

**VERTEX** Construction Services, Inc.  
Colorado Office  
820 16<sup>th</sup> Street, Suite 720  
Denver, Co 80202  
Tel: 303.623.9116  
Fax: 303.623.9118  
Contact Anne: [alassegard@vertexeng.com](mailto:alassegard@vertexeng.com)

# LOSS TRENDS IN THE SURETY INDUSTRY

by

WILLIAM J. McCONNELL P.E., PRESIDENT  
VERTEX CONSTRUCTION SERVICES INC.

## TABLE OF CONTENTS

Section I – Executive Summary.....	Page 1
Section II – Why Construction Loss is Prevalent?.....	Page 4
Section III – Trend Analysis.....	Page 6
Section IV – Future Predictions.....	Page 14
Section V – How Subguard will Affect the Contract Surety Industry in the Future.....	Page 16
Section VI – Will Consolidation Continue?.....	Page 18

## I. Executive Summary

In an effort to improve predictions regarding the future performance of the contract surety industry, Vertex Construction Services Inc. (“Vertex”) endeavored to identify driving forces that have influenced loss patterns over the past twenty-five years. Annual contract surety loss data was plotted against various economic indices in an effort to identify trends - some of indices include the Consumer Price Index, ‘put in place’ construction industry revenue, ENR’s Building Cost Index, 10-Year U.S. Treasury Bill rates, crude oil prices per barrel, Dow Jones Industrial Average, ENR’s Top 400 contractor profit margin survey results, Yahoo’s Construction Industry Index, etc.

Although it is common in the surety industry to blame the most recent years of extreme loss largely on aggressive underwriting policies of the late 1990s and the declining economy of the early 2000s, the data I reviewed suggests other economic factors played a large role in this loss cycle. A number of hypotheses were drawn from the contract surety loss data comparisons, the most significant being *inflation reduces contractor profit margin, which subsequently drives up surety loss ratios*. In addition, contract surety ‘loss cycles’ (in the shape of bell curves) typically ranging from eight to eleven years have been getting shorter

(most likely due to the Federal Reserve Board introduced the Federal Funds Rate in the late 1980s as a means of controlling inflation).

Vertex also researched Zurich's subcontractor default insurance product, Subguard, to calculate its current market share and growth rate and estimate the impact it has (and will have) on the contract surety industry. Although premiums for this product have grown significantly since its introduction in 1995 (conservatively estimated by Vertex to be no more than \$123 million annually), the target audience is limited, as it requires contractors to have subcontractor/supplier revenue of \$50 million annually – and this figure will likely be adjusted to \$100 million in the near future, which leaves less than four hundred contractors that fit this criteria. Moreover, the target project for this product is private, primarily office or commercial construction, further narrowing the potential pool of contractors. If Zurich keeps its marketing consistent, I don't see Subguard taking more than \$200 million in annual premium in the future (in today's dollars), which represents a maximum five percent marketshare of the surety industry.

Lastly, Vertex analyzed consolidation patterns of the global insurance industry, and property & casualty providers in particular, in an effort to predict whether mergers and acquisitions will continue at the same pace they have for the past fifteen years. Financial and insurance institutions, by nature of being publicly traded, are pressured for growth. As long as money is historically cheap to raise and/or borrow, I believe the consolidation trend will continue.

In the 1980s, when the cost of borrowing money was expensive, there was very little consolidation in the surety industry. As the cost of money dropped in the mid 1990s, consolidation picked up. Between 1990 and 2006, ten of the top fifteen players have either merged, been acquired, or exited the surety industry. Another trend in the insurance industry is to divest non-core products and swiftly grow core products. This may also affect certain surety programs.

## **II. Why Construction Loss is Prevalent?**

In the United States, the \$1.14 trillion construction industry represents over nine percent of the country's gross domestic product. The 800,000+ construction establishments represent twelve percent of all U.S. companies. While tremendous in size, this industry is extremely fragmented, as ninety percent of all construction establishments have fewer than twenty employees.

