November 16, 2012

Director John Huff, Chair
Solvency Modernization Initiative (E) Task Force
National Association of Insurance Commissioners

On behalf of the Solvency Committee of the American Academy of Actuaries'[1] Risk Management and Financial Reporting Council I am pleased to respond to your August 16, 2012 request to "outline multiple methods of measuring regulatory financial success" with respect to the state-based system of insurance regulation.

Consistent with the stated objectives of the Solvency Modernization Initiative (SMI), the following is a framework for illustrating certain regulatory measures of success developed by actuaries who have spent their careers in the insurance and financial sectors. We present both quantitative and qualitative ideas, acknowledging some are more challenging to prepare and maintain than others. We acknowledge that some of the measures of success suggested rely on certain levels of subjectivity. This report is intended to inform the SMI Task Force's work on its whitepaper, *The U.S. National State-Based System of Insurance Financial Regulation and the Solvency Modernization Initiative*. It is not meant to be a reflection of the American Academy of Actuaries assessment of the current insurance regulatory structure. Nor do the examples presented herein necessarily indicate policy perspectives of the practice councils of the Academy who are engaged with the NAIC and other regulatory entities in the assessment and formulation of specific effective regulation and public law.

The format for the measurement approaches presented below comprises a designated name, a description, a real or hypothetical example where possible and comments regarding issues surrounding the preparation of such a metric.

We recommend the NAIC compile and maintain some of the following options to assist it in illustrating that the U.S. insurance financial regulatory system for insurers is successful in achieving its regulatory goals.

1. Archives
2. Lessons Learned
3. Mortality Rate
4. Benefits Not Paid
5. Headlines That Never Happened
6. Accounts from the Financial Analysis Working Group
7. Diaries from Risk- Focused Examinations
8. RBC Action

[1] The American Academy of Actuaries is a 17,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

9. Guarantee Fund Association
10. Capitalization Trend
11. Safety Net
12. Failure Rate Cascade
13. Concentration
14. Regulatory Capital Enhancement
15. Customer Concern
16. Credit Spreads
17. Return on Investment

Regulation from an individual's viewpoint

Every country promulgates rules and regulations to which people within their jurisdictions must comply with or face consequences. Among the myriad rules are those that encompass personal safety, public health, and financial protection.

In the US, the financial sector is viewed as three industries – banking, securities, and insurance. Banking and securities are generally regulated at the federal level; insurers are supervised by the states, whose efforts are facilitated by entities such as the NAIC and National Conference of Insurance Legislators (NCOIL).

Regulated activities of insurers include market conduct and financial health. Market conduct, which is not a focus of this paper, addresses items at the consumer level, contract compliance and timely service. Supervisors are responsible for determining the financial health of insurers, assuring that policyholder commitments can and will be made.

The insurer environment in the U.S.

There are about 4,500 insurers licensed in the United States and its territories.[2] An insurer is domiciled in a single state and is licensed in every other state in which it does business. There are about 2,800 property & casualty (general) insurers[3], 800 life insurers[4] and 900 health insurers[5].

In the US, there are about 700 insurance groups[6], some of which operate internationally as well as in the US.

Shareholder interests are protected and regulated at the federal level. The US Securities and Exchange Commission (SEC) oversees the listing, trading, and accounting for publicly-traded shares. The SEC has recognized the establishment of accounting principles of the Financial Accounting Standards Board (FASB). The FASB has developed United States Generally Accepted Accounting Principles (GAAP). Financial statements are required to be filed quarterly

[2] 2012 Insurance Department Resources Report
[3] Statistical Compilation of Annual Statement Information for Property/Casualty Insurance Companies in 2012
[4] Statistical Compilation of Annual Statement Information for Life/Health Insurance Companies in 2012
[5] Statistical Compilation of Annual Statement Information for Health Insurance Companies in 2012
[6] 2012 Insurance Department Resources Report

by publicly traded companies, and financial audits are performed on them annually by public accounting firms. Audits of financial reports under GAAP usually occur at the group, rather than legal entity level. GAAP for insurers generally calls for loss recognition tests on liabilities to assure the reported amounts are adequate.

