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SEGMENTED PORTFOLIOS AND STRIPPED INVESTMENTS ACCOUNTING

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- o Capital gains and losses accounting
- o Internal sales of investments among portfolios
- o Equity investment accounting
- o Internal stripping of securities (allocating interest and principal payments from a given security among several portfolios)
- o Internally manufactured puts and calls
- o Allocation of taxes and investment expenses among portfolios
- o Accounting systems needed

MR. JOSEPH E. CROWNE: At the May 31 - June 1, 1984 meeting in New York, in a session on segmentation, Daniel J. McCarthy stated, "There are some questions (involving segmentation) which I think are not being dealt with very thoroughly yet. They are not the first questions you set out to deal with when you come to segmentation, but it is important to take a look at them as time goes along. One of them is the question of splitting pieces of assets by segment in a non-proportional way. Coupon stripping is a popular phrase...I see this as a second or third generation issue for segmenting companies rather than a first generation issue." (RSA Vol. 10, No. 3 (1984), p. 1374.)

We are attempting to deal with some of those second and third generation issues, along with a few of the first generation questions. I don't believe that there is a great deal of activity in this area within the industry yet. In some cases attempts have been made to deal with internal transactions only to be abandoned, at least temporarily, until problems can be worked out. This area of internal transactions may be one where trail and error are necessary to fully comprehend the requirements.

MR. RICHARD L. SEGA: Several years ago, there were relatively few society meeting sessions dedicated to the asset side of our business.

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About half of this meeting's sessions deal directly or at least peripherally with some aspect of asset management or financial performance.

This has been a natural evolution -- a progression of events, which cannot be denied, and, for the actuary, an increasing involvement in portfolio management, which cannot be avoided. So long as actuaries view themselves as risk control specialists, and so long as asset management and liability management are appropriately viewed as two sides of the same coin in a risk enterprise, then these kinds of topics will fall more often into the actuary's sphere of influence, and the actuary will need to expand the selection of tools to meet the challenge.

Coupon stripping is one of several recent phenomena that qualify as new tools in asset management. Coupon stripping is a method of "synthesizing" securities that otherwise wouldn't exist in exactly the same way in the marketplace. Presumably, the specific realization of the synthetic security, which results from stripping, in some way adds value to the universe as well as simply expands numbers. There are other techniques besides stripping that accomplish the same generic result, i.e. expanding the investable universe of securities. Interest rate swaps, dynamic hedging, future and options and the making of securities through collatoralized mortgage obligations (CMOs) are examples. While most of the operational problems encountered in stripping are centered around the intricate and sticky issues of accounting for the transactions, the genesis of the whole process is actually very simple: as portfolio managers, we wish to own a security with specific characteristics to meet certain risk management needs, and stripping is one tool that occasionally can do that. I will review what we've done in this area and some problems that we've had.

Guaranteed Investment Contracts (GICs)

Clearly, the GIC product is a natural starting point for stripped investment discussions, and probably in good part motivated the early uses of the technique. The definitive papers on this subject, particularly the paper "Internal Coupon Stripping" by James A. Tilley and David P. Jacob, published by Morgan Stanley, describe how the GIC line could benefit by the use of strips. Strips are almost perfect for C-3 risk purposes in GICs because GICs are almost zero-coupon corporate bonds. This is an example of how stripping adds value as well as expands the universe. The various felines (CATS, TIGERS, COUGARS, etc.)[1] as well as U.S. Treasury Strips do exist but don't carry nearly enough yield to be competitive. Internal stripping sometimes does.

Annuities -- Strips have been considered for both fixed and variable annuities. The former might use a nearby coupon stream for annuities in payment status, the intermediate coupons might be used for deferred

[1]CATS -- Certificates of Accrual on Treasury Securities - Salomon Brothers 1982
TIGERS -- Treasury Investment Growth Receipts - Merrill Lynch 1982
COUGARS -- Certificates on U.S. Government Receipts - A.G. Becker Paribas 1983

annuities. Variable annuity funds might be tied to the performance of several specific zero-coupon durations.

Life Insurance -- High-yield, short-term investments are always sought by universal life managers, and stripping can be a source of short-term paper. Of course, there are conditions which must be met before all these attractively yielding short-term items come flowing out of the coupon stripper.

We have actually stripped real estate deals and one private placement. This is due to the available spreads; I see no reason why we couldn't strip corporates if the spreads were such that the yields worked in the portfolios.