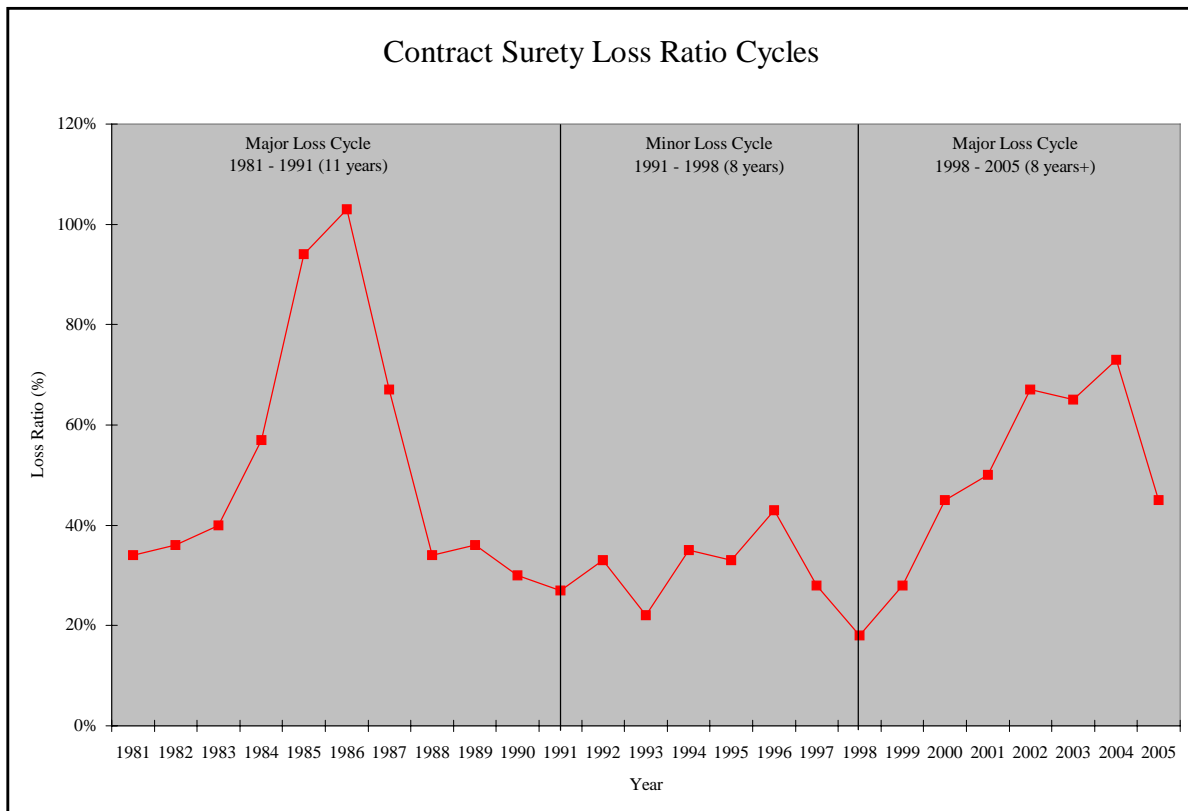
The fragmentation is largely a result of the low barrier to entry and lack of efficiency gain associated with regional growth. For instance, a New York City general contractor is not going to realize improved subcontractor and material pricing or be able to increase revenue per employee, if it expands operations to the west coast. Because the majority of construction establishments are small to mid size local players and only a handful of the large contractors are publicly traded, limited data exists to track industry profitability. Due to the lack of profitability data, the health of the construction industry is solely measured by statistics including overall revenue growth, the number of housing starts, and the amount of annual federal appropriations.

With the high level of competition, contractors commonly bid and negotiate work with reduced profit margins ranging from 2% - 6%. The financial risks for contractors are extremely high due to high capitalization requirements, reliance on multiple subcontractors and vendors to meet as-planned performance, reliance on architects and engineers for well designed projects and timely review processes, and onerous contract forms. Construction problems are prevalent in the construction industry as a result of this high level of risk and low profit environment.

As noted in a recent 2005 National Association of Surety Bond Producers (NASBP) survey, the leading cause of difficulties for contractors is low profit margin. When profit margins begin to shrink, surety loss ratios tend to increase. Micro-trends can typically explain individual construction defaults or bankruptcies; these micro-trends include uncontrolled expansion, ownership/management transition, undercapitalization, labor/material shortages, and service area diversification. However, the purpose of this report is to identify macro-trends that influence a reduction in contractor profit margins, which ultimately leads to industry wide increases in contract surety loss ratios.