Policyholder interests are protected and regulated by the states. Each state enacts legislation and promulgates regulation that applies to insurers not only who are domiciled in that state but those that conduct business there as well. The states employ approximately 11,500 people[7] in insurance regulation. Model laws, model regulations, and certain guidelines such as actuarial guidelines come from two organizations: NAIC, an organization whose membership comes from each of the 50 states and US territories and the National Conference of Insurance Legislators (NCOIL). The NAIC has about 425 employees and is based in Kansas City, MO with additional offices in New York and Washington, D.C. Model legislation and regulation developed by the NAIC is generally, but not always, adopted by states. In a similar vein, NCOIL creates model laws that provide the framework for state legislation. NCOIL includes membership from each of the 50 states and its national office is in Troy, New York. The NAIC and NCOIL engage in dialogue on their respective activities at the NCOIL national meetings.

Generally, actuaries or management must submit opinions or reports annually that opine whether or not the reported reserves comply with regulations and are either reasonable or adequate. These financial reports are based on Statutory Accounting Principles (SAP), which are developed and maintained by the NAIC. SAP served as the origins for liability calculations for a third accounting basis, the one used for federal income tax. Accounting firms also issue audit reports on insurers. These reports are based on the individual insurer using SAP.

Statutory (SAP) accounting focuses on the balance sheet and solvency while GAAP focuses on the income statement and operating performance.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 has enabled the federal government to become more involved with the oversight of insurance entities through the entities it created, the Financial Stability Oversight Council, and the Department of Treasury's Federal Insurance Office and Office of Financial Research.

Nationally Recognized Statistical Rating Organizations (NRSROs) have a significant impact on managing of insurance companies. Rating agencies evaluate both the financial condition of the insurer and individual securities (debt) it or its holding company may issue. The ability to be viable in the insurance marketplace is vitally linked to an insurer's credit rating. Just as insurance regulators have begun to move away from pure formulaic evaluation approaches in recent years, so have rating agencies who now view companies through more risk-focused or holistic lenses. Lenders to insurers or their holding companies generally rely on a combination of state and federal regulatory financial reporting and rating agency reporting to monitor the financial strength of the borrower.

[7] 2012 Insurance Department Resources Report

Elements of success

Insurers have their eyes on several aspects of success. These include the generation of value for owners, the ability to service debt holders, the ability to sustain and prosper as an entity, and the protection of value for policyholders. Different agencies are involved with supervision of these elements.

There is the financial aspect from a shareholder's perspective: Has the value of the investment increased? This is generally assessed by the level of shareholder dividends and the value of the company perceived by the market as reflected in its share price. The SEC oversees financial markets and is responsible for accounting policies. Accounting firms attest to the quality of a firm's financial condition.

Another attribute of success has to do with the ability of the entity to repay debt. Insurers might own debt directly or through pools. Success is generally measured by their record of repayment and rating agencies' assessments of prospects of repayment going forward.

Yet another way to consider success is stability. The insurer provides vital employment opportunity and tax revenue to governments in jurisdictions where it is domiciled or operates contributing greatly to economic growth at all levels, including a significant part of the world economy. How well regarded insures are in general is an important part of stability. Though impossible to measure in hard dollars, negative front page news has a real and detrimental impact on the industry's ongoing success.

Another pillar of success is the ability of an insurer to satisfy policyholder obligations. This can be measured from two perspectives: market conduct and financial strength. The states employ many methods to assess financial capabilities of insurers. These include; monitoring quarterly and annual reporting; on-site visits, triennial examinations, risk-focused examinations, and looking at insurers' Risk Based Capital (RBC). The states can force remediative action when RBC levels indicate an insurer is weakly capitalized at a point identified at a company action level. In the US, RBC was introduced as a regulatory tool to identify weakly capitalized companies for life insurance companies in 1993, for property/casualty insurers in 1994 and for health insurers in 1998.

Challenges to selecting a method for measuring success

Success is a concept. It is unlikely that everyone would agree that a certain indicator is appropriate for measuring the success of regulation. Further, different users of such indicators will likely employ different measurements. If a process is effective 80% of the time, that may be deemed a success by some according to one set of standards but insufficient by others according to different criteria.

One financial-sector specific example is the ability for customers to access their funds during insolvency. Bank depositors sometimes wait a short time to have accessibility to their deposits restored. Policyholders with claims on defunct insurers might get most if not all of their funds, but could have to wait months or years for resolution.

Another challenge to developing regulatory success indicators is that some necessary information could be proprietary and thus confidential. Currently, the transmittal of information of remedial actions steps taken by the states to the NAIC, let alone the public, can be problematic.

