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Gary Tobin

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Résumé de l'article

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RISK SECURITIZATION

by Gary Tobin

ABSTRACT

This paper is intended to shed some light on securitization, an evolving instrument for managing risk, specifically adressing those risks involving bond issues. This tool may be new to the insurance industry, but it has been around in the financial markets since the mid-seventies in the U.S., and is currently gaining acceptability in other countries.

Keywords : Bonds, climatic catastrophes, risk securitization, securitization.

RÉSUMÉ

Cet article a pour but de jeter un éclairage sur la titrisation, un instrument de gestion des risques qui commence à se développer, et qui s'adresse en particulier aux risques liés aux émissions d'obligations. Si cet instrument est nouveau pour l'industrie de l'assurance, il a été utilisé sur les marchés financiers américains depuis la moitié des années soixante-dix et prit ensuite rapidement de l'importance dans les autres pays.

Mots clés : Obligations, désastres naturels, titrisation, titrisation des risques.

The author :

Gary Tobin, FCIP, CMR of Manulife Reinsurance.

Note :

Each year, the Insurance Institute of Canada sponsors a research competition among its 30,000 members. In 2000, the Reinsurance Research Council offered to participate in this competition as a sponsor of a separate prize for works of research which focus upon reinsurance topics.

The goal of the competition is to move back the knowledge boundaries in the property/casualty insurance industry, and the Institute and the Reinsurance Research Council are pleased to share with the Revue Assurances' global readership the following paper by Gary Tobin, the first winner of this new prize.

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INTRODUCTION

This article is intended to shed some light on securitization, an evolving instrument for managing risk, specifically addressing those involving bond issues. This tool may be new to the insurance industry but it has been around in the financial markets since the mid-seventies in the U.S., and is currently gaining acceptability in other countries.

With the possibility of a market hardening, securitizations may become more commonplace in property and casualty insurance, but there are applications for life insurance as well. This paper will describe the basics of securitizations and how they work. It will also project a number of possible uses for securitizations, and describe some of the regulatory issues that may arise from their use by Canadian companies or for Canadian risks.

These tools are available to be used from a number of different perspectives. A primary insurance company can use them, if it is willing to absorb the costs of setting up the deal. A reinsurer can use them to cover a portfolio of risks assumed from various insurers. Or a large commercial company may be able to protect a significant exposure from loss. The versatility of a securitization is limited by its cost and investor interest.

At a time when corporations and money managers are focusing very closely on earnings growth and share performance, securitizations may provide a higher (albeit somewhat riskier) rate of return than other investments.

The costs of setting up these arrangements are not described in this article. Costs will vary depending upon the size of the securitization, the due diligence work performed, the work required to

establish the special purpose vehicle and the amount of work subcontracted to other parties. A considerable portion of the cost will be the legal fees required in all aspects of the transaction.

This article is intended to give a beginner's overview of securitizations and not to provide advice or guidance. Anyone interested in arranging a securitization should consult the appropriate tax, investment and legal advisers to do so.

■ HISTORICAL PERSPECTIVE

In the last ten years, insurance management plans and reports have optimistically reported upon the proximity of the next hard market. Despite the plans, prices have deteriorated but large commercial clientele have moved increasingly to alternative risk transfer mechanisms regardless of the competitive pricing, especially in the United States. Traditional insurers are also feeling the squeeze from increased regulation and more competition from new entrants to the industry, whether banks or new direct-marketing companies.

Relatively low interest rates combined with strong performances in investment portfolios have assisted insurers in turning profits despite the inadequacies of market pricing. A strong focus on financial performance, return on equity and share performance has fueled the quest for sustained growth, leading to consolidation of some parts of the insurance industry (particularly amongst large brokers and reinsurers).

Reinsurers have also been caught up in the market pressures. Pricing has come down, global consolidation has significantly reduced the number of players and increased their size, but now results are catching up. Reinsurers' loss ratios are on the rise, and this may be the start of the long awaited market hardening.

Historically a slow moving creature, the insurance industry has not developed many new tools to service its customer base. While large commercial clients have developed their own approach to risk in the form of captives and risk retention groups, the industry has been slow to react, only recently developing a high-end package policy (multi-line, multi-year) that has met with limited success in the market. Consumer and small commercial clients have not seen any form of "revolutionary change" in the way insurance is delivered or handled by insurers.

Discussion in the last few years has centered on the convergence of the insurance industry with the financial markets. The life insurance industry, through the development of segregated funds and investment products, seems to have enjoyed more benefit from this than the property and casualty field, possibly due to recent lower returns and higher risk characteristics of P&C business.

The first real application of financial market products to support the insurance industry has evolved from the wake up call that the U.S. insurance industry received from Hurricane Andrew in 1992. Damage from Andrew was more severe than had been thought possible, at US$18 billion, and it came with the realization that a US$50 billion catastrophe was possible.

The industry needed to look for new ways to deal with catastrophe risk. The potential of a US$50 billion loss would seriously impair the financial strength of the insurance industry, consuming up to 25% of the available capital and surplus of the P&C industry in 1992. The Insurance Services Office in the United States suggests that 36% of US insurers would become insolvent from an industry loss event of $50 billion.

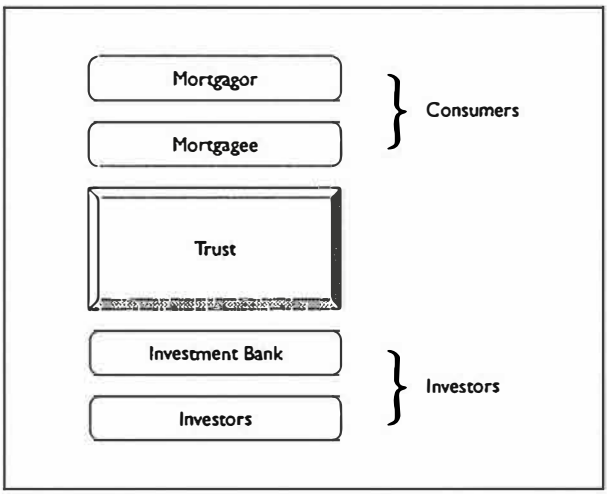
In contrast, the daily swings of the financial markets exceed US$100 billion. The question arises as to how to tap into that available capital and make use of it in the insurance industry. Risk securitization is one means of achieving that objective.

