



Securities Valuation Office

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## Introduction to Credit Linked Notes

*By Shanique Hall-Barber, Research Analyst\**

Of the various risks embedded in an insurer's bond/debt investment portfolio, the measurement and management of credit risk presumably receives the most attention. To recall, credit risk is the probability that a borrower will default on a commitment to repay debt or bank loans. Recent market activity, including some widely publicized bond defaults, has renewed investor and regulatory interest in credit risk issues. Moreover, the level of credit risk, as measured by NAIC Designations and/or rating agencies, is an important component of modern Risk Based Capital regulation. However, for all of the advances in financial market innovation, only recently have tools become available that would allow a portfolio manager to actively manage a portfolio's credit risk. Thus far, the primary credit risk management tools available are either the structuring of portfolios across various credit risk categories (NAIC1, NAIC2, Aaa, BBB, etc.) and/or by diversifying across specific security issuers/issues.

Within the last several years, new types of securities have evolved that allow portfolio managers to actively set the level of, and price for, specific credit risk. These products, collectively known as credit derivatives, are financial contracts that allow the credit risk portion of an investment to be separated, priced, and traded. Credit derivatives are one of the fastest growing credit risk management tools used by depository financial institutions and are beginning to be used more frequently within the insurance industry. Credit derivative use is likely to continue and grow as institutional investors, including insurance companies, realize the potential uses and advantages they can offer to portfolio managers.

The product menu in the credit derivatives market appears to change daily. In the February issue of the *SVO Monthly Newsletter*, two of these, credit default swaps and total-rate-of-return swaps, were described and reviewed. This article provides a description of another relatively popular family of credit derivatives; known generally as credit-linked notes. Credit-linked notes are offered in many different configurations, but all share in common the fact that they are, at their core, just another subset of the class of securities known as structured notes. Structured notes are created by combining one or more existing securities into a pool, then, using the pool as collateral, creating new types of securities with payment contract features different from those associated with the underlying securities in the pool.

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*\* Special thanks to Kevin Driscoll, SVO Senior Credit Analyst for his contributions to this article.*

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## From the Director

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*Chris Evangel, SVO Managing Director*

The challenge for many professionals lies in their ability to gauge future events. Frequently, events perceived as being unrelated to the current situation can have a major influence, which leads to my presumption: Wall Street, closer than you think.

For us here at the SVO, a five minute walk from our offices takes you to Wall and Broad Street, the epicenter of the financial markets. Measured in physical terms, the SVO is in fairly close proximity to Wall Street.

However, no matter your physical location, Wall Street is much closer than many of us once realized. Far beyond the monitoring of one's own portfolio, we continue to learn by experience the ripple effect of some presumably far-removed event, as the sharp and prolonged decline in the financial markets have recently served to remind us. [Side note: our frame of reference has changed so that I use the word prolonged in the previous sentence in reference to only a one-year event (April 2000 to April 2001). We would have to invent a new term had we been experiencing

the Japanese financial market's experience that last recorded a market high in the 1980's.]

Two separate articles this past week, one in the *New York Times* and the other in the *Wall Street Journal*, spoke about the current and potential economic impact reverberating now in many state budgets. The Times articles focused on the sharp reversal of fortunes for many state budgets, which appear driven by the under-realized capital gains reported in this year's 2000 tax collections. The 2000 financial market downturn has served up a shortage of anticipated state revenues. Market downturns could also make once prized employee-issued stock options worthless, and, in turn, not exercised and thus no taxes collected. One would be on safe ground stating the recent history of year-over-year growth in state revenues seems over for the near-term. Talk of state budget surpluses could be last year's good old days. One may safely state that revenues have "topped out."