A further hurdle is that while some data is publicly available and accessible, its analysis requires a significant commitment of time by those who will prepare and maintain it.

Just as it is necessary for any system of regulation to be assessed objectively, it is incumbent on the U.S. insurance regulatory system, to demonstrate the successes and effectiveness of its regulatory processes.

Methods of measuring success

Regulators and stakeholders in the US usually view the US approach to solvency regulation as a system that has worked with some degree of success. It would be valuable to develop measures of regulatory success to aid in supporting this point of view despite some challenges in assembling and presenting these measures as noted above.

Conclusion

The Solvency Committee of the American Academy of Actuaries Risk Management and Financial Reporting Council has been pleased to develop and prepare this document that can enhance the national and international evaluation of U.S. regulatory success. Some of the methods may be more practical than others to develop. Presentation of more than a single method will be needed to convey the concept of success.

Should the SMI Task Force consider developing any such success measures, the Solvency Committee stands ready to assist.

Sincerely,
R. Thomas Herget
Chair, Solvency Committee
American Academy of Actuaries

CC: Fred Heese and Kris DeFrain

Appendix: Regulatory Measures of Success

1. Archives

Description

A list of events for each of the past twenty years should be compiled. These events will describe how the existing regulatory structure dealt with publicly-identified crises.

Example

General American Corporation. Around 2000, this large mutual offered guaranteed investment contracts that became immediately payable upon the insurer's credit rating downgrade. The company was downgraded and the resulting requests for refunds caused a liquidity crisis for the insurer and its subsidiaries. The Missouri Department of Insurance took over the insurer and oversaw its rescue by a larger firm. All benefits were eventually honored and paid; nearly all employees retained their employment. Thus, the supervision resulted in policyholder protection and financial stability.

Variable Annuity (VA) Rider Guarantees Post-Crisis. In 2007-2008, volatility in the derivatives market, specifically the equity options market used for hedging VA rider guarantees became more and more expensive as volatility increased and thus caused hedge programs to become prohibitively expensive. The pricing problems this turbulence initiated soon became transparent as balance sheet changes caused by the updated US regulatory framework reflected these market/pricing issues. Specifically, the C-3 Phase II capital method (pre-2009) and the AG43 reserve method (replaced AG 34 and 39 on 12/31/09) are based on prescribed stochastic methods that hold companies to the same standards. These methods produce large reserves when circumstances such as the '07-08 financial crisis warrant. The resulting impact on the variable annuity industry, which was the goal of already existing or approved NAIC-driven regulation, was reduction of risk and a move toward stability. This occurred in the form of higher prices, less rich benefits, outright withdrawal from the market and of course, higher levels of reserves and Risk Based Capital on inforce business.

Comments

While totally in narrative form, this should give the reader an idea of the breadth and depth of issues and responses.

The above are condensed examples and should be expanded for more depth and context.

2. Lessons Learned

Description

Identify significant events, similar to those addressed in Archives, but whose regulatory responses introduced new provisions that make supervision more effective today.

Example

Baldwin-United, once primarily a piano manufacturer went on an acquisition spree financed through debt. By the early 1980s, Baldwin owned over 200 savings and loan institutions, insurance companies and investment firms. Meanwhile, the company had taken on significant debt to finance its acquisitions and new facilities, and was finding it increasingly difficult to meet its loan obligations. In 1983, the company was forced into bankruptcy with a total debt of over $9 billion, at that time, the largest U.S. bankruptcy ever. Baldwin fixed deferred annuities were sold between 1979 and July, 1983, they paid 14% interest for the first year with a guaranteed minimum for the next 10 years, and a floor guarantee of 5.5% to 7.5% interest. What happened (after the bankruptcy) was that not only were rates cut, but the policyholders couldn't get access to their cash without penalties. This type of crisis has become *much less likely* due to the NAIC's more stringent Risk Based Capital requirements.

In the 1980's, **Mutual Benefit Life,** at the time the 18th largest U.S. insurer, was a large writer of GIC contracts. These are used to fund pension benefits by the company's clients. Mutual Benefit was in real trouble by backing these products with asset holdings overweighted in commercial real estate. An actual 'run on the bank' occurred in 1991 when policyholders panicked and surrendered contracts at alarming rates. This crisis, caused by an Asset / Liability mismatch, has become much less likely due to the NAIC's Actuarial Opinion and Memorandum Regulation, more stringent Risk Based Capital requirements and tighter basket clause (a limitation on the concentration of investments) requirements.