In the aftermath of Hurricane Andrew, several risk securitizations have been successfully completed, providing catastrophe relief in the event of a large industry loss[1]. The tightening of the reinsurance market, especially in light of European storms in the last couple of years, may provide additional incentive for the industry to consider using securitizations. Canadian insurers may also find some relief from these structures because of the exposures they face – flood, icestorm and earthquake. In Canada, many reinsurers are subsidiaries or branches of foreign parents. Therefore, Canadian reinsurers may be more likely to seek relief through regional and global arrangements structured by their parents combining exposures with other countries than through plans that solely protect Canadian exposures. Many parents of Canadian reinsurers have already been involved in placing one of these transactions, many of which cover US hurricane or earthquake exposures, and they will be able to draw upon resources that were used in those transactions.

WHAT IS SECURITIZATION?

Securitizations were first used in the United States to back residential mortgages. The concept was that issuing bonds to investors, using the future cash flows from the mortgages to repay principal and interest, could generate cash for mortgages. The risk of repayment would be assumed by the investors and not by a traditional lending institution, in exchange for a premium interest rate.

The transaction is made up of two components, identified below as the consumer side and the investor side:



Between the two groups of participants is a trust vehicle. The trust is set up to isolate the groups. The trust "buys" the asset from the mortgagee and then "sells" assets (typically bonds) to the investment bank. In the event of the trustee becoming insolvent, the investors have recourse only to the trust and not to the mortgagee.

In very simple terms, the mortgagee sells the future cash flow (payments) from the mortgages to the trust in exchange for cash to loan. The trust then issues bonds, which are sold by an investment bank to a number of investors. These bonds will pay a higher interest rate than other bonds, and may be rated by a bond rating service. The rating will be determined by the risk characteristics of the mortgages – the higher the credit quality, the higher the rating. As the rating rises, the interest rate premium will decline. The investors take the risk that the mortgages will not be repaid, and risk the principal and interest on their investment. These bonds are then available to be sold by investors on the open market.

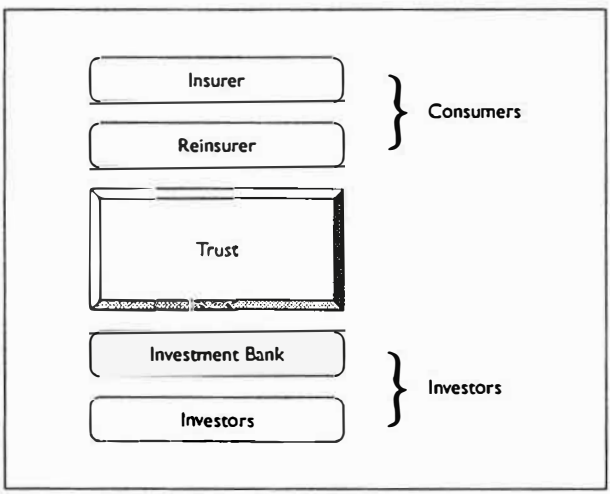
This type of securitization is now commonplace, and almost any predictable cash flow can be the object of a securitization.

WHAT IS DIFFERENT ABOUT RISK SECURITIZATION ?

The major difference between an asset backed securitization and a risk securitization is the characteristics of the underlying object being sold to the trust. Instead of a cash flow, the object is a reinsurance contract protecting against defined exposures or risks in particular geographic regions.

With a risk securitization, the investors assume the risk of an exposure that may or may not be otherwise insurable. The simplest illustration is that of a catastrophe.

The mechanics of the transaction are very similar to those of the mortgage securitization. An insurer will enter into reinsurance contract, either with a reinsurer or directly with the trust. The reinsurance contract is the asset backing the securitization. Catastrophe bonds are then issued by the trust, underwritten by the investment bank and sold to investors.



The bonds are sometimes issued in more than one group, otherwise known as a tranche. A single tranche is a grouping of securities with the same characteristics, whether interest rate, repayment schedule, or any other variables. In some securitizations that have been completed, one tranche guarantees the principal will be repaid

to the investor, but in the event of a triggered loss, the interest will not be repaid. The second tranche risks both principal and interest – if there is a loss, the investor will lose both. Other tranches may be offered to structure "layers" of risk for investors – that is, in the event of a loss of a certain size, tranche 3 will be at risk, but not tranches 1 or 2. One deal, involving Oriental Land Inc., the owners of Tokyo Disneyland, has gone to the length of setting up two Special Purpose Companies. One assumes the first layer of risk, and the second only comes into the picture after the first layer has been exhausted. Having two companies involved provides additional protection to investors concerned about the solvency of the Special Purpose Companies if a "covered" event occurs, and can provide for different financial tools to be used by each company (for example, one company may issue bonds while the other issues surplus notes).

The purpose of these securitizations is to supplement the traditional markets at present. The exposures assumed into securitizations are difficult to place, and the securitizations provide much needed capacity for large concentrations of risk. The initial cost of risk securitizations has been relatively high in comparison with other securitizations, and high concentrations of risk are necessary to make the transaction more cost effective. However, as securitizations begin to occur more frequently, there is the possibility that they may become more cost efficient than traditional risk transfer mechanisms as rate spreads come closer to those of other investments and traditional capacity becomes more expensive.

