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Equity-Linked Notes—What's New?

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Summary: The panel discusses recent developments in the equity-linked note market, including:

- *new structures that allow active management*
- *trade-offs affecting participation rates*
- *accounting issues*
- *tax issues*
- *risk-based capital issues*

Ms. Josephine Elisabeth Marks: We're going to be talking about recent developments in the equity-linked note market—including new structures, accounting issues, tax issues, and risk-based capital (RBC) issues—with our two panelists this morning. Our first speaker this afternoon is Mike Siegel. Mike is a managing director at General Reinsurance Financial Products where he provides comprehensive risk management solutions for life and property and casualty (P&C) insurers. He has previous extensive experience at Goldman Sachs and other major banks where he was doing asset/liability and optimization work. Mike will start off with the current structure of equity-linked notes.

Mr. Michael H. Siegel: Glen and I are going to try to give a fairly strong structural background about equity-linked notes, and then a more broad discussion of a lot of the issues that are involved as to how you structure these notes. I'm really going to focus on two things: (1) the motivation for why insurers want to invest in equities, and (2) the basics of how you would build an equity-linked security. Glen has the difficult task of going through all of the various issues and how they conflict and how that affects structure.

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Note: The charts referred to in the text can be found at the end of the manuscript.

Why do insurers invest or want to invest in equities? First, equities have outperformed fixed income investments, mortgage investments, and real-estate investments over long periods of time, so it's been an attractive asset class from a historical performance standpoint. Second, it provides a diversification benefit against the other assets in the general account—equities are not perfectly correlated with these other investments. Third, and I think most important for life companies, is that it is a long duration asset. It provides a good match against long duration liabilities such as structured settlements or long-term care, long-term disability, or on the P&C side against workers' compensation or medical malpractice type of liabilities.

There are some very specific cases of equity investment. Life insurance companies with long-term-care liabilities invest in baskets of equities such as drug companies or pharmaceutical companies under the belief that if the pharmaceutical companies are very successful in their business—e.g., they create more drugs that promote longevity—then while that's good on the investment side, that's going to be bad on the liability side because the long-term-care liabilities are going to extend out. Also, P&C companies (more so than life companies) may choose equities as a good place to invest surplus or the equity in the company. So for many P&C companies, a fair bit of the asset allocation is in equities. There are several good rationales as to why a company should consider investing in equities, but you don't see companies often freely investing in equities. Why is this? First of all, although equities are a very high return asset class, that probably means they're also a high-risk asset class, and indeed equities are a very volatile asset class. Second, it requires its own expertise like anything else and if you have an insurance company that is very heavily fixed-income-oriented, you may not have the expertise in house to invest in equities. Third, and probably one of the most important things, is the high capital charges associated with equities both on a regulatory RBC basis, and on a rating agency basis. So it makes the asset a very expensive asset to hold from a capital standpoint.

Probably the single most important impediment is the balance sheet treatment, or the accounting treatment, where equities are held at the lower of cost or market while fixed income is typically held at cost. So if the stock market drops or the value of the equities drops, they're marked to market immediately, giving rise to a surplus reduction. Last (particularly relevant for public companies rather than mutual companies), equity earnings come through as realized gains as opposed to investment income so that they're typically viewed as being onetime-only results as opposed to recurring ongoing results. So an equity analyst evaluating the company would typically pull that out of the earnings stream and provide a lower multiple. In dealing with the regulators and the rating agencies, they're not that fond of a company that shows a lot of income because of capital gains as opposed to a company that shows a lot of income as straight investment income.

So we have an asset class for which there's a good purpose and a series of very real impediments. Taking those two conditions together, you find the basis for an instrument called an equity-linked note. The objectives for an equity-linked note are, first, to provide equity returns, where its performance is linked in some fashion

to the equity market. Second, we'd like to get favorable capital treatment; we would prefer not to hold 15–30% RBC against the instrument. We'd like to get good tax treatment, we'd like to get good accounting treatment, not mark-to-market or even worse, lower-of-cost-or-market, but something that's held for sale-type accounting treatment. We'd like to have high credit quality because you don't want to mix two different kinds of risks in the same instrument, both equity risk and credit risk. Also, we'd like to have some flexibility in managing. Maybe we want to allocate away from Standard & Poor's (S&P) and into another index, so it would be ideal if we could have an instrument that gave us that kind of flexibility. It would be good to get periodic cash flow, and it would be ideal if the returns coming off the instrument could be viewed as investment income as opposed to capital gains.

