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Moody's Looks At Guaranteed Segregated Funds In Canada & Their Risks

Summary Opinion

The Canadian market for individual segregated funds (seg funds) has been booming in recent years, similar to the variable annuity market in the United States: at June 30, 2001, seg fund assets under management stood at approximately Can $42 billion, or five times higher than in 1995. Sales on both sides of the border have benefited from strong consumer demand for equity-based retirement and savings products, a trend that is likely to persist in the long-term.

A more recent contributor to this boom, however, has been the introduction of enhanced product features, in the form of guaranteed death and "living" benefits, or, in Canada, where minimum guarantees already existed, *enhanced* benefit guarantees. While these features are attractive to consumers, they expose life insurers to catastrophic equity market risk, drawing attention from industry participants, rating agencies and regulators, alike.

In September 2000, the Office of the Superintendent of Financial Institutions Canada (OSFI) - Canada's primary regulator of insurance companies and banks[1] — formally addressed these risks in a new set of capital guidelines, effective starting in 2000, and fully phased in during 2001. Changes in the product and the market have already been observed, despite the short period since the introduction of these guidelines.

This Special Comment examines the individual seg fund market in Canada in the context of these new regulations, with a focus on the products, the market, and key product risks. The principal features of the new OSFI regulations are also reviewed, along with their impact on the market to date. Comparisons between Canadian seg funds and U.S. variable annuities are made where applicable. Moody's views on guaranteed seg funds from a ratings perspective are summarized below.

1 OSFI supervises and regulates all Canadian banks, and federally incorporated or registered insurance companies, trust and loan companies, cooperative credit associations, fraternal benefit societies and pension plans.

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Moody's Opinion: Risks Unlikely to Adversely Affect Aggregate Industry Ratings

Canadian guaranteed seg funds, like guaranteed variable annuities in the U.S., expose their issuers to catastrophe risk - namely, the low frequency, but potentially high severity risk of a prolonged downturn in the equity markets, resulting in reduced seg fund asset values and potential losses on guaranteed benefit payments[2]. In Canada, this risk is magnified by the prevalence of maturity guarantees, which, unlike death benefits, pay out with certainty at a specified contract maturity date (assuming no previous lapsation). We believe that significant individual guaranteed seg fund exposures exist, given the recent retreat of reinsurers from this market, and in the absence of effective hedging techniques.

Despite these concerns, we do not expect the risks of guaranteed seg fund products to translate into wholesale industry rating downgrades in Canada. Our universe of rated Canadian life insurers benefit from generally diversified sources of revenues and earnings, good capital, and, in some instances, the additional support of a strong parent company. These strengths are reflected in the industry's relatively high average insurance financial strength rating of "Aa2/Aa3".

In addition, we view the new OSFI capital requirements as an important first step in risk mitigation. Although the new capital allocation guideline falls slightly short of Moody's implied level for issuers rated Aa3 (see below), we recognize that the methodology will continue to evolve and improve. Moreover, in the absence of any other regulatory capital guidelines for guaranteed variable annuity-type products, the new OSFI requirements are the only North American standard, to date.

At the same time, we note that the adequacy of the new OSFI regulations has not been tested, while the risks of guaranteed individual seg funds are real. For this reason, we will continue to monitor the performance of individual guaranteed seg fund providers, taking rating actions on a case-by-case basis, if necessary.

Segregated Funds at a Glance

Definition — In the simplest of terms, individual seg funds are mutual funds that return a guaranteed minimum percentage of the contractholder's investment upon death or at maturity. In Canada, the guaranteed minimum percentage for individual products[3] is 75% by law, with maturity being at least 10 years after the deposit, or age 69, at which time the contract officially terminates[4]. Management fees, expressed as a component of the "management expense ratio," (MER), are deducted periodically from the contractholder's account to cover the cost of these guarantees and other expenses[5]. The product is sold by life insurers and by mutual fund companies in partnership with insurers, the latter of which provide the contract's guarantees.