HOW DOES IT WORK?

With most insurance risk securitizations, there is a Special Purpose Reinsurer set up to act in the same capacity as a trust in a commercial securitization. The reinsurer is a separate entity contracting with the insurer or reinsurer in the form of a reinsurance treaty.

The cedent of the reinsurance contract usually sets up the Special Purpose Reinsurer. It may be a primary insurer or it may be a reinsurer. Often, the Special Purpose Reinsurer is set up offshore to take advantage of more favorable tax and regulatory climates. Setting up a Special Purpose Reinsurer requires the same process as setting up any other corporation, and must comply with the laws and regulations of the jurisdiction it is being incorporated in, and with local insurance and reinsurance statutes. The reinsurer must be

structured as an independent entity of the cedent, and not as a subsidiary corporation if that can be arranged.[2] It may be possible to structure the reinsurer as a subsidiary of a foreign sister company if such a company exists within the ceding company's organizational structure.

The Special Purpose Reinsurer will usually be revenue neutral, with a minimum of employees and all tasks subcontracted to others. A management firm will oversee day-to-day operations (if any), an investment firm will take care of investments, an actuarial consultant may be required and a legal firm will handle any legal or regulatory issues that arise. There will be some tax implications to the parent of the reinsurer, and the tax and accounting guidelines of the parent's domicile must be reviewed.

The reinsurance contract must be developed and the structure for relief in place before the investment bank can begin marketing the bonds. The treaty must clearly define the business being reinsured, the specific perils covered, the trigger, limit and attachment point, identify an administrator, and define the claims process.

A clearly defined trigger must be in place. The trigger should be structured to avoid any manipulation by any of the parties involved in the transaction, and should be administered and verified by an independent party. Whether the trigger is an industry claims index, a company-specific index (loss ratio or actual claims paid) or any other index (earthquake magnitude on the Richter scale as measured by a government entity or result of computer modeling of the catastrophe), it must be able to be calculated and verified.

Other triggers include losses calculated by sophisticated modeling of events. For example, data about a hurricane loss in the southeastern U.S. is modeled to determine the extent of damage. A payment will be made under the reinsurance contract in the event that the losses modeled exceed a specified dollar amount. This type of trigger has the added risk of the claimant's losses being greater than the recovery under the securitization, but it also could provide recoveries greater than the losses incurred because there is no link between covered losses and those calculated by the model. This is known as basis risk.

Tokio Fire & Marine developed a securitization that allows for payout based upon the severity of earthquakes experienced within defined regions in Japan. If an earthquake in excess of 7.1 occurs (as defined by the Japanese Meteorological Association scale) in the Tokyo area, the reinsurance contract would pay.

Swiss Re did a securitization deal for California earthquake in 1997 that had different triggers for different tranches. One tranche attached at $12 billion in losses from a single event, while two others attached at $18.5 billion from a single event.

The attachment point must be low enough to provide financial relief to the ceding company in the event of a major loss, but high enough to make the risk of a loss remote enough to be attractive to potential investors. Some of the structures that have been put into place envision the possibility of once–in-one-hundred-year events, or attaching at levels of $500 million or greater, events that would seriously impact the financial stability of the ceding company.

This gives rise to a large limit of coverage, meaning that the ceding company must have a significant aggregation of risk from a peril or perils to make a securitization worthwhile. Most securitizations are in excess of US$100 million. For Canadian insurers, earthquake exposures in Quebec and British Columbia can be significant, but often underwriting governance within the insurers restricts or limits the amount of exposure each is willing to accept from these areas (or from any one peril or risk). Using a $200 million attachment in Canadian dollars (which is rather low for this type of arrangement), this would mean that the ceding company would have to have an accumulation of risk in excess of $300 million (US$100 million assuming an exchange rate of $1.50CDN = $1 US plus the attachment point) to be able to benefit from a securitization. In 1997, USAA arranged a securitization paying 80% of US$500 million in excess of US$1 billion.

The next thing to deal with is the claims process. Claims should be able to be made quickly and easily, because the Special Purpose Reinsurer will likely use an independent party to administer them. Payments may be made according to the actual payout of the ceding company, but it may take months to determine the exact amounts because the underlying claims need to be settled. A similar problem may occur if a claims index is used as a trigger. An independent triggering mechanism creates the risk that claims paid by the reinsurer are greater or less than those incurred by the ceding company, but the claim can be made more quickly. Within a fairly short period of time after a loss, computer-modeling scenarios can be run to determine a simulated loss amount that can trigger losses. If the trigger is the third category 5 hurricane in one year striking a geographic area, or a 7.1 magnitude earthquake, it is pretty easy to determine if a claim is payable under the reinsurance treaty.

But the next question is how much is payable? A payout structure should be described in the contract that ties into the triggering mechanism. With actual or computer generated losses, the amounts of the loss exceeding the attachment point might be paid dollar for dollar or in another ratio. A percentage of all losses may be paid if the total incurred exceeds a certain amount (if losses are greater than $100 million, then 75% of all actual losses in excess of $20 million will be paid by the reinsurer), or a defined amount may be prescribed by a schedule in the treaty (if $100 million of losses are incurred, the reinsurer will pay $25 million).

When other triggers are used, it is probably best to create a loss schedule that defines what amount will be paid by the reinsurer with some link to the trigger. Otherwise, there may be disputes between the parties over how much should be paid by the reinsurance contract, creating the possibility of arbitration and litigation comparable to disputes in more traditional arrangements.

The structure of the bond issue must also be considered. There may be one or more tranches of bonds offered to investors. The characteristics of each tranche will probably be different, including differing rates of return and bond ratings based upon the risk assumed.