So I'd love to stop here and say this is the wish list and Glen's going to provide it for you, but it's not as simple as that. What you'll find is every one of these is a desired feature and usually if you press very hard on one, you run into a problem with the others. Many of these are in conflict. I'm going to go through the basics of building an equity-linked note to demonstrate that it's not that complicated. A lot of this is a process of building something that suits your own needs. What is an equity-linked note? Well, first as the word *note* connotes, it is a debt instrument of an issuer or of a special purpose vehicle. That special purpose vehicle could be a trust, a limited liability corporation, or a partnership, but, one way or another, we get a debt instrument that is going to pay an ongoing coupon. The coupon could be zero or it could be 1% or 2%, but that coupon will be a below market coupon; it will not be an at-the-market coupon. In addition, being a debt obligation it should return its principal at the end. The only reason it shouldn't is if there's a default of the issuer; nevertheless, it should pay equity returns above a certain threshold. The threshold becomes the strike on a call option. Let's say I'm going to buy a note. It's going to pay me some small recurring coupon; at the end it's going to pay me back par, plus it's going to pay me any of the upside over a certain threshold against a certain equity basket or stock index.

Getting a little bit more detailed here, this issuer could really be any credit, but ideally I think we're going to want a strong credit. We don't want to get into a good news/bad news situation where the good news is that the stock market's gone way up and the bad news is that the issuer has defaulted and you won't get paid. If you take a look at the credit exposure in your investment and think about what equities can do over a long period of time, taking into consideration that your returns are back-end-loaded, you have the potential to build up a lot of credit exposure to a single obligor. If we're looking at a 10-year note, it's not unreasonable to think that the equity market could double. If we're looking at a 30-year note, it's not unreasonable to think that the equity market could quadruple. If I pay \$100 today, I could have \$400 outstanding to a single credit, and that's a factor to be taken into consideration. The net result is that investors typically look for the highest grade credits available. They'll look at government agencies as issuers. Some will look at Freddie Mac, Fanny Mae, or Federal Home Loan Bank. They may look at strong double A or triple A corporate issuers or trust structures that have Treasuries or other government collateral in them. It would be

unusual to take a look at a high-yield issuer of an equity-linked note for obvious reasons. Equity-linked notes typically don't carry any management fees. There's typically no active management of the equity portfolio underneath the note. The notes typically can be public or private, and the equity sensitivity can be to a single index, a basket of indices, a single stock, or a basket of stocks. You then have the variable of how much coupon you want.

So basically what we're doing is taking a debt obligation and separating it into its principal component and its interest component. We take the interest component (the coupons), sell it, and use the proceeds to buy equity options. We then attach the principal component to the equity options and deliver that as one instrument. The payoff on that instrument is the redemption of the principal at the end plus the value, if any, of the equity call options.

The principal component of the debt obligation consists of a zero coupon bond that will accrete to the desired value at maturity. The end result is a zero coupon bond plus equity call options. At maturity, I get back all my principal, plus whatever the payoff is on the equity call options. So, for example, if you take a 1-year note, the present value of the zero is about \$90, so you only have \$10 to buy equity options; I'll end up with a very unlevered equity-linked note. At the other extreme, if I bought a 30-year debt obligation, the zero coupon component of that is worth about \$12, so I can get \$12 of principal and \$88 of equity call options; I'll have an equity-linked note that has a lot of equity firepower to it. The equity options could be S&P options, but they could also be Nikkei options or IBM options. Instead of striking these options at the money, I can strike them out of the money, which means my coupons could be used to purchase more options.

Chart 1 illustrates the case. It shows a 20-year bond where the underlying bond had a 5.4% yield. We separated that bond into the present value of the principal, or in other words what the zero coupon bond should cost, which is \$32. The forgone coupons are worth \$68, so you use \$68 of coupons to buy call options. In this particular example, I was able to buy enough at-the-money call options to cover 90% of my principal. Now I just made that number up, but, if you were to then sell this note, what we would say is here's a principal-protected, equity-linked note that pays you 90% of the upside of the S&P above its level today.

As you start to work with these instruments, you'll ask, "Why is this one 110% and this was 90%?" Well, they are very market-sensitive, and there are several components that affect valuation. First, as interest rates increase the cost of the equity call option increases which means less equity participation in the note. As equity market volatility increases, the cost of the call option increases, which means, again, less participation. As the equity option extends out in time as we go from a 1-year to a 10-year to a 30-year note, the cost of the call option increases. There is a little bit of an offset here, though, because as we extend out the cost of the zero coupon bond decreases. I can buy more options. As equity dividends increase, the cost of the option decreases because as the dividend rate goes up the equity forwards increase, which reduces the cost of the call options. And then as the strike goes up—in other words, as the equity option gets more and more out of

the money—the cost of the call option decreases; therefore, I can buy more options.

Let's talk briefly about how the option itself works. There are a couple of different ways to structure the option, and there are two issues here: First, is the option doing what I need it to do and is it giving me any cost benefit? The first thing that companies will look at is using an averaging option, or what's called an Asian option. For example, if we had a ten-year option, we might average the quarterly return in the market for ten years, and by using this averaging we're reducing the volatility of the option and, therefore reducing its price.

From the Floor: Can you tell me how this averaging is done?

