RECORD, Volume 22, No. 1*

Marco Island Spring Meeting
May 29–31, 1996

Session 20PD
Accounting for Investments

Track: Financial Reporting/Investment
Key words: Financial Reporting, Generally Accepted Accounting Principles (GAAP), Investments

Moderator: DOUGLAS C. KOLSRUD
Panelists: ARNOLD BROUSELL*
CATHY ENGELBERT†
Recorder: DOUGLAS C. KOLSRUD

Summary: The investment environment has undergone significant change over the last several years through the introduction of many sophisticated investment vehicles. This session provides an update on current challenges encountered by life insurance companies in accounting for this new array of investments. Among the issues covered will be accounting for derivatives, mortgage-backed securities, and other hedging vehicles. The session also includes some of the system and projection modeling challenges encountered as a by-product of investment in these vehicles.

Mr. Douglas C. Kolsrud: I am a vice president and actuary at Aegon USA, Inc. Our panel provides an update on the challenges encountered in accounting for two classes of assets showing increased usage by life insurers: mortgage-backed securities and derivative financial instruments.

Our first speaker is Cathy Engelbert, a senior manager at Deloitte & Touche in Parsippany, New Jersey. Cathy transferred to Deloitte & Touche's tri-state region in

*Mr. Brousell, not a member of the sponsoring organizations, is Senior Manager of Coopers & Lybrand LLP, in New York, New York.

†Ms. Engelbert, not a member of the sponsoring organizations, is Senior Manager of Deloitte & Touche LLP, in Parsippany, New Jersey.

the summer of 1994 after completing a two-year assignment in the firm's Management Development Program, serving in the Accounting Research Department of their national office. Her experience included providing consultation to practice offices on the application of generally accepted accounting principles with an emphasis on financial instrument issues. Also, Cathy provided research and consultation on emerging issues to the firm's representative on the FASB's Emerging Issues Task Force. Since arriving in the tri-state region, Cathy has served as the lead senior manager for a diversified financial services company. Cathy has authored articles on derivatives and financial instruments and has made various presentations on financial instrument topics to clients, outside industry groups, and the firm.

The second speaker is Arnold Brousell, senior manager at Coopers & Lybrand in New York. Arnold, a CPA, has been in public accounting for 12 years and does audits for insurance company clients. His work is mainly property and casualty (financial guaranty) reinsurance. He does a bit of life insurance work and also does technical research. He has been a consultant on product development with investment banks and startup companies.

Ms. Cathy Engelbert: I'll spend some time on derivatives and then Arnold will spend a half hour on mortgage-backed securities and related instruments, but it's hard to do it in such a limited amount of time so I may go rather quickly. I want to make sure that we get to the examples at the end, which, I think, sometimes put the whole thing in perspective.

I became interested in derivatives a couple of years ago. I went to a conference where someone from the Federal National Mortgage Association (FNMA) spoke. He handed out about a ten-page, double-sided list of recent financial products, and I started looking through that list thinking, this is absolutely amazing.

You need a college degree to be able to really absorb what each one of these products does, and what the risks can be involved. Just to let you know, some of the products on that list were dwarf and Yankee bonds along with bull options. Of course, CIRCUS was on the list and refers to a combined interest rate and currency swap. There are falcons, caps, collars, floors, corridors, wedding and tuition futures, swaptions or swap options, eagles, and American, African, and European options. It was very interesting and I started to think that I'd like to get to know a little more about these.

One of the things that we want to accomplish today is to at least give you an introduction to some of these derivatives that you've been reading about in *The Wall Street Journal.* That publication contains recent press reports on the definition

of major losses of derivatives. Derivatives are contracts that derive their value from the performance of underlying assets, interest, currency rates, or a variety of other indexes like Standard and Poor's (S&P) 500 Index. That's basically what a derivative is. A derivative is off-balance sheet—that's what we're talking about. Then Arnold will talk more about on-balance sheet derivatives. Off-balance sheet derivatives include exchange-traded instruments such as futures contracts. They're exchange traded, or over the counter, which just means you and I can enter into a private contract and call it a derivative.

There are four major derivative financial instruments used in off-balance sheet activities: futures, forwards, swaps, and options. Everything else is a derivative of one of these derivatives.

Definition of a future and a forward: they're actually the same thing. Economically, a future and a forward are the same thing. They're commitments to buy or sell something for some price sometime in the future. The difference, though, is that a future is exchange-traded, meaning it's traded regularly on an exchange and it has a daily cash settlement. At the end of every day, the future contract settles.

In a forward transaction, it could settle in 30 days, 60 days, 90 days, or 10 years, depending on the terms. Because a forward contract is over the counter, you can make the terms whatever you want as long as your counterparty agrees to those terms. So that's futures and forwards.

Swaps, on the other hand, have really become such a large part of the market. I think at the last count, there's about $18 trillion of notional amounts of swaps outstanding worldwide. As we'll see when we talk about the accounting, total derivatives are probably close to $30 trillion, which is over ten times the gross domestic product. We actually do not have one accounting standard that will help you account for the $30 trillion out there. But an interest rate swap, or a currency swap, is an agreement to exchange cash flows based on a notional principal amount and some index.