Basic Product Features — Similar to a life insurance policy, seg fund death benefits are protected from creditor claims and estate-related costs, if a beneficiary is named. However, similar to mutual funds, investment gains earned on the contract's underlying assets are subject to taxation, unless they are registered as contributions to a tax sheltered individual retirement account (i.e., a Registered Retirement Savings Plan (RRSP) or a Registered Retirement Income Fund (RRIF) - similar to 401-k plans in the U.S.). Three key features of seg funds set them apart from U.S. variable annuities: a stated contract maturity, the absence of tax deferability (if not in a RRSP or RRIF), and legal minimum benefit requirements. In addition, seg funds do not offer annuitization features common in the U.S. and other living benefits that VAs do in the U.S. (see Appendix 1 for a comparison of seg funds and VAs).

Seg Fund Product Enhancements - 1997-2000

Seg funds have existed since the 1970s, but many enhanced product features have only been introduced since 1997. Enhancements that were widely available prior to the new OSFI capital guidelines are listed below:

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2 For more information on U.S. guaranteed variable annuities and their risks, see Moody's Special Comment, *Bells and Whistles: Credit Implications of the New Variable Annuities, October 2000.*
3 Group seg funds do not offer minimum benefit guarantees.
4 However, it is common for companies to effectively extend the maturity guarantee at age 69 by allowing a the contract to rollover into a tax-sheltered individual retirement account.
5 MERs also include fund-specific charges, seg fund operating costs, and other related expenses .

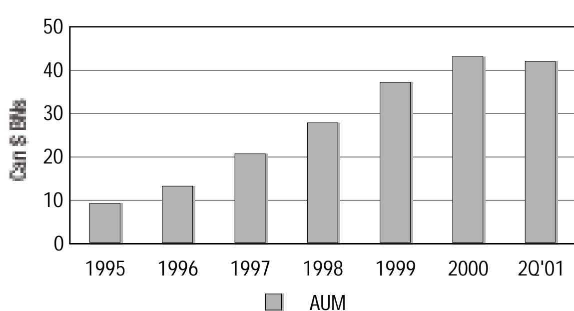
- *Enhanced Benefit Guarantees* - These are death benefit and maturity guarantees that exceed the required minimum of 75% (i.e., 75%-100%);
- *"Reset Options"* - These options allow the contractholder to reset the guaranteed death or maturity benefit periodically (and sometimes automatically) at the greater of the current or prior period's underlying asset value. Exercising the reset option usually extends the maturity date, as well.
- *Greater Fund Variety/Transferability* - New and more numerous fund options were made available within a single contract (i.e., multimanager funds and fund series) starting in 1997. These included higher risk foreign funds, NASDAQ and other equity and bond funds. Multiple or unlimited inter-fund transfers were permitted.

The introduction of these enhanced features contributed to the acceleration of seg fund market growth in the late 1990s. The growth and composition of the seg fund market is discussed in more detail below.

The Market

Figure 1

Individual Seg Fund Market Assets Under Management



Source: iNVESTOR ECONOMiCS.

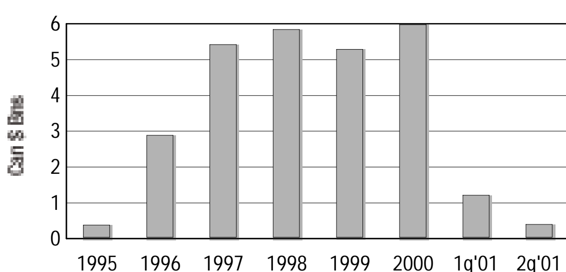
At June 30, 2001, the market for individual seg funds stood at Can $42 billion, as measured by assets under management (AUM). Seg fund assets have been rising at a compound annual rate of approximately 40% since 1990. Much of the market's initial growth was spurred by the retirement and investment needs of an aging Canadian population. However, the positive impact of the new enhanced seg fund guarantees is clearly visible, starting with their introduction in 1997.

Figure 1 shows AUM between year-end 1995 and the second quarter of 2001. Figure 2 shows the growth in net sales, including the impact of the new guarantees, which increased net sales by 86% between 1996 and 1997.

Figures 1 and 2 also show the more recent impact of the weakening North American economy and equity markets on seg funds in the first half of 2001: both AUM and new seg fund sales are lower than comparable figures in 2000. These trends are likely to persist, if the markets do not recover. Over the longer term, however, we believe that seg fund growth prospects are more favorable, given the needs of an aging population, and the higher long-term returns of equity markets relative to other types of investments.