Mr. Siegel: The averaging is a variable that you specify. The more averaging that takes place, the more you're dampening the option; therefore, you're lowering its cost; you can go to the extreme and do daily averaging for ten years. If you just want to be generally invested in the market, you tend towards averaging. If you are trying to match a very specific liability that's geared towards a onetime payout, you're going to want a European option that pays on a specific date to a specific index. So, to answer your question, if you want quarterly averaging that's fine—daily or monthly.

From the Floor: Do you start from inception for the averaging?

Mr. Siegel: You can average from inception, or you can average from some point towards the end. For example, if it's a 10-year option, you can average the last 12 months of the tenth year. That way you can avoid the one-day risk of the stock market, where the market crashes on the specific day that the option expires so that it expires worthless. That way you have ten years worth of exposure, but you avoid that single day risk.

Mr. Glen D. Keller: Normally, you average the underlying index points, not the percentage increases from various times.

From the Floor: So if the S&P is at 1,000 today, then at 1,100 after 1 quarter and 1,200 after 2 quarters, do you take the average of these points, or do you take the growth every quarter and average that?

Mr. Siegel: Either way. In other words, if you want point-to-point averaging, that's fine. If you want to take a look at the percentage change over periods and average those, that's fine as well. The modeling capability is such that you can basically specify any kind of option structure that you want and it can be priced; that's an advantage. The flip side to that is the more custom you make something, the less liquid it's going to be or, in other words, the more friction cost you're going to incur as you invest. So there's a trade-off between something that specifically meets a need and something that has a lot of embedded cost associated with it.

We talked a bit about averaging-type options—the benefit is that it reduces the volatility and lowers the cost. European options are the standard in the market where the payout is based on two values—today and the end point. The nice thing about European options is that they are the most liquid part of the market. You can use a look-back or high-water mark option, which pays off based on whatever the peak is over the option period. This is an option that some insurance companies sell through their equity-indexed annuities (EIAs), although I have yet to see this option in an equity-linked note. I think it has more marketing appeal than investment appeal. It's a very expensive option. I'm not sure that it's really warranted for the general account. And then there are cliquet or reset options, which are really just a series of options stapled to each other. A one-year option that starts today will run a year; another one-year option that starts a year from now will run a year, so it's really a string or a series of options. Again, this is sold fairly frequently in the EIA product, but we don't really see it in the equity note market.

Chart 2 shows the relative cost of these options with different structures if you keep everything else constant. These are five-year, at-the-money calls. If you compare the monthly average with the annual average, you can see that the more frequently I average, the more I dampen the volatility and, therefore, the cost. Notice the European option and the high-water or look-back option, which is obviously very expensive.

This was not intended to be an exhaustive list of all of the option structures that you can have. Basically, if you go back to the example of the zero coupon plus the call options, you can purchase whatever call options you'd like. That could be against a single index, any index; it could be against a basket of indices; or it could be against a single stock or a basket of stocks—whatever you specify. You need to consider what you're trying to accomplish and look at the cost.

Table 1 shows some illustrative pricing for some ten-year, equity-linked notes against foreign indices. We took a look at DAX, which is the German index; CAC, which is the French index; the Nikkei, which is the Japanese market index; and the HIS, the Hong Kong index. In some cases the index may be quoted on a total rate-of-return basis, which is the change in price plus the accumulated dividends; in other instances it might just be quoted on a price basis. Sometimes you'll see a payout of more than 100% of an index and you'll wonder how could that be; well, that's because they've left the dividends out. To simply get the S&P index itself, you're missing a recurring 1–2% income stream per year, and that would be the difference between a price index and a total return index, which includes the dividends.

TABLE 1
EXAMPLE PRICING

No Current Cashflow						
Pays at Maturity Greater of: Final Principal Guarantee or Participation times Index End Value						
Equity Index	Price Term (Years)	Quanto or TROR	Minimum or Local	Annual Rate	Final Principal Guarantee	Cumulative Participation
DAX 30	10	TROR	Q	1%	110	84%
DAX 30	10	TROR	LC	1	110	88
CAC 40	10	Price	Q	1	110	132
CAC 40	10	Price	LC	1	110	123
NKI 225	10	Price	Q	1	110	171
HIS 10	10	Price	Q	1	110	78
HIS 10	10	Price	LC	1	110	127

If we're dealing in foreign indices, are we going to exchange or take payments in local currency? Are we taking the currency risk or not? If I invest in the Nikkei and the Nikkei goes up 10% and the yen has fallen 20%, am I out 10%? Well, it depends on how you've structured the note and who's bearing the currency risk. If the note is hedged for exchange risk that means you're not bearing the currency risk. In that example you would get the 10% movement in the Nikkei (forget about what the yen did), but, of course, there's a cost associated with that.

Table 2 shows the effect of term on the participation rate—European versus Asian, a 0% coupon versus a 3% coupon on the note—and you can see the difference.