Most plain vanilla simple interest rate swaps are based on a fixed rate and a variable rate. That variable rate is often the London Interbank Offered Rate (LIBOR). It's just a common variable rate on which the swaps are based. Notional amount is the amount on which your cash flows that you're exchanging are going to be calculated. You don't exchange notional amounts. Many times you hear that the notional amount of a swap is a $100 million interest rate swap. Either you didn't pay or someone didn't pay you $100 million. It's only the amount on which you calculate your interest exchange or your cash flows. So you calculate 8% on $100 million and that's your cash flows annually. So that's a swap. We're going to go

through some good examples of swaps, and some options which, I think, will help clarify a bit.

Options are a contract that provides one party with the right and the other party with the obligation to deliver something or to do something. That's all an option is. There's an important distinction, though, between a written option and a purchased option. A purchased option gives you, as the holder, a right to have the other party do something. You pay for that; there's no free lunch. You pay a premium for the right to have something happen. On the other side, the person who has "written" the option, in street terms, has the obligation to do something and receives a premium. They've taken on some risk so they've received money for that.

This is one of the areas where in the past couple of years, companies have gotten in trouble because they have been writing options. Everybody says derivatives are supposed to reduce risk, that's why we enter into them, and that's very true. They can be great tools to manage risk, particularly for insurance companies. But recently people have been writing options or options have been embedded into instruments; sometimes the company that entered into it doesn't know that there's an option embedded in another instrument. That is a written option that exposes them to risk because you have the obligation to deliver something. So it might be interesting just to read.

Speaking of written options, there's a couple of highly publicized ones, Gibson Greetings was one. There's also Meade, and Procter & Gamble (P&G) certainly is one of the most highly publicized big derivatives debacles of the past couple of years. We'll actually see later on the case study on the P&G swap that lost the company over $100 million.

Gibson Greetings was a small greeting card company working with Bankers Trust (BT) on a variety of financial instruments. The first one they entered into was called a Treasury-linked option. Then they entered into various other instruments after that. What happened was BT started to realize that Gibson was losing a great deal of money, but BT did not inform Gibson of this. When Gibson would call and say they needed a fair value on what they had entered into with BT, BT would say the fair value was for instance, $8 million but maybe it was out of the money by $14 million.

I just thought I'd read this passage. It just proves that in this world of complexity even the people entering into these transactions don't always understand them, and this was the case. BT handed over to the SEC some internal tapes that they had. They have an administrative proceeding against them; although they've really fixed many things, this was one isolated incident.

Here's discussions between a BT securities managing director and another person in BT:

> I think that we should use this as an opportunity. We should just call the Gibson contract and maybe chip away at the differential a little more. I mean we told him $8.1 million when the real number was $14 million. So now if the real number is $16 million, we'll tell him that it's $11 million. Just slowly chip away. The problem is that there's too much of a gap between what he thinks and what reality is.
>
> If this continues on and on like this, we're going to have to start unwinding, and I don't think we want to be in a position of unwinding something that's worth $20 million. He thinks it's $11 million, but we have to try to close the gap. The market hasn't changed at all, it was just kind of dottering around within a couple of ticks, there's nothing we can say. He's going to keep thinking it's around $8 million when it's really $14 million.
>
> You know what it was yesterday, but when there's a big move, if the market backs up like this and he's down another $1.3 million, we can tell him he's down another $2 million and vice versa. If the market really rallies like crazy and he has made back a couple million dollars, you can say he only made back half a million.

Gibson had no idea that this was going on. They were getting values from BT. That's just a lesson that in order to enter into these types of instruments, you have to understand what you've ventured into. This was just eye opening, I think, for the industry to hear that this was going on. BT got fined $10 million and had some administrative proceedings against it, but it's just a good lesson to be learned. Again, as I said, derivatives are supposed to be used to manage risk, such as to changing interest rates.

Many insurance companies, particularly in their investment portfolios, have certain interest rate characteristics, so they enter into derivatives to manage that risk. There are fluctuating exchange rates. If you have foreign exchange exposure in any country now, you can almost enter into a derivative to help manage that. There are changing prices, which is more seen in the manufacturing world, but you can also use them for trading and speculation.

Now some would argue that when you write an option, you're automatically trading or speculating because you've exposed yourself to unlimited risk. Most companies, however, would argue they don't do that on purpose.

With regard to characteristics of derivatives, they are primarily off-balance sheet. Other than in the option situation, you pay very little, or nothing, to get into them. There's no cash exchanged, so there's nothing to put on the balance sheet. That's what makes them off-balance sheet. That's what makes them sometimes dangerous because they can be very volatile. They can be highly leveraged, and we're going to see an example of that in a little bit. They can have very high or very low liquidity depending on the nature of the instrument.

It is important to include the risk indicators. If the entity receives an up-front cash payment, for instance, if you receive cash, that probably means you've taken on some risk and probably means you've written an option. Not in every case, but in many cases. If the terms don't make sense in a derivative, then usually there's something wrong. There's so many times when you get—I don't know if you've ever seen a contract—let's say a swap contract. Because it's three or four pages long, it doesn't take that long to read. But if there's an up-front cash payment, or the terms don't make sense, it usually means there's some risk that results in the downside exceeding the upside risk you were trying to manage.