Conceptually, there are five types of pairings of strip counterparts:

1. Internal within the same portfolio, (e.g., long versus short GIC)
2. Internal between segments (within the same company)
3. Quasi-external between companies (within the life or property/ casualty (pc) group)
4. Quasi-external between life and PC companies
5. External (outside the corporation)

We've stripped between life companies, but have not yet begun to contemplate the accounting problems of going between life and PC.

So to summarize, we've taken long deals into the corporate account, stripped the coupons, sold the short to annuity, sold the intermediate zeros to GIC, and kept the very long in corporate account.

This has given rise to several interesting problems downstream requiring clever solutions, most of which have not yet been found. It would be most convenient if at the time of acquisition of strippable asset, all parties agreed on the allocations and levels but that is an ideal we've not yet achieved. Generally one portfolio, say the corporate account, will buy the asset and book it, then the deals will be made. In the meantime, the market has moved. The buying and the selling segments will negotiate a price (presumably at or near the market) where the transactions will occur. Say the seller books a gain in an interlife company strip. The buyer presumably must book a loss to keep the consolidated statement net unchanged. But the buyer doesn't want that; he just wants to buy a lower yield. He doesn't want to book a current loss against future income.

Accounting's first suggestion was to mandate "no more transfers at market value, only at book value." This was clearly not acceptable. Next, a fourth set of books was contemplated (in addition to Statutory Generally Accepted Accounting Principles (GAAP) and tax) to reflect the economic intent of segmentation and strips. This was clearly not cost effective. The current solution of choice is a "consolidation account" which will hold the net of all the unwanted entries. This solution seems to work fine for GAAP, but it's still not clear to me that such netting is allowed for statutory accounting.

We've tried to simplify several things with arbitrary rules. For example, all upfront fees (like mortgage commitment fees, points, and so on) stay with the corpus. Premiums and discounts do also. Also, a stripped portion of a security must be considered fairly illiquid, because if there is no segment willing to purchase your piece, and the other holders won't give up theirs, you can't sell.

What is the cost basis in the various coupons and the corpus? Is there a capital event at the time of sale of the strips? How should credit standing be decided, and how then should spreads be allocated? Does the series of strip holders have pro rata claim against the outstanding or a senior/subordinate relationship? I suspect the answer to that will be negotiated the first time one of those goes belly-up. Insofar as spread allocation goes, up to now the yield on the various pieces has been arrived at through the art of negotiation as opposed to the science of the yield curve. However, this is more than a theoretical exercise if only because an accurate measure of C-1 risk surplus required by line and, in turn, the return on the surplus depends on it.

What is it about the process that makes it attractive? Why can two segments that used to be one portfolio, take one bond that they used to buy grudgingly, break it up into two pieces and each go away happier than they were before? Does stripping create money? The answer lies in a better and more sophisticated isolation and quantification of risk and in correlations of risks. In our old portfolios, which bought coupon bonds, each product stood alone with respect to risk-reward goals, and all had an awkward fit of assets to liabilities. Risk charges were redundant because correlations (particularly negative correlations) of not totally independent risks were inadequately quantified. This quantification is extremely difficult to accomplish either analytically or by modeling. Segmentation and coupon stripping allow us to nullify the effect of the misquantification and thus lessen the redundancy by separately targeting and reducing the overall risk in each of the products.

This new capability in the hands of the portfolio manager also brings with it a new responsibility, that is, the manager must be carefully consistent in his selection of a utility function, i.e., his risk-reward tradeoff. This was an actual situation that we looked at for a GIC stripping application:

1. Five-year GICs backed by five-year coupon bonds have 50 points of risk charge, due to reinvestment;

2. Five-year GICs backed by five-year zeros have no risk charge omitting credit risk, expenses, profit charges, and so on;

3. Five-year coupon bonds are available at +100 over U.S. Treasuries

4. Five-year GICs can sell at 60 over U.S. Treasuries. We lose to competition for ten basis points.

In the same portfolio, a swapping program allows swapping a long bond for a five-year coupon bond at +150 to U.S. Treasuries. These are not available. Because the portfolio is mismatched long, a shortening swap lessens risk, so it requires less yield under our utility function. Level-pay five-year loans require only +120.