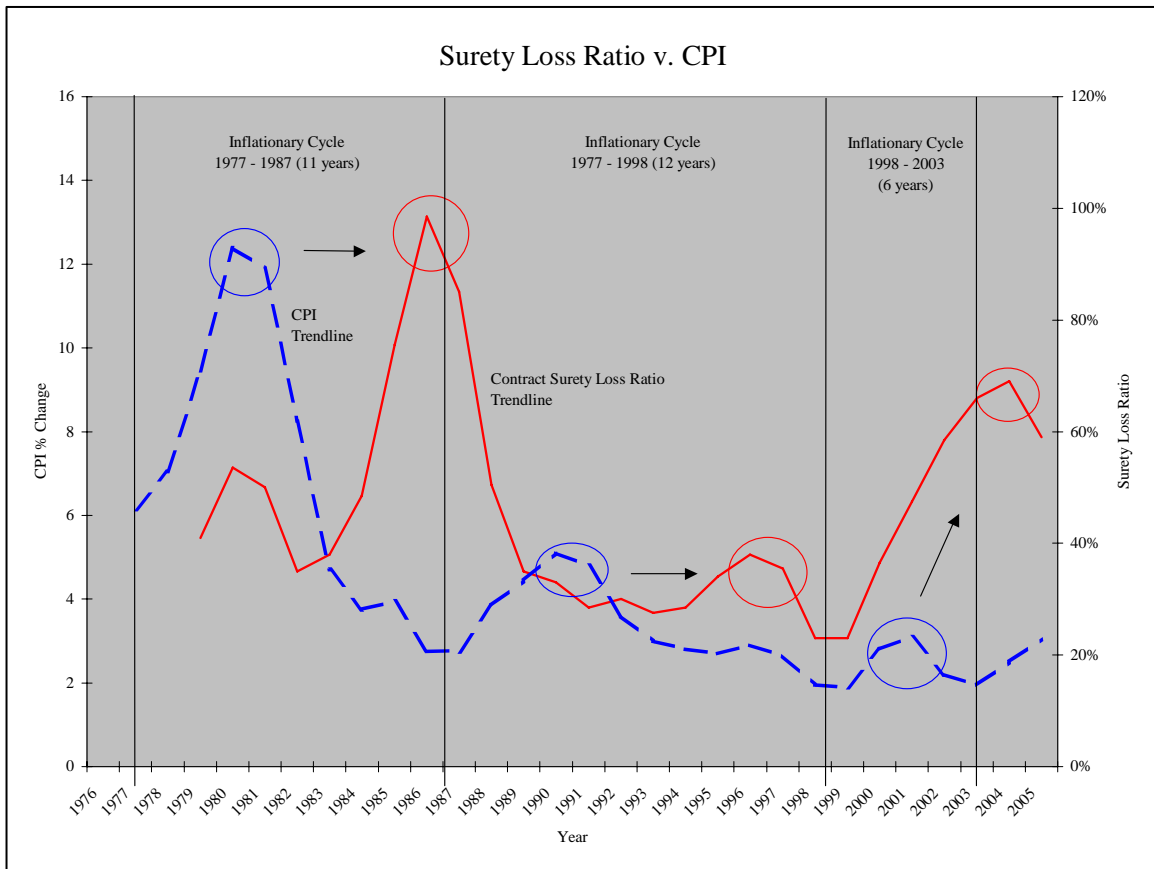
### III. Trend Analysis

*Contract Surety Loss Ratio Cycles:* Plotted below are annual contract surety industry loss ratios since 1981 provided by the Surety Association of America. There have been three distinct cycles over the past twenty-five years, with the industry trending from profitability to several years of loss and back to profitability. As a general rule, sureties are profitable when loss ratios are 40% or below.



- Cycle 1 (1981 – 1991): This eleven-year cycle was the most volatile with loss ratios starting at 34%, trending up to a peak of 103% in 1986, and trending down to 27% in 1991.
- Cycle 2 (1991 – 1998): The second cycle covered an extremely profitable period with the loss ratio starting at 27% in 1991 and trending up to a peak of only 43% in 1996, and tending down to a mere 18% in 1998, the lowest loss ratio the contract surety industry has experienced over the past twenty five years.
- Cycle 3 (1998 – 2005): The third cycle started in 1998 with a loss ratio of 18% and trended up to a peak of 73% in 2004. Preliminary 2005 figures indicate the industry loss ratios will be down to 40%. It is my opinion the loss ratio of 2006 will be lower than 40% and will conclude a nine-year cycle before loss ratios start trending back upward.

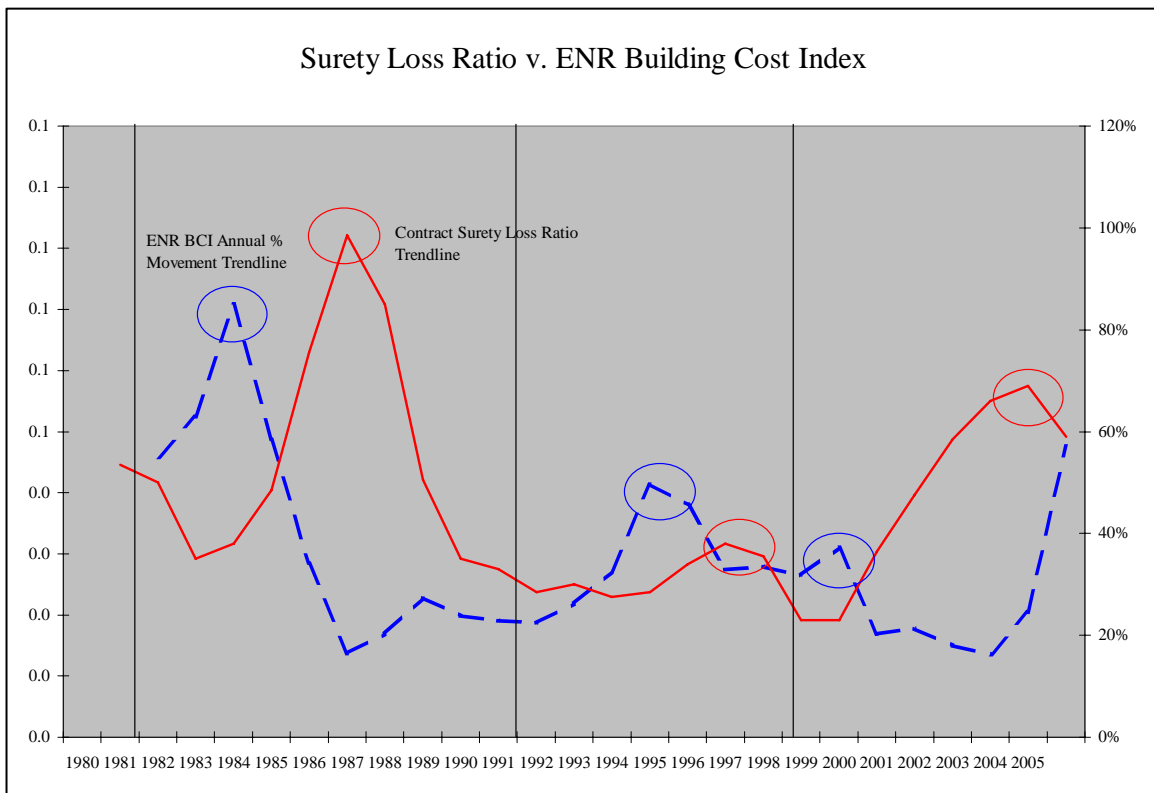
*Contract Surety Loss Ratios v. Consumer Price Index Movement:* Inflationary pressures often stem from an economy that is too strong, creating supply shortages due to excess demand. Since 1989, The Federal Reserve Board has attempted to control inflation through increases and decreases in the Federal Funds Rate. If the economy is too strong, which traditionally means low unemployment and high consumer and government spending, the Federal Open Market Committee (“FOMC”) will raise the Federal Funds Rate in order to cool down the economy.