Bonds issued by the Special Purpose Reinsurer are normally priced at LIBOR plus a margin. LIBOR is the London Inter-Bank Offered Rate – the rate at which banks in London can borrow money from each other. It is quoted on one month, three month, six month and one-year periods, and is published in most major financial newspapers. Using LIBOR plus a margin allows variability of returns commensurate with market trends.

One form of bond has all or part of the principal guaranteed by the Special Purpose Reinsurer by setting aside funds in secure investments. It has a lower rate of return than other bonds that are not guaranteed. However, the investor will probably lose their interest earned if an event occurs. The way some of these bonds have been structured is that in the event of a reinsured loss, the bond changes from a short-term (often one year) bond that will pay both principal and interest at the end of the reinsurance period to a longer term bond (ten years or more). At the end of the ten years, the guaranteed principal will be repaid to the investor, and the investor may receive additional funds depending upon the amount available after all other liabilities are paid.

The guaranteed layer of the first USAA securitization in 1997 paid LIBOR plus 282 basis points (1 basis point is 1/100th of a percent) totaling US$163.8 million. Of that amount, US$77 million was placed into a defeasance fund to pay principal in the event of a loss. As investors became more comfortable with the risk (and the fact that no losses have been paid) the margin has come down, so that the second USAA bond issue paid LIBOR plus 140 basis points.

Another form of bond risks both the principal and the interest. In the event of a loss covered by the reinsurance contract, the investors may lose the entire amount of principal and interest. If there is no loss, these bonds will pay a significantly higher interest rate to compensate for the risk of losing principal. They are also rated lower than guaranteed principal bonds because of this risk.

Using the example of the USAA securitizations, the 1997 tranche of non-guaranteed bonds, totaling US$313 million, paid an interest rate of LIBOR plus 575 basis points. The 1998 layer paid LIBOR plus 400 basis points. Again, the margin was reduced in the second issue in response to investor comfort with the risk assumed.

The ceding company will still pay a reinsurance premium to the reinsurer in these situations. The reinsurance premium will help defer start-up and operational costs and will also become part of the interest payable to the investors. The rate-on-line is subject to negotiation, though, and will be included in the price modeling undertaken when the investment product offering and structure is being readied.

In addition to the other aspects of a securitization, the currencies involved must be looked at closely. A company could unintentionally create a currency exposure for itself if the securitization is done in one currency and losses are incurred in another. A change in currency valuation is a possibility after a large natural catastrophe, depending upon its impact to the local economy.

■ HOW ARE THE BONDS RATED?

One of the things that is critical to an institutional investor, someone who might purchase bonds issued from a risk securitization, is the amount of risk each bond bears in comparison with other investment vehicles. Higher ratings indicate a higher probability of the securitization to be able to meet its obligations. Several rating agencies rate commercial bonds, but only a handful rate risk

securitizations. One such rating agency is Standard & Poor's, who also rate the financial strength of insurance and reinsurance companies.

Standard & Poor's evaluates catastrophe bonds using a four-step process. The steps are:

1) Evaluation of the structure;

2) Evaluation of the model used to determine the trigger;

3) Stress testing the model used to determine the trigger;

4) Evaluation of the cash flows and default risk.

The structure is checked against several key elements. The Special Purpose Reinsurer must have the legal authority to execute the transaction, and the contracts that it enters into must be enforceable. The investment policies of the Special Purpose Reinsurer are reviewed to ensure that only permitted investments are chosen. Finally, a responsible third party must validate the claims process. Other things are checked, too, such as the unobstructed flow of all funds due when they are expected, and the manner in which interest is calculated. Interest calculations should be verifiable and able to be calculated by an outside, independent party. The ceding company must estimate incurred but not reported losses, and the IBNR calculation must not reduce the amount of interest paid to investors.

Investors have a degree of credit exposure to the ceding company, because part of the reinsurance premium paid by the ceding company will pay a portion of the interest payable to investors. As a result, the ceding insurer's financial rating will have an impact on the bond rating.

The model, or triggering mechanism, is the second component checked. Companies that rate insurers' financial strength are suited to assessment of comprehensive catastrophe models. In these arrangements, the risk is defined specifically by the risk securitization being placed. The model must be representative of the true risk being assumed. As that representation increases, the potential rating from this step in the rating process rises.

The stress test is ultimately the level of confidence placed in the model, or the probability that the results will match the modeled outcome. The sophistication and confidence in the modeling process has improved over recent years, with several companies forming that specialize in estimating the effect of various types of events, including earthquakes and hurricanes. The stress testing

involved in the rating usually attempts to increase the confidence levels to further assure investors of the likelihood of expected outcomes.

The final step is to compare the probability that a loss will breach the attachment point, and the risk relative to the default of other securities. For example, the end result of the testing on the models might indicate that a tranche of a bond issue has roughly the same risk of having a claim as the risk a single "A" bond has of being defaulted, then the bond issue will receive a single "A" rating. This has no effect on the interest rate offered on the bond – the bond interest rate may be significantly higher than that of comparable "A" – rated commercial paper. If so, that is an indication of the premium being paid to investors to become comfortable with a new form of investment risk, suggesting that the market would not be as receptive at a lower interest rate.

The highest ratings offered by Standard and Poor's rating services are AAA for long-term credit and A-1 for short-term credit. The interest margins will decrease as the rating increases. Institutional investors that must abide by regulatory investment guidelines and investors subject to risk based capital standards and reporting will be capable of investing more in highly rated bonds than in the lower rated bonds. From the standpoint of the Special Purpose Reinsurer, the higher the rating (and the greater the margin), the more likely the issue will be fully subscribed.

Moody's Investor Services also provides ratings for these transactions. Their approach to these transactions differs somewhat to the approach taken by Standard and Poor's, but is equally relevant. Moody's does a thorough analysis of the work performed by outside consultants, such as those who create the catastrophe models used to determine the probabilities of loss from a covered event.

