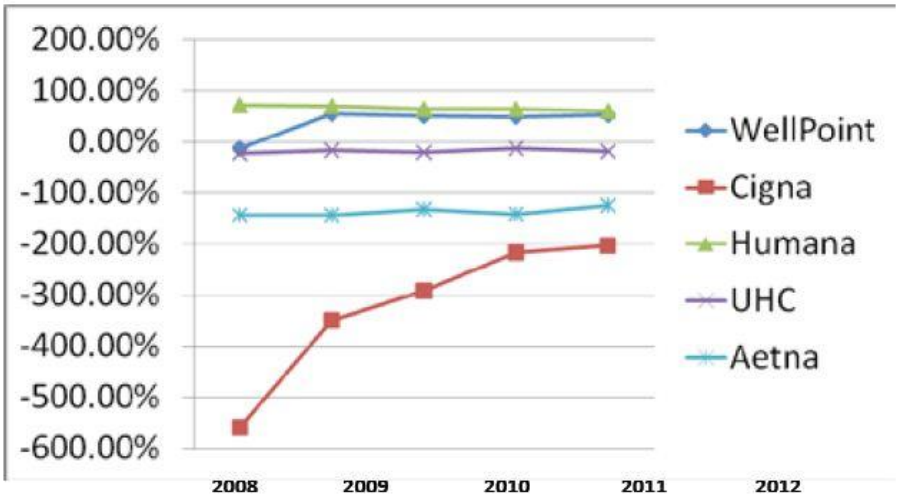
Using SEC filings for 2008 through 2012, as well as information from ycharts.com, we calculated the following Z-Scores:



It's important to note the safe benchmark of 2.6 and the high bankruptcy benchmark of 1.1 when reviewing this graph. It is also extremely important and productive to review the trend of each company. Note the ability of the Z-Score to relate these companies to one another.

Working Capital to Capital and Surplus Ratio as a Driver of the Z-Score

As seen in the chart below, working capital is a significant driver of the Z-Score. Companies with higher working capital to surplus ratios also are the Companies with higher Z-Scores. As you can see, the working capital of the most successful companies is carefully managed within a tight range to its capital and surplus.



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Z-Score Calculation and Benchmarks

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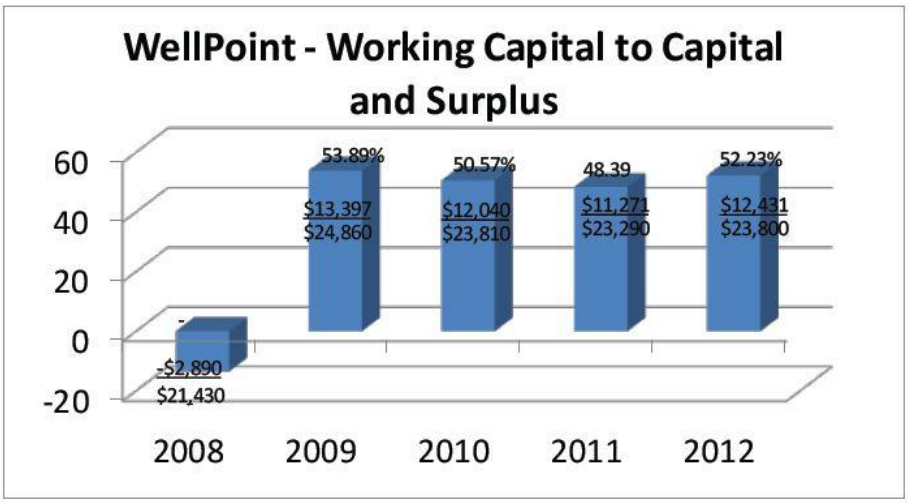
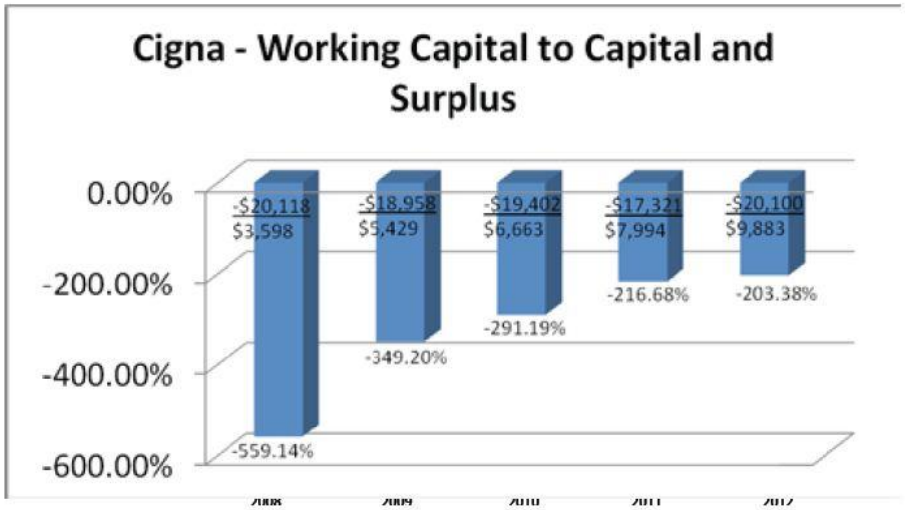
Note the relatively strong working capital positions of WellPoint and Humana get high credit using the Z-Score. The poor working capital positions of Cigna and Aetna result in much weaker Z-Scores. To further illustrate, see the individual charts below for WellPoint and Cigna.