"Topped out" revenues can be viewed as the inverse of what market watchers are calling the "bottoming" of the financial markets. However, bottoming out only means that quarter-over-quarter financial results are no longer

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## Introduction to Credit-Linked Notes *(Continued)*

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Broadly defined, a credit-linked note (CLN) is a funded balance sheet asset which offers the holder an artificially created, or synthetic, credit exposure to a particular credit (known as the reference credit) in a structure designed to resemble a synthetic bond or loan. Credit risk can be transferred in return for payment of interest, premium, etc. Financial institutions and other investors utilize credit-linked notes to "buy" credit risk protection (or alternatively, to "sell" credit risk exposure). This allows them to remove credit exposure from their balance sheets while retaining ownership of the assets.

Credit-linked notes have become increasingly popular because they are on-balance sheet, cash market instruments. Investors who are not authorized to use credit derivatives can (1) gain access to the credit derivatives market by purchasing credit-linked notes and (2) can customize maturity structures that may not otherwise be available in the cash market. Additionally, they offer some financial

institutions a hedge against credit risk and investors a higher yield for buying a credit exposure synthetically.

Credit-linked notes are normally issued by special-purpose vehicles (SPVs) or trusts which typically hold a highly-rated security (known as the "underlying security") and a credit-default swap agreement between itself and a highly rated counterparty. That is, the pool consists of high quality securities (used for interest and principal payments in the absence of a qualified credit event) and a credit-default swap agreement based on a (usually) riskier credit (the reference asset or reference credit). Acquisition of the underlying security is typically financed through the issuance of notes or certificates to the investor.

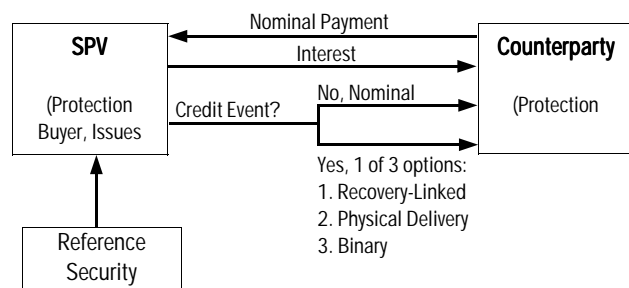
Through the credit-default swap agreement, in the event of a defined "credit event" (which typically includes bankruptcy, payment default, repudiation as well as restructuring) to the "reference security" (usually a bond or

*Continued on page 3*

## Introduction to Credit-Linked Notes *(Continued)*

company whose rating and/or NAIC Designation is *lower* than that of the underlying security), one of three things may happen depending upon what was negotiated between the SPV and the credit default swap counterparty. Under the “Recovery-Linked” option, a predetermined pricing formula and sale procedure is negotiated, whereby, an agreed-upon third party will sell the reference security to qualified bidders and whatever proceeds are realized are passed on the credit-linked noteholders by the SPV’s trustee. Similarly, an agreed-upon third party will sell the underlying security and distribute the proceeds to the credit-default swap counterparty. Under the “Physical Delivery” option, the counterparty will literally deliver the reference security (known as the “deliverable” in this context) to the SPV and, in turn, the SPV will deliver to the counterparty the underlying security. Finally, under the “Binary” option, the payment of a predetermined fixed amount is negotiated between the SPV and the credit-default swap counterparty (see Figure below).

**Credit-Linked Note Cash-Flow Diagram**

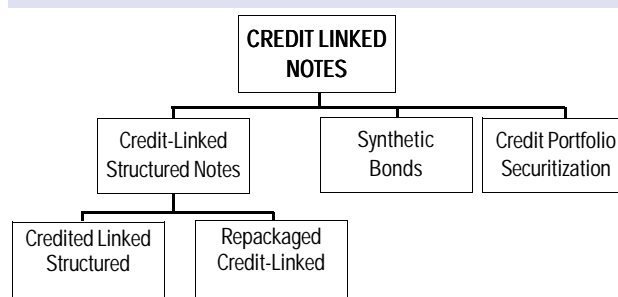


By entering into the credit-default swap agreement with the counterparty, the SPV (and ultimately the credit-linked noteholders) is essentially “selling” default protection to the counterparty (in this context, the SPV is considered a “protection seller” and the counterparty is considered a “protection buyer”). In return, to compensate the investor for the default risk of the reference credit under the credit-default swap agreement, a premium (in the form of additional yield or return) subsidizes the coupon received on the underlying security.