TABLE 2
EFFECT OF TERM ON PARTICIPATION RATE

Option Type	5 yr	10 yr	20 yr
European 0%	85%	103%	115%
Asian 0%	98	112	121
European 3%	39	49	55
Asian 3%	45	53	59

From the Floor: What was the at-the-market rate?

Mr. Siegel: The at-the-market rate was about 7%. If this issuer issued straight debt, it would be at about a 7% return. So I'm giving up 7% a year, which should be buying a lot of options.

We've been talking about the economic components of the option, but there's also the structuring component to think about. What kind of issuer are we looking at? It could be a corporate issuer that issues straight off their balance sheet, or it could be a structured vehicle where you create either a trust or some other kind of instrument that holds the equities and the options. Each one of these instruments is going to differ according to their credit quality, the accounting treatment, the tax treatment, and the capital treatment. In some instances, these may be offshore vehicles—for example, Cayman Island vehicles—so you have to take into consideration that this would come into the foreign basket.

I want to leave you with one thought as to how you structure it. You're the person who can control this process. Basically, the way we build these things is we take the underlying assets and the derivative instruments, or the call options, and put them into some kind of vehicle. The vehicle then issues out a note. There are no real rules here; it's a process of construction. Glen is going to deal with the fact that it's not as simple as that. I will say that there are a number of different issues to take into consideration; some of which are very simple market-related issues, and others that are very complex. The easy ones are liquidity, credit, and onshore versus offshore. Each one of these has a price associated with them. The difficult issues are the accounting, the capital, and the tax.

Ms. Marks: Our next speaker is Glen Keller, who is senior vice president of Conning Asset Management. His responsibilities there include asset/liability management and portfolio optimization and insurance advisory services for clients. He has 20 years of experience in the asset/liability management field.

Mr. Keller: I've been involved in some unbelievably heated discussions between actuaries and accountants on how to apply the rules for equity-linked notes. Often, because of the unique nature of some transactions, there is no guidance with regard to how the accountants should treat these notes, although there is general guidance with regard to equity-linked notes. Every year, the FASB issues a paper on various emerging issues. I will discuss the 12th paper issued in 1996 through the Emerging Issues Task Force.

Basically, the 1996 pronouncement specified that the equities would accrue an equity-like return over the lifetime of the instrument, which would then account for both income and balance sheet treatment; however, I know for a fact that a lot of companies only accrue income on the bond portion. In Mike's example, you could see that the bond portion only accounts for 10–50% of the value of an equity-linked note, and, if you're only accruing income on a portion of that, you actually don't get much income accrual hitting the balance sheet. This is where you get into application versus theory. For one of our larger clients, the auditor was vehement with regard to accruing income on only the bond portion of the equity-linked note, and that's ultimately how the client accounted for it. Obviously they didn't get very much income in a current period, and it wasn't exactly what they were looking for from the accounting perspective. However, I have other companies that have accrued a conservative yield, 3% or 4%, or even as high as a Treasury yield on the entire equity-linked note. One could argue that accruing too little income is just as bad accounting as accruing too much income, and I think some other companies have used that theory in determining how they should account for it.

There are a lot of other issues you want to deal with; in particular, how it affects your income statement and how it affects your balance sheet. I talked a little bit about how it affects the income statement, but the entire change in value of the equity-linked note affects the balance sheet, (on a GAAP basis) and your *Financial Accounting Statement (FAS) 115* adjustment in just the same manner as the *FAS 115* adjustment affects the value of your bonds. So that's not necessarily a bad thing. It will be slightly more volatile because this asset is more volatile in valuation

than a bond. And there is one major development that is going to change the accounting for these things quite a bit, and that's *FAS 133*, even though the implementation of *FAS 133* has been delayed until the end of the year 2000. *FAS 133* deals with instruments that have embedded options in them; of course, an equity-linked note has an embedded option in it. *FAS 133* will require that an equity-linked note be bifurcated—what that means is that you have to take the value of the option and completely separate it from the value of the bond. Additionally, you have to mark that option to market, and run the change in the value through income, as well as running it through the balance sheet under *FAS 115*. This will cause a great amount of increased volatility in the income treatment of equity-linked notes. The quid pro quo for that is that a public company publishing a GAAP balance sheet or even a mutual company publishing a GAAP balance sheet will see a lot of volatility in their earnings because of the equity portion of the equity-linked note; that makes it much less desirable. What you really need to do is to consult with your accountants on how they're going to treat it as well as the outside auditing staff because there is wide interpretation of the rules, and the accountants are generally a more conservative group than the actuaries. You probably want to deal with it up-front as opposed to after you bought the instrument.

Statutory reporting is perhaps easier. You do get bond treatment for the balance sheet so it looks like any other bond, which looks very nice on the balance sheet. There are no explicit statutory instructions that say that equity-linked notes should be treated this way for either income or capital or for how you treat the income through the income statement or the value on the balance sheet. The practice generally is to be consistent with GAAP, so whatever you decide on GAAP, most companies follow exactly the same treatment for statutory.

