RECORD, Volume 23, No. 2*

Montreal Spring Meeting
June 19–20, 1997

Session 60D
Wanted Dead or Alive: Asset Segmentation

Track: Investment
Key words: Investments, Financial Management

Moderator: JULIE L. HAUBRICH
Panelists: HELEN GALT
FRANCIS P. SABATINI
Recorder: JULIE L. HAUBRICH

Summary: Some insurance companies segment their asset portfolios and some don't. The segmentation can be done by line of business, profit center, product portfolio, or others. Segmentation has both advantages and disadvantages, and its usefulness depends on various factors. In this session, panelists debate the pros and cons of asset segmentation. Recent practices, trends, and changes are also discussed.

Ms. Julie L. Haubrich: Many of you may be familiar with the concept of asset segmentation, but for those who are not, I'll briefly describe the idea and leave the details to our speakers. Generally, asset segmentation is the process of notionally or truly splitting asset portfolios into subportfolios, and each of these subportfolios may back a specific line of business or block of liabilities. You may use information gathered from a system such as this for things such as investment income allocation. This issue is pertinent right now because many companies are looking for ways to cut administrative costs, and because many investment professionals think that they are able to manage assets better on an unsegmented basis.

I think both our speakers agree that on this issue no single correct answer is applicable to all companies, but each company will have to consider many issues when deciding whether to segment. For example, there may be substantial administrative costs involved in setting up a segmented system. Also, you may need to consider the degree of autonomy that each of your lines of business has in such areas as setting credited rates or reporting income. Also, you may need to consider the extent of centralization in your investment decisions such as credit quality.

We are fortunate to have two very distinguished speakers. Helen Galt is the company actuary with Prudential Insurance Company of America in Newark, New Jersey. Frank Sabatini, a partner and consulting actuary with Ernst & Young, specializes in asset/liability management (ALM) and annuity product development. Helen will start our debate and discuss the disadvantages of asset segmentation. Frank will follow and argue in favor of the segmented policy. We will then hear counter arguments from Helen.

Ms. Helen Galt: I want to make it clear that the positions that I am stating in this debate are not the official positions of the Prudential.

Lets review some of the characteristics of portfolio management that I think are particularly relevant to the question of using a segmented or unsegmented general account. Your portfolio management strategy should achieve some ALM. That means looking at the cash-flow characteristics of the products in your general account, either separately by product or in the aggregate, and how those cash flows will vary under different future scenarios. We often think about ALM mostly in the context of how those cash flows will vary under various interest rate scenarios, but there are many other risk characteristics of products to consider, such as the availability of early retirement options in the pension products.

A company's general account portfolio also has to be managed within certain company constraints that may not be product-specific. For example, the company may set aggregate limits on the amount of credit risks, interest rate risks, prepayment risks, or other market risks in the portfolio to conform to the enterprise's overall risk appetite. There may also be additional constraints in the portfolio in terms of other risk policies, such as policies on the use of derivatives, limitations on exposures to single issuers, and limitations on foreign exchange risks. You also have to take into account your overall liquidity position.

The portfolio strategy also has to make sense in terms of the plan the company has put in place for determining how much investment income will be allocated. Obviously, for simple nonparticipating products such as single-premium annuities, the name of the game is to generate enough investment income so that you meet your original pricing assumptions. For participating products, *Actuarial Standard of Practice (ASOP) 15* demands that investment income be allocated according to the contribution principle. Under *ASOP 15*, the company should have a plan for initially setting and then subsequently redetermining nonguaranteed elements. All these decisions have to be made in the context of competitive considerations and expectations that may be explicitly established in sales illustrations.

Another very practical consideration is keeping the expenses associated with managing the portfolio at a reasonable level. Those expenses include the costs of acquiring or disposing assets, keeping track of all the actual asset cash flows, and tracking unrealized and realized capital gains and losses. The way the portfolio is managed has to be flexible enough to accommodate new products. In many cases, the investment strategy for new products may not be significantly different from the strategy for existing products, but occasionally product revolutions do occur, such as the one that is currently taking place with equity-indexed annuities, which will probably require a fancier hedging strategy than of the rest of the company's product portfolio.