By stripping the five-year, I can make a zero at +70 (keep the +10 for profit if I don't need it) and also make a coupon stream at nearly +170, well over my guideline. I seem happy to write low-risk new business competitively and lower overall portfolio risk at a yield pick-up. If I stop back and look, all I've done is buy that five-year coupon bond that didn't work in either case before. There is no free lunch. The value must come from somewhere.

It should come from a better quantification of negative correlations of risks in the portfolio, and not from an inconsistency in the risk-return demands made for new business versus swaps. In our case it was a little of both.

Wherever stripping is undertaken, an examination of where the apparent benefits come from is in order. The "willing partners" should go into the transaction aware of what they get. These synthetics aren't exactly bonds, and it's important to be able to identify and cope with the differences, and to be able to measure value.

There are several things to look for when trying to measure this value. Look at the "theoretical-spot-rate" yield curve, i.e., the decomposition of the risk-free-coupon yield curve into its zero-coupon components. Until you do this a couple of times in different yield curve environments, you may be a little surprised at what you get. This exercise should give you a starting point for measuring required yield on the strip you're buying. Note that in general, coupon stripping is used to pass yield down the curve, or raise the yield on the short paper at the expense of the long. When you look at the spot-rate yield-curve environment, you begin to appreciate why this might be possible. The spot-rate curve lies above the coupon curve in this case. If your liabilities are keyed to the coupon curve, you may have the beginning a happy situation. That coupled with the fact that people often are willing to pay up for the duration, convexity, and lack of reinvestment risk of long zeros, allow yield to be passed down the curve to those of us who really need it.

Once you've gotten an idea of the appropriate risk-free rate for the various strips based on term, you can then make further adjustments for other risks. You need to assess the various default risks (senior/-subordinate or pro rata, time exposed and so on). How call premium and call experience are to be allocated will affect the yield you're willing to accept. Certainly liquidity needs must be considered.

MR. ROBERT OZENBAUGH: The purposes of segmentation and its effect on accounting needs include:

1. Allocation of investment income
2. Profit center measurement
3. Product pricing
4. Credited rate setting

5. Investment strategy by segment
6. Risk management

One of the basic uses of segmentation would be to allocate investment income for statutory statement purposes. However, as more emphasis is placed on profitability by line of business, by product, or even by agency, being able to allocate all insurance and investment cash flows to detailed segments has grown in importance. As the pricing of products has become more interest sensitive, the form of the asset portfolio backing each product has become more critical to that pricing process. Developing credited interest rates generally requires knowledge of what assets are supporting existing cash values as well as what yields can be assumed for the future. Investment strategies are developing into a sophisticated menagerie of duration and cash-flow matching techniques that exemplify the need for detailed accounting of segmented portfolios. The insurance industry has prided itself on its ability to manage insurance risks, thus providing an important service to the insured public. The advent of highly visible, highly competitive credited rates has given us the opportunity to manage yet another realm of risks -- those of the investment world. Segmented portfolios have sprung up through this need to manage interest risks. Market value and disintermediation risks are real and the legislation that may follow in their aftermath will certainly affect the portfolio manager's accounting requirements. Your company may be using segmentation for any one or a number of these purposes, and it is the combination of different needs and purposes that requires different levels of detail and accuracy in accounting for segmentation.

Segmentation of assets has taken many forms including:

1. Number of segments
2. Notational or actual
3. Statement purposes or management information only
5. Systems involvement
5. Accounting
6. Investment
7. Projection