Figure 2

Annual Net Individual Seg Fund Sales



Source: iNVESTOR ECONOMiCS.

Market Composition by Guarantee

As of August 2000, it is estimated that almost 50% of the industry's seg fund AUM supported 100% maturity guarantees, with approximately 50% supporting the 75% guarantee[6]. Intervening sales of less generous maturity guarantees (i.e., under 100%), in anticipation of higher OSFI capital requirements, may have shifted the 50%-50% proportion somewhat. Nevertheless, we believe that exposures to the higher-risk product (i.e., the 100% maturity guarantee) remain significant on both an aggregate industry level and for certain specific companies (see *Guaranteed Seg Fund Risks*, below).

6 Source: iNVESTOR ECONOMiCS.

The Players: A Concentrated Market

Figure 3 lists Canada's ten largest individual seg fund providers at June 30, 2001 and their respective market shares, as measured by AUM. The market is highly concentrated, with almost 90% of all individual seg fund assets attributable to this group. The two largest seg fund providers, Great-West Life and Manulife, account for almost 40% of the industry's AUM alone.

Figure 3

Top Ten Individual Seg Fund Players at June 30, 2001

Company Name	AUM at June 30, 2001(Can $ Millions)	Market Share
Great-West Life (incl. London Life)	9,556	22.9%
Manulife	6,767	16.3%
Maritime Life	3,818	9.2%
Transamerica Life*	3,721	9.0%
Canada Life	3,030	7.3%
Clarica	2,857	6.9%
Industrial Alliance	2,804	6.7%
Empire Life	1,666	4.0%
Standard Life	1,413	3.4%
C.I. Mutual Funds**	1,298	3.1%

**Estimated.*
***Mutual fund distributor; guarantees are provided by Toronto Mutual Life Insurance Company and Transamerica Life Canada.*
Sources: iNVESTOR ECONOMiCS; Moody's Investors Service.

We believe that further concentration in the seg fund market is likely, given on-going industry consolidation, the current market downturn, and the cost of the new MCCSR requirements - all of which may make it difficult for smaller or more marginal players to compete. Industry consolidation, in turn, may either diversify or further concentrate 100% maturity guarantee exposures among individual seg fund providers, depending on which companies merge or are acquired.

Guaranteed Seg Fund Risks

Under most "normal" market scenarios, guaranteed seg funds can provide positive revenue and balance sheet growth, all other things being equal[7]. They can also add incremental earnings, since the more generous guarantees command higher MERs.

However, in severe market conditions, the guaranteed death and maturity benefits embedded in the product - particularly in their enhanced forms — present significant risks for Canadian insurers, as listed below.

- ***Catastrophe Risk*** - As noted earlier, this is the low frequency, but high severity catastrophe risk of a prolonged downturn in the equity markets. Under such adverse market conditions, the guarantee provider would be required to pay the contractholder (or contractholder beneficiary) any difference between the guaranteed contract value and the actual market value of the underlying assets for all maturing contracts or death benefits claimed. This could result in significant losses for the insurer if the market-to-guaranteed value gap is significant, and if many contracts mature and/or deaths occur during this period.
- ***Limited Reinsurance*** - Many guaranteed seg fund and variable annuity providers were initially able to mitigate much of their catastrophe risk by ceding large portions of their guaranteed seg fund business to reinsurers. Recently, however, reinsurers — themselves facing growing exposure to this undiversifiable market-linked risk — have retreated or exited the seg fund market for most new business. Although stop-loss coverage is still available, deductibles and premiums are high.
- ***Double Exposures*** - A number of major life insurers have "double exposures" to guaranteed seg funds, both through direct sales efforts and through reinsurance operations. The magnitude of a company's risk-taking appetite may differ significantly between the two operations, however, mitigating the company's consolidated level of risk.

