COMPLETE ACTUARIAL SOLUTIONS COMPANY

The CASCO Bulletin

ISSUE 4

3RD QUARTER 2011

What If Inflation Rears Its Ugly Head?

Concerns about a rise in inflation persist. You only need to look at the core CPI, which excludes volatile energy and food prices, to see that inflation is a very real issue. This measure was up 0.3% in May, its largest increase since July 2008. At the same time, corporations are sitting on record amounts of cash and ready to deploy capital.

As concerns about high unemployment, slower than expected GDP growth and a possible "double-dip" recession mount, the Fed has made it clear that inflation is very much its secondary worry and continues to pump liquidity into the economy through purchasing government debt and maintaining low interest rates. This uncertainty is enough to make actuaries scratch their heads.

Meanwhile, our actuarial crystal ball keeps flashing the following warning: "Make sure clients understand how increased inflation impacts their balance sheet, given that they have been managing their insurance programs in a low inflation environment for so many years."

A balance sheet is a comparison of the projected current value of assets and liabilities. A typical insurance program relying on alternative risk financing such as a self-insurance fund, a captive insurer, or a risk retention group is operated in a way to maintain its surplus position in a range which minimizes volatility in funding over the long term. The lower end of the surplus range is intended to guard against potential adverse loss experience. The upper end of the range is managed to guard against unreasonable accumulation of assets in the program to the detriment of better investment opportunities.

A sustained rise in inflation slices the GAAP surplus position of an insurance program like a double-edged sword. It lowers the valuation of the assets typically invested in fixed-income notes. At the same time, it inflates the valuation of the liabilities as it increases future costs associated with open and incurred but not reported (IBNR) claims. This leveraging effect increases as the duration of liabilities and fixed-income assets increases.

As a demonstration, let us assume the Well Funded Captive Insurance Company (WFCIC) writes workers' compensation insurance. As reflected in the balance sheet on the next page, a sustained rise in inflation will have a leveraged effect on WFCIC's projected surplus, with a 1% higher than expected rate of inflation reducing surplus by 20% and a 2% higher than expected rate reducing surplus by 40%.

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What If Inflation Rears Its Ugly Head? (continued)

WFCIC Balance Sheet

	Rate of Inflation		
	Expected Inflation Level	1% Higher than Expected	2% Higher than Expected
Assets			
Cash	$ 1,000,000	$ 1,000,000	$ 1,000,000
Fixed-Income Notes a/	4,000,000	3,885,759	3,775,869
Total	$ 5,000,000	$ 4,885,759	$ 4,775,869
Liabilities			
Workers' Compensation Liabilities	$ 3,482,000	$ 3,667,000	$ 3,861,000
Surplus	1,518,000	1,218,759	914,869
Total	$ 5,000,000	$ 4,885,759	$ 4,775,869
Change in Surplus vs. Expected Inflation Level		**-20%**	**-40%**

a/ A three year duration treasury bond.

In light of the significant impact of a sustained rise in inflation on the balance sheet, insurance program managers should discuss the following action steps with their service providers, including investment managers, brokers, actuaries, and claims administrators:

- Review investment strategy regarding duration and sensitivity to increased inflation.
- Examine claim settlement philosophy. Settling claims quicker reduces the impact of increased inflation.
- Review the inflation sensitivity of upcoming structured settlements.
- Analyze the impact of potential increases in discount factors on liabilities and future funding.
- Consider funding and reserving at a higher confidence level if you want to be one step ahead.
- Consider further capital contribution or changes to dividend policy in case the surplus position of the program is in danger of falling below the safety margin required to guard against adverse experience.
- Monitor the impact on the financial strength of the program’s insurers/ reinsurers and the future availability of coverage under the desired terms and limits.

Whether sustained inflation is around the corner or further down the road, there is no denying that the risk is real and the adverse impact on insurance programs could be significant and should be planned for.