Executive Life and First Capital Life generally wrote large amounts of investment-oriented contracts that promised fixed yields on principal for one or more years--annuities, guaranteed investment contracts, and interest-sensitive life insurance. To provide high yields on those products, the insurers pursued high-risk investment strategies. The units of First Executive and First Capital Holdings had substantial holdings of junk bonds (40 percent of assets or more). When the junk bond market plunged in the first half of 1990, so did the fortunes of those companies. As news of those insurers' financial difficulties spread, many policyholders surrendered their contracts. The run at Executive Life was prolonged: cash surrenders exceeded $3 billion in the year preceding its insolvency. These collapses, primarily triggered by credit risk, have become much less likely due to the NAIC's more stringent Risk Based Capital requirements as well as tighter basket clause requirements.

The Dingell report entitled "Failed Promises" invoked the NAIC response in their 1990 publication titled "State Actions to Improve Insurance Solvency Regulation. This July 30, 1990 report outlines the NAIC action plan that led to RBC, appointed actuaries and other facets of the current set of solvency regulation tools.

Comments

Cases such as the Mutual Benefit demonstrate how regulatory improvements can prevent comparable occurrences in the future.

3. Mortality Rate

Description

Compare institutional failure rates in the U.S., year by year, between banks, insurers and possibly securities firms. Do it by a) number of institutions in total, b) liabilities, or c) some other dollar-weighted measure.

Present rates by market segments, such as 1) for the entire industry, 2) for large national insurers and 3) for small regional insurers.

Example

1985	Insurers			Banks		
Size	#insolvencies	#companies	insolvency rate	#insolvencies	#companies	rate
>1billion	x	y	x/y	e	f	e/f
>250million	a	b	a/b	g	h	g/h
<250million	c	d	c/d	i	j	i/j

1986 etc.

Comments

In this case, failure would be defined as insolvency.

The metrics will need to reflect that the banking industry is generally ten times the size of the insurance industry. There are many small banks (and insurers too), so perhaps the results should be categorized by size.

This metric does not show any of the effort or results that went into rescuing impaired companies and keeping them out of this measure.

This study is similar to AM Bests' impairment studies.

Frankly, a modest number of failures for both banks and insurers could be expected.

This would be interesting to prepare for other countries in the G-20.

4. Benefits Not Paid

Description

Quantify, year by year, the benefits that were denied policyholders due to insolvency after guarantee association action.

Example

Year	# of insolvencies	amounts of benefits paid	amounts not paid
1990:	7	$280,000,000	$13,000,000
1991:	5	$200,000,000	0
1992:	21	$590,000,000	$28,000,000
1993:	6	$400,000,000	0

For perspective, it would be good to list total benefits paid by the industry in the years listed.

Comments

The count and amounts above are hypothetical.

For life insurance, benefits are generally fixed; amounts unpaid should be reasonably quantifiable. The impact of lost benefits on restructured annuity contracts would be difficult to quantify.

For health and p/c companies, benefits are more open. It might be more difficult to determine what was not paid. But reasonable estimates can be made, especially since many are short-term policies.

It should be noted that the reduction of some benefits (for example, from over-market to market) could be warranted.

One of the main purposes of financial regulation is to assure that policyholders get the benefits they have the right to. This measurement shows if that goal was achieved.

5. Headlines That Never Happened

Description

Regulatory reporting requirements have enhanced the ability for the actuary to work closely with senior management. The ability to review cash flow testing results with senior management can lead to remediation before insolvency is imminent.

Example

#1. A parent life company owns a subsidiary life company. Equity in the subsidiary is assigned to fund the parent life company's liabilities for purposes of cash flow testing. The subsidiary passes cash flow testing and can theoretically dividend up earnings. But since new business is not included, there is a remote possibility of generating upstreamable income. Without subsidiary earnings inuring to the parent, the parent will not be able to support its liabilities. With adequate warning, the company is able to raise new capital at a reasonable price.

#2. A P&C parent revived its dormant life company which focused on deferred annuity sales. Cash flow testing, using real expenses and competitive interest crediting, revealed significant profitability would be a decade away. The parent's management decided capital could be better deployed in the P&C market and was able to sell the company at its price. Cash flow testing helped focus management to find a better home for the policyholders.