The companies with less working capital will argue that they have predictable cash flow and access to the public markets if necessary. They are relying less on balance sheet strength and more on current cash flow from operations and liquidity options if necessary. But, working capital is a "law of nature" and operating with zero or negative working capital increases business risk, particularly with the uncertainty created by the ACA.

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Z-Score Calculation and Benchmarks

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Historical Trends

The Z-Score chart on page 14 shows that, for the most part, Z-Scores were lower for the companies studied in 2008 and have become stronger since then. The initial explanation for this may be the financial crisis led to a weakened working capital position. This is partially true. However, when we expanded the chart back to 2006, we saw that some of the companies seemed to be more impacted by the financial crisis than others. Additionally, some have had much stronger recoveries than others.

Humana

Humana's Z-Score is well over the safe benchmark of 2.6 for all five years, with an average of 4.20 over the period. Over the last 10 years, the only year it was below 3 was in 2006. Humana is very liquid, with working capital increasing each year, and manages its working capital to surplus in a very tight range. Humana's ROA has also been strong. It is evident that Humana places a premium on working capital.

WellPoint

WellPoint went from a Z-Score of 0.62 in 2008 to a Z-Score of 3.61 in 2009, and has been able to maintain a Z-Score in the safe range since then. It is interesting that in the 2003 article WellPoint had the strongest Z-Score and working capital of any of the companies studied; WellPoint took a significant hit to its Z-Score in the 2006 – 2008 period but has since recovered. With the exception of 2008, WellPoint's ratio of working capital to capital and surplus has been as strong as that of Humana. Researching the significant increase in WellPoint's working capital in 2009, we found the source of recovery to be that in the fourth quarter of 2009 WellPoint sold its prescription benefits manager to Express Scripts for $4.7 billion. Although WellPoint's Z-Score has decreased some since 2009, the Company appears to place a high degree of emphasis on its working capital and has been managing it above the safe benchmark.

United HealthCare

United HealthCare (UHC) has had a fairly steady Z-Score during this period, ranging from 1.83 to 2.11; just below the safe range. Its Z-Score was over the safe range pre-2008, and in 2008 decreased due to the overall market condition, but has re-bounded to a good position relative to its ability to generate positive earnings and access capital markets. UHC's working capital has also been very consistent throughout the period. Its working capital to capital and surplus ratio has been consistent, but slightly negative from 2008 through 2012, and its ROA has also increased incrementally during the

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Z-Score Calculation and Benchmarks

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period. Its high ROA is the main driver of its Z-Score. Since UHC's ratios are within a very tight range it is evident that a high degree of emphasis is placed on achieving safe levels of working capital.

Aetna

Aetna has had a slightly negative Z-Score, and a slightly negative level of working capital throughout the period. Both the Z-Score and working capital level have been very consistent, with the Z-Score ranging from only -0.47 to -0.75. Aetna's working capital situation became worse between 2009 and 2011, and began to slightly improve in 2012. Aetna also has a lower return on assets than its more robust competitors in this group. While Aetna's Z-Score was in the safe range pre-2006, Aetna has much less working capital today, and is dependent on cash flow from operations and access to the capital markets if liquidity becomes an issue.

Cigna

Cigna has had a negative Z-Score throughout the period; in fact, its Z-Score never reached above -1. For the last 10 years, Cigna's Z-Score has only been above +1 one year. It has improved however, from a low of -2.34 in 2008 to close to -1 in both 2011 and 2012. Its level of working capital, while negative as well, has also significantly improved, from -559% of surplus in 2008 to -203% of surplus in 2012. We believe that if Cigna continues its trend of working capital strengthening, its Z-Score will continue to improve as well. Cigna is relying on positive cash flow from operations and access to capital markets if a liquidity event occurs.

Not-For-Profit Healthcare Entities

We could not find publicly available data which could be utilized for the analysis of not-for-profit healthcare entities, and therefore could not calculate any Z-Scores for comparison to the public companies. We understand that many of the not-for-profit Blue Plans benchmark themselves against other Blue Plans; however, this information is not made available to the public. It is assumed that other not-for-profits benchmark this information as well. This is something that could be requested and reviewed by the analyst or examiner.