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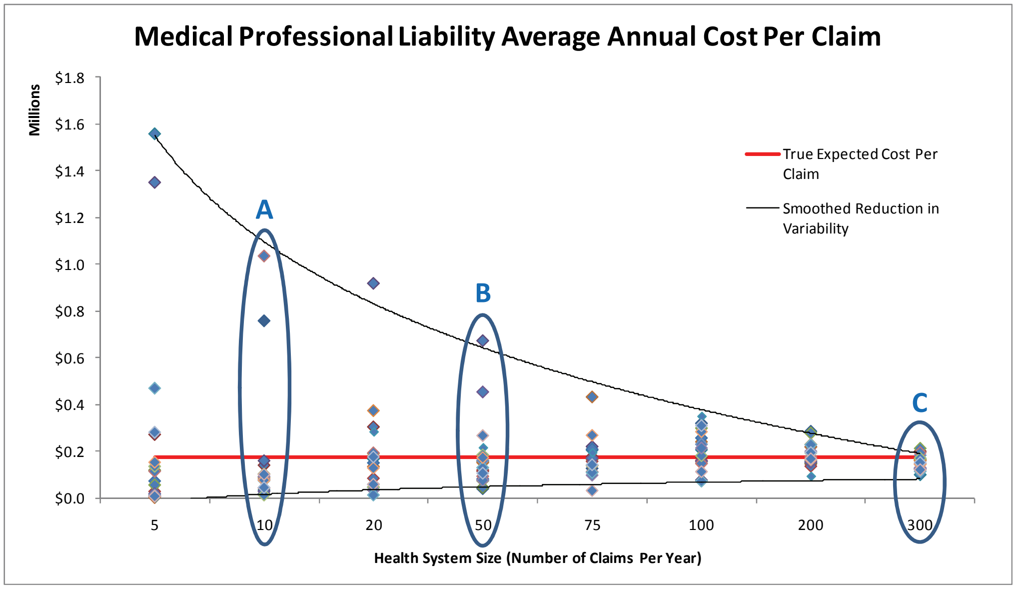
As the number of claims per year grows, the variation in the annual average cost per claim tends to decrease.

Ask the Actuary: Credibility

Actuarial projections rely heavily on analysis of past loss experience. Oftentimes, the loss experience associated with alternative risk financing is not a large enough sample to give a complete picture of possible losses. The weight (credibility) that can be applied to this loss experience is based on factors such as the size of the program, amount of loss history, and the inherent volatility in the experience from one year to the next.

Q: Why is more better?

The more observations (claims), the closer the average of those observations will likely be to the true mean. For example, the following graph shows 20 years of potential average annual cost per claim for institutions of varying size (between 5 and 300 claims per year). The red line is the true expected cost per claim for the line of coverage. Each blue dot is the average cost per claim for a given year.



As the number of claims per year grows, the variation in the annual average cost per claim tends to narrow to a smaller band around the expected value.