Similar to the surety loss ratio trendline, there have been three full inflationary cycles over the past three decades. Once inflationary pressures peak in each of the cycles, surety loss ratios begin to rise and tend to peak four years thereafter. The reason for this lag has to do with the ‘slow death’ inflation causes contractors. Contractors adjust schedule of values and use other measures to push losses off to the tail end of projects. This creates cash flow issues a year to several years after projects start which leads to a domino effect of reducing profit margins, making cash flow matters worse, and hampering a contractor’s ability to borrow.

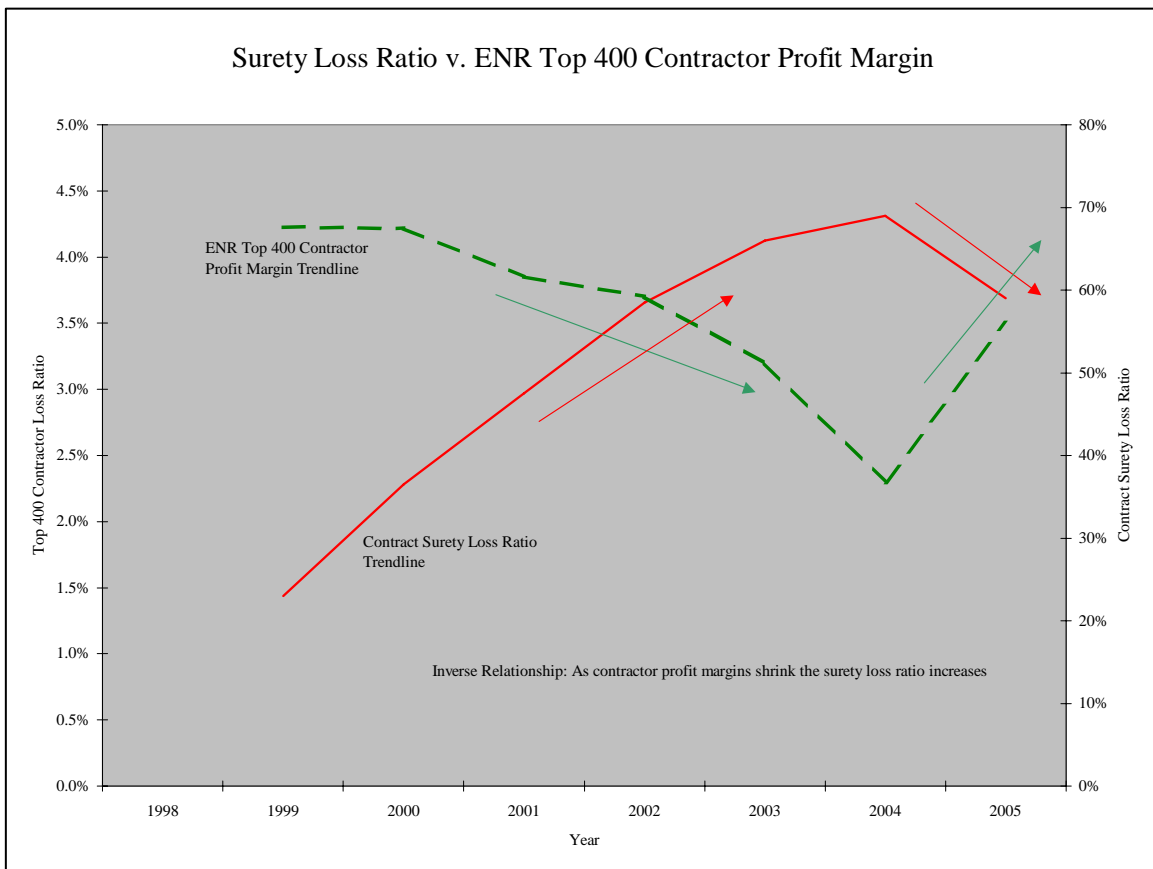
*Surety Loss Ratio v. ENR Building Cost Index:* ENR’s Building Cost Index (“ENR BCI”) is made up of average construction labor rates and material pricing that is widely accepted as a gauge of inflation. A similar trendline pattern is found here between ENR BCI and the Consumer Price Index – as soon as inflationary pressure peak, contract surety loss ratios begin to rise.