The form is how segmentation is implemented within your organization. Segmentation has been with us for a few years, and it's only recently that we are coming to grips with the impact that segmentation has on our accounting and investment systems. We know the benefits, but we also have to understand the costs and the consequences of implementing segmentation. For example, the number of segments will affect your needs. Some companies, such as my own, are working with a few portfolios. We have two major portfolios, group pension and individual life and annuity. The individual portfolio is further split into universal life, other life, and flexible annuities. The group pension portfolio is separated into single premium annuities, GICs and 401/k type contracts. Other companies will find it better to isolate many segments. In some instances, up to forty segments are identified in order to properly measure the goal's management desires. The size of the company has a major impact on this decision. Regardless of how many segments are involved, there are many ways to play segmentation games. If one does so within one's office, it could be called notational segmentation or if one does it out in the open with one's annual statement, it might be called actual segmentation. Again, this is a management decision that greatly impacts the flexibility available within the accounting process. Notational segmentation, if controlled properly, can give the appearance of actual segmentation without many of the hassles of the detailed accounting problems. If segmentation is being used to provide management with valuable asset/liability management information but not used within the annual statement the necessity for tying every loose end together is again diminished. This is not to say that segmentation of assets on any level does not require systems involvement. Accounting systems will be the last and hardest to include. Insurance companies historically have not spent much time worrying about where insurance cash flows are coming from. I'm not talking about new business premium. I'm talking about cash flow (premiums less expenses). My company's accounting system is supposed to be able to handle this type of detail but may not be able to do so until 1986. There will always be allocated items, such as overhead expenses, but hopefully these are predictable enough to allow accurate measurements. The accounting system's role in the segmentation process will be a continually growing one. Most modern asset management systems allow for active portfolio management. The flexibility of these systems will vary greatly, however. My company's systems will allow separate portfolios, and the reporting of each of those portfolios. However, our system is not flexible enough to handle certain dynamic transactions. Unfortunately, this is where the segmentation accounting is critical. The less automated the system becomes because of special cases, the more tedious it becomes and the more it becomes closer to the systems of the past that we're trying to get away from.

Because my company's accounting system cannot measure accurately incoming cash flows and their source, we have put more emphasis on our corporate modeling projection system. My company uses a large corporate model to isolate expected cash flows. We use it to help us in our asset/liability management by looking toward the future, but we also use it to generate relationships between cash flows of different products given the amount of new business coming from each portfolio's products. We then tie the corporate modeling projection system to our investment system, and that is really the core of what we're currently using for segmentation of assets and the sources for much of our accounting needs.

Accounting for segmentation, in general, is not easy. Everything that was done on the corporate level now needs to be done on the portfolio level. Any overflow of transactions between portfolios will create additional accounting complexities. There are some specific transactions and assets that will magnify this concern.

Accounting Difficulties of Specific Transactions

1. Horizontal stripping
2. Vertical stripping
3. Internal sales
4. Capital gains and losses

5. Defaults
6. Income taxes
7. Nontraditional assets

Horizontal Stripping

The key characteristics of horizontal stripping are:

1. Easiest from asset accounting viewpoint
2. Benefits smaller segments
3. Can be accomplished before the deal, by issuing more than one certificate

Horizontal stripping is taking a stream of asset flows along with maturities and proportioning each between two or more segments. In other words, taking the asset flows from asset A and slicing them horizontally leaving in half the coupons and half the maturities in each asset.

Smaller segments are capable of participating in larger assets in that one large asset is capable of being shared between two or more smaller portfolios. If the asset is a bond, this can oftentimes be effected before the deal by issuing more than one certificate.

Vertical Stripping

Vertical Stripping involves taking stream-of-asset flows (coupon and maturities) and allocating 100 percent of some flows to one segment and 100 percent of the remainder to another.

The key aspects of vertical stripping are:

1. Requires asset accounting flexibility.
2. Allows for creation of two or more desirable assets from one that is not as desirable.
3. Difficulty lies in the fact that created assets do not resemble original assets in cash flows, book values, or yield.

Vertical stripping has a much different impact on accounting needs than horizontal striping. Vertical stripping is taking stream-of-asset flows and proportioning 100 percent of some flows to one portfolio and 100 percent of the remaining flows to a different portfolio. This is similar to taking the asset flows and slicing them vertically, proportioning those to the left of the slice to Asset B1 and those to the right of the slice to Asset B2. The benefits from this transaction are that we have now created two synthetic assets from one existing asset which might meet our needs better than the original asset. The problems that we have created are that assets B1 and B2, are priced off of different points on the yield curve. Therefore, they have different yields and book values, and they no longer resemble the original asset in cash flows. Now we have a need for some accounting flexibility. The problem will be with us for the life of assets. We must monitor assets B1 and B2 to make sure that they continually add up to asset B because asset B is what is really on our statutory books. My company's current asset accounting system will not allow for this type of asset stripping. We could do this notationally; however, that would create an environment that we have strived to get away from -- that is, manually handling of special assets. We have identified the need for this type of stripping. We know the benefits that our company can derive from such stripping, but we have yet to fully implement the account for such transactions.