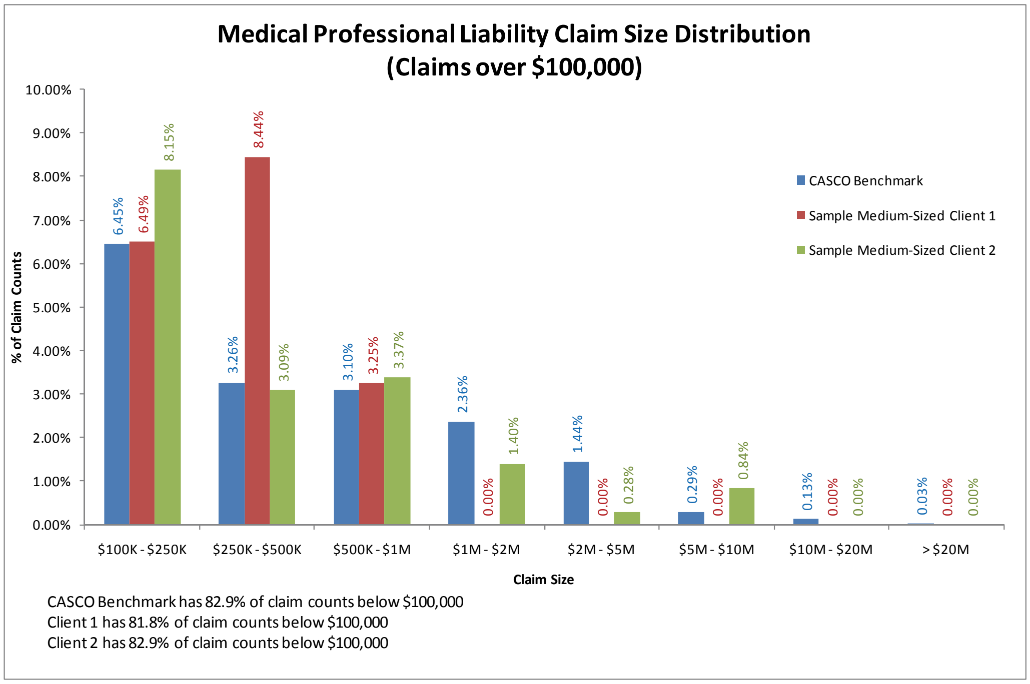
For example, assume health system A is a small system with 10 claims per year, B is medium-sized with 50 claims per year, and C is a large system with 300 claims per year. For most years, A's average annual costs per claim end up below the red line because most medical professional liability claims are small. However, when there is a large claim it causes the cost per claim for that year to rise significantly. Health system A's annual costs per claim vary from $12,000 to $1,033,000. This volatility makes it difficult to accurately project losses based solely on their own claims experience.

Health system B's annual costs per claim also vary from year to year, but not as much ($37,000 to $673,000). Health system C's annual costs per claim vary even less ($100,000 to $212,000). This reduced volatility allows for greater reliance on their own claims experience when projecting losses.

Ask the Actuary: Credibility (continued)

Q: What is missing from smaller data samples?

Smaller data samples provide an incomplete picture of claims of various sizes (especially large ones). Projecting future losses based solely on this information results in a prediction of this incomplete history repeating itself instead of allowing for the full range of possible losses. For example, the following graph shows the claim size distribution (claims over $100,000) for CASCO's benchmark compared to two sample medium-sized clients.



Small to medium-sized systems typically do not have a complete distribution of claims of various sizes (especially large ones).

As reflected in the CASCO benchmark, claims over $1 million do not happen very often (about 1 in 25 are over $1 million), but they are possible. For a small to medium-sized system who does not experience a lot of claims per year, there is a good chance that they have not had many (if any) large claims in their history. For example, client 1 has not had any claims over $1 million. While client 2 has had a few larger claims, they have not experienced any claims over $10 million.

Actuaries must project the "best estimate" of losses (including the small chance of a large claim) and not the estimate based solely on the systems' limited past loss history. To more reliably estimate the chance of large losses, additional data is needed to complete the picture.

Q: What additional data should be used?

Good sources of additional data are published rating agencies, rate filings by commercial carriers, data available from similar institutions, etc. It is important to select data that is credible in and of itself, while selecting the most relevant available information.