#3. Several years after an acquisition, the amount of business written in the newly-acquired insurer was significantly less than expected and persistency was worse than expected. Cash flow testing revealed that subsequent earnings would not be sufficient to fund the debt used to make the purchase. The company was able to sell off other blocks of business in order to remain a going concern.

#4. Of the thousands of insurers in place at the onset of the 2007-2008 financial crisis, only a handful became impaired.

#5. Hurricane Katrina was the largest single natural disaster. There was no groundswell of failed insurers.

Comments

Since these events were not public, participants will need to be located and willing to volunteer this information. The company names may need to be incognito.

This would be a good place to elaborate on the resiliency of insurers throughout the 2007-2008 financial crisis.

6. Accounts from the Financial Analysis Working Group
Description These will be narratives that describe a deteriorated situation in which the Financial Analysis Working Group interceded and resolved.
Example (No example provided.)
Comments The narratives will need to be provided by current or former state regulators. Discretion must be used so that still-recovering entities cannot be identified.

7. Diaries from Risk-Focused Examinations
Description These will be narratives that identify deteriorating conditions identified by a Risk-Focused Examination and how this RFE helped resolve the situation.
Example (No example provided.)
Comments The narratives will need to be provided by current or former state regulators. Discretion must be used so that still-recovering entities cannot be identified. If the RFE lead to new regulation or procedures, it would be enlightening to disclose.

8. RBC Action

Description

This report would be both qualitative and quantitative.

For each year, this report would:

a) Quantify the number of companies identified as weakly capitalized
b) Quantify the number of such companies identified for review
c) Discuss the actions taken for a sample of such companies

Example

In 2003, 78 out of 3,800 insurers were identified as weakly capitalized (hypothetical)
Of these 78, 27 were targeted for reviews.
Of these 27, here are resolutions on four of these insurers:
Insurer 1: Told to raise capital
Insurer 2: Suspended new business
Insurer 3: Withdrew from one market
Insurer 4: Brought in new management

Comments

The statistics can be prepared by NAIC staff but the actions will need to come from current or former state regulators.

The NAIC currently prepares a similar report annually.

9. Guarantee Fund Association

Description

Year-by-year, quantify the number of insurer insolvencies.

For selective examples, summarize what actions were taken; how long resolution took; was the company rehabilitated or placed into insolvency?

Example

(No example provided.)

Comments

Examples could illustrate how the funding mechanisms work; i.e. the assessment of healthy companies to partially or fully fund the benefits.

10. Capitalization Trend

Description

Display, year-by-year, statistics that show a general strengthening or weakening of companies, how many have ratios that have gone up, and how many have gone down.

Example

RBC ratios (hypothetical)

	1998	1999	2000
Over 500	12%	13%	etc.
400-499	25%	26%	
300-399	30%	31%	
200-299	25%	22%	
Under 200	8%	8%	

Number of Companies:	
Moving up	312
Moving down	48
Total companies	4,397

Comments

This could be done either by count or by total assets (or both).

The trend is more important than the absolute level itself.

11. Safety Net

Description

Compare the states' regulatory safety net for policyholders to the Pension Guaranty Corp's safety net for pension plans.

Show what percent of policyholders have received less than 100% of their contractual benefits after state guarantee funds vs. pension beneficiaries in corporate insolvencies.

Example (numbers are hypothetical)

Year: 2005	Insurance	Pension plans
Individuals (or contracts) in-force	230,000,000	180,000,000
Individuals (or contracts) entering impairment	1,000,000	5,000,000
Number receiving less than 100% of benefits	20,000	4,000,000
Percentage	2%	80%

Comments

This could be challenging to calculate. Insureds have multiple policies; pension participants may be in two plans.

More than just one year must be selected as the PBGC was burdened with a few big terminations in the middle of the last decade.

This measure would have to be refined to indicate the degree of important and to recognize that Congress sets specific limits on how much PBGC can pay.

It should be recognized that pension plans have a much higher failure rate than do insurance companies. Also, the PBGC has little control over how pension plans fund or invest. States can regulate that for insurance companies.

12. Failure Rate Cascade

Description

Provide a display of failure counts, within a range of RBC ratios, based on years from the respective starting point for each of the RBC formulas.