If you're conservative on GAAP, you'll also be conservative on statutory accounting. If you've been relatively aggressive on GAAP, you'll be relatively aggressive on your statutory accounting.

RBC is a big win. One of the reasons that we have equity-linked notes is because the RBC treatment of equities is so terrible. The 30% base factor for equities is punitive. I guess it could be considered to be an effort for the regulators to not have life companies invest in equities; equity-linked notes solved that problem. You do get equity exposure with a very favorable RBC treatment, based on the rating of the issuer, and since most issuers are NAIC-1 or a very high grade, you get the RBC factor of 0.3%. I might just add that even though you give up some of the equity yield, because of the additional friction costs, you do get a great return from a capital efficiency point of view when you consider how much capital you actually had to put up to get that return compared to the 30% you'd have to put up to get the full equity return. So, equity-linked notes are very capital-efficient, even though there are a lot of hidden expenses within the contract.

If the RBC factors for common stocks are changed, the need for equity-linked notes will go away, unless you are trying to structure a particular pattern because you want averaging or you want something completely different rather than holding

the equities outright. If they change the RBC formulas, you could see a big drop in the demand for equity-linked notes.

Now for the tax treatment. This is treated as a contingent interest obligation for tax purposes. That is a tax term, but basically the company is taxed on some accrual rate on the outstanding principal; the accrual rate is based on the interest rate normally paid by the issuer. If this is issued by some bank and they normally issue notes at 7%, the tax department will accrue 7% income on that note annually in your tax return. Clearly this is a disadvantage because you're going to be paying current tax without actually having any income, especially if you choose to have no coupon on your equity-linked note, which I think most people do, at least in my experience, because they want to maximize the equity exposure. It creates a deferred tax asset on your balance sheet on both a GAAP and a statutory basis.

What happens if you sell it before the final maturity? The difference between the price that you paid and the amount you've accrued into income already is treated as a capital gain (as you would expect it to be). So, for those companies who have different tax rates for capital gains versus ordinary income, this can be important. If you have loss carryforwards against capital gains and capital losses, that's an important distinction. However, at maturity only by pure coincidence will the equity-linked note mature to be exactly the same as what you've accrued it at, and that difference, whether it's a gain or a loss, is treated as ordinary income. Again, I need to caution everybody that there is a wide range in interpretation, so your tax expert may take a slightly different view on any one of these issues.

Enhanced product design features. As Mike said we see lots of different indices. I don't necessarily have to go through them, but I would add here that for a basket of countries people tend to go into countries that have liquid financial markets because the cost of the option is reduced and you get more participation. Similarly, if you want to have a basket of stocks, each kind of stock has a different liquidity associated with it in the marketplace, and, if you choose a basket of stocks that is more liquid, you get a better option price because of the friction. Similarly, you can get a specific basket of stocks that reflect a view on the market; however, you do have to recognize that you can't trade these. Therefore, it's a very long view, a 10- or 20-year view, which may not be appropriate. Now the term is variable of course. I've seen them as long as 30 years. The advantage of a 30-year contract, of course, is that the cost of the defeasement is very low; you get more option and, hence, more equity exposure. The credit quality of the issuer is another consideration that determines the value of the contract.

We've seen in the marketplace some extendable notes where you might have a ten-year note that can be extended. The high cost of the option for callable notes has driven some people out of the marketplace. Wall Street has designed it this way to make the note callable at their option. So, basically, they put it in and say that at the end of the first year, they will guarantee at least 10% and the note can be callable at any point in time. Clearly if the stock market goes up 50%, you don't want to get your note called at 10%, but if you buy a callable note you get a higher participation rate going forward. If you want an option or something extra in one

part of the design, you pay for it in another part of the design. One of the reasons why plain vanilla is often the best value is because it's simple, the market is used to it, and it's getting relatively common. Puttable notes are where you, the receiver, can put it back at any point in time before the end of the term. Obviously, there's a cost to that, but some people like to have that and I would add that most of these notes are puttable in the sense that if you go back to the issuer they'll buy it back from you, but generally it's at a bid-ask spread whereas a puttable sets down the terms.

From the Floor: What would be the accounting treatment?

Mr. Keller: My understanding is that the option that you do not control would definitely be bifurcated, whereas the option that you do control may not be. But again there are some open issues.