Technically, the investor buying the credit-linked note assumes not only the credit risk of the reference asset, but also the credit risk of the underlying security and

counterparty risk associated with the credit default swap. However, to the extent the underlying security is usually a highly rated instrument (or else the counterparty, acting as protection buyer, would probably not engage in the credit default swap to begin with), and the swap counterparty is typically a very highly rated entity, most of the emphasis is on the credit risk of the reference credit. Consequently, the Nationally Recognized Statistical Rating Organization (NRSRO) and/or NAIC Designation for such securities is driven by the NRSRO rating and/or NAIC designation of the reference credit.

**Types of Credit-Linked Notes**



Source: Satyajit Das, “Credit Derivatives and Credit Linked Notes” (see footnote).

There are a variety of credit-linked notes transactions with some overlap among the structures (see Figure above). Due to limited market transparency and lack of publicly available information, it is difficult to keep track of the numerous individualized variations of credit-linked notes. Nevertheless, the common thread between them is the link between return and credit-related performance of the reference security. The most common types of CLNs are credit-linked structured notes, repackaged credit-linked notes, and credit portfolio securitizations.

### ■ Credit Linked Structured Notes

Credit-linked structured notes (CLSN) are conventional types of credit-embedded securities in which a highly rated fixed income security is combined with a credit derivative (usually a total return swap, credit default swap, or credit spread option). Under this structure, the coupon or price of the note is linked to the performance of the reference security. CLSNs are issued by an investment grade entity or a bankruptcy-remote special purpose vehicle. Generally, a plain CLSN has a coupon and requires the full repayment of the principal investment unless a credit default event

*Continued on page 4*

## Introduction to Credit-Linked Notes *(Continued)*

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occurs, in which event, a lower predetermined amount is paid or the market value of the referenced security is paid.

### ■ Repackaged Credit-Linked Notes

Repackaged credit-linked notes are a special class of credit-linked structured notes. They involve using a repackaging vehicle or asset-repackaging structure to repackage the credit risk of a reference security to create credit-linked structured notes. The vehicle is associated with, but not owned by, the dealer or investment bank. The concept of repackaging is to deliberately take securities that have some attractive features but are nonetheless unappealing to many investors, repackage them as a security (via a repackaging vehicle) and then place them with investors. Under this structure, the repackaging vehicle enters into a derivative transaction (total return swap or credit default swap) designed to eliminate the original credit exposure. The repackaging vehicle then issues a security to the investor consistent with the investors requirements and risk-reward profiles. The distinguishing feature of repackaged credit-linked notes is the focus on tailoring the credit risk of the reference securities to meet the investors objectives. At maturity, the derivatives dealer pays par to the vehicle (unless it defaults) and receives the maturing proceeds of the reference securities.<sup>1</sup>

### ■ Credit Portfolio Securitization

Credit portfolio securitization entails repackaging *portfolios* of credit risk into multiple tranches of securities that are then distributed to investors. This is designed to reduce or eliminate the credit risk of existing obligors. The unique features that characterize these structures are (1) the transaction incorporates a portfolio of credit risks rather than an individual counterparty credit risk; (2) the transaction is issuer-driven motivated by the transfer of risk and in some cases, access of funding; and (3) the credit portfolio structure builds on existing credit-linked notes technology and utilizes securitization concepts.