7 Assuming proper product pricing and management.

- ***The Difficulty of Hedging*** - There are no capital market instruments currently available to hedge in an effective and direct manner the market risk associated with seg funds products. Those hedging strategies that exist are either extremely costly and/or significantly mismatched to the risk. Although the market risk of seg fund guarantees is undiversifiable within the seg fund segment (because both death and maturity benefit guarantees are co-dependent on the performance of the market, regardless of the level of the guarantee), a company can nonetheless diversify its seg fund risk through its overall business mix (i.e., individual and group life insurance, health insurance, fixed annuities, etc.). Effective, or more effective hedging strategies may be developed over time.
- ***High Industry Exposure to Maturity Guarantees*** - Maturity-type guarantees exist in the U.S. (i.e., in the form of guaranteed accumulation benefits), but their prevalence is unique to the Canadian seg fund market, given stated contract maturity dates and the 75% minimum return of premium requirement. The risk related to maturity guarantees is greater than for death benefit guarantees, because all contracts mature at their specified date, wheareas death is only a statistical probability. Contract lapsation; the long term of certain contracts; the pooling of individual fund risks in a "policy level" guarantee; and the laddering of maturities do offset the equity market risks somewhat. VAs with certain guaranteed "living benefits" (i.e., with guaranteed annuitization rates) can also have considerable risk, as the recent experience of U.K. pension providers has demonstrated[8].

"Secondary" Product Risks

Catastrophe risk is the primary risk associated with seg fund guarantees, but it is not the only source of risk. The magnitude and severity of catastrophic market risk can be increased or decreased by the "richness" of a product's features.

For example, 100% minimum guaranteed death/maturity benefits, generous and frequent *reset options*, multiple higher-risk fund choices, and liberal switching options can significantly increase the magnitude of a company's potential losses in the event of a catastrophic market situation. Conversely, the less available and the more conservative these features, the lower the potential loss prospect and the lower the risk.

A number of other factors can also increase or limit the magnitude of the risk to the seg fund provider. These include:

- *The concentration of maturities* - The more concentrated the seg fund liabilities are over time, the greater a company's market exposure and potential for losses. The more laddered and the longer the maturity, the lower the risk related to an equity market downturn;
- *Average contractholder age* - The higher the average age of the contractholder pool, the greater the incidence of death and death benefit claims.
- *MERs and pricing considerations* - the greater the MER and the more flexible the pricing levers, the lower the potential loss of earnings.
- *Policy persistency* - The higher the policy persistency rates are above pricing assumptions, the greater the risk, particularly for products with high maturity guarantees, since more contractholders than anticipated will receive benefits. In addition, because higher-than-expected persistency is most likely to occur under falling equity market conditions, it can reduce an insurer's MER income (based on the market value of the contract's assets) and its ability to recoup acqusition costs.
- *Fund-level versus policy-level guarantees* - Seg fund products that guarantee each individual fund under a policy are higher risk than products that set the guarantee at the policy level. This is because under a fund-level guarantee, individual fund losses would be additive, whereas under a policy-level guarantee, gains in some funds might offset the losses in others, averting a "triggering" of the policy guarantee.

As noted earlier, we believe that a significant portion of the industry's seg fund exposure (sold prior to the new MCCSR capital requirements) includes 100% death and maturity guarantees, along with some of the more aggressive investment choices and reset features. This product segment represents one of the industry's more significant risks, and its largest challenge for risk management.

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8 For information about guaranteed annuity options in the U.K., see Moody's Special Comment, Not Yet Bleak House - *The Implications of Guaranteed Annuity Options for the UK Life Insurance Industry," May 1999.*

The New OSFI Capital Requirements: A Positive Step Forward

In 1999, OSFI, with the collaboration of the Canadian Institute of Actuaries (CIA), began to seek a solution to the industry's growing exposure to guaranteed seg fund risk from a capital and reserving standpoint. In August 2000, a special CIA task force produced a report[9] with a recommended framework for establishing *total minimum balance sheet* requirements (i.e., capital *plus* reserves, rather than just capital or reserves). Following a review and modification by OSFI, the recommendations culminated in the introduction of a new Mandatory Minimum Continuing Capital and Surplus (MCCSR)[10] guideline in December 2000. The new requirements are being phased into the MCCSR capital of Canadian seg fund providers[11] with 50% of the new standards required at year-end 2000, and the full standards required by year-end 2001.