It should also be possible to reposition the portfolio to the investment opportunity, such as the increasing variety of securitized assets, or to changing market conditions where the relative attractiveness to various asset classes has changed. This part also reflects the organizational or political issues surrounding portfolio management. This is really important. Who is involved in setting the company's overall asset profile and risk constraints? Who actually determines an interest-rate-crediting strategy? Chances are two or more groups are involved in these decisions, so how does this process actually work in real life?

One can argue that life would be simpler if the company had one asset segment for each major product line. Then you could model the liability cash flows expected for each product line under various scenarios compared with the asset cash flows associated with a proposed investment portfolio and determine if the proposed portfolio met the desired dividend or interest-rate-crediting strategy within an acceptable level of risk. If a significantly new product comes along, a new segment can be established to meet the unique investment characteristics of that product. Under this approach, policyholder equity concerns are limited. It would be easy to argue, for example, that you are using the contribution principle in establishing dividends, if the assets associated with the participating product are segregated, so it is easy to determine how much investment income has been generated by those assets.

In theory, it is easier under the one-on-one approach to define accountability for the results of each product line. If each line of business owns its own asset segment, then it also clearly owns the expenses for the net investment income associated with those segments. On the other hand, creating separate asset segments in each product category tends to be inefficient. The smaller portfolios that match the desired risk and return characteristics of each product may be harder to construct.

For example, it may not be possible to take advantage of higher yielding assets such as private placement bonds or commercial mortgages in a small portfolio. They may not be available in a small enough chunk, or the portfolio manager may be reluctant to include a small number of big deals in the portfolio for fear that he or she will have insufficient issuer diversification. Infrequent purchases of sales of certain assets such as commercial mortgages or collateralized mortgage obligations may expose the portfolios to greater random fluctuations in results. It may be harder to implement efficient hedging strategies for smaller portfolios because exchange-traded options are typically available only in certain minimum sizes.

In addition, the investment expenses associated with smaller trades mean higher commission rates than for larger transactions. One could get in a position where one segment is buying a particular asset and at the same time another segment is selling a virtually identical asset, leading to commissions on both sides of the transaction. You may also get in a position where you need more portfolio managers to manage many segments. Finally, a company can incur a higher administrative expense from tracking both the asset cash flows and liability cash flows for these small segments.

One seemingly simple strategy for dealing with these issues is for segments to share large deals, such as large private placements or real estate property. However, this introduces certain recordkeeping complexities and associated expenses. There may be contention if one segment manager wants to sell the asset while at the same time the other wants to keep it.

Another strategy is to combine more than one product line in the segment. I think it is difficult to decide if ALM is easier or harder under that scenario. In theory, the portfolio manager may find it easier to duration-match the combined cash flows of multiple product lines. For example, some of the near-term cash flows associated with a long bond can be used to fund shorter liabilities, while far-dated coupons and principal payments can be used to match longer dated liabilities. Such a strategy may work well unless the proportion of business represented by each product in the combined segment changes over time, either due to changes in lapse rates or changes in the growth of new business, or the characteristics of newer generations of one product line may begin shifting over time. For example, the company may change its product design and therefore its crediting rate strategy for deferred annuity products, leading to a desire for a slightly different investment strategy than what was contemplated when the joint segment was established.

Allocation of investment returns in a shared segment can also be tricky. Let’s take the case of two nonparticipating products sharing an investment segment where policyholder equity or satisfaction is not an issue. Let's assume that an initial agreement was reached on how investment income would be allocated based on reserves. Over time, different management teams are made responsible for the two different product lines, and one team begins to argue that it would rather allocate investment income on a more sophisticated basis, and that reallocation will affect the relative profitability of the two product lines. The more accountable the product manager is for financial results, the more contentious these issues may become.