Since 2004, there has been an extreme spike in construction material price inflation. Accordingly, I anticipate an associated spike in surety loss ratio will begin in 2007/2008. Based on strict underwriting practices that have been implemented by the top surety providers since the last surety loss cycle, the peak loss ratio should still be less than 70%.

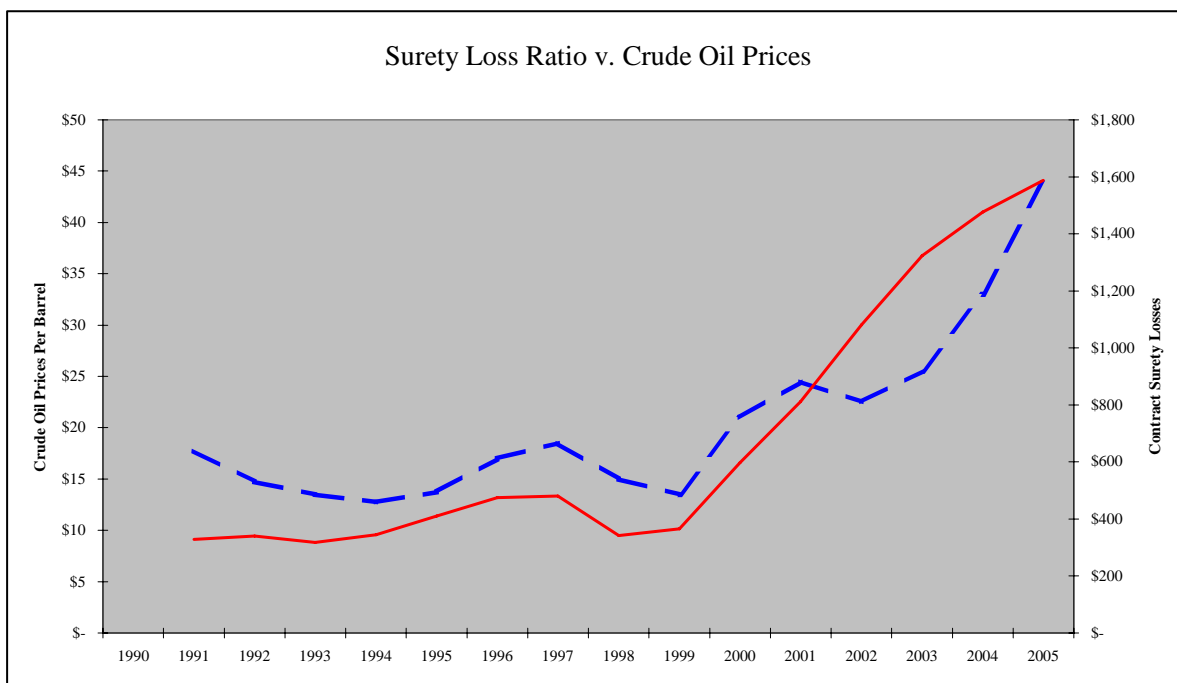


*Surety Loss v. ENR Top 400 Contractor Profit Margin:* ENR has surveyed the Top 400 construction contractors each year over the past decade and requested they provide profit margin percentages. Approximately three hundred fifty contractors respond each May. Plotted below are the average profit margins and the surety loss ratios. Since 1998, the trendlines are inversely proportional – as contractor margins decrease, surety loss ratios increase. Similarly, as contractor margins increase, surety loss ratios decrease.

ENR conducts a similar study for the top 600 specialty contractors. The same trendline as the Top 400 contractors results, which leads to the same conclusions – as subcontractor profits decrease, surety loss ratios increase.



*Surety Loss v. Crude Oil Cost:* The cost of crude oil per barrel is also correlated with contract surety losses. As the price of oil increases, surety losses increase. In 2006, surety loss ratios will likely be the lowest they've been since 2000. Interestingly, oil prices are beginning to fall as well. This graph continues to reinforce the conclusion that surety losses are influenced by inflation.



*Surety Loss v. DJIA:* During the three cycles, the Dow Jones Industrial Average (“DJIA”) has had its poorest performance during the initial year of the peak loss ratio years for each cycle. This data suggests surety loss ratios spike as the large corporations’ performance and valuations are at their eight year lows. One way to predict surety loss ratios is to review predictions regarding the performance of the DJIA.