The evaluation of the consultants begins with a review of the background and qualifications of the consulting firm's staff, and the quality of the data being used to develop the model. From their experience, Moody's reviews the variables and parameters that will affect the results of the models used, and perform stress tests upon them. They will compare pricing with other insurance mechanisms, and perform some degree of simplified modeling internally to confirm the results produced by the consultants.

The structure of the deal is analyzed, and the characteristics of risk. The type and number of perils being "covered" (earthquake, windstorm, hurricane or all catastrophe risks, for example) and

whether the structure will respond to a single event or multiple events will influence the rating, as will the spread of risk of the peril. A reinsurer will achieve a greater spread of risk than a single insurer will.

Moody's will assess the obligations made by the issuer. The obligations include the timing and mechanics of making payments to investors, and whether the principal is at risk. The impact of the loss scenarios modeled on the obligations as stated by the issuer are also taken into consideration – what will happen in the event of a loss? An expected loss calculation is made, and the probability of the expected loss occurring will be used in a formula to determine relative risk of the issue, and then is compared with a table of benchmark bond ratings to assign a rating that most closely matches the risk of a conventional bond with a similar risk profile.

Moody's is quite clear that they only address credit risk of such an issue, and that the risk is solely the likelihood of the issuer in meeting its obligations to investors. The top rating that Moody's assigns to any issue is Aaa.

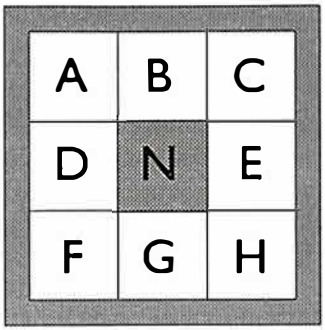
SEGREGATED ACCOUNT OR PROTECTED CELL COMPANIES

An alternative to setting up trusts, especially when there is the possibility of several securitizations, is to use a protected cell or segregated account company to issue the bonds. This is similar in concept to a rent-a-captive arrangement, but the assets of one customer are "protected" against claims from other customers.

Some US states and offshore jurisdictions are establishing something called protected cell legislation. In Bermuda, for example, it was possible to create a Segregated Account Reinsurer by creating a special act of parliament, essentially a private members bill proposed by a commercial entity. Recently, Bermuda has passed The Segregated Accounts Companies Act 2000, a piece of legislation to enable segregated account companies to be formed without a special act of parliament.

A Segregated Account Company is a corporation that has created divisions within itself to be independent of all other divisions within the same company. That is, if the company is a Segregated Account Reinsurer, each cedent may set up its own account (or more than one account) within the reinsurer. Each account is treated as a separate legal entity, and in the event of any one

account becoming insolvent; it will have no effect on the other accounts within the reinsurer. This separation is protected by statute within the domicile that the company is organized, the structure of the accounts to be determined in the company charter and bylaws.



In the graphic above, the boxes labeled A through H represent the "cells" or "separate accounts". Each cell is treated as an independent entity within the organization, maintaining its own accounting, investment objectives and operations, but each is a unit of the separate account company. Box N represents the core capital of the company, not belonging to any of the cells. The core capital may receive some form of compensation from the cells to cover the combined entity's costs of operation, and may face some risk to part of the capital amount in the event of the insolvency of any individual cell.

Rather than establish a new trust each time that a securitization is considered, a new account or cell can be set up. The account may go further and establish a formal trust anyway, to provide a higher degree of protection to the cedents against investor claims against the Separate Account Reinsurer in the event of its insolvency.

This approach can benefit an intermediary to these types of transactions, ultimately reducing the significant costs of setting up a Special Purpose Reinsurer each and every time a securitization is contemplated by instead setting up a new account within the company structure. Several investment houses and some reinsurers have established separate account companies offshore already.

WHAT LEGAL CONSIDERATIONS ARE THERE?

There are legal considerations beyond those of incorporation of a Special Purpose Reinsurer. There are securities laws relating to the creation and marketing of investment products, and regulatory and tax issues.

The biggest question that covers many risk securitizations is what area of regulatory supervision is applicable? Is this a reinsurance arrangement, and thus the investors considered to be reinsurers, or is this an investment and subject to investment guidelines and regulations. Canadian insurance regulators have not yet addressed risk securitizations, but there is a guideline about asset securitizations issued in July 1994. This guideline is discussed in more detail in the next section relating to the regulatory hurdles one of these transactions must face.

The Reinsurance Association of American provides arguments for both sides in a position paper entitled "Index-Based Insurance-Linked Derivatives Interested Parties Public Policy Discussion".[3] It does not make any conclusions from the arguments presented.

The consumer portion of this type of arrangement is clearly reinsurance when a reinsurer creates the securitization. A reinsurance contract is executed between the primary insurer and the reinsurer, and the reinsurer subsequently "sells" its interest in the reinsurance contract to another legal entity (either a trust or a separate accounts reinsurer).

The investment side of the transaction is treated as an investment and not as reinsurance, although some regulators and interested parties have questioned how it should be considered. The argument is that if an investor is assuming essentially an insurance risk, whether by way of an insurance or reinsurance policy or through the use of a capital markets instrument that the investor is engaging in the business of insurance and should be regulated as such. The issue is clouded somewhat because many of the investors in this type of securitization have been insurers and reinsurers. These companies better understand the risks that are being assumed. These investments may enable insurers and reinsurers to maximize returns on their investment portfolio and have the added benefit of helping to diversify their underwriting risk, although there may be restrictions or guidelines for investment strategies of insurers and reinsurers that must be complied with. In the particular case of insurance risk swaps, the New York Insurance Department

does not consider counterparties involved in the transaction to be in the insurance business if the swap is index-based.