Another pragmatic consideration is the constraint a segmented investment portfolio may create once the segmentation plan has been filed with the state of New York. When a company adopts a segmented approach to allocating the investment income for its general account, a description must be filed with the New York department. This includes the purpose of the segmentation and the alignment of how the classes of business relate to the segment. My understanding is that after adopting a segmentation method for distributing investment income, you cannot revert to other methods except on a gradual basis. The purpose of these rules is to ensure that the plan of operations for allocating investment income is well thought out, that investment income will be allocated in a reasonable and equitable way, and that companies do not flip-flop their methods of allocating investment income. Once a segmentation structure has been put into place with the state of New York, it is very, very difficult to change it.

It is possible to establish new segments for new business, and it is possible to change the asset profile of the existing segments simply by buying and selling assets. However, it is my understanding that a company cannot realign in-force products from one segment to another, even though the nature or management of the business may have changed. There may also be limitations on intersegment trades. This inability to rethink the alignment of products to segments as the company's business evolves or as the company's level of sophistication and ALM evolves is one of the most serious drawbacks to a segmentation strategy, at least for companies that have to be licensed in New York. Therefore, I see the advantages in running a general account portfolio on an unsegmented basis relating to the ability to consider larger deals and to fully exploit diversification for the portfolio as a whole, and to reduce the relative costs of administrative expenses and transaction execution in investment management.

Segmentation, with its focus on line-of-business profitability, may lead managers to ignore the diversification effects among different liability classes. Some diversification exists, for example, among individual life and annuities and group products and their individual counterparts. Not considering the effects of that diversification may overstate some components of liability risks and therefore lead to suboptimal investment decisions.

There are other important advantages to an unsegmented portfolio. I would argue that you have more flexibility to accommodate product changes. You do not have to consider the issue of which segment to assign a new product to, a decision that you will have to live with for a long time if you are in New York. Your portfolio managers may also be in a better position to take advantage of new investment opportunities. They can buy a modest amount of specific equities because it is a small bet for the general account as a whole, but it may be a much larger bet for an individual segment. Another practical advantage is that any one segment does not get stuck with a bad deal. If a particular commercial mortgage goes bad, for example in a segmented environment, that segment takes the whole hit. You cannot spread the pain over your whole portfolio.

The key question for any unsegmented approach is how to allocate investment income equitably without the detailed structure of segments. I would like to discuss a nontraditional approach for answering this question, a model portfolio approach, and then comment briefly on other ways to allocate investment income—pro rata by reserves and by investment-year methods.

Conceptually, a model portfolio is quite simple. A theoretical portfolio of assets is defined for each product line; the returns on this theoretical portfolio are tracked; and investment income is allocated to the product in an amount equal to what the model portfolio would have generated. Some of you may recognize this idea as being very similar to the transfer-pricing approaches used by many banks. So how would you actually construct a model portfolio? You have to follow certain rules; in fact, the same principles as sound ALM would apply to constructing a real portfolio of assets. For example, you could have criteria that a model portfolio should meet the duration, convexity, or other optionality characteristics of the product. I would argue that you probably want to not only be duration-matched but also be key-rate duration-matched.

The expected model portfolio net investment income should support the dividend or interest-rate-crediting strategy for new products the dividend or interest-rate-crediting strategies for in-force products. I think that the model portfolio should be able to pass asset adequacy testing. These criteria are intended to ensure that interest rate risk is reasonably controlled some intellectual honesty is preserved in defining the crediting rate strategies for new products and the associated investment strategy in the model portfolio, so that older contracts do not end up subsidizing new ones.

I am not suggesting that the model portfolio assets be used for actual asset adequacy testing. I'll say more about that soon. I am suggesting that the model portfolio should withstand interest rate scenario testing and the other kinds of sensitivity testing that an actuary conducts to come up with a clean reserve opinion. That means that a model portfolio should have a risk profile that reflects the appropriate amount of market risk, credit risk, and interest rate risk that one would impose on a real portfolio of assets.