Cycle No.	Peak Surety Loss Ratio Years	% Annual Movement in DJIA
Cycle One	1985 - 1986	-4% in 1985 (worst performance btw 1982–1991)
Cycle Two	1995 - 1996	2% in 1995 (worst performance btw 1991-1998)
Cycle Three	2002 – 2004	-17% in 2002 (worst performance btw 1998-2006)

*Example of how inflation affects contractor profit margins:* Assume a contractor was hired by a developer through a ‘CM At Risk’ agreement to construct a 100,000 square foot high rise luxury condominium project in an urban area using union trades. The cost of the work was estimated at \$400 per square foot. The ‘CM at Risk’ agreement stipulated a guaranteed maximum price of \$40 million. On top of this GMP was the contractor’s fee of \$1 million (2.5% of total cost).

The contract was signed in mid to late-2004, a notice to proceed was issued to the contractor in early-2005, and a twenty month duration was stipulated in the contract which brings the contractual end date to September of 2006. Although proposals for each trade were solicited prior to the execution of the construction agreement, the contractor took more than six months to get all necessary subcontractors and suppliers under contract. Because the developer took the full ninety days to issue the contractor the notice to proceed, and it took the contractor forty-five days to fully mobilize, and buyout wasn’t completed until June of 2005, the contractor was exposed to nine months of escalation.

In 2005, the Consumer Price Index had increased 3.4%, its highest annual increase since 1991. ENR's Building Cost Index was up 9.2%, by far the highest annual increase over the past three decades. Assuming \$20 million of buyout was not completed for six months, the contractor was subjected to nearly five percent escalation, which led to buyout overruns in the amount of \$1 million. Moreover, a number of the subcontractors were working at a near break even level, particularly the framer and structural steel subcontractor, two trades that fell on the critical path. As profitability of this project was in jeopardy for these key subcontractors, they didn't staff the project until large work areas were available and they both submitted change order claims almost daily in an attempt to make up for lost profits.

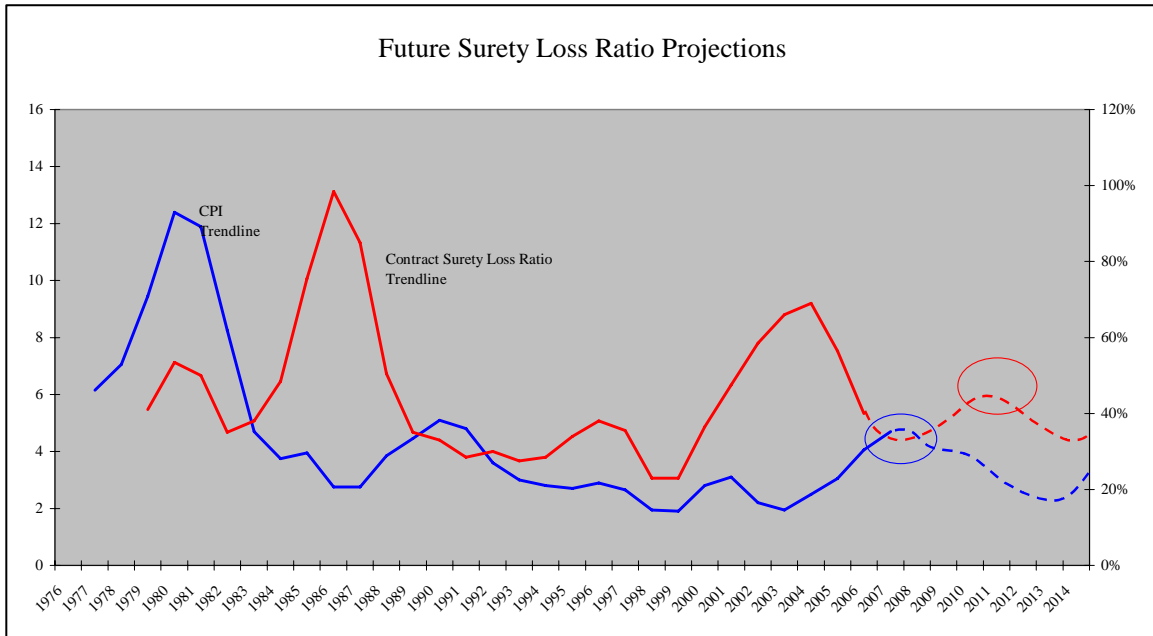
The contractor's fee was completely offset by labor and material escalation so it began to submit affirmative claims that normally would not have been submitted had the costs been in line. As a result, friction between the architect and the contractor developed and therefore the architect began to over-inspect the project and strictly enforce the contract requirements. Coupling this with the subcontractor issues, the project fell sixty days behind schedule, leaving the contractor exposed to a liquidated damage assessment (which is ultimately used to offset affirmative claims). In the end, the contractor will take a \$500 thousand dollar loss in 2007, once the project is substantially complete, nearly two years after the contract was signed.

Unfortunately for the contractor, this loss will negatively affect other projects in 2007 as funds from other projects are used to pay subcontractor retainage payables on the luxury

condominium project. Ultimately, the contractor's performance will begin to suffer on these other projects in 2008, which will lead to a default on two projects, triggering its surety's obligations. The surety will set a reserve in 2009 to cover the performance and payment bond loss on these projects.