I said it before that we have $30 trillion or even more probably in notional amounts of derivatives out there, but in GAAP, there's not one accounting standard to cover all of these. We have one authoritative accounting standard called *FAS 80*, which is accounting for futures, but that's all it really covers. We analogize to *FAS 80* and apply it to forwards and swaps, and in some cases, options, but that's it. That's all we have. There are different rules for different uses of derivatives. If you're trading and speculating, you mark-to-market; if you're hedging, you get another kind of accounting. It has created a great deal of confusion: you can have the same derivative in one company versus another company and have a totally different accounting. There's a totally different economic effect in your financial statements.

Many of my clients don't like this theory, but the default accounting for derivatives is mark-to-market. You have the mark-to-market, mark-to-fair value, get a fair value and, again, you can't always trust your investment banker to give you that fair value because he or she may not always be right.

There are some people in the industry who feel you should never enter into a derivative that you can't value yourself. For the less sophisticated user, it is difficult to have valuation methodologies that will value them, but that is the default.

Then you have your exceptions under GAAP—again this is all under GAAP—of hedge accounting, which, again, we find in *FAS 80*; settlement accounting, which is for interest rate swaps, which we'll talk about; and synthetic instrument accounting which is when you match against another on-balance sheet instrument. In hedge

accounting, you use the same accounting as what you're hedging. So if you're hedging an investment on your balance sheet that you're carrying at, let's say, lower cost to market under old rules—although that won't be the case once all life insurance companies go to GAAP—then you follow the lower of cost to market. If you're hedging something at cost, you follow cost.

What's the cost of the derivative usually? Zero. You really have no or little effect in hedge accounting. That's why everybody strives for hedge accounting because they want the off-balance sheet effects of that. But it's very difficult to qualify for hedge accounting and these are the ways you qualify.

The first criteria is designation. You have to designate if you enter into a forward to hedge something on your balance sheet. You have to say that it's designated as simple as writing in on the trade ticket or writing it on the contract, this is designated as X. I think that applies, as well, for the NAIC rules.

The second criteria, risk reduction, is a tough one. You have to perform regression analysis to show that the movement of your instrument offsets and highly correlates, to whatever is moving on your balance sheet. So if you're hedging debt, or you're hedging an asset, and that asset goes up in value, your derivative should go down about 80–120% correlation. The opposite could also happen. It's tough to meet the hedge accounting criteria.

I talked about settlement accounting. Settlement accounting is for plain vanilla interest rate swaps where you are just trying to change the interest rate characteristics of something on your balance sheet. Let's say you had debt at 8%, and you think that rates are going to go down, so you want to swap that 8% stream for something lower, or for a variable rate, because you think rates are going down. You would enter into an interest rate swap, and let's say swap it for a three-month LIBOR, which today is at 5.5%. So now you start paying 5.5% instead of the 8%. Under settlement accounting, as long as you've matched those two cash-flow streams, it's just like accrual accounting. You accrue for the settlements as you go. Settlement accounting is fairly simple and easy and, as long as it's plain vanilla, it gives you a good result.

The problem is that many times investment bankers embed things into the instruments that make it more difficult to account for. Again I mentioned that all we have is *FAS 80*. There's considerable difficulty with the hedge-accounting criteria that especially insurance companies experience. These companies don't necessarily have this technique of designating and matching against a specific asset or liability, so it's extremely difficult.

Furthermore, the NAIC rules under Chapter 8 that came out in October 1994 don't really help in the GAAP world. The NAIC rules are fairly unclear. They just account for in a manner consistent with the item you're hedging—so that's hedge accounting—or you can mark-to-market, where it's impractical to specifically allocate, so it leaves you more flexibility than GAAP. GAAP says you have to have high correlation, designation, and enterprise risk. The NAIC's Chapter 8 says you have to have that as well, but it's not as clear.

The codification that's occurring is going to have a derivatives paper. For some of you who may know, the FASB has been working on a derivatives project for over ten years, and it still hasn't come to agreement as to how to account for derivatives in a consistent manner. As a result, for the NAIC to take up a project that the FASB has been working on for ten years probably wouldn't be the best use of their time right now, but there have been some initiatives.

The SEC is very hot on derivatives as a result of the Proctor & Gamble, Gibson Greetings, Meads, Air Products, and some of the other debacles that have occurred. It pressured the FASB to get out a disclosure document. We now have that and that came out actually quicker than anything else the FASB has done in the past couple of years. That was effective last year for certain, but, again, it was just disclosure. It didn't help the accounting on the balance sheet or the income statement. The SEC recently came out with further disclosure requirements. Everybody loves the annual reports; they're getting thicker and thicker.

The SEC has more requirements now in the management discussion and analysis for derivatives disclosures. It will be very quantitative and qualitative requirements such as a value-at-risk calculation. That's one of the major things the SEC is looking for. As I mentioned, the FASB hedging project has been going on. We were told that by the end of the second quarter of this year they would have an exposure draft out. We're almost to June [1996]. I haven't really heard an update on that.

Let's quickly go over some examples. Chart 1 is an example of an interest rate swap curve. It's very similar to a Treasury yield curve. As you go out in time, the rate goes up. This is not today's rate or all that recent; I'm using it for illustrative purposes. It's from when the P&G debacle occurred in 1994, but actually rates aren't that different today.

Look at the bottom, the *x*-axis. The first year is priced at LIBOR. That's the variable rate in the first year; thereafter, it's the Treasury rate, which is a risk-free rate plus a swap spread for the additional risk in entering into a swap. So that's a swap yield curve.