A model portfolio is built by using generic asset classes. For example, a generic bond would have an issue date, a semiannual coupon, a maturity date, and a credit rating that allows you to calculate the amount of investment income that you can expect to receive, the interest rate sensitivity of the bond, and the expected credit risk associated with the bond. Therefore, this generic security reflects all the systematic risks associated with holding similar bonds, but not the unsystematic risks associated with particular issues. The systematic risk of other assets, for example, stocks and real estate, can be represented in the model portfolio by holding shares of public indexes, which represent the risks and rewards of holding those asset classes. Once the proportion of holdings of these model asset categories is determined, the model portfolio would purchase or sell holdings according to the pattern of asset cash flows of the product line. Net product cash flows would be invested proportionately based upon current market rates, also taking into account the actual availability of the desired assets in the marketplace. I see constraints on a model portfolio if those assumed assets have to be purchasable.

In general, the model portfolio would not be an actively managed portfolio. That is, one wouldn't expect active trading of your model portfolio bond holdings. In addition, the model portfolio would not derive the advantages or disadvantages of security selection, deliberate duration-mismatching, or other value-adding investment portfolio management strategies. But the model portfolio could, in the normal course of operations, have realized gains and losses on fixed-income investments that would have to be captured in an interest maintenance reserve. That could occur, for example, if group or individual annuity product lines are subject to large withdrawals that may have to be funded with asset sales. The model portfolio would also be charged with credit losses, the simpler approach being to use the asset valuation reserve contributions, and it would be charged with investment expenses, interest on borrowed money, if any, and capital gains taxes.

Because the model portfolios have a low transaction volume and do not require custody and settlement tracking, and because the actual assets do not have to have any accounting records below the general account level, the overall administrative expenses associated with these model portfolios should be less than a current segmented approach. Over time, the characteristics of the products the company sells may change in response to product innovations or changes in the competitive environment. If those changes are significant enough, then obviously you may want to decide to establish a new model portfolio. Alternatively, you could modify your existing model portfolios by modifying the rules for the types of assets that are purchased by your cash flows. There has to be some discipline, though, around this process. Changes in the model portfolio's target assets should be reviewed by a neutral third party.

In the meantime, what is going on with the real asset portfolio? If the company wants to have competitive and financially sound products, then the asset mix of the actual asset portfolio has to be reasonably close to the asset mix of the funds of the model portfolios. The model portfolios determine the allocation of investment income for the lines of business, so in the aggregate they represent the level of income that must be generated to support your product. In addition, the actual asset portfolio must be used to perform asset adequacy testing of the company's reserves. The cash-flow characteristics of the actual asset portfolio, including expected defaults, and the characteristics of these model portfolios, will have to be well-aligned.

The composition of the actual asset portfolio will be influenced by many other factors, such as the company's aggregate risk control, policies for each asset type, interest rate risk limits, and credit quality limits. Finally, the actual asset portfolio will be influenced by the portfolio manager's views of the relative performance of certain asset classes going forward with current market conditions. Overall, though, you would not expect big discontinuities between the total profile of the model portfolios and the profile of the actual asset portfolio, if the model portfolios are constructed honestly and the actual asset portfolio recognizes the needs of the product lines. There will be differences between actual and model portfolio returns, especially if your portfolio managers are successful in delivering that value-added return that they are getting paid for, due to good security selection or other active portfolio management. But I would argue that the individual product lines are likely to experience more stable returns over a several year period in an unsegmented world. Over time, the result of consistent over performance can flow into surplus, or it can be allocated back to the individual product lines, perhaps in proportion to model portfolio income.

There are other ways of allocating investment income in an unsegmented environment that are recognized under New York law. Investment income can be allocated in proportion to reserves and other liabilities. On the surface, this method appears to ignore many of the underlying characteristics of the liabilities, unless it is being used in a situation in which all the products sold by the company are homogeneous in terms of crediting rate strategy and asset/liability matching characteristics, but if those conditions are not met, then it would still be possible to construct an asset portfolio that in the aggregate is reasonably matched to the liability. It is a less clear, though, that you would end up crediting investment income in a way that would result in a competitive product or that your books would not deliver some misleading conclusions about the real financial results of each of the company's product lines.