In simple terms, the new OSFI guidelines establish a set of "factors" that Canadian life insurers must use to determine both minimum capital and policy liabilities for their guaranteed seg fund business. The factors adjust for the specific features of a company's seg fund business, such as the type and extent of the guarantees offered; the presence or absence of reset options; the type of investment funds available (i.e., "money market/short-term", "fixed income", "balanced", "exotic or aggressive equity", etc.); the laddering of liabilities over time; MER and margin offset adjustments, and so on[12]. The more generous the feature offered, the greater the risk borne by the insurer, the more severe the factor, and the higher the level of capital and/or reserves the company will have to hold to support it under the new OSFI requirements.

The factors were developed by the CIA using an analysis of multiple models each of which used at least 1000 potential investment scenarios[13], and they cover approximately 97.5%-98.5% of all possible outcomes: in simple terms, the 95% most frequent outcomes, plus an average of the worst (non linear) 5% — essentially, the catastrophe risk — at the tail end of the curve[14].

Moody's historical ten-year default rate for Aa3-rated issuers — the average insurance financial strength rating for our universe of Canadian life insurers — is 49 basis points, which is equivalent to a more conservative 99.5% confidence level. We believe that a 99.5% confidence level is more appropriate for the industry's current ratings, but we also recognize that the ratings of individual insurers often take into account other factors, such as strong capital, a diversified business mix, ownership, and sustainable earnings[15]. In addition, for many companies, the gap between our Aa3 default rate and the 98.5% confidence level may be smaller than the 98.5% confidence level would indicate - at least on an aggregate MCCSR basis. This is because the factors are designed to determine 100% MCCSR, while OSFI actually requires companies to maintain target MCCSR capital at at least 120% on a company-wide basis (i.e., for all business lines), and most companies actually maintain significantly more.

Moreover, OSFI's "factor" approach is only the first step in the development of a more dynamic capital methodology, which is expected to provide more accurate balance sheet provisions for guaranteed seg fund risks over time. By the end of 2001, OSFI expects some companies to develop and shift to their own company-specific models[16], subject to OSFI's review and approval. The development and application of hedging techniques is expected to follow a similar modeling and approval path.

The Impact of OSFI's New MCCSR Requirements

The primary and immediate impact of the new OSFI MCCSR guidelines has been an increase in total balance sheet provisions (i.e., policy liabilities plus MCCSR capital) to support guarantees in a company's seg funds business — particularly for those companies offering more generous guarantees. Because higher reserves and capital have a cost to seg fund providers, most insurers have responded by introducing the product changes outlined below[17].

9 *Report of The CIA Task Force on Segregated Fund Investment Guarantees*, Canadian Institute of Actuaries, August 1, 2000.
10 MCCSR capital is the minimum risk-adjusted capital required by OSFI to support all of a company's business.
11 The new MCCSR requirement also applies to the guaranteed variable annuity business of the U.S. operations of Canadian life insurers.
12 Source: Office of the Superintendent of Financial Institutions, *Guideline No. A: Minimum Continuing Capital and Surplus Requirements for Life Insurance Companies*, Section 9, *Segregated Funds Risk*, December 2000 .
13 I.e., "stochastic" modeling and analysis, which consists of making multiple projections of guaranteed seg fund investment returns based on a randomly generated set of numbers.
14 In technical terms, the factors were developed based on a 95% "conditional tail expectation."
15 See Moody's Special Comment, *Bells and Whistles: Credit Implications of the New Variable Annuities*, October 2000.
16 I.e., individual company-specific stochastic models.
17 The changes vary significantly by company depending on the nature of their product before the new capital rules were introduced.

- ***Higher MERs*** - Starting in 2000, MERs, which ranged between 2-2.75% prior to the new MCCSR requirements, have risen to as high as 4% (for some of the more generous guarantees) on both new and existing blocks of business.
- ***More Limited Guarantees*** - Some seg fund providers are no longer offering 100% death and/or maturity guarantees; others are only offering them through separate, higher cost riders. For existing business, some insurers have initiated policy exchange programs aimed at shifting guaranteed contractholders into lower guaranteed (and therefore, lower cost) seg fund products.
- ***Fewer Resets*** - The number of allowable resets has been restricted, with voluntary and/or automatic resets eliminated in many cases, on new business.
- ***Fixed Fund Allocations/Restricted Fund Switching*** - Some of the newer seg fund products are designed with a low-risk fund allocation requirement, set by the insurer, to ensure that contract deposits do not all end up concentrated in the riskiest funds. In addition, fund switching options (number of times per year/between certain types of funds) have become more restricted, or require a fee after the maximum number of switches is reached.
- ***Deposit Limitations*** - Many providers have either limited or eliminated additional deposits a contractholder can make under an existing guaranteed seg fund policy (thus limiting an insurer's potential future liability).