RRC feels that not-for-profit entities are particularly vulnerable to liquidity strain since they have limited access to capital markets. Additionally, many not-for-profit entities have significant investments in affiliated assets, including capital intensive assets such as hospitals, which are not readily converted into working capital. Uncertainties associated with the ACA such as adverse selection, utilization rates and pricing risk could put significant strain on the working capital of many not-for-profits. This is a significant prospective risk and should be taken into consideration in examinations and supervisory plans.

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Any State could monitor the working capital of a not-for-profit to assure the traditional focus on RBC is not creating and unrealistic sense of comfort. As 2014 and 2015 unfold we predict that liquidity issues will arise way before RBC trigger levels. This is particularly true for plans in the individual and small business markets as those books of business are hard to predict under the ACA.

Overall Conclusion

While the NAIC's primary tool for regulating companies is Risk-Based-Capital (RBC), for health entities the Z-Score can be used to effectively analyze holding companies and legal entities for liquidity risk. RRC predicts that with the implementation of ORSA, companies will be focusing on both liquidity and RBC and tools like the Z-Score. These tools are useful to both regulators and the industry.

Also liquidity usually becomes a problem way before RBC trigger levels are hit. The ACA makes it more difficult for a health insurance company to predict what its book of business and related cash flow will look like in 2014 and 2015.

The Z-Score could be applied in the following situations:

Financial Examinations

- M&A analysis –Z-Score is a great view of the liquidity impact of before and after major transactions
- Linkage to key risk evaluation-particularly ORSA type information which requires an analysis of liquidity and fungi ability of capital
- Evaluate parent/holding company
- Peer group analysis
- Prospective risk assessment
- Understanding of company strategy
    - Strategic plan, budgets and forecast
    - Evaluate management's solvency/liquidity monitoring controls
    - Evaluate liquidity risk mitigation options with objective balance sheet information

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Financial Analysis

- All of the above examiner uses
- Analysis of dividends- Z-Score before and after. Dividends reduce working capital which is why it's a helpful view in addition to RBC
- Objective analysis of working capital (liquidity) trends, particularly in 2014 and 2015 when winners and losers should emerge as a result of the ACA.
- Company risk profile
- CAMEL/CARRMEL
    - Liquidity
    - Capital and Surplus adequacy
- Asset liability matching (A&H, P&C)

The ACA creates a significant risk with unknowns associated with adverse selection, utilization rates, and pricing risk. Because of these risks, many large companies have chosen to limit participation in exchanges. These risks could have a significant impact on health companies, particularly not-for-profits, and should be monitored closely on a quarterly basis to promote long-term capital and surplus planning and mitigate short-term liquidity crises.

About the Authors:

M. Patrick Tracy, CPA, CFE is a Partner with Risk & Regulatory Consulting LLC. In this role, Pat coordinates, manages, and leads a team providing all aspects of engagements with regulatory and commercial insurance clients. Prior to joining RRC, Pat has spent more than 36 years of professional experience. He spent his first eight years with Arthur Andersen and the past 28 with a regional accounting firm purchased by American Express Tax and Business Services in 1997 and RSM McGladrey in 2005. Pat has been active in the NAIC for many years. He has made formal presentations, initially to the Examiner's Handbook Committee and eventually to Ex (4), on the use of consulting firms on multi-state examinations. Pat has taught the NAIC's Codification Program and taught and developed the NAIC's Fraud Training Program. He is an active member of the Society of Financial Examiners (SOFE); American Institute of Certified Public Accountants (MAICPA), and the Board of Trustees and Past President of the Alumni Association of the Baltimore Polytechnic Institute. Pat can be reached at 443.253.9206 or by email at patrick.tracy@riskreg.com.

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Jan Moenck, CFE, CIA, CRP, CBA, CFSA is a Partner in Risk & Regulatory Consulting's (RRC) Minneapolis, Minnesota office and over 25 years of experience providing examination and internal audit services to clients in the financial services industry. For over 15 years, Jan served as the lead engagement manager working with the Minnesota Department of Commerce, Insurance Division (Minnesota) by providing co-sourced financial examination services. Jan assisted Minnesota in the development and deployment of its risk-focused examination process and has served as the Examiner in Charge on risk-focused financial examinations for over twelve years. Jan has also provided hands-on and classroom training on risk-based examination techniques to several states, the Society of Financial Examiners (SOFE), and RRC employees. Jan can be reached at 612.868.9839 or by email at jan.moenck@riskreg.com.

Alex Quasnitschka, CFE is a Manager at Risk & Regulatory Consulting, LLC (RRC) and holds the CFE designation. He has approximately 10 years of experience in insurance regulation – all of which have been spent with RRC. Prior to joining RRC, Alex served as a health plan accountant for a national health care entity. Alex holds a Bachelor of Science in Business Administration degree (focus in Accounting) from the University of Hartford. Alex can be reached at 860.729.2732 or by email at alex.quasnitschka@riskreg.com.