Another way of allocating investment income is the investment-year method. Under this approach, various assets and particular fixed-income investments are allocated to annual statement lines of business according to the monthly cash flows from those lines. A suitable investment for this methodology can be made for assets that have less predictable cash flows such as common stock or real estate. Under this method, each calendar year is generally treated as a separate year of investment, and a line-of-business name tag must be assigned to each asset and its associated income and principal cash flows. Under New York law, a company must file a complete description of the plan to allocate investment income under the investment-year approach, certifying that it meets the requirements of the law. Revisions to the plan also require approval. If the company wants to abandon the investment-year approach, the transition must be accomplished on a gradual basis, and the plan must be approved not only by the company's board, but also by the department.

Using an investment-year approach to allocating income in an unsegmented portfolio has some distinct advantages over simple pro rata methods, assuming that the right kinds of assets are purchased with the product line's cash flows. Assets can be purchased that match the duration characteristics of the liabilities, the product's crediting rate strategy, and the desired risk profile for the portfolio. A strict interpretation of the investment-year requirements, however, can lead to some very practical problems in that the availability of the right kinds of assets may not exactly match the timing of the cash flows associated with the liabilities. If particular acquisitions are shared across product lines the demands of keeping the records straight can be onerous. In effect, I would argue that an investment year method is a form of segmentation, with many of the same expenses and administrative complexities.

Let's assume that a company wants to move from a segmented to an unsegmented portfolio. What would the transition look like? I will address this issue from the perspective of model portfolios. The key issue here is making the transition without unintentionally changing the company's dividend practices or interest-rate-crediting policies or violating any policyholder equity concerns. One way to accomplish those objectives is to define a beginning model portfolio that is identical to your current asset portfolio for the product lines, and then, over a several year period, the model portfolio could buy and sell assets to get to a desired model portfolio configuration. If your motivation for considering a model portfolio is to reduce investment expenses, then obviously you will not achieve that objective for a long time under that gradual approach.

A couple other approaches could also be considered. For example, you could define a model portfolio from scratch, based upon all the constraints that I mentioned earlier. Recall that the model portfolio does have to support the crediting rate strategy of the product line and conform to the desired risk profile of the portfolio. Then you could test the investment results of the model portfolio against the continuation of the current strategy. Another approach could be to map the current portfolio of assets into the model portfolio's generic assets to create a simple portfolio that replicates the characteristics of your current actual portfolio. For example, a set of rules could be formulated for how to take the current portfolio's publicly traded bonds and map each of them into a generic bond cell with the same modified duration, coupon, and credit rating. That way both the risk and return characteristics of the current portfolio would be preserved. In either case, the model portfolio that has been created may or may not replicate the current investment results. If the model portfolio does not give you a close approximation of your current strategy, the construction of the portfolio is flawed, or there is some misalignment between your current actual investment portfolio and your stated risk/reward objectives. In either case, going through that exercise may teach you how you can manage your business.

Mr. Francis P. Sabatini: Segmentation is not dead. It is alive, it is well, and it is vibrant. Segmentation's critics have focused on problems that have nothing to do with segmentation but have a lot to do with ways we manage our assets and liabilities within that segmentation framework. Killing segmentation, in my view, creates more problems and does not adequately address the issues that critics are so quick to point out. Segmentation is positioned for change. This way we get to keep all that is good about segmentation and still address its historical faults.

Why do we segment in the first place? There are three primary reasons that I can think of: product pricing, ALM, and financial reporting. I will look at each of these three to help create some perspective and help us understand why all these criticisms of segmentation exist.

Product pricing was probably the primary driver for segmentation back in the late 1970s and early 1980s. We started introducing new money products, and these products, with smaller margins, were very competitive. The rates that you offered on a given day determined how competitive you were. If interest rates changed, you needed to change your pricing. Historically, the investment people were off doing their own thing, and we were trying to figure out how to price our products. It was extremely difficult to do it in a vacuum, so we started arguing that we needed to know exactly what assets we were going to buy to support our liabilities, and that was driven by the guaranteed investment contract (GIC) and the single-premium group annuity markets.