If you're going to enter into a swap tomorrow, you should be able to pull up Bloomberg, look at the yield curve, and say, I should be getting 6% for a five-year swap, and that's the rate you should get. So it's kind of a quick test to see whether there's anything above market in the swap.

CHART 1
INTEREST RATE SWAP YIELD CURVE

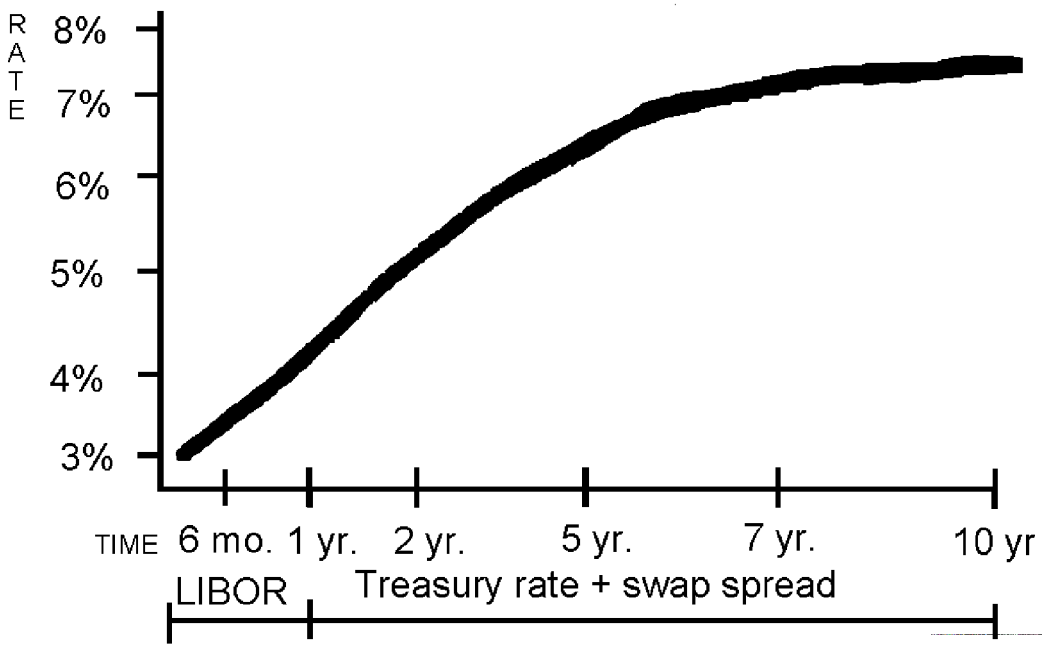
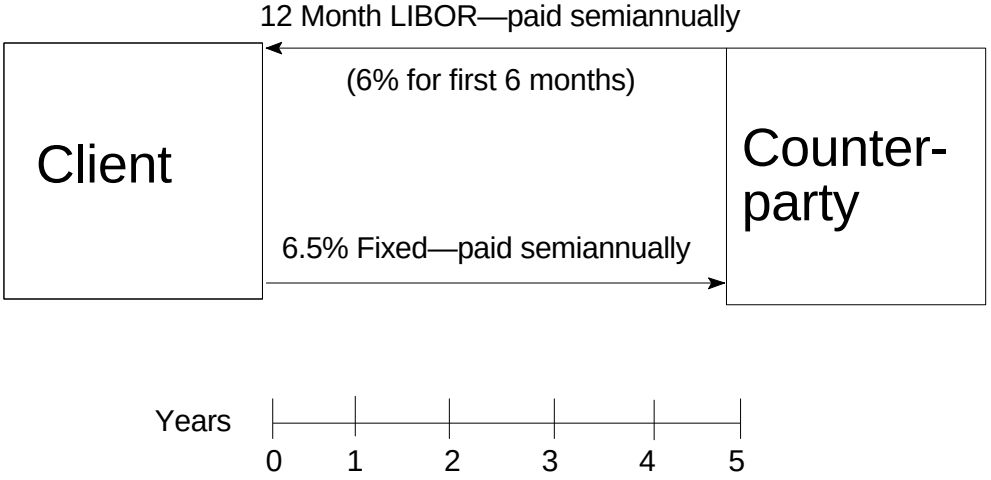


Chart 2 is an example of a client who is paying 6.5% fixed—that's the pay leg to the counterparty—and is receiving 12-month LIBOR. That sounds OK, right? But there was a provision in this particular swap—these are all real examples—that said for the first six months, they're going to get 6%.

You automatically refer to Chart 1, to see that we should be getting what? Six percent. Right? But now 12-month LIBOR on that swap curve is what? That date was about 4% if you track the lines on the interest rate swap curve. So you should be getting about 4%. Why are we getting 6% for the first six months? There must be something going on.