Let's leave equity-linked notes for a while and talk a little bit about some other things in the marketplace that give you equity exposure. One is to use reinsurance as an asset class where you would cede a block of business to a reinsurer and the reinsurer would invest in equities on your behalf underlying that particular contract and pass the excess equity returns back to the ceding company through the reinsurance contract. The reinsurance contract is not only a risk transfer of some of the insurance risks, but the investment component is also part of the contract and a key reason for doing the reinsurance. What are the advantages of this? There are a couple. A major advantage is that because these reinsurance flows get treated as ordinary income, you get the capital gains passed back through as ordinary income. That is very important, especially on a GAAP basis for stock companies. You also have the chance of smoothing equity returns. Even if you can solve the capital gains problem, one of the problems with equity returns is that they're way up and way down. What stock companies really want is nice, stable earnings; the analysts pay up for stable earnings. This arrangement has the potential of smoothing earnings and getting them back to the ceding company in a manner that would be more appropriate. Another advantage is that reinsurance avoids a fair amount of the RBC treatment. There are some additional RBC charges for reinsurance transactions, but they are reduced.

This all seems all wonderful, so why don't we actually do this? I think the reason that reinsurance companies are becoming so important and why they're growing so rapidly is that reinsurance companies are becoming de facto investment bankers to the life insurance industry. You see all sorts of not only risk transfers, but financial arrangements and product development, which is really helping the life companies in many ways; this is another idea on how they could help life companies solve a problem. It's really neither here nor there whether or not you use a domestic or offshore reinsurer. I've seen a lot of these structures proposed with an offshore reinsurer because then there's less of the U.S. regulatory body determining how they can set up the reserves and account for their obligations. A key item, of course, is how the ceding company gets the reserve credit because obviously this doesn't work if you don't get the reserve credit. An additional item is the capacity or how acceptable it is for the reinsurer to hold equities on your behalf, and

whether or not the compensation required for holding the equity uses up all of the excess returns in the first place because then it wouldn't work. Pure economic theory will tell you that if somebody's taking an equity risk, and they're actually taking the risk, then they should get the return. Pure economic theory says this arrangement can't work, but there are all sorts of extra ways to build the reinsurance arrangement where the risk for the reinsurer is more apparent than real.

What about risk transference rules? There are very complicated statutory and GAAP risk transference rules to make sure that these are valid reinsurance transactions. Again, I would mention that you need a very aggressive set of accountants at both the ceding company and the reinsurance company. I do not know of a transaction that has actually taken place, but I have been privy to trying to develop a few of these, so we'll just see whether or not one can work out. Now a cynic might say that this is just a way to get around some regulatory issues—any widespread abuse here will be shut down dramatically—but, nonetheless, they're within the current laws and some companies may choose to do this. Another way of getting equity risk without an equity-linked note is through an actively managed pool where the basic structure is virtually identical to the equity-linked note, with the only difference being that one portion is bonds, which is the part that defeases the principal, and the other portion is equity, whereas in an equity-linked note that equity portion purchases options.

There are many different ways to guarantee the principal, but one structure that I have seen is that of a special purpose trust where a bank issues a guarantee on top of it so that you do get your principal back. You buy zero coupon bonds to defease the principal. The ones that I've seen tend to use single A corporates because if you get a higher return on that, you have less money going to the bond side and more money going to the equity side. The equity can be placed with an equity manager, so, if you want to have Putnam Investments manage the equity portion, here's a chance to get them within a structured note; or, if you want your own individual manager to manage that pool of equities, you can do it, or you can buy an index fund or get an arbitrage manager. Many arbitrage managers or hedge fund managers have great track records and stable returns using various techniques. The total return, of course, is the blend of the bond return and the equity return. Here's a simple example. Let's say we have a \$50 million, 10-year structure, using single A corporate strips. In this case, they yielded about 7.2%; the ten-year Treasury strips were yielding about 5.9% that particular day. Using the corporate strips, you need \$25 million to defease the principal, which grows up to \$50 million. If you used government Treasuries, you would have had to have put \$28 million here, so you would have \$3 million less if you used Treasuries. You want to get as much money as possible into the equity return so that you get a much higher potential return—approximately the same on a ten-year single A. It's a little bit higher than the bullet bond of that maturity, so you can see a potentially higher return. It really depends on how comfortable you are with the return on the equity side. Now, a lot of arbitrage managers will say they can get you 10%; I've seen some arbitrage managers that have Association of Investment Management

and Research-compliant numbers that have very consistent returns. You have to make up your own mind whether or not they can continue to do that in the future.

It's treated the same as an equity-linked note. The key here—and this might be a very strong statement—is to structure it so that there's no bifurcation under *FAS 133*. If you have lots of options on that equity side, you're going to get bifurcation. If you structure it, you may not get bifurcation, or the bad accounting that comes with bifurcation, which is basically the mark-to-market and taking the volatile income into income. That sort of defeats the purpose of the equity-linked note. An advantage of this, however, is that you can get your own manager. If there's a manager you like, you can hire him or her to manage the equity portion. I've heard of cases where less than 100% defeasement is possible—i.e., you only have to defease 90%—but you still get bond treatment and an NAIC single A rating. Clearly the less you have to defease, the more money goes into the equity class. The one that I heard of had some very strict controls on the equity side so that basically whatever strategy was being used was working against you; they would unwind it and get into cash to supply the extra 10%, the extra amount of money that you're short on the defeasement. So, of course, there's a cost to that because if you're going down that path, you may cut your manager off before his or her strategy has time to work in the marketplace.