### ■ Risks

The primary risks of credit-linked notes are credit risk and liquidity risk. Given the high investment grade rating of the principal cash flow (from the underlying security), the

primary credit risk stems from the uncertain interest cash flows, which are tied to the performance of a below investment grade residual (e.g. the reference credit). Higher than expected losses on the collateral underlying the credit-linked obligation will reduce the cash flows to the residual, and in turn, reduce the interest cash flows to the credit-linked notes. The credit risk is heightened by the high degree of leverage built into the residual. Additionally, credit-linked notes are privately placed securities for which no known secondary market exists. Their liquidity is likely to be extremely limited.<sup>2</sup>

### ■ Regulatory Treatment

From a regulatory reporting perspective, credit-linked notes differ from other credit derivatives in one important way. Credit default swaps and total return swaps are reported on Schedule DB, as derivative instruments used for hedging. Credit-linked notes, on the other hand, can, in a number of variations, qualify for Schedule D, part 1 treatment as a bond, with appropriate impact on surplus and with appropriate RBC.

The expanding credit derivatives market is increasingly gaining the attention of insurance regulators who are concerned with establishing proper regulatory climate and reporting requirements for them. Current research is underway to identify the breadth and depth of insurer investment in credit-linked notes and these results will be available to the regulatory community for its use.

### ■ Conclusion

Credit-linked notes, and in fact credit derivatives in general, are new innovative financial instruments usually marketed as an efficient way to manage credit exposure. When used properly, they can help to diversify the credit risk embedded in an investment portfolio. Conversely, the improper use of credit derivatives can result in an imprudent credit risk profile. Credit-linked notes in particular are complex securities with many variations and nuances. As with any complex security, the full spectrum of risks must be clearly understood and measured before any portfolio management/enhancement program using them is undertaken.

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<sup>1</sup> Das, Satyajit, "Credit Derivatives and Credit Linked Notes," *John Wiley & Sons* (2000).

<sup>2</sup> Zamorski, Michael, "Examination Treatment of Credit-Linked Notes," *FDIC* (December 2000).

# Insurer Investment in Foreign Sovereign Securities: the Caribbean, Central and South America

SVO Research Staff

As the financial markets continue to widen their global reach, it follows that aggregate insurance company investment reflects an increasing global flavor as well. This may be somewhat of a surprise to those in the insurance regulatory community who do not follow insurer investments on a regular basis, or track investment portfolios on a company-by-company basis. In fact, policy holder premium dollars are being invested around the planet at a growing rate and will likely continue to do so.

This article is the first in an occasional series that is designed to familiarize the insurance regulatory community with the broad scope of insurer aggregate foreign investment. Here, insurer investment in the debt of sovereign nations located in the Caribbean, Central and South America is described and summarized. The nations in these regions have been making increasing use of the global credit markets, often with multilateral institutional