Example (hypothetical)

Year 1995

RBC ratio	1995 count	failures in:	1996	1997	1998	1999	2000	2001	2002	2003	etc.
Over 500	500		0	0	0	0	1	3	3	2	
400-499	700		0	0	1	1	4	5	5	5	
300-399	2,000		4	5	3	5	12	13	11	8	
200-299	2,200		5	7	10	8	6	10	8	9	
Under 200	400		11	14	10	11	10	8	8	7	

Year 1996

RBC ratio	1996 count	failures in:	1997	1998	1999	2000	2001	2002	2003	2004	etc.
Over 500	480		0	0	0	0	1	2	2	2	
400-499	720		0	0	2	0	3	6	5	5	
300-399	2,200		1	3	3	4	8	9	10	7	
200-299	1,800		4	6	12	5	10	8	10	9	
Under 200	380		12	13	9	14	12	10	6	8	

Year 1997
Etc.

Comments

This will illustrate what happens when companies hit the regulatory action levels. (E.g., Do they steadily go downhill from there or do they recover? Does recovery vary depending on how deep into regulatory action they went?)

This would look at whether the regulators are simply "escorting" the companies out of business or are they actually part of the recovery solution.

The data should exclude Risk Retention Groups (RRG's) as the ability of states to regulate these entities is limited.

13. Concentration

Description

Annually list the market share of the top providers by either count or percentile.

Example (hypothetical)

Current year

Market	life premium	annuity premium	P&C premium	retail banking	commercial banking
Number of players	800	600	3,000	2,000	1,500
Top two companies	5%	8%	7%	4%	5%
Top five companies	8%	10%	10%	6%	7%
Top ten companies	10%	12%	13%	9%	11%
And/or					
Top ten percentile	20%	40%	30%	50%	60%
Top twenty percentile	35%	55%	45%	65%	70%
Etc.					

Comments

This measure will help show the degree to which financial regulation has enabled a market that is attractive to enter and competitive for consumers. A market dominated by a single or pair of companies is not desirable.

14. Regulatory Capital Enhancement

Description

Track the growth of regulatory capital, in aggregate for all insurers, from one year to the next. Do this for several countries.

Example (hypothetical)

	Australia	Canada	France	Germany	Japan	US	UK
2000	6%	5%	4%	5%	6%	5%	7%
2001	5%	6%	4%	4%	7%	5%	6%
Etc.							

These are ratios of capital & surplus to assets.

Comments

This calculation can be easily performed: Too high a result means policyholders (or shareholders) may not be getting timely or adequate returns; too low a result means not enough capital is being conserved to cover future risks.

15. Customer Concern

Description

Unfortunately, some financial institutions have tarnished the fiduciary image needed to assure the public of the ability to provide stewardship for safe investing.

Several recent examples include the manipulation of LIBOR, foreign currency exchange rate mischarges, and the disappearance of funds under Peregrine Financial, MF Global and Madoff investments.

Insurers have been fortunate not to have had such experience to a similar degree.

While no one takes joy in others' suffering, the NAIC should track the incidence of financial institution's failure to safeguard customers' funds. The states' regulation of insurers has provided value to policyholders in general and especially during life company demutualizations.

Example

The NAIC could prepare an annual inventory of financial institutions where customer funds have been lost. This inventory would include insurers.

Comments

The valuation actuary in the life insurance industry must submit opinions regarding the fairness of crediting non-guaranteed values to the policyholder's account. No other industry has this. There may be a correlation.

The insurance industry has experienced some acts of fraud. Equity Funding, from the 1970's, involved the creation of policies for fictional people then selling these policies to reinsurers. Martin Frankel in the 1990's acquired insurers and looted their assets for his own personal use. Regulators can detect fraud before it gets to terminal stages such as these two examples. Our industry isn't immune to such behavior but it doesn't seem to occur with the frequency it does in other financial markets.

16. Credit Spreads

Description

Examine the costs of insurer's borrowing before and after changes in regulatory procedures.

Example

The insurance industry borrows in the fixed income markets at x basis points over Treasuries and other financial industries, such as banks borrow at y, z, etc. basis points.