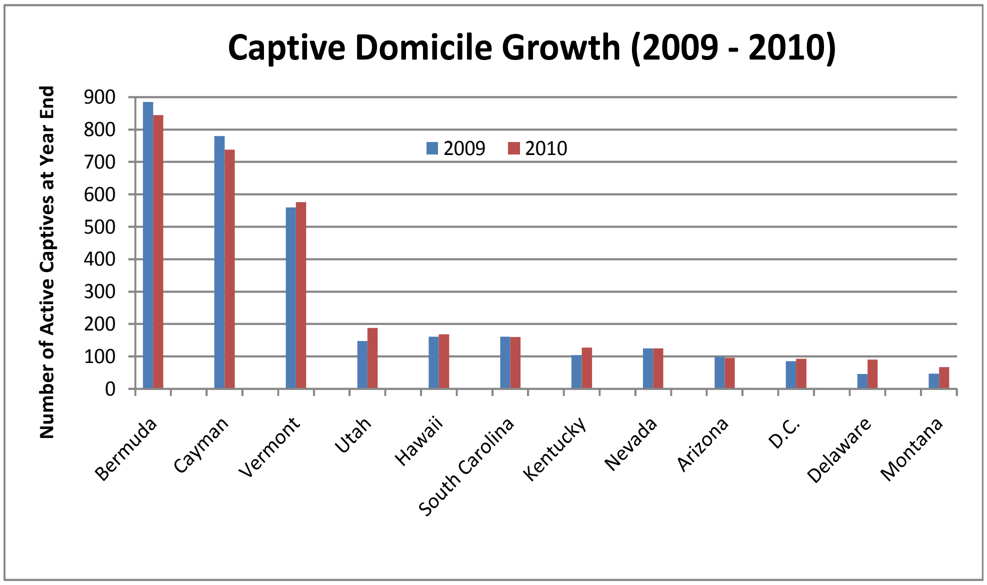
Market Focus

In this issue, we look at recent trends in growth, formation, and industry utilization for captive insurance companies (captives) and risk retention groups (RRGs).

Bermuda and Cayman remain strong domiciles, and there was solid growth in Delaware, Utah, Montana, Kentucky, and D.C.

Market Focus: Captives and RRGs

The number of active captives was up 2.2% in 2010 despite difficult market and economic conditions. The rankings among the leading domiciles were largely unchanged, with Bermuda remaining number one. Onshore domiciles continued to grow in 2010, with the most significant growth in Delaware, Montana, and Utah (which now ranks second behind Vermont in terms of number of active captives).



Source: Strategic Risk Solutions 180° Newsletter

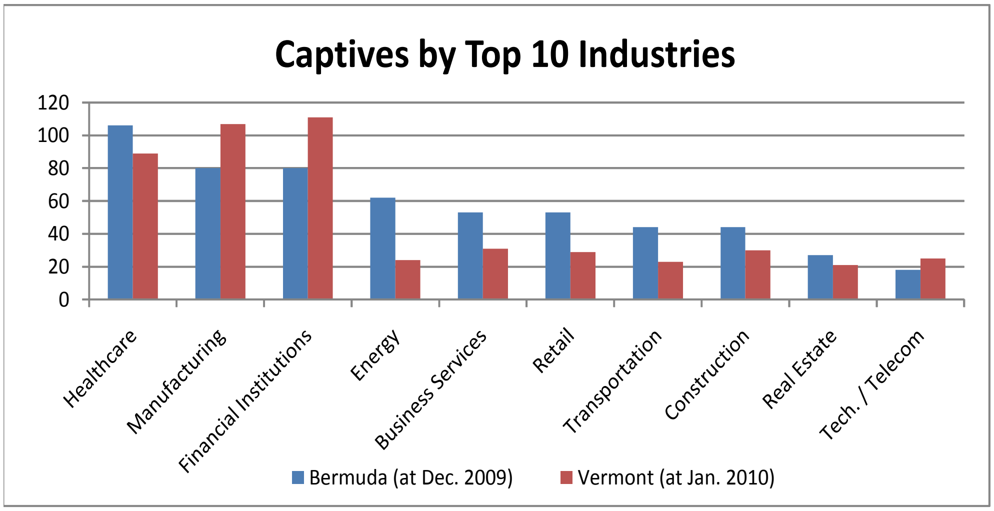
Despite declines, Bermuda and Cayman remain strong domiciles. The declines in Bermuda were mainly due to mergers and consolidations of their main captive segments (Fortune 500 companies and multinationals; association and group captives). Cayman's decline was due to the closure of special purpose captives underwriting catastrophe bonds that were created with a finite lifetime.

Strong growth in Delaware, Utah, Kentucky, and D.C. was due to tax opportunities provided by new 831(b) companies and interest in cell captives, which contributed to relatively flat growth or declines for several other onshore domiciles as they faced increased competition.

The following graph shows the number of captives by parent industry for the largest on-shore (Vermont) and off-shore (Bermuda) domiciles.