CHART 2
INTEREST RATE SWAPS—EXAMPLE 1
FIVE-YEAR INTEREST RATE SWAP—$100 MILLION NOTIONAL



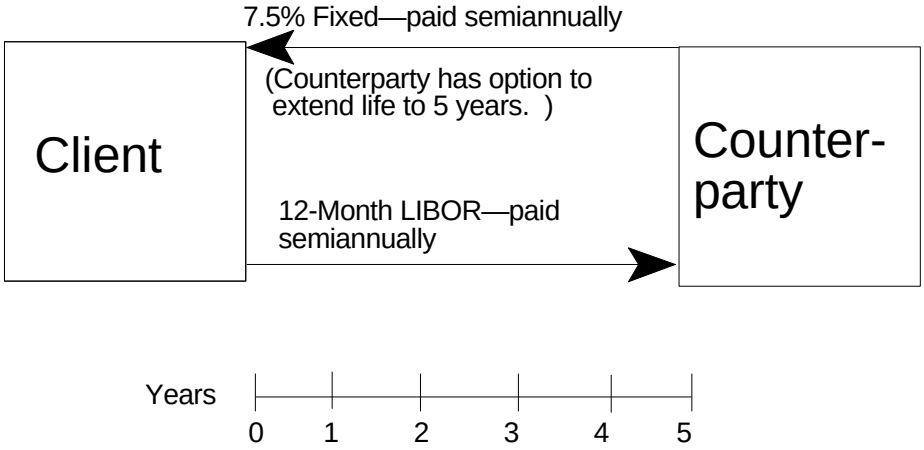
This is a situation where it actually is not an embedded option or anything like that. We're just front loading income. We're getting 6% for the first six months because we want to bring in 6% of income instead of 4%. So normally under six-month LIBOR, we'd only be getting 4%. We're getting 6%. Then we're paying out that 0.5% over the five years and are spreading that over five years. All we're doing here is front loading. The SEC gets a hold of this and says, "You can recognize income up to 4% only." Up to market, you have to defer that 2%, and then you spread the other out at 6%. They would be on top of this. It's tough to catch sometimes in practice. But if it does come up, it is a problem. It's not a huge problem, and it's not like an embedded option, but it is a problem

Chart 3 shows a five-year interest rate swap. We're receiving 7.5% fixed, and we're paying 12-month LIBOR. There's a provision in the swap contract that stipulates that this is really a two-year swap, with the counterparty having the option to extend the life to five years. This is a very common swap that Citibank was entering into with clients.

Again, we refer to Chart 1, which shows the interest rate swap yield curve, and we look at a two-year swap. What should we be getting for a two-year swap? Is it 5%? Why are we receiving 7.5%? Well, we're receiving 7.5% because we actually are receiving a premium of 2.5%, the difference between 5% and 7.5%, to give the counterparty the option to extend this to a five-year swap. Why does that matter? Well, if two years down the road the rates go up to 8% or 8.5%, what's the counterparty going to do in this swap? Are they going to extend it or not? They're going to extend it because they're paying 7.5% fixed.

This is an example of what's called a swaption or a swap option. This is an option, a written option, embedded into a swap. We have written that option because we have given the counterparty the ability to extend it. We could end up paying 20%.

CHART 3
INTEREST RATE SWAPS—EXAMPLE 2
FIVE-YEAR INTEREST RATE SWAP—$100 MILLION NOTIONAL



In this case, 12-month LIBOR did go above 7.5%. The counterparty wanted to extend this, and the company said, no, we don't want to be paying 8.5–9%. We want to get out of this. The counterparty asked for $10 million to get out of it. You can always get out of them, but there's always a price.

Chart 4 shows a five-year swap. We're receiving 7.5% fixed and we're paying three-month LIBOR. That all looks fine except we know now for a five-year swap we should be receiving 6%, not 7.5%. We haven't received any cash up front, but we're receiving a more favorable rate for taking on some risk. In this situation, the risk we've taken on is this—again, this will appear just as a small sentence in your swap contract—there's an additional payment due if three-month LIBOR goes above 5.5%.

We, the client, have to pay the counterparty additional amounts. In this case, three-month LIBOR went above the 5.5%, so we had to pay an additional amount. If it went up to 8%, we have to pay an additional amount. This is called a “cap,” which is a type of option contract. This written cap is embedded into an interest rate swap. Our risk is that three-month LIBOR goes above the 5.5%. We have received something for that risk, a 1.5% premium. The client tried to get out of it because rates started to rise. He said, I need to get out of this. The counterparty wanted to be paid a specific amount, but it didn't make up for the premium they had received. You have to be careful.