The biggest area of risk on these deals, though, and the one subject to considerable legal review from the outset, is that of insolvency of the trust. Efforts are made to protect the consumers of a securitization from the claims of investors in the event of an insolvency of the trust. The challenge here is that an insurance risk securitization has not faced insolvency, and thus the concerns must be addressed without formal precedents being available.

If there is a Special Purpose Reinsurer, often there may be other laws that relate to insolvency than standard bankruptcy laws. Many jurisdictions have enacted winding down laws or special provisions to deal with the insolvency of an insurer or reinsurer. Similarly, trustees may find themselves subject to special bankruptcy provisions under local statutes. The jurisdiction in which any claims are filed may have an impact, too, especially if the jurisdiction does not recognize separate account structures. These must be thoroughly investigated at the time of structuring the deal. The investment bank may use the results of their research in these areas, usually in the form of legal opinions from law firms in the various jurisdictions, to help comfort potential investors during the sales process.

The investment bank will also be responsible for complying with securities laws relating to the sale of bonds by the Special Purpose Reinsurer.

The reinsurance contract is also subject to the laws and regulations of the jurisdiction of the company ceding business. For example, if the Special Purpose Reinsurer is Bermuda domiciled, and the ceding company is a Canadian insurer, the reinsurance will be treated as unlicensed by Canadian regulators. To receive credit for the reinsurance, some form of collateral must be established (a reinsurance trust or letter of credit) based upon the combination of unearned premiums, case reserves and incurred but not reported provisions, otherwise the insurer will not be allowed to take credit for reinsurance, possibly impacting its capital and surplus requirements. This is more completely discussed in the next section.

WHAT REGULATORY HURDLES MUST BE OVERCOME ?

In reality, most of the time securitizations will take place between a licensed insurance or reinsurance company and an unlicensed entity.

The Special Purpose Reinsurer is unlikely to reside in Canada. It will probably be established in a domicile that has a favorable tax and regulatory environment. To be domiciled in Canada, the Special Purpose Reinsurer would have to comply with local capitalization requirements, and that alone may make the entire transaction uneconomical. If it were set up in Canada, it would probably be established in a jurisdiction with special insurance company legislation, such as British Columbia or New Brunswick. Provincially registered companies are considered unlicensed reinsurance for federally licensed insurers and reinsurers unless they meet several conditions, including minimum capital and written premium thresholds. Knowing that the Special Purpose Reinsurer is set up for a very specific task, it is equally unlikely that it would meet these conditions.

There are no rules or guidelines specifically related to the operation of a risk securitization, but it is safe to assume that the guidelines that exist for asset securitizations would apply to setting up a Special Purpose Reinsurer. The guidelines issued in OSFI directive B-5 in July 1994, applicable to both life and non-life companies, indicate the following:

- A financial institution may not own share capital (common or preferred) in a special purpose vehicle established for asset securitization, nor can it be the beneficiary of a trust;
- Include the name or a symbol of the financial institution in the name of a special purpose vehicle or trust used for an asset securitization (but the name may be included in an offering circular);
- Have directors, officers or employees on the board, unless the board has three or more directors. If there are three or more directors, the financial institution can place one person on the board, but the other board members must be independent third parties;
- Lend to the vehicle on a subordinated basis (except as provided in the guideline); nor

- Support any losses incurred or recurring expenses by the asset securitization issue or investors in it, except as provided in the guideline.

Accounting for this arrangement by a Canadian insurer or reinsurer would be exactly the same as accounting for any reinsurance transaction with an unlicensed reinsurer. The ceding company has a contract with the Special Purpose Reinsurer, and the reinsurance contract is the same in general structure as any other reinsurance contract. The difference is what is behind the Special Purpose Reinsurer, and that is remote from the ceding company.

In order to receive credit for the reinsurance, the reinsurer will have to secure any reserves with the ceding company by way of a reinsurance trust agreement or letter of credit. A letter of credit that will only provide statutory relief if it is issued by a Canadian financial institution in a format acceptable to the Office of the Superintendent of Financial Institutions, and only if it is drawn to the insurer in the care of the Receiver General of Canada. Also, the letter of credit must be physically held by OSFI for the ceding company to receive credit for the reinsurance.

If a reinsurance trust is used, then assets must be placed in trust with a Canadian trustee and the assets are subject to prudent investor rules that Canadian insurance companies must abide by. In other words, there may not be the latitude in choosing investments, and the ability to maximize returns, that might be available if the investments were held offshore. OSFI will also be one of the signatories of the reinsurance trust agreement, and defines the wording of the agreement (the OSFI wordings can be found at their website[4]). If the proceeds of the bond issue were placed in a reinsurance trust, then the ceding company could presumably take credit for the reinsurance, assuming whatever the proceeds are invested in complies with OSFI prudent investor rules. Also, there may be withholding taxes applicable to income earned by the investments.

In the absence of any security from the unlicensed reinsurer, from a statutory perspective, the business ceded to the Special Purpose Reinsurer would be treated as net business retained by the ceding company. It would be added to other statutory liabilities for the new minimum capital test for non-life companies.

Ceding companies that deal with unregistered reinsurers must address one last issue. There is a limitation placed upon the amount of unregistered reinsurance that can be placed – 25% of the pre-

mium volume of the insurer.[5] The premium volume expected in one of these transactions should be small enough to fall well within this guideline unless the insurer places a considerable amount of unlicensed reinsurance through the course of normal business.

Regulators may find themselves concerned with the correlation between the triggering mechanism and the company's risk portfolio, especially if the trigger is based upon an index or computer modeling arrangement. The insurer will receive less protection from a weaker correlation.

■ WHAT TYPES OF RISK SITUATIONS CAN IT PROTECT ?