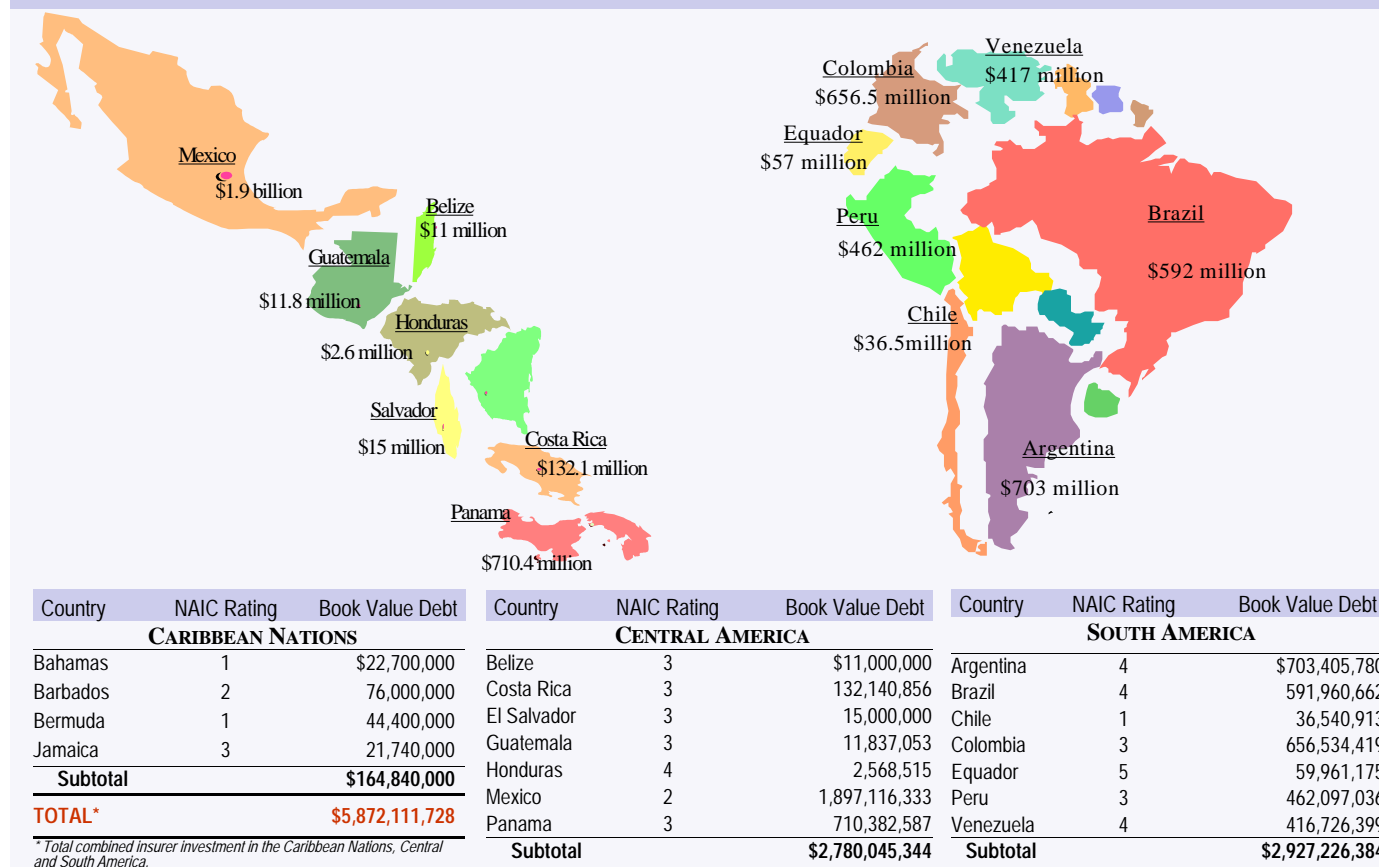
guarantees or support, to increase their rate of economic development.

## ■ Insurer Investment by Region and Nation

Chart 1 below summarizes the aggregate book value insurer investment in the sovereign debt of nations in these regions. A total of almost \$5.8 billion of book value was reported on the 2000 annual Schedule D, part 1 statements filed with the NAIC for life and property/casualty insurance companies. The totals by region show insurers holding \$165 million in book value of sovereigns from Caribbean nations (defined to include Bermuda), \$2.8 billion in Central American nation sovereign debt, and \$2.9 billion in South American sovereign debt.

The approximate equality in total investment in Central America and South America is somewhat deceiving. Mexico dominates the volume of Central American sovereign investment (almost \$1.9 billion out of the \$2.8 billion total). Central American sovereign investment ex-

**Chart 1**  
**Insurers Investment in the Caribbean, Central and South America**



# Insurer Investment in Foreign Sovereign Securities: the Caribbean, Central and South America, *(Continued)*

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Mexico is only \$943 million, or about half, in total, of Mexican bonds held. In addition to Mexican investment, the largest aggregate investments in individual nations throughout this region include \$703 million to Argentina, \$656 million to Colombia and \$591 million to Brazil.

## ■ Sovereign Designations

Chart 1 also shows the NAIC sovereign designation for each of the nations in each region. These designations range from 1's to 5's, with the majority holding the NAIC 3 sovereign designation. These designations reflect, among other things, the relative degree of economic development and economic stability in many of these still developing nations.