This phenomenon spread to other products that had similar requirements, such as deferred annuities, universal life, and structured settlements. Where would we be on renewal pricing deferred annuities and universal life if it weren't for segmentation? It is true that renewal pricing is not always directly tied to what you are earning on that segmented portfolio, but it is also clear we do not do it in a vacuum.

ALM was the flag that was carried around the halls of our companies when we argued for segmentation. How else were we going to manage these risky products without having segmented portfolios? Did segmentation really fuel the birth of ALM? Is there anybody who believes that ALM is not good? Of course. It involves targeted investment strategies that are designed to match the liabilities. We have been able to measure risks at the product line level. Duration and convexity have become measures that receive very close attention. Segmentation provided the opportunity to actively, in theory, manage the asset portfolio versus the liability, and without segmentation we would not have the information to reposition the portfolio and match cash flows. It also provided us with the opportunity to combine complementary risk characteristics of certain products. GICs and the combination of GICs and single-premium group annuities are good examples of that.

Probably the greatest benefit of segmentation has been its ability to allocate investment income and capital gains and losses to segment products that allow us to evaluate the true profitability. Now with segmented assets, we can say that here are the assets we bought to support the liabilities and here are the income statement results— aren't we profitable? That has been the primary driver. I am being somewhat facetious, but that has been the greatest value that we have received from segmentation. It has allowed us to evaluate the performance of pricing and risk characteristics of many of the interest-sensitive products that we have brought to market.

Let's see how segmentation has preformed over time. It has not been all peaches and cream. It has produced some side effects that have had a profound effect on our business. Here is my report card, and I will give you reasons as to why I have arrived at these grades. This is my opinion only, and it is certainly subject to debate. One of the wonderful things about segmentation is that it allows us to link specific activities to product pricing, and it creates a desire to be more competitive. That desire to be more competitive caused us to spend more time with our investment professionals, which caused us to make demands in terms of returns. I have even been known in my career to say the reason we are not competitive is because of the investment organization. We all know now that is not true, but it did fuel yield-oriented investing, it did contribute to low-quality portfolios, it did contribute to duration and convexity mismatches, and it did contribute to asset concentration. Is segmentation responsible for these outcomes? No, but it has probably contributed.

In the final analysis, segmentation has helped create more rational pricing. Certain markets have become extremely efficient. We just had to live through all that irrationality to get there. I would argue that we would have a whole set of different problems with many of these products if we did not have segmentation today. Overall, our use of segmentation to refine product pricing gets a C+, because it has caused us to focus on taking incremental risks in the name of market competitiveness.

Would we have ALM without segmentation? It has certainly facilitated the dialogue between investment and actuarial professionals. We may not always agree, but we talk. We have a clearer understanding of risk issues associated with products and their assets. Would we have that focus without segmentation? We have targeted investment strategies. I realize that they may not be that well-defined or documented, but usually we end up buying the right kinds of assets.

Would we use derivatives to manage risk if it were not for segmentation? The use of derivatives will blossom in the next several years as ALM activities receive greater attention. Segmentation, I believe, will fuel that growth. The downside of this is that as an industry, we are still evolving in the development of our ALM arts and sciences, and it is for this reason that ALM receives an A- instead of an A+.

Regarding financial reporting, would we know how profitable certain products are without segmentation? Would we still be having these subsidy debates? Would we still be debating the inherent profitability of certain products? Could we effectively measure the value added of a particular product without segmentation? I contend that we would still be wondering about product line profitability without segmentation. The financial reporting benefits of segmentation receive a resounding A+.

Why support desegmentation or, if you have not segmented, have no segments? Several arguments have been given for desegmentation. I would suggest that they fall into three basic categories: value-added investment management, holistic ALM, and lower expenses. With value-added investment management, probably the greatest complaint about segmentation is that it does not permit the investment organization to add value. The basic premise is that if the portfolio were managed as a whole, we could construct more optimal portfolios that add more value. In effect, what the opponents are saying is that the whole is greater than the sum of the individual parts. In theory, I have no argument with this claim. I believe that myself. However, does segmentation preclude the development of more optimal total company portfolios? I do not think so.