Most risk securitizations that have been successful to date involve catastrophe exposures. The following table lists several securitizations of various types that had been completed and reported in various articles and press releases since 1994.

For Canadian companies, the largest exposures faced relate to earthquake risk in the Montreal area and the lower British Columbia mainland. The challenge that any one insurer will face is whether there is enough aggregation of exposure from these areas to make a securitization economical and interesting enough for investors.

Using CDN$100 million as a base, any exposure that could generate a $100 million loss could be securitized if the risks can be quantified or if cashflows can be projected with some degree of certainty. This could encompass everything from hail and flood exposures in the prairies to coverage for an offshore oilrig to an environmental catastrophe along the lines of the Exxon Valdez. Political risk coverage, insurance against losses arising from the perils of operating in jurisdictions that become politically unstable, is also a candidate for this type of protection.

The perils covered can be defined as broadly or narrowly as the Special Purpose Reinsurer wants, although broader coverage may expose the investors to a higher degree of risk and require a higher interest margin be paid. A narrower definition of the perils triggering payments by the securitization also has the effect of providing narrower coverage to the ceding company, reducing the possibility of recovery to very clearly defined events.

Another potential use for a securitization is to provide "coverage" to a large corporation for risk of reputation or product recall. Firestone, with its problems over tires on Ford Explorers, could

have been indemnified by a securitization, assuming a trigger and payout pattern could be determined that would work. The Intel Pentium chip or Tylenol recalls are other examples of situations that may be suited to a risk securitization. Drug companies could use a smaller securitization to provide protection on specific drug trials and tests. The trigger may be as simple as a percentage of test subjects affected by the drug, and then a payout schedule could be negotiated and defined.

Conceivably, a construction company or developer could use a securitization in place of a performance bond, although it may be closer to a more traditional cash flow or asset-backed securitization

SUCCESSFUL INSURANCE RISK SECURITIZATIONS [6]

1994	Florida Residential P&C JUA	Catastrophe line of credit
1994	Florida Windstorm Underwriting Association	Catastrophe line of credit
1994	Hannover Re retrocession	Catastrophe excess of loss
1994	Hawaii Hurricane Relief	Catastrophe line of credit
1995	Arkwright	Contingent surplus notes
1995	Nationwide	Contingent surplus notes
1996	Hannover Re	Proportional reinsurance swap
1996	RLI	Catastrophe equity put
1996	St. Paul Re / Georgetown Re	Marine & Fire excess of loss
1996	State auto	Catastrophe line of credit
1997	LaSalle Re	Catastrophe equity put
1997	Parametric Re (Tokio Fire & Marine)	Earthquake
1997	Reliance	Multi-line catastrophe excess of loss
1997	Swiss Re	California Earthquake indexed losses
1997	Swiss Re	Catastrophe excess of loss
1997	USAA / Residential Re	East coast US hurricane losses
1997	Winterthur	Catastrophe excess of loss

SUCCESSFUL INSURANCE RISK SECURITIZATIONS [6]

1998	Centre Re / Trinity Re	5 months of Florida hurricane losses
1998	C.N.A./ Hedge	California earthquake
1998	C.N.A. / Hedge	Northeastern US windstorm
1998	XL & Mid-Ocean	US hurricane and earthquake risk
1998	USAA / Residential Re	East coast hurricane losses
1998	USF&G Re / Mosaic Re contracts	Aggregate excess cover on cat
1999	Kemper / Domestic Re	New Madrid earthquake Stocks and floating rate notes
1999	SOREMA	Japanese earthquakes & typhoons
1999	Concentric Ltd. (Oriental Land Inc.)	Japanese earthquake
1999	Namazu Re (Gerling-Konzern)	Japanese earthquake Floating rate notes
1999	Golden Eagle Capital (American Re)	Catastrophe losses from East Coast and Gulf Coast hurricanes, and earthquakes in California and New Madrid fault line
2000	Atlas Re (SCOR)	European windstorm / US & Japan quake Floating rate notes
2000	NeHi Inc (Vesta Insurance Group)	US hurricanes NE US and Hawaii Reinsurance-linked notes and common stock

than a risk securitization (an arrangement along the same lines as mortgage-backed securitizations). Presumably, though, the margin would be greater because there is a perception of increased risk of delay in completion of a project, especially a major construction project than might be assumed for other insurable risks. International projects would be able to securitize their political risk exposures in this way, depending upon the location of the project.

Life insurers could use an asset-backed securitization to reduce the capital strain they incur by "selling" a block of business

to a trust arrangement. The trust assumes the underwriting risk (mortality, morbidity and lapse risk) reducing the amount of capital the insurer requires for the business. The premium payment patterns are predictable on life business, and on term business, extend over a defined period of time. This can help improve the short-term financial results of a life insurer by enabling it to realize profits from a block of business almost immediately. The life insurer would still be required to administer the business (collect premiums on behalf of the trust and forward the payments). Also, the assumptions made at the outset about lapse risk must be conservative to ensure that there is a good probability that the investors will make a reasonable return, but this will be reflected in the rating of the structure by rating agencies.

The question is would any of these scenarios generate enough investor interest to make a securitization successful? By increasing the interest rate premium paid by the bonds over LIBOR interest can be generated, but that will also serve to increase the cost of the transaction and the amount of protection afforded.

The real challenge these situations face is the ability to quantify the risk that each of these exposures has. Traditionally, it has been very difficult for organizations to arrange insurance coverage on many of these risks because there are no adequate records maintained to measure and quantify the risk. Product recall insurance is a cover placed very infrequently in North America for industries that have large exposures, whether from lack of coverage wording, incomplete historical information or lack of demand. Even insurance companies themselves have historically had considerable difficulty in tracking their aggregate exposures for earthquake, windstorm or other catastrophe perils.