It must be clearly noted that these reported NAIC sovereign designations are for the nation itself and not necessarily for any of the particular bonds issued by the sovereigns. A particular bond's NAIC designation could be higher or lower than the sovereign depending on the provisions of the bond indenture, the existing or absence of multinational

institution guarantees, preferred creditor status or other factors.

As with most other asset-class specific investment, no one insurer reported a highly concentrated percentage of investment in any of these bonds relative to their overall bond investment portfolios. Indeed, the \$5.9 billion reported here represents only about 0.3% of the total bond investment reported by insurers for the year 2000.

Insurer foreign investment, whether in government bonds or in foreign corporate bonds, is growing, reflective of the globalization of the financial markets. From a regulatory perspective, this reach necessitates an increased familiarity with the sometimes unique issues related to foreign investment. This article has summarized insurer investment in sovereign debt of the nations of the Caribbean, Central and South America. Future articles will summarize insurer sovereign investment in other regions, as well as foreign corporate investment.

## SVO Activity

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The SVO staff continues to be active in professional seminars and presentations. Chris Evangel, Managing Director, is scheduled to speak at the IASA (International Insurance Accounting & Systems Association) 2001 conference Tuesday, June 5 in San Antonio, TX. Ray Spudeck, Research Manager, will speak at the Society of Financial Examiners (SOFE) annual meeting in Baltimore, MD in July. Ray will also be providing instruction at the Ken Smith Program for Financial Examiners held at Drake University, Des Moines, IA in July.

A one day seminar on provisional exemption issues and challenges was presented to the Colorado DOI in Denver, with examiners from the Wyoming DOI also in attendance. A two day financial market training program is scheduled with the Minnesota DOI in June.

On May 17<sup>th</sup>, the SVO sponsored a regulators only one day seminar on current activities of the SVO and current issues in the financial markets. The seminar was held in the SVO offices in New York City, and 18 regulators from 6 states registered to participate.

In conjunction with the NAIC Education Department, SVO staff will be presenting the "How to File Securities with the SVO" program on September 13-14<sup>th</sup> at the Mayflower Hotel in Washington, D.C. Additional information and registration materials can be found on the Education page at the NAIC's website ([www.naic.org](http://www.naic.org)) under the Public Programs link.

If you have any research, training or other requests that we can help you with, please do not hesitate to call Ray Spudeck, Research Manager at (212) 386-1978.

# Changes in the VOS Database from Year-End 2000 to Q1 2001

Ray Spudeck, Research Manager, SVO

As this is the first year in which the provisional exemption guidelines are in place, it is important to the regulatory community and the insurance industry to keep track of the changes in the VOS database that result. This report compares the composition of the 1<sup>st</sup> Quarter VOS database (the CD-ROM) to the database as reported on the Addendum 2000 CD-ROM. With regard to the provisional exemption guidelines, the major difference between the two relates to how the provisionally exempt securities on the database were populated. For the Addendum 2000 database, the listings of provisionally exempt securities were taken from voluntary disclosure by insurers over two time horizons in late 2000. For the Q1 2001 database, the listings of the provisionally exempt securities were captured from the annual statements filed by insurers with the NAIC.

## ■ Number of Securities on the Database

Overall, the Q1 2001 CD-ROM contains records on 222,937 securities, up 18% from the 189,718 securities reported on the Addendum 2000 CD-ROM. The first quarter data show 165,869 (74%) of these securities were filed with the SVO using traditional processes, compared with 149,869 (79%) from the 2000 Addendum.

A total of 57,608 securities were reported by insurers annual statements as being provisionally exempt at the end of the first quarter, compared with 39,849 securities at the end of the Addendum period, and increase of about 45%.