CHART 4
INTEREST RATE SWAPS—EXAMPLE 3
FIVE-YEAR INTEREST RATE SWAP—$100 MILLION NOTIONAL

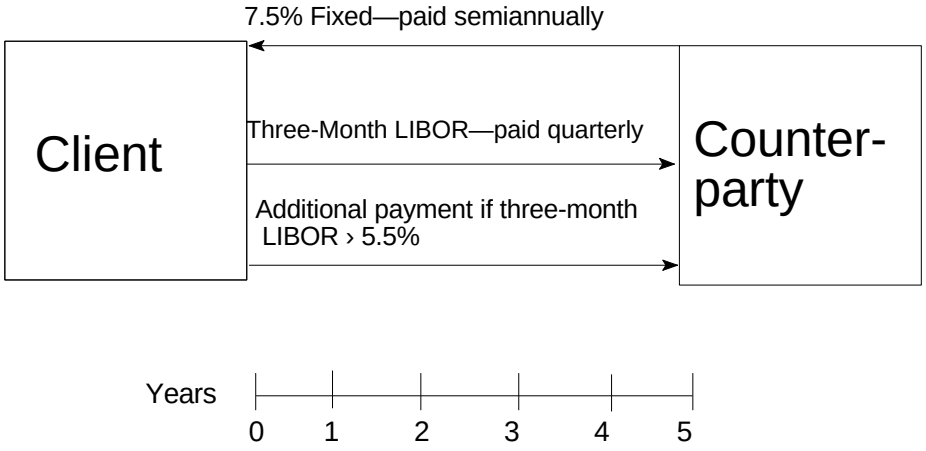
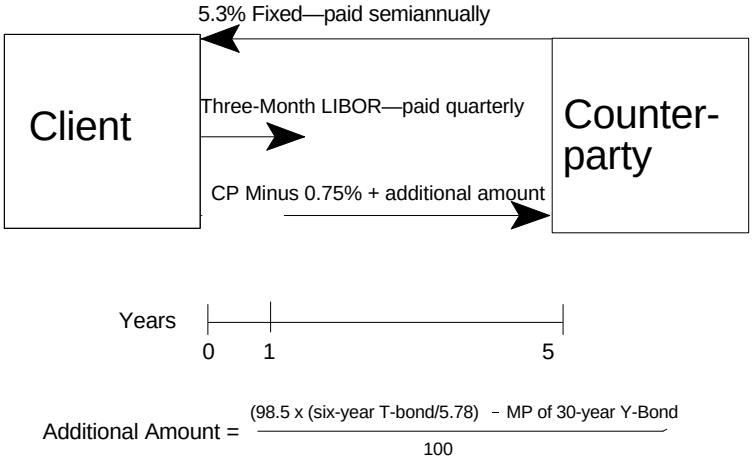


Chart 5 is an example of a swap that lost over $100 million. One swap cost a company. It's very well documented now, so I can share it with you. The client was receiving 5.3% and paying a commercial paper rate minus 0.75% for the first six months, and then, thereafter, that plus an additional amount. Now the additional amount was defined, believe it or not, as 98.5 times the five-year Treasury rate divided by 5.78 minus the market price of the 30-year bond, Treasury bond, divided by 100. The result should not be less than zero. This is an example of a highly leveraged feature.

CHART 5
INTEREST RATE SWAPS—EXAMPLE 4
5 YEAR INTEREST RATE SWAP—$200 MILLION NOTIONAL



$$\text{Additional Amount} = \frac{(98.5 \times (\text{six-year T-bond}/5.78) - \text{MP of 30-year Y-Bond}}{100}$$

One of the big things that you can tell is whenever you see the word *times* in a swap contract, that usually means there's leverage, something times something. This is a highly leveraged swap.

What P&G was trying to do in this swap is play the game between the five-year Treasury rate and the 30-year Treasury rate and when rates move, the 30-year Treasury moves more than the five-year Treasury. When rates go up, it decreases more so they would have to pay less. However, rates didn't go down, rates went up.

P&G then called BT and said, I want to get out of this. BT said, $150 million to get out of this or $120 million. Actually, it started at about $80 million and P&G held and thought rates would move and they didn't. They kept going up. P&G then sued BT and said, We didn't understand. We didn't know this feature was in there, and so forth.

As you probably read in the paper recently, they settled this litigation and P&G and BT came to an understanding. I think P&G got most of their money back. This is an example of a very highly leveraged feature. Other than that, it's a plain vanilla interest rate swap of receiving fixed and paying something variable based on commercial paper rate of $150 million.

One of the key things is internal controls related to derivatives. Had the management of these big companies understood senior management oversight and board of director oversight? The single most important control in today's environment is that the top people know what's going on because when they go to senior management, they (senior management) typically don't know anything about this, only one person does and, of course, that person gets fired. The burden is now on the board of directors and senior management to make sure that they understand these instruments before they enter into them.

That was off-balance-sheet instruments. Now we're going to talk about instruments which are probably more common in insurance companies only because of the mortgage-backed security market and less risk associated with the on balance sheet than off balance sheet.

Mr. Arnold Brousell: My presentation is mortgage-backed securities. I intend to cover the basic structures of mortgage-backed securities as well as the accounting for mortgage-backed securities.

There are three basic fundamental structures: traditional fixed-rate mortgage-backed securities, collateralized mortgage obligations (CMOs), and something referred to as real estate mortgage investment conduits (REMICs).

Structurally REMICs and CMOs are essentially the same. The only difference is that a REMIC is basically a tax election that enables such structures to avoid double

taxation, which we'll talk about a little bit later in my presentation. The CMOs are the more complex mortgage-backed security instruments, and we'll get into that a little bit later as well. The traditional fixed-rate mortgage-backed securities are somewhat more plain vanilla. They make up most of the market in mortgage-backed securities, which, I understand, is somewhere in the neighborhood of 50%.

Certain characteristics of traditional fixed-rate mortgage-backed securities apply to CMOs as well; for example, there's no fixed maturity date. Unlike a typical bond or debt obligation which has a certain term to maturity, CMOs will commonly prepay (for example, if interest rates decline, homeowners have a tendency to refinance their mortgage and take advantage of lower interest rates and reduce their cost). As a consequence, the maturities of mortgage-backed securities may accelerate in declining interest rate environments or may extend or lengthen as interest rates rise.