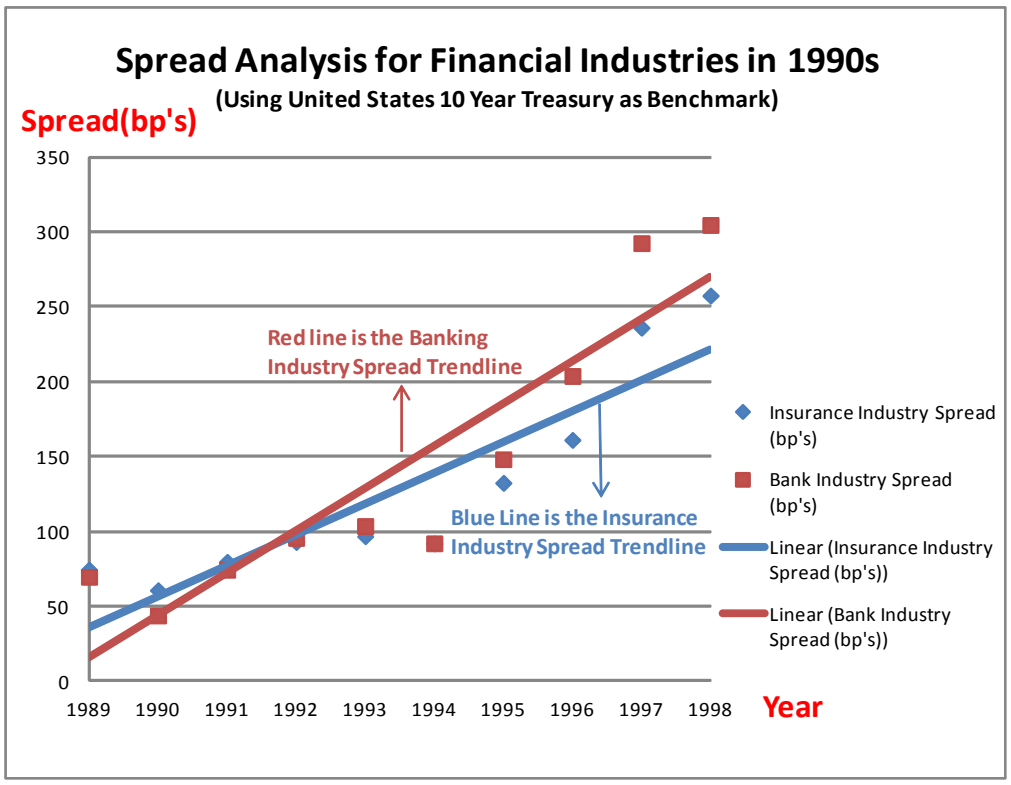
Assume a new solvency or consumer protection regulation comes out. The insurers can now theoretically borrow at 90% of x basis points over Treasuries because the bond market and its analysts recognize that the long-term financial viability of the insurance industry just became more creditworthy. This happens often in fixed income subsectors, such as municipal bonds.

Examine spreads over the period 1989-1999 for insurers and banks:

Spread Analysis for Financial Industries in 1990s

(Using United States 10 Year Treasury as Benchmark)

Year	Bank Industry Spread (bp's)	Insurance Industry Spread (bp's)
1998	305	258
1997	293	236
1996	204	161
1995	148	133
1994	92	92
1993	104	97
1992	96	93
1991	75	80
1990	44	61
1989	70	75



Source: Bloomberg Historical Spread History by Industry

We can see that, after the regulatory reforms of the 1990's which followed the problems of the late 1980's (such as cases of asset liability gross mismatches to chase yield as well as inexperience with newer interest sensitive product designs in general), the borrowing cost of insurers increased at a lower rate than spreads of banks. This is evidenced by the gentler slop of the blue Insurance Industry trend line in the above graph exhibit.

Comments

There are multiple factors that go into the insurance industry's credit spread over Treasury.

The comparison bar, e.g. the bank case sited above, has its own independent levers which may cause it to move in ways making it unsuitable as a benchmark.

The fixed income markets ebb and flow in aggregate and using an observation period which isn't sufficiently lengthy may produce an unusable comparison.

17. Return on Investment (ROI)

Description

Estimate the rate of return to taxpayers and the public by the introduction of better regulation.

Compare this rate before and after the introduction of key supervisory initiatives.

Example

A is the tax dollars devoted to insurance regulation (for example, insurance department budgets plus company assessments).

B is the dollars saved in problems prevented such as insolvencies, fraud, and soft dollar costs due to tarnished industry image.

The rate of return would be the discount rate that equates A to the present value of B

Estimating A: First, the estimated 50 state insurance department budget is estimated at a hypothetical $1.25 billion. Next assume that federal regulation of insurance is a fraction of this cost and arbitrarily choose 10%. We will next assume that these 2 amounts are funded by the sum of all earmarked taxes, fees and assessments and that they are in balance with the sum of the state and federal budgets. Hence, a cost for 2012 of $1.38 billion (110% of $1.25 billion) is our starting point.