Internal sales is swapping assets between portfolios. One portfolio might be swapping cash for another portfolio's long-term bond to rebalance a portfolio's assets. Recently we have concluded a transformation of our Immediate Participation Guarantee/Deposit Administration (IGP/DA) business into a fixed-term contract which has created an acute need for shorter assets than those currently on the books supporting group pension products. Most of these transformed policies will be maturing over the next four to five years which will create an acute need for cash flow from those assets, especially if a considerable amount of this business leaves the company. Therefore, we are looking at selling some of those long bonds in that portfolio to the individual portfolios in exchange for shorter assets or cash that group pension can use to better match the maturities of its liabilities. This could be done externally by actually selling assets, especially in today's marketplace where many of those assets currently on the books could be sold at a profit. However, this creates tax considerations and transaction costs, and those costs may not be necessary if we can do internal sales of some of those assets between other portfolios. The problem which is similar to that in vertical stripping, is that if those assets have been on the books for some time, their market value will not be equal to their book value. Therefore in the process of making that swap, we have created a new asset that no longer resembles the asset actually on our books. If one sells or swaps those assets between portfolios at book, again this problem is moot. But, if I were the portfolio manager and could sell my assets in the open market for a profit, I'm not sure I would be excited about swapping them with another product line at book.

Capital gains and losses create a different kind of problem because they are used differently by different portfolios. My company supported GICs with deep discount bonds assuming tax benefits of the capital gains on those discount bonds. Today, those tactics are perhaps questionable, but we have a portfolio of GICs that are maturity matched with deep discount bonds. It is important in the management of those products that the capital gains from those deep discount bonds get back to the group pension line to be used in supporting that product. This is not usually done, or at least it's very difficult to do as far as the statement is concerned. But, this is one example of how capital gains and losses can compound the accounting problems of managing separate portfolios.

Defaults are another concern. My company's two major portfolios, individual products and group pension products, have different risk characteristics. To be competitive in the group marketplace, management felt it was necessary to increase ever so slightly the risk characteristics of our portfolio. Within those large portfolios, there are several smaller portfolios. If a default were to occur within one of those smaller portfolios, it would only seem right that all of the portfolios in that risk classification, either within the group pension or individual portfolio, participate in the experience of that default or work-out arrangement. This again is an accounting difficulty because of the handling of such items in the annual statement. As portfolios grow in number, the size of each will diminish as the economies of scale do, which might lead to some suboptimization. In reality, without separate accounts, all assets support all liabilities, so allocating the experience of defaults is, in some ways, violating our promise to the policyholders that their one small policy is being supported by this huge block of assets, which is supporting each one of our products.

Income taxes cause an allocation problem. Income taxes are incurred as a company, but when you add up the pieces of your profit centers, each individual profit center may not necessarily produce income tax liability that is getting allocated within the statement. The complications of piecing up those income taxes might be affected by the asset base that is supporting each of those product lines. Therefore, it might be best to look at segmentation on a pre-income-tax basis.

Nontraditional assets include items such as interest rate swaps, mortgage-backed securities, futures, floating-rate assets, options and sale lease backs. All of these transactions create accounting concerns. Segmentation of assets may complicate their handling, but even without segmentation, accounting for these types of assets is not easy. However, unless these types of assets cross portfolio lines, accounting for them may not be much affected by the segmentation of assets.

MR. NEIL C. SCHNEIDER: I have worked with a number of clients in dealing with conceptual segmentation issues. There is little guidance or authoritative literature available on the topic. Much of what has been written as well as what is being instituted by insurers is based on common sense and trial and error. As a practical matter, there are no standard approaches on how to segment; it varies all over the industry.

Investment accounting can be very complex. Issues such as interest rate futures, real estate yields and recoverability, and stripped investments cannot be explored fully in a relatively short time. When applying these concepts and adding segmentation, the issues can get even more complex. So, to go through the specifics and teach external accounting is not the purpose of today's discussion.

In one form or another segmented portfolios have existed for many years. Separate accounts are nothing more than formalized segmented portfolios. Many companies have used informal methods of segmenting when looking at asset and liability management. Formal or more sophisticated segmentation has resulted recently because of business dynamics. The economic environment, new products, conflicting needs of products, and the need to manage risk are some of these basic issues that have created more formal segmentation than that which existed in the past.