I have talked about arbitrage managers. Some of them experience very stable returns. You can make up your own mind as to whether or not that's possible. I might add that this particular structure works best for a company that is already holding strips in a portfolio. If you're already holding the 10-year strips or the 30-year strips in your portfolio, you can just package them together. In reality, if you package it in the right proportion as to how much equity you want to hold, you get to hold your equity in a bond form and you don't have that drain of the bond return. I might add that one of the disadvantages is that you need to have a critical mass, \$50 million or at least a \$10 million investment, so it limits the applicability to smaller companies.

I would like to touch on a couple of final thoughts. *FAS 133* is going to change the marketplace for equity-linked notes. I know that there is a recommendation by one of the Academy task forces to change the way that the RBC formula treats common stock, and the recommendation I saw proposed that the C-1 common stock factor be a separate item compared to the rest of C-1 and C-3 so that when you square it and then take the square root of the entire thing, if you have a very small proportion, very little of it gets passed back through to the final RBC number. That's virtually the same way the RBC formula is applied to P&C companies, and, if that change took place, I think you would see more and more companies investing in common stock directly. That doesn't solve some of the accounting issues with regard to common stocks, but if statutory and GAAP accounting can get their act together and use some sort of smoothing the way that Canadian GAAP treats equity gains perhaps you will see more equities on balance sheets directly as opposed to using these structures. Of course, for all of these things there's a lot of regulatory scrutiny, and although I don't think that the regulators really mind equity-linked notes even though it avoids a rule to the extent that we push the

envelope on some of these items, I think we may get more and more regulatory scrutiny, which might take away any advantages to these structures. You never know whether or not these things will be grandfathered. Generally they are grandfathered, but occasionally some of these structures are not. And like I said before, a lot of them are very illiquid, and if you have to sell them, you often take a bit of a loss rather than a true intrinsic value.

From the Floor: When you talk about friction costs on the transaction, I know there's some variance. What does the range tend to be?

Mr. Siegel: The question of friction cost is a tough one because we really put out such a wide range of instruments. I would generally answer that by saying the more generic or straightforward you go, the better off you are, and the more complicated bells and whistles, the more cost you're embedding. That would be one way to answer it. I'll answer it another way as well and then we'll hear Glen's thoughts. You have to take a look at where the component pieces are coming from. If they're coming out of liquid markets, then the package is going to be relatively liquid and not have a lot of friction cost. If you're asking somebody to take in one component on their own balance sheet for 10 to 30 years, I can tell you you're going to be bearing a lot of capital cost. So, in simple terms if you ask for a five-year S&P call, there's a fairly liquid market. If you ask for a 14-year look-back on the Nikkei, DAX, and CAC and somebody's going to keep that on their balance sheet for 14 years and hedge that out for 14 years, you're going to be paying a tremendous capital charge.

Mr. Keller: I can't add much more than that other than if you're unwinding these things with the investment bankers, they will often hit you with their ongoing profit charge, and that can be very sizable—the present value of 25 or 50 basis points over and above the actual intrinsic costs of unwinding the component pieces. These are things that you don't want to actively trade and try to sell unless there's some dire need.

From the Floor: It seems as if the reason they are getting this kind of investment is because they don't anticipate the hypothetical return of the vehicle in the market without taking the risk from the downside. If I have to simplify that, it seems like there's a swap deal: I give you the interest I am earning and you're giving me the participation in the index. Now why would somebody be willing to take that 5% and give away that potential high return? It would seem that in the long run the return from the client perspective and the writer of the offer is going to even out. Isn't that right?

Mr. Siegel: Well, this gets back to basic economic theory that says if I have an instrument that pays me 5% and floats with the marketplace, it's worth \$100 now and I can buy common stock that's worth \$100. Now they're both worth \$100, but the common stock has a much higher expected return, so why would anybody buy this 5% note? The whole key is that it's less risky. And so, if you're asking, "Why does the swap market exist where you can swap 5% interest payment for the equity return?" it's because there's this assessment based on the riskiness of

both of those cash flows brings it back to the common value. That's why the whole marketplace exists.

The person who takes the opposite side of the swap rarely takes the risk. He or she will lay it off into one of the other financial markets, but you can find somebody who is willing to take the opposite risk that would rather hold a bond-like return rather than equities. That person is seeking to actually take the risk that you don't want to take, and that's how the swap market developed.

From the Floor: The other question I have is about the maturity of the option versus the bond. If the guarantee on the principal is on a yearly basis and I'm going to buy ten-year bonds, I have a mismatch between maturity of the option and the maturity of the bond. How do you solve that?