Principal prepayments are passed through to mortgage-backed securities investors. In traditional fixed-rate mortgage-backed securities, they're sometimes referred to as pass-through certificates, and what that means essentially is that the principal and interest payments on the underlying mortgage pools supporting the mortgage-backed securities are passed directly through to the investor through a conduit of some sort, whether that be a trust, a special purpose entity, a partnership, or whatever other form of entity that may take place. It's passed directly through to the investors in proportion to their ownership interest in that mortgage-backed security.

As interest rates decline, the rate of prepayments typically accelerate, as I mentioned earlier in my example, and as a higher rate of mortgage prepayments reduces the life of a mortgage-backed security, you have certain risks. One is reinvesting risk, and one is interest rate risk.

Reinvestment risk refers to the ability of an investor, upon receipt of proceeds from his or her investment, to turn around and find a similar yielding security. This might be difficult to do in a declining interest rate environment; however, it's not impossible. You might be able to find another instrument yielding the same, but you might sacrifice some credit quality in the process.

Interest rate risk refers to basically the risk involved in an asset liability match. If the mortgage-backed security prepays ahead of your expected time period, you might find yourself in a situation where you have an asset liability mismatch.

CMO are designed to minimize reinvestment and interest rate risks through redirected cash flows. A good example to distinguish a CMO from a traditional mortgage-backed security may be a traditional mortgage-backed security. You have a pool of assets, mortgage loans, and a cash list from those mortgage loans going to

support a bond obligation: it's one bond obligation with basically certain payment terms or conditions. In a CMO structure, you have more than one bond obligation, in a sense, which support different payment terms. Within a CMO structure, you have different classes, or tranches, and each one of those tranches may have different payment terms, interest rates, average lives or payment conditions, and ultimate maturities.

Real estate mortgage investment conduits or REMICs are virtually identical in form or structure to a CMO. This really is a tax election. Under the Tax Reform Act of 1986, legislation was included to exempt these multi-class securities from double taxation. Had this legislation not been included, essentially what you would have is taxation of the investment income that generated from the mortgage pool and passed up to the conduit. You got taxation at the conduit level, and then again you had taxation when it was distributed to the ultimate investor in that mortgage-backed security. This legislation essentially exempted these conduits from double taxation. Within the REMIC structure, you have what's referred to as regular interest and residual interests. The residual interest is really the last tranch in terms of priority within a CMO structure. It receives ultimately the cash flows that the tranches above it are not entitled to under the structure.

Moving further along with respect to tranches (we talked about regular interest and residual interest), there is something called sequential pay. The sequential pay tranch cash flows are directed in a certain form of priority. Usually in a CMO structure, you might have a Class A tranch, Class B tranch, or a Class C tranch. Cash flows are directed in a certain manner such that Class A, the principal, might get paid down first before Class B, Class C, Class D, and so forth. Then you have what's referred to as the Z tranch—that's usually the last tranch before the residual tranch—and that negatively amortizes and provides a certain amount of support to the rest of the CMO structure. As all these tranches above it get paid down, and once all of them are paid down, then the Z tranch will pay down, and the remaining cash flows will be given to the residual tranch.

Planned amortization class and target amortization class tranches are designed such that the principal will be fixed within certain prepayment speed ranges. That's principally the path of design, so that if prepayment speeds accelerate, this tranch won't pay down principal any faster. The accelerated principal will be directed towards other tranches, and these types of tranches are good to acquire if you're trying to match assets and liabilities. This is similar in form except the only difference is that it protects the principal paid down from accelerated prepayment on the underlying mortgage pool, but not on the down side. If the interest rates were to basically increase and principal were to pay down slower, it wouldn't take it on the downside.

A floating rate tranch refers to the interest rate associated with that particular tranch, and that will be the variable rate possibly tied to some index, which is LIBOR, and interest only in principal. Only tranches relate to the fact that you might have a particular tranch that pays principal only versus interest only. Here is something I wanted to read that makes the point very well. The principal-only tranch or principal-only consists of a stream of principal cash flows that are purchased at a discount and always return at par. The sooner the cash flows are returned, the greater the present value of the future cash flows as contrasted to an interest-only tranch where the cash flow stream consists only of interest coming up from the mortgage pool that supports it. Because interest is generated from principal, no definitive amount of interest cash flows is returned. If prepayment speeds accelerate, the principal would be paid back quicker, and the total amount of the interest cash flows will be less than expected.

Now we get to the exciting part of the presentation—accounting for mortgage-backed securities. What I'm going to focus in on here is really the accounting for income recognition and the amortized cost of the securities. The authoritative guidance for the accounting for mortgage-backed securities is *FAS 91*. That's accounting for nonrefundable fees and costs associated with originating or acquiring loans and initial direct cost.

FAS 91 prescribes the interest method of accounting for amortizing a discounted premium associated with the acquisition of mortgage-backed securities. The interest method effectively works such that if you were to buy a bond with a coupon at 6% and the current market rates were 8%, you would buy that bond at a discount to yield 8% over time. *FAS 91* and the interest method basically requires that discount be amortized over the life of the bond such that your coupon payment plus your amortization in any one reporting period equals that effective yield of 8%.

The only problem with mortgage-backed securities is that there's no definitive terms of maturity and as a result, there are derivations in the interest method, referred to as the prospective method and the retrospective method.

The retrospective method requires that at any particular reporting date, you would recalculate what your expected cash flows are on the underlying mortgage pool by looking at your actual experience to date plus your revised estimate of projected future cash flows. Once you've got that effective yield, you would recalculate what your amortized cost would be at the reporting date, as if you were using that effective yield to amortize discounted premium since the date of original acquisition, and you would adjust your basis in that asset accordingly. From that point forward, you would use that new effective yield to amortize discount and report income.

The prospective method is a little different, in that you don't look back. You basically revise your estimate of projected future cash flows, come up with a new yield, and apply that yield on a go-forward basis to determine what your investment income is.

One important point to note is that the retrospective method is applied to most types of mortgage-backed security obligations; the prospective method is applied only to what's considered to be a high-risk mortgage-backed security, and those typically are interest only or some form of that. Nonequity interests are accounted for in accordance with the retrospective method. Equity interests, APD-18, typically a residual type of tranch, are accounted for in accordance with APD-18 or consolidated under *FAS 94.*

From a statutory standpoint, there are three areas that should be focused on: valuation, risk-based capital (RBC), and something referred to as the flow uncertainty index, or FLUX. The NAIC has specifically accepted the retrospective and prospective methods, and both are accepted methodologies. The NAIC also requires that the prepayment assumptions be reviewed at least annually, and in the face of high-risk securities they must be done more frequently, typically quarterly. RBC for mortgage-backed securities is similar to that of your conventional or traditional type of bonds. Depending upon the SDO class, you'll have these RBC charges. Finally, the flow uncertainty index is a tool designed by the NAIC to basically assess the risk nature of mortgage-backed security portfolios to the extent that they score in highly and have significant amount of risk. The NAIC will focus on that, or the examiners may focus on that when they look at a company.

Mr. William Robert Wilkins: I would like to supplement some comments that Cathy made. She talked about a hedging project that the FASB had; that's the project I'm in charge of. Our deadline is to get something out by June 30, 1996. We are in the process now of having board members vote on a proposed standard by written ballot. As recently as a week ago today, at a public meeting they orally indicated super majority support for issuing the proposal. Our plan is to have it on the street by June 20, 1996. I invite you to call us and we'll send you a free copy after that date. We're inviting comments on the proposal. Comments are due by October 11, 1996. The one comment I might make is that it will do away with off balance sheet treatment because all derivatives and similar instruments will need to be at fair value on the balance sheet; however, the hedge accounting that we have will still give you similar accounting in many respects as what Cathy talked about with the synthetic instrument accounting or settlement accounting. I would encourage you to get a copy of it and give us your thoughts, because that's the way we come out with better standards.

From The Floor: I have a question for Cathy. Aren't there some other FASB statements other than *FAS 80* applicable to the accounting like *FAS 105* and *FAS 119*?

Ms. Engelbert: Those are disclosure statements. I was referring explicitly to accounting. There's accounting for foreign currency contracts under Statement 52, *FAS 52.* There's *FAS 80.* There's a myriad of Emerging Issues Task Force issues that address specific derivative issues, such as: interest rate swaps, mortgage swaps, and some other instruments; purchased options with little or no intrinsic value; instances where you're hedging; and intercompany commitments; and so forth. There's also an options issues paper, which I didn't mention, but it did come up in many of the deliberations with the P&G situation, because that was an option that they were looking to account for. Unfortunately, issues papers aren't all that authoritative. They're at the low end of GAAP, and some people refer to them as authoritative as *The Wall Street Journal*. The basic hedge accounting document we have is *FAS 80*. *FAS 105*, *FAS 107*, and *FAS 119* are all disclosure documents, not accounting documents.

From The Floor: It was I guess Statement 52 that I remembered. So the hedging criteria were more stringent for Statement 52 than *FAS 80*?

Ms. Engelbert: Right. In Statement 52, it's not all that clear. Some people might think *FAS 80* is more difficult because you have to do the specific correlation analysis under the high correlation. The following list is a summary of what *FAS 52* says; however, it just applies to foreign currency, not to domestic forwards, swaps, or options.

Accounting for Foreign Currency Contracts (*SFAS 52*)

- Hedge accounting can be obtained for:
  - —Firm commitments
  - —Anticipated transactions hedged with purchased options with little or no intrinsic value
  - —Intercompany commitments generally not considered firm.

From The Floor: Regarding the new FASB standard, are they thinking about macro hedging, or is that not going to be allowed at all?

Ms. Engelbert: Well, Bob, maybe you can address that. I don't think so.

From The Floor: No, the macro hedging will not be allowed because Statement 80 requires an assessment of enterprise risk. You have to take a look and say that this derivative does reduce the entire entity's exposure. We've done away with

enterprise risk assessment. You no longer have to demonstrate that. In fact, you could actually acquire a derivative designated as a hedge even though, on a macro basis, it actually increases risk. We are requiring a one-on-one designation. So you now have to either designate it to a particular hedge-to-asset liability—a firm commitment—or to a portfolio of similar items that would react comparably to a change in market indicators—market conditions. We have done away with macro hedging, but we've done away with enterprise risk assessment as well.

Ms. Engelbert: But remember, for statutory they're working on the codification currently. As far as macro hedging, statutory says use mark-to-market if you're really doing a macro hedge, and I think that probably will continue from a statutory NAIC perspective, but we don't know yet.