These product changes have, in turn, had an impact on another facet of the seg fund market: the mutual fund distribution channel. The higher MCCSR cost to insurers has made the product less available. As a result, a number of mutual fund distributors of seg funds have exited the market in recent months.

We expect the new MCCSR requirements to have an impact on the industry from a financial reporting basis, as well. The industry's reported financial results (i.e., earnings, reserves and capital) are likely to become more volatile because the level of required minimum MCCSR capital and reserves must be adjusted regularly to reflect changes in the equity market and future expected experience.

Overall, however, the industry's response to the new OSFI requirements to date has been to reduce the risk of the new products sold. We believe that the shift to more conservative product features, in conjunction with the new OSFI capital requirements, are two positive steps in the industry's management of its aggregate seg fund exposure and product risks.

Appendix 1

Seg Funds Versus Variable Annuities - Seg funds are often compared with variable annuities (VAs) in the U.S., but they are not identical products. The following describes their key similarities and differences.

Similarities:

- **Same Underlying Product Concept** — Both seg funds and variable annuities provide contractholders with both insurance and investment benefits, namely a death benefit, and asset choice and potential appreciation, respectively. Both products also offer the contractholder asset protection from the insurer's "general fund" liabilities (in Canada) or "general account" liabilities (in the U.S.), in the event of the insurer's failure or insolvency.
- **Estate/Creditor Protection** — Seg funds and VAs both protect the proceeds of the death benefit from probate, creditors' claims, and legal or estate-related fees, when a beneficiary is named.

Differences:

- **No Legal Minimum Guarantees** - Unlike seg funds, minimum guaranteed death and maturity benefits are not required by law for VAs (although the return of premiums, as a minimum, is a standard industry practice upon death in the U.S.).
- **U.S. Tax Advantage** - In the U.S., the investment build-up inside a VA is tax deferred. This is not the case in Canada, where seg fund investment gains are taxed[18].
- **Guarantee Fund Coverage** - The *guaranteed maturity value* (up to Can $60,000) of a Seg fund contract is covered in the event of an insurer's insolvency by CompCorp — the guarantee association for Canadian insurance companies. In the U.S., guarantee associations do not provide coverage for ordinary VAs (i.e., with no guarantees), however, for VAs with guarantees, they will support guaranteed amounts up to the statutory limits established by the NAIC model act (i.e., maximum $100,000 for cash values of life insurance and annuity contracts, and a maximum $300,000 in death benefits). (NB: maximum coverage amounts may vary by state.)
- **Other Guaranteed Living Benefits** - In addition to guaranteed death and maturity benefits ("guaranteed minimum death benefits" and "guaranteed minimum accumulation benefits"), VAs in the U.S. often offer a variety of other guaranteed "living benefits" (GLBs), which inur to the contractholder while he or she is alive. These include guaranteed minimum income benefits (GMIBs), which allow the contractholder to annuitize a prescribed accumulated account value at a guaranteed annuitization rate after a waiting period, and guaranteed variable immediate payout annuities,[19] which provide guaranteed minimum payments at specified intervals for the life of the contractholder, after an initial lump sum deposit[20]. These products are not typically offered in Canada, although many U.S. units of Canadian insurers do offer GLBs.

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18 However, most seg fund contracts are held in RRSPs or RRIFs, which are tax sheltered.
19 For more detail on VAs see Moody's Special Comment, "Bells and Whistles: Credit Implications of the New Variable Annuities," October 2000.
20 Some Canadian life insurers sell GMIBs and other GLBs through their U.S. branches and subsidiaries, however, this U.S.business is also subject to the new MCCSR capital requirements.

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