Market Focus: Captives and RRGs (continued)

Parent companies of Bermuda and Vermont captives operate in a wide variety of industry groupings, led by healthcare, manufacturing, and financial institutions.



Sources: Vermont Captive website and a recent Bermuda Monetary Authority Captives report

Formations of RRGs in 2010 were up 87.5% (from 8 to 15) over 2009, with most new formations coming from sectors other than healthcare.

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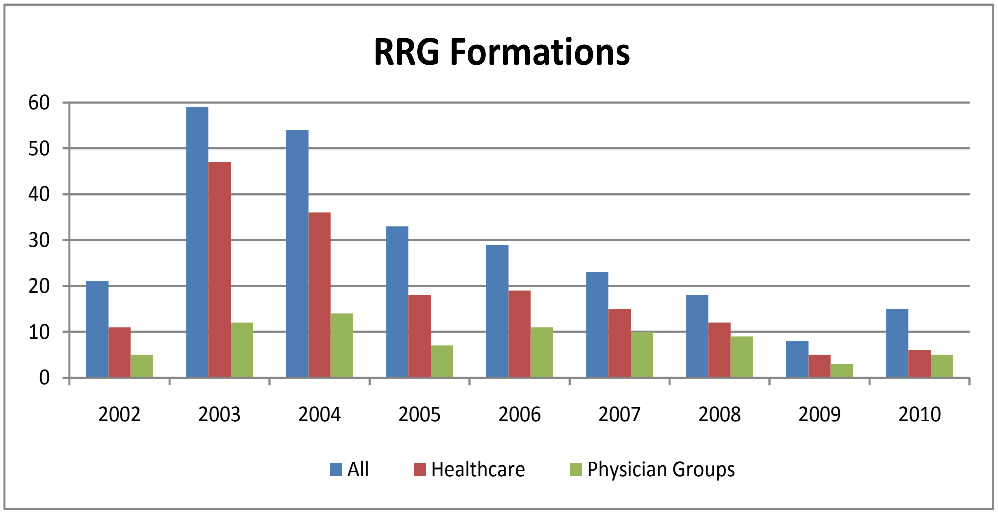

Source: Strategic Risk Solutions 180° Newsletter

There was rapid growth in the number of active RRGs, particularly in the hard market period of 2002-2005. The number of RRGs continued to increase through 2008 in spite of the soft market, with the first decline in the last decade occurring between 2008 and 2009.

Formations of RRGs were up over 2009. However, closures mostly offset formations, with a total of 254 active RRGs at the end of 2010 (up from 252 in 2009).

Unlike the past several years, the healthcare sector saw a decline in active RRGs in 2010. Most new formations in 2010 came from sectors other than healthcare.

Interesting Articles

30% of employers may stop providing health care coverage after 2014

According to a recent survey, 30% of employers may stop providing health care coverage when key provisions of the health care reform law go into effect in 2014.

Use of mobile devices by employees could increase workers' compensation exposure

Employers who supply their employees with company cell phones, laptops, tablets, and other portable devices could face surprise workers' compensation claims if employees are injured while using the device when off-site or off the clock.

Buyers expect flat or increasing commercial insurance prices

Commercial property/casualty insurance prices expected to stabilize or increase after years of decline, according to survey.

CASCO Corner

Congratulations to Hua Li on becoming an Associate of the Casualty Actuarial Society.

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About CASCO

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- Workers' Compensation
- Automobile Liability
- Managed Care Errors & Omissions
- Medical Benefits Stop Loss Risk
- Disability Benefits

We help clients with:

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- Communication with auditors, regulators, and excess insurers
- Other regulatory or administrative problems
- Impact analysis of judicial/law changes affecting program costs
- Strategic risk financing studies
- Retention limit analysis (single and multi-line)
- Internal cost allocation
- Pro-forma projections of program results under varying scenarios
- Cash-flow forecasts to help in setting investment strategy
- Evaluation of insurance products
- Projecting costs for acquisitions and new ventures
- Expert witness testimony
- Benchmarking data on loss costs, trends, retention limits, and more

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