With today's seemingly unusual weather patterns, we may not even be aware of the effects of the peril until after an event has occurred. For example, the Quebec ice storm and Manitoba floods were extremely unusual events that might have benefited from a catastrophe securitization, had anyone thought that they might occur with the severity that they did.

Computer modeling may help determine the probabilities of an event occurring when an exposure is known, and then the task is to convince potential investors of the likelihood (or rather remoteness) of the event occurring. When a significant event does occur that is covered by a securitization, investors may revisit their investment philosophies, especially if they lose all or part of their principal, even if they were not an investor in the securitized event.

Following an event, it is likely that the margins will rise, even if only for a short period.

If an event does occur, one of the benefits of a securitization, if it is well-structured, is that claims can be paid out relatively quickly and cost-effectively in comparison with the claims handling process involved in most property and casualty claims. Once it is determined that the trigger has been "met", and a schedule of loss payments has been prescribed, the payment can be made by the Special Purpose Reinsurer without need for the investigation, negotiation and litigation that accompanies many claims, or the time required to compile catastrophe claim statistics. This will help the claimant, whether reinsurer, insurer or large commercial company by providing immediate cash to help resolve a potentially crippling cash flow problem.

■ WHO IS BEST SUITED TO DOING LOSS SECURITIZATIONS?

This tool is not limited to reinsurers alone, although reinsurers are more likely to have the aggregation of exposures to make a securitization more viable. Insurers with large accumulations of risk by peril or geographically may be able to make use of securitizations as a supplement to traditional reinsurance, especially for earthquake perils in Canada.

Large commercial companies may also be able to obtain protection by using securitizations to cover large exposures from extremely large losses. Pulp mills, power plants or any other property that has a large maximum possible loss could use the capacity available from the financial markets, although it may be more costly than traditional markets, if the amount of cover is available at all. Other perils, such as product recall and loss of reputation are also potential candidates, enabling non-insurance companies to transfer their exposures. In these cases, it may be an insurance policy that is written by the Special Purpose Insurer, and it may be fronted through locally admitted paper.

Oriental Land Inc., the company that owns Disneyland in Tokyo, is one of the first non-insurance companies to use a bond issue to protect against a catastrophe. Two special purpose reinsurers, Concentric Ltd. and Circle Maihama Ltd., have issued bonds in this transaction. The Concentric Ltd. issue protects business interruption and property damage up to US$100,000,000 depending upon the magnitude, depth and location of an earthquake. Circle

Maihama Ltd. will then provide another US$100,000,000 via a five-year bond issue. It is likely that other large companies will follow Oriental Land's lead to protect their largest exposures.

Other intermediaries (insurance brokers, investment companies and other consulting services) may enter the picture, by arranging pool capacity for groupings of risks, or by selling consulting services and expertise and using their offshore affiliates. Reinsurers and reinsurance intermediaries may be able to offer their services in arranging securitizations on behalf of insurers as well. Without directly assuming risk, an intermediary may face a more difficult time in becoming involved in a securitization, but their client knowledge and the ability to act on behalf of several clients can enhance their expertise and value in these transactions.

Some investment banking firms in the US developed offshore reinsurers in 1998. Lehman Brothers and Goldman Sachs both established Special Purpose Reinsurers to attract insurers to securitized reinsurance products, enabling them to use their connections with investors to market the securitizations.

Another group of companies that can benefit from securitizations are Mutual Insurance Companies. Mutuals have limited accessibility to the capital markets for as a source of additional capital in the event of a catastrophe or other occurrence that causes a significant depletion of capital and surplus. A securitization transaction, especially one connected to a catastrophe situation, can provide relief for the perils most likely to impact capital and surplus.

This field is presently in the domain of a handful of companies, most having some degree of financial reinsurance expertise, and most having the size to be able to attempt these transactions without being overly concerned about their cost. It is likely that only the largest primary insurers in Canada would be able to develop a securitization on its own, but the competitive nature of the marketplace somewhat prohibits the companies from expending the time, effort and capital required to structure an arrangement of this type. As stated earlier, although Canadian reinsurers may face accumulations of exposure great enough to benefit from securitizations, most reinsurers that operate in Canada are subsidiaries of foreign parents. It is more likely that the parent would initiate any securitization, and include the exposures faced regionally (North American earthquake) than solely from Canadian risks.

CONCLUSION

It is improbable that securitizations will replace reinsurance as a means of protection for insurance companies because of the concentrations of risk needed to be cost effective and the availability of affordable traditional capacity. Right now, securitizations offer capacity where no other capacity is available in the traditional marketplace. The opportunities exist for investment banks, brokers and other intermediaries to provide valued services and expertise to companies interested in exploring this option.

Hardening of reinsurance prices and any reduction in availability of catastrophe capacity may help persuade insurance companies to give this option more consideration. Similarly, increases in insurance prices, tightening of terms and frustration with the insurance process may push large commercial clients to move to securitizations as an option to traditional insurance.

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☐ Notes

[1] A list of successful securitizations can be found on page 25.

[2] OSFI has established guidelines for asset securitization, including rules for setting up a Special Purpose Vehicle, in OSFI Guideline B-5 Asset Securitization, issued in July 1994. It is reasonable to expect that a risk securitization would follow the same guidelines.

[3] This document can be found at : http://www.reinsurance.org/policyupdate/index.html .

[4] http://www.osfi-bsif.gc.ca/eng/insurers/life/agreements/index.asp .

[5] The percentage is calculated by taking the premium payable to unlicensed reinsurers, without reduction for commissions, expense allowances or other considerations by the gross premium income of the ceding company for the year. The result of this calculation is then multiplied by 100.

[6] From Best's Review April 1999 and July 1999, with additional transactions as recorded by press releases issued by AM Best, Duff & Phelps, National Underwriter Online and NewsRe.