We have created organizational structures around segmentation that hamper the total company view. Separate lines of business that exhibit extremely autonomous behavior and portfolio management that supports that autonomy are the problem. Changing the organizational structure that permits corporate governance and overall management of the assets to the liabilities, while preserving segmentation, is a solution that preserves the benefits of segmentation: product pricing, financial management, risk management, and measurement at the product line level. We have not been able to optimize at the segment level anyway, so what makes anyone think that it will happen without it?

It seems to me that the degree of difficulty of adding value increases dramatically without segmentation. In my opinion, one of the greatest myths in the insurance industry is the notion that investment professionals can add significant value. I am not in any way criticizing investment professionals, because in fact they can add value and many times they do, but, in the scheme of things, the value that can be added by investment organizations pales compared to the value that can be added through sound liability management. Many times when investment professionals try to add incremental value, there are only so many things that they can do, and many times adding value comes in the form of adding risk. But sound product pricing and product management can add material value. In products that permit periodic repricing, such as deferred annuities, and universal life, it would add more value than an investment organization could ever add without taking more risk.

Desegmenting, I believe, will tend to unlink the assets and liabilities and the level of coordination between the investment and actuarial professionals. I also think that sometimes this is a grand plan on the part of the investment professionals to make the product line people go away. Wouldn't liabilities begin to lose their identity? We have enough trouble getting a handle on liability dynamics at the segment level. What makes you think we are going to do it without them? Do we have a corporate product manager who is the champion of the aggregate liability? It seems to me that in desegmentation we are losing a lot.

It really all boils down to the holistic ALM concept, managing value and risk at the entity level. In my view, this is extremely important to good financial management. Optimization at the total company level makes sense. There is no question that views on risk relative to a specific product line would be much different when viewed in the context of the total company risk profile. Take a company that may be one-third deferred annuity and two-thirds non-interest-sensitive traditional life, and I guarantee that your view on risk of that annuity block will be much different when viewed in aggregate than when viewed on a stand-alone basis.

Segmentation, however, does not preclude these activities. These activities can be accomplished within the segmentation framework, so also remember that to manage the aggregate liabilities to the aggregate assets, you need to build credible models for all the liabilities. Not many companies can actually say that they have consistent high-quality liability models across all lines of business. But isn't that a criterion for a desegmented approach, and certainly it is a criterion whether you are desegmented or not. Desegmenting does not create credible total company ALM models. The last time I looked, it took dedicated resources not found in many of our companies. In fact, it is likely that ALM might not even receive the attention it deserves in a desegmented world that continues to support product line organizational structure. It might cause us to spend more time focusing on the asset-only side.

Achieving a holistic view in a segmented environment is fairly easy to achieve, provided the right organizational structure exists. The process is usually coordinated at the corporate level by the corporate actuary or company actuary and some key individual in the investment organization, generally by someone who does not have any product line responsibilities. Segment and product line ALM models are rolled up to the total company level. The models reflect corporate-wide assumptions, methods, and measures. These corporate-wide assumptions and methods usually do not impact the liability side, but they do impact asset projection assumptions and methods. If you are a multiline company, even when you are coordinating asset adequacy work, you worry about consistency of assumptions across product lines anyway. Risk measures are designed to be appropriate for all liabilities. They are designed to be understood by senior management. This usually precludes such measures as duration and convexity, because these measures are inappropriate for certain liabilities. They are also difficult concepts for management to understand. How many people here think that if you went to your most senior individual in the company and said that you had a 0.735 duration mismatch, he or she would understand what you said? I do not think so. Duration and convexity still make sense to certain segments, and it is important that for those segments they be developed, measured, monitored, and managed. Hence, we reap all the benefits of segmentation and are still able to manage risk and value at the total company level.

So how do you do it? By the way, this is the counter argument to the model portfolio. You roll up ALM results to the company level by using corporate-wide assumptions. The ALM committee sets policy and guidelines: We don't