Estimating B: We will assume that the insolvencies of the 1980s, which predates most of the important supervisory regulations (RBC, AOMR, etc.) related to insolvencies, are a good basis for 'worst case'. Next, estimate that the reduction in insolvencies since then will give us a basis for 'regulatory savings' when we take the difference between the pre and post cost. We will get an annual dollar figure by using 'losses as a percentage of industry capital' as a metric. With regard to other losses, such as fraud or tarnished image costs, assume that the same percentage reduction used in insolvencies also applies to these reductions using known fraud and GAAP goodwill as bases for reduction. By applying these steps, it results in an annual B value of (a% of Surplus + b% of Known Fraud +c% of Industry GAAP Goodwill) which equals approximately $x.y billion in 2012. (To approximate industry GAAP goodwill, one could estimate that GAAP goodwill equals 10% of GAAP assets and that industry insolvencies 'above normal rate' reduce industry goodwill by 10-20%, giving a reduction to value of 1.0-2.0% of industry assets. While an estimate, this along with actual insolvency cost could be a starting point to leverage the table that follows). This method, though theoretically the best, has many elements of judgment. In actuality, we calculated insolvencies for L&H insurers, and also for P&C insurers, both before and after the wave of insolvencies that prompted the NAIC to revise regulation to be more proactive in the modern era. The life company insolvency and impairment rate dropped very sharply from 2.13% to .77% while the P&C company insolvency and impairment rate dropped from .22% to .16%. The sharper L&H drop makes sense due to the fact that the risk-taking behavior of L&H companies was prompted by the high interest rates of the 1980's while P&C companies were less sensitive to interest rates.

Insurance Company Historical Table of Insolvencies

1988 to 2007 (Data from A.M. Best)

Table 1

Life & Health Insurance Companies

	Year	Total Number of Companies	Number of Insolvencies	Insolvency Impairment Rate
Period 1	1988	2348	27	1.15%
	1989	2269	54	2.38%
	1990	2190	46	2.10%
	1991	2066	81	3.92%
	1992	1949	38	1.95%
	1993	1846	24	1.30%
Period 2	1994	2143	12	0.56%
	1995	2075	11	0.53%
	1996	1593	18	1.13%
	1997	1622	18	1.11%
	1998	1558	12	0.77%
	1999	1469	26	1.77%
	2000	1264	11	0.87%
	2001	1333	8	0.60%
	2002	1290	8	0.62%
	2003	1212	4	0.33%
	2004	1190	5	0.42%
	2005	1124	10	0.89%
	2006	1071	3	0.28%
	2007	1011	9	0.89%

Table 2

Property-Liability Insurance Companies

	Year	Total Number of Companies	Number of Insolvencies	Insolvency Impairment Rate
Period 1	1988	21758	50	0.23%
	1989	14043	48	0.34%
	1990	27666	55	0.20%
	1991	30801	60	0.19%
	1992	34421	58	0.17%
	1993	19052	41	0.22%
Period 2	1994	14610	29	0.20%
	1995	62500	16	0.03%
	1996	33803	12	0.04%
	1997	36300	31	0.09%
	1998	21352	18	0.08%
	1999	30645	19	0.06%
	2000	48419	49	0.10%
	2001	23063	50	0.22%
	2002	15040	47	0.31%
	2003	16619	35	0.21%
	2004	8249	18	0.22%
	2005	7330	14	0.19%
	2006	5181	15	0.29%
	2007	2468	5	0.20%

Summary of Study

		Annual Average of Number of Companies	Annual Average of Number of Insolvencies	Annual Average of Insolvency Rate
1988-1993	Period 1	2111	45	2.13%
1994-2007	Period 2	1426	11	0.77%

		Annual Average of Number of Companies	Annual Average of Number of Insolvencies	Annual Average of Insolvency Rate
1988-1993	Period 1	24624	52	0.22%
1994-2007	Period 2	23256	26	0.16%

Comments

This method is notably subjective.

The estimate produced above contains a large margin of error. We may, however, be able to firmly quantify some of the elements of the estimate.

The ROI calculated could be compared to that of other industries or even insurance regulation in other countries.

A case could be made that the cost of regulation (item A) is the sum of premium tax that the industry pays to the state. It is likely that less than 10% of this amount inures to the explicit regulation of insurers.