#### IV. Future Predictions

*Future Contract Surety Loss Ratio Projections:* As noted above, inflation drives surety loss ratios. The consumer price index is up 3.6% through August of 2006. Should this level simply hold though year-end, 2006 will represent the highest level of inflation since 1991. Starting in 2004, a severe inflationary cycle began with the ENR Building Cost Index increasing 3.3% in 2004 (nearly double the average annual increase), and 9.2% in 2005 (by far the largest percent increase since 1980). Through September of 2006, the BCI is up 3.1% and ENR's Material Cost Index is up 6%, meaning 2006 will be another year of extreme inflation.



Based on the recent deflation in oil prices, and the recent leveling of cement and lumber costs, 2007 inflation should start to slow then decline from the peak of this inflationary cycle

(assuming 2006 represents the peak year for inflation). Based on the historic trend data, loss ratios should begin to increase in 2007 and create another eight year loss cycle that will peak in 2010/2011. Loss ratios will likely trend up to 55%, and then trend down to 35% in 2012/2013.

## V. How Subguard will Affect the Contract Surety Industry in the Future?

Zurich began offering its subcontractor default insurance product, Subguard, in 1995. Zurich explains that, “Subguard was designed to address the needs of large general contractors, construction managers and design-build firms with annual subcontractor/supplier expenditures of \$50 million or more.” The first policy was written in 1996 and Zurich claims to have underwritten 130 policies to date, providing coverage for approximately \$70 billion in construction.

Although premiums collected from Subguard are not identified in Zurich’s annual report, the cost to purchase a policy is approximately one percent of total construction insured. Assuming all 130 policies are still in place, and

Year	Annual Premium Subguard	Annual Premium Contract Surety	Number of Policies	Volume of Construction Insured by Subguard
1995	\$ -	1,208,000,000	0	-
1996	\$ 1,900,000	1,286,000,000	2	190,000,000
1997	17,575,000	1,429,000,000		1,757,500,000
1998	\$ 33,250,000	1,526,000,000	35	3,325,000,000
1999	40,850,000	1,602,000,000		4,085,000,000
2000	\$ 48,450,000	1,639,000,000	51	4,845,000,000
2001	64,125,000	1,768,000,000		6,412,500,000
2002	\$ 79,800,000	1,924,000,000	84	7,980,000,000
2003	84,075,000	2,109,000,000		8,407,500,000
2004	\$ 88,350,000	2,179,000,000	93	8,835,000,000
2005	105,925,000	2,227,936,000		10,592,500,000
2006	\$ 123,500,000		130	12,350,000,000
Total:				68,780,000,000

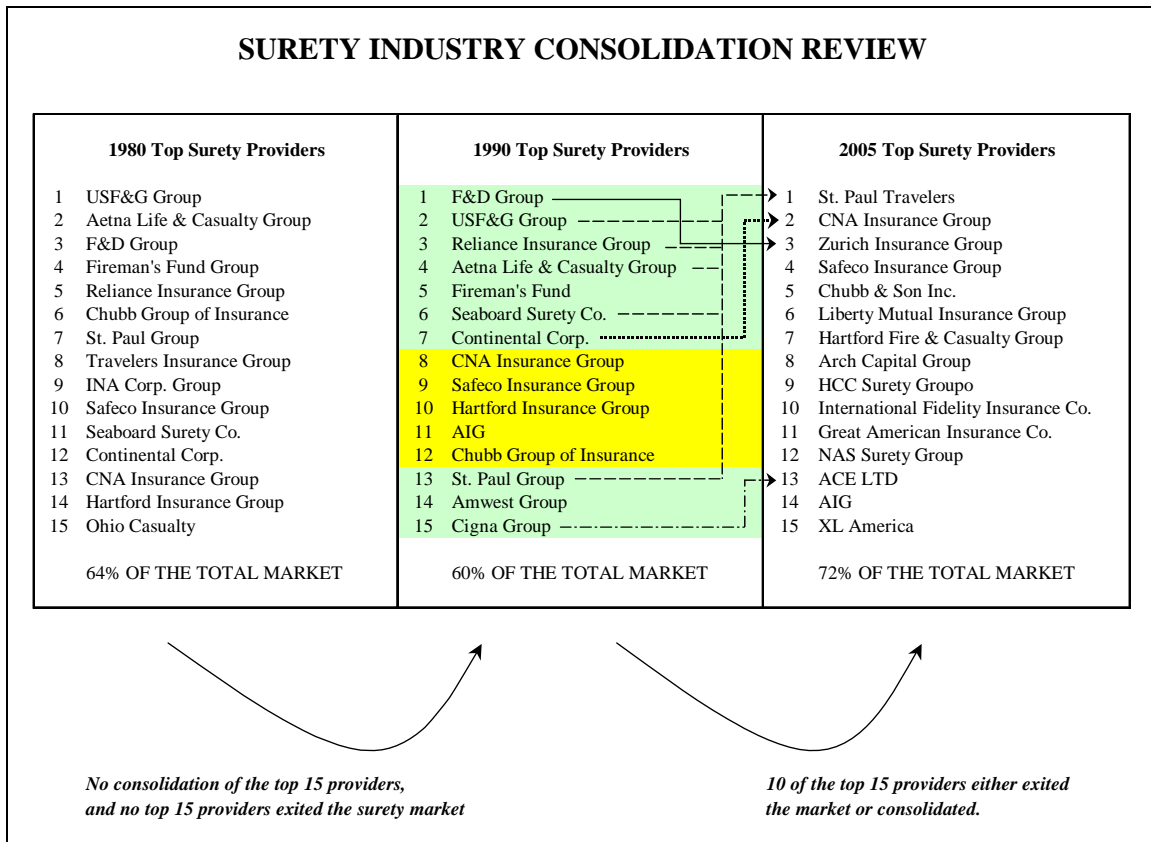
just under \$70 billion of work has been insured since 1996, and each policy holder completes \$95 million of insured subcontractor/supplier volume each year, this conservatively yields an annual premium of \$123 million (as calculated on the chart).