Segmentation is nothing more than a refinement or an ability or a tool for investment management. It's an idea that is probably more pronounced and more recognized today, but actually it represents many steps that investment managers have been performing in the past. The concept of segmentation is good, despite its implementation difficulties. In many cases, it's tough to come up with a cost benefit relationship, at least initially. Experience shows that more companies are beginning to use segmentation. Some are using it to a limited degree, but almost everybody in one form or another is using some approach. You must remember that segmentation is first and foremost a management tool. It is not an accounting solution, and it is not something that is going to increase profits by itself. The end result and the management information you get back from the segmentation is what increases profits. It is not the segmentation itself.

Management tools must be responsive to management objectives. Whether it be product line, profitability, risk evaluation, duration, yields, we must have management objectives. Accounting must be responsible for recording those objectives. It must demonstrate an understanding of what is being done and why it is being done. It must be developed with an imaginative view, and it must provide a measurement criteria that management can focus in on.

Accounting must also be responsive to company capabilities. There's no question that there is much accounting that may exceed the ability of a company because the company may not be able to supply the required manpower.

Segmentation is an internal concept and not an external concept. Obviously, as an accountant by profession who is an auditor, I deal in the external. In internal accounting you deal in terms of operating a business and how to reach a management decision. The basic premise in accounting for segmented portfolios is external accounting, GAAP, or any other external accounting that goes to regulators or the public. The answer will be the same regardless of what you do within the portfolio. You can segment; you can do intraportfolio swaps; you can do anything you want within a portfolio, but the external answer will generally be the same. I caveat that with the legal issues. If the transaction is internal, obviously there's no external accounting. If it is conducted externally, you use the same external answer whether you have the segmented portfolio or not. However, segmented portfolios can impact the external environment if internal coordination is lacking. Coordination is the key issue.

In a pool of accounts when all the pieces have to add up but you don't know what to do with the leftover piece, that is what coordination is all about. Perhaps the key demand in segmented accounting is the systems development. Without good systems, segmented accounting and segmented portfolios cannot work effectively or efficiently or achieve an objective. The required systems capabilities are not usually in place. There are few packages available that can do segmented accounting. Even the packages that are available generally must be extensively tailored which is a time consuming and expensive process. The unsophisticated systems that some have tried to use can cause nothing but problems. You lose control, and not segmenting may be a better choice.

There obviously are implementation issues. These issues require a significant amount of internal coordination. How to break apart existing pooled portfolios either when you start or as you continue is key. You will never get investment managers to agree on how you do this in the most efficient and effective manner.

Establish portfolios criteria -- how many portfolios should you have, and what type of investments -- is obviously a function of the type of products, company, and management you have.

Should internal transactions be allowed or not allowed to be recorded at fair market value or not. How you deal with this is another aspect which requires coordination.

Taxes are the one issue, which has a significant impact on the external environment, that can get caught up in the segmentation question.

There are some basic ways that segmentation processes differ. We have to distinguish between how you account in a segmented portfolio and how you report to the outside because you can use almost any way you want. When you deal on the outside, tax planning is important because it relates to any company. In some insurance companies, overall control of the segmented portfolios from a tax viewpoint can destroy your tax position. There's no sense thinking you are going to make money assuming a capital gains rate if your company can't use the capital gains rate but instead has to use an ordinary rate. This key issue probably affects the external environment the most.

The issue of segmentation and accounting for segmentation is to achieve equitable accounting among the segments, whether it be based on pricing or other criteria. In addition, the overall objective should result in something that management can use.

MR. CROWNE: Regarding the corporate segment, how does it work in dealing with the different segments? Do the portfolio managers make deals among themselves or does the corporate segment act as a referee?

MR. SEGA: We are structured now so the corporate account has a portfolio manager and stands like any of the other portfolios in that kind of negotiation. It doesn't referee anything; it stands as the provider of certain kinds of services. When a bond is stripped and nobody wants the long piece, it takes the long piece. Generally, the corporate account is not compelled to just take the long piece at the whim of everyone else. The portfolio manager actively negotiates with the other managers for the appropriate pricing and yield on the pieces it has to take. The different managers will deal very hard for incremental yield on your pieces. Sometimes they will turn down an investment that is clearly better than they can get on the outside simply because they think this process owes them something above and beyond what is economically feasible. It is not an easy thing, so it takes a long time, and markets move in the meantime. It is not easy to get everyone to agree on the allocation, but the corporate account is just another portfolio in this process.

MR. CROWNE: Mr. Ozenbaugh, do you have a corporate account or are your segments strictly along product lines?