Mr. Siegel: I think you try to match them up together because otherwise you're creating a lot of inefficiency in the structure. If I had a five-year option and a ten-year bond, that means the option payment comes in five years; it has to be invested at fixed income now for another five years and that's a drag on the structure. You just try to match the two up; it doesn't make sense to have it shorter or longer.

From the Floor: How is the counterparty hedging the risk?

Mr. Keller: They're just using the futures market to find somebody else to accept the risk rather than swapping it elsewhere.

From the Floor: What is the impact of putability on the participation rate?

Mr. Keller: Most investment bankers will unwind the notes, so the putability option is really the ability to set the terms on which it gets unwound as opposed to accepting the investment banker's numbers. That option is relatively inexpensive because if you look at the intrinsic value that you lose in selling that note before its maturity, it's probably not much more than 2% or 3%, so the putability option is more of a guarantee that you're going to get good pricing, which increases your value 2% or 3% at some point of time in the future, which probably isn't all that big of a deal. There will be some minor reduction in your participation, i.e., a couple of percentage points.

CHART 1
MECHANICS OF PRICING A CALL-BASED ELN

- Assume a bond has a 5.4% coupon and a 5.4% YTM
- Value of bond = PV of Coupons + PV of Principal

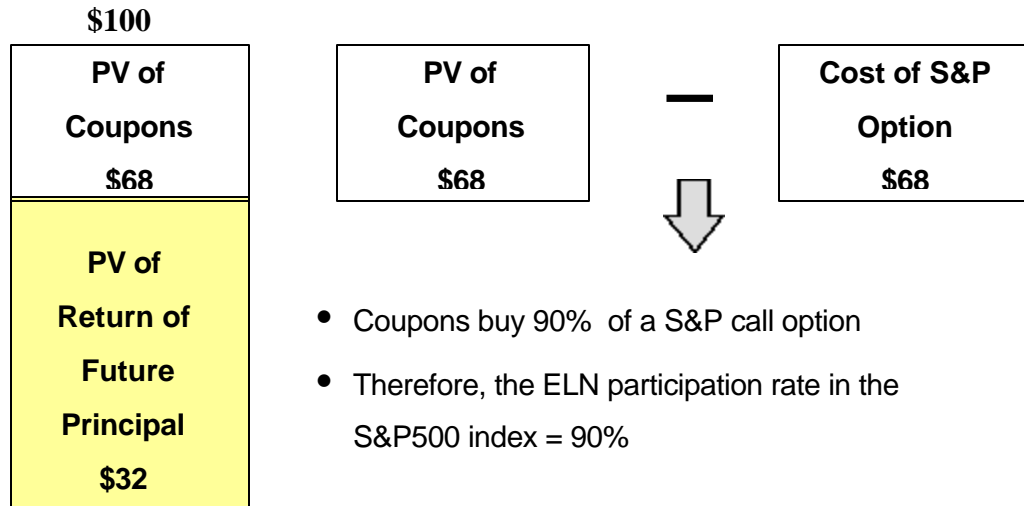
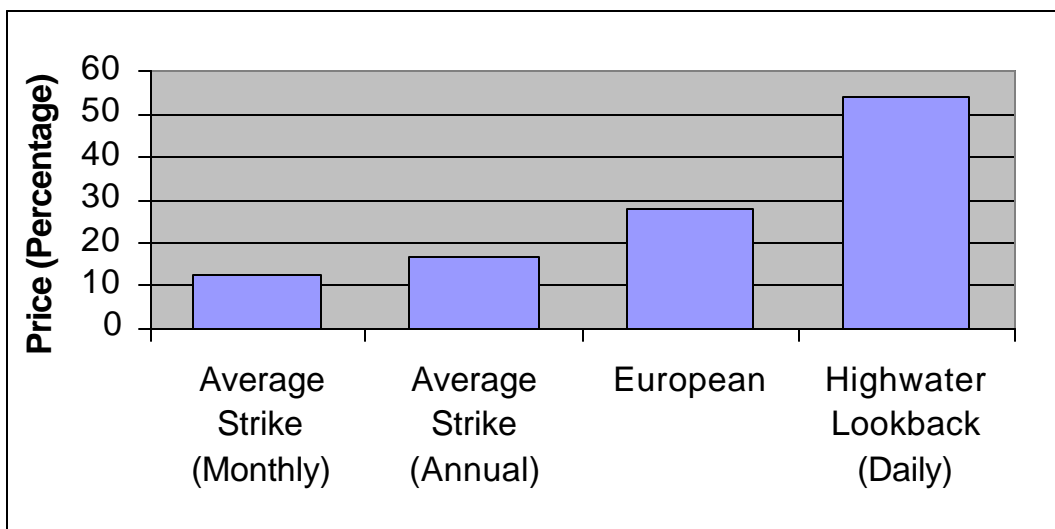


CHART 2
PRICING OF VARIOUS OPTION STRUCTURES*



*5-year ATM Calls