Based on several discussions with Zurich Subguard Specialists, the annual \$50 million minimum subcontractor/supplier figure will likely be increased to \$100 million in the future. If this happens, the pool of qualified contractors that will fit this economic model is less than four hundred. Moreover, Zurich prefers to target private construction contractors that negotiate contracts for office, large scale residential and commercial projects. This further narrows the potential pool of contractors that would use Subguard.

Of the three contractors I've interviewed that use Subguard, each appears to be satisfied with the product, although the individuals I had discussions with were not directly involved with managing any claims that have occurred. I feel the market for Subguard is only a fraction of the market for contract surety products. I don't see this product taking major market share moving into the future unless Zurich begins to market smaller contractors that perform private and/or public work. If there are two hundred fifty contractors that meet Subguard's criteria, and all use this product, the number of policies would at most double, bringing the premium closer to \$200 million, which still represents only about five percent of the \$4 billion surety industry.

## VI. Will Consolidation Continue?

The surety industry is fairly small, earning approximately \$4B in premium in 2005. Of the 125 or so companies that write surety business, only two are separately traded public companies that focus solely on surety / fidelity products, and the balance are multi-line insurance companies that focus solely on surety / fidelity products, and the balance are multi-line insurance companies that include surety / fidelity in their portfolio of products. In 2004, global insurance premiums amounted to \$3.3 trillion (source data - Wikipedia), with approximately \$1.3 trillion written in North America. Based on these figures, surety is less than one percent of the North American insurance market.



Due to its small presence, “the surety industry is being affected by the convergence of the entire financial services industry. Banks, insurance companies and securities firms are all challenged by the need for scale in terms of revenue growth, product breadth, and distribution”, says Mike Dougherty, the Executive Vice President and Chief Marketing Officer of CNA Surety, in Construction Business Review’s 2004 newsletter.

Several consolidations in the surety industry since 1990 include:

- CNA Surety & Capture Holdings (Western Surety & Universal Surety Company of America)
- Liberty Mutual & Employers of Wausau & Peerless
- Zurich North America & F&D
- Amwest exiting the business
- Fireman’s Fund Insurance Company exiting the business
- XL America exiting the business
- Reliance & Travelers
- St. Paul & Travelers
- Safeco & American States
- St. Paul & USF&G
- Gulf & Frontier
- XL & CGU Surety
- F&D & Mountbatten

Borrowing money was very expensive in the 1980s, when the prime interest rate trended from 20% in 1980 to 10% in 1989. As such, there was very little consolidation during this timeframe. In the 1990s, the prime interest rate decreased from 10% to 8%. Money became very cheap to borrow after the turn of the millennium, as the prime interest rate trended from 8% in 2000 to 4% in 2003, and back up to 8% in 2006 (source data – Financial Forecast Center ([www.forecasts.org](http://www.forecasts.org), historical bank prime loan rate)). As long as the cost of borrowing money continues to be cheap, which will likely be the case as inflationary

pressures subside over the next year, acquisitions will likely continue. Large corporations often do not have the patience for gaining marketshare organically.

According to KPMG's International's 2006 report on global insurance consolidation, "insurers are trying to do one or both of the following to improve their business: (1) gain market share through acquisition and/or expanded distribution and (2) raise capital or otherwise make more efficient use of capital to streamline their business to focus on core competencies. John Nigh, KPMG's M&A Practice Leader, says "On average, we expect to see one significant insurance transaction per month over the next 24 months. Future deals will be about scale, distribution and restructuring. Sizable deals like St. Paul-Travelers and Manulife-Hancock are going to force consolidation among other players. Companies that previously considered themselves big will now be mid-sized."

Steve Lowe, KPMG's Global P/C Insurance Practice Leader, predicts that "the U.S. commercial P/C market will soon be dominated by a handful of major players, complemented by specialist firms operating in market niches." He further notes, "In both personal and commercial lines, a strong brand will become more critical to success. Greater scale will be required to support the distribution of mass-market products. Going forward, size will be defined by companies like AIG and the new St. Paul-Travelers combination."