## ■ Composition of Securities on the Database

Chart 1 shows a comparison of the composition of the securities on the database, by NAIC designation, from Addendum 2000 to Q1 2001. Looking first at the provisionally exempt securities, the number of 1PE securities rose 46% from year-end, from 28,988 to 42,817. The number of 2PE securities rose 13%, from 2,709 to 3,050. Those securities reported by insurers as provisionally exempt but obtaining one of the “W” designations when compared to current ratings provided by the Nationally Recognized Statistical Rating Agencies (NRSRO’s) [Standard & Poors’, Moody’s, or Fitch], rose 37%, from 8,152 to 11,201.

The overall distribution of securities by NAIC designation, including provisionally exempt securities, changed little

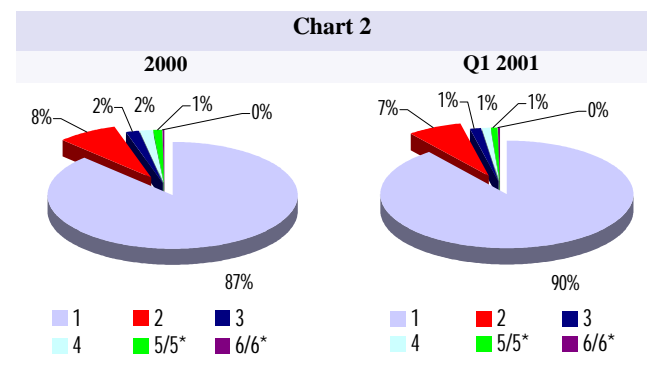
**Chart 1**  
**VOS-CD Comparison, 2000 Year End - 1Q 2001**

Designation	Q1 2001	Addendum 2000	Change
1	146,317	131,558	14,759
1PE	42,817	28,988	13,829
<b>Subtotal 1's:</b>	<b>189,134</b>	<b>160,546</b>	<b>28,588</b>
2	11,809	10,977	832
2PE	3,050	2,709	341
<b>Subtotal 2's</b>	<b>14,859</b>	<b>13,686</b>	<b>1,173</b>
3	2,908	2,761	147
4	2,360	2,260	100
5	1,170	1,286	-116
5*	440	381	59
6	848	629	219
6*	17	17	0
W's†	11,201	8,152	3,049
<b>Subtotal Non-PE Securities</b>	<b>165,869</b>	<b>149,869</b>	<b>16,000</b>
<b>TOTAL</b>	<b>222,937</b>	<b>189,718</b>	<b>33,219</b>

† Includes all W categories: W, 1W, 2W, 3W and 4W.

from the Addendum 2000 period to the end of Q1 2001, although there has been a slight increase in the percentage of NAIC 1 and 1PE securities. These distributions are given in Chart 2.

The database will be compared again when the second quarter 2001 updates are posted, and the results will be shared in this publication.



## From the Director *(Continued)*

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declining. Some may unintentionally, and incorrectly, conclude that growth will then resume. The ability to estimate sustained growth in the market could be futile.

Still, state revenue growth could be further hampered by extrapolating from the Wall Street Journal article reporting on how companies are looking to trim costs. As a company sheds costs by a varied combination that may include layoffs and holding back capital spending, a state's revenue flow could be further hampered. The almighty consumer could further respond by curtailing spending and a state could feel the slowdown through reduced sales and income tax collections. A state, in turn, could respond by reducing their expenditure growth, which could result in requests to Insurance Departments to "contribute" to cost reduction measures.

What could have been done? In terms of the financial markets, the answer is not much. The challenge lies in our ability to adjust our expectations to potential events that seem far removed from our daily dealings. How can currently known events impact us tomorrow? Will the Federal Reserve short-term interest rate reduction, while favorable to short-term borrowers, benefit longer-term borrowers, or lower our investment return? Further from home, could Argentina's recent eleventh-hour near inability to service their debt obligation impact us? None of us really know, but remaining aware allows us to better anticipate the ripple effect. The more serious concern would be in knowing about these events, but believing they will never impact us.



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