MR. OZENBAUGH: We don't have a corporate account. Our corporate account is hidden in both sides of the portfolio and has yet to rear its head. But we know it is in there somewhere.

MR. GERALD S. SILVA: My company is Mutual of America and it runs product lines that are separate for tax deferred annuity (TDA) and pension plans. Partially as a result of Mr. Tilly and Mr. Jacob's paper, we have the idea of using coupon stripping, the TDA segment getting the short piece and the pension plan the long piece. In the study I did, we ran into serious difficulties once we hit the investment accounting section. There seemed to be no way of actually determining the investment earnings for the long piece since there were no coupons coming in. The traditional way of measuring investment income by interest paid and change in accrued income wasn't available to us. Mr. Sega said that operating this between segments was difficult. Mr. Schneider suggested that we could do this without going through what appears to be the necessary accounting system. Can we circumvent this? Can we do it in some other way? If you do this, do you wind up with more problems than you started with?

MR. SCHNEIDER: You are asking how do you assign the values initially going to the various components and then track the components and the yields on the income as they come through. Technically, you use a present value of future flows concept in assigning the values. That is what I have seen most companies use, and it is a generally accepted approach. Presumably when you start amortizing the discount and you match this with the investment income, you know you are getting the anticipated yield.

MR. SEGA: I agree with that. Your question was what do you do with the piece that you put in the pension segment because you don't have cash coming in. You've got a discount bond and the annual write-up on a constant method is one of the things that causes problems in a lot of accounting systems. If you want constant yield amortization, then it's a problem, at least in a lot of systems that I have seen. If it's in a pension account, then I don't think it's a big problem. In any taxable account, it is a problem because you've got to pay taxes and you don't have any money. That's a typical problem of zeros.

MR. SILVA: It does seem to be that the arithmetic is equivalent to valuing a deep discount bond. We're in the position where our investment accounting is done by an outside firm who did not have the capabilities to do this. Whether we wanted to take this on in-house was a question with which we were faced. The answer was no, and it seemed like we were excluded from the world of coupon stripping on that basis.

MR. SEGA: That seems to be a situation where the benefits from stripping would be not quite as much as the cost of implementation. I can assure that's going to happen. For these investment techniques, futures, and options, firms, particularly small ones, have to look at the substantial overhead and substantial commitment on the part of personnel in the firm in terms of expertise. It might not yet be at the stage where the benefits can outrun the cost. Presumably as these investment techniques become more familiar and the markets get more efficient, the cost will come down and more people will be able to partake in the benefits.

MR. GARY F. SPAETH*: I'm from General American Life. I read and hear a lot about the various segments (individual, group pension, corporate, and so on). I am not aware of two different lines of business sharing the same segment. Are any of you aware of any such instances, and if so, what are the problems.

MR. SEGA: In our shop, at least in the life companies, we are fully segmented by product line. We've been divided up more finely than we even need to be, I think.

MR. OZENBAUGH: We haven't crossed group with individual lines. We do have universal life products and an individual-flexible-premium annuity that, from a credited interest rate standpoint, are supported by the same investment strategy. Therefore, we are using one pool to support those products. Both being on the individual side, it makes it much simpler.

MR. CROWNE: I've seen situations where individual and group, or two separate product lines are combined in a segment. What I've seen done is allocation of the investment results within the segment to lines of business by some traditional method, such as the investment year method.

MR. G. THOMAS MITCHELL: I'm with Charter National Life which has perhaps four distinct product lines. We're smaller and have seventy-three employees. It appears to me that much of what's going on is an exercise in how to handle large complex human organizations. We have precisely the same basic investment risk problems but in our case, we are functionally organized. We had product managers negotiating with one another. We'd be arguing with ourselves which we have been known to do. Our problem is global. We look at different segments. We are looking at the requirements, the cash flow and liquidity, and term structure problems. We then add them all together and look at it versus an unsegmented investment portfolio.

MR. SEGA: One of the things that I've always heard even before I got to the investment department was that one of the advantages of being with the Travelers was that you were so big you could do things that other people couldn't do. What we found is that we're just a big collection of a bunch of small segments. We can't do some of those techniques any more without going through a painful process of reassembling some of the pieces we already broke up. I sympathize with your feelings about segmentation being gyrations for large companies. There may be some truth to that.

*Mr. Spaeth, not a member of the society, is Director of Investment Accounting and Purchasing with General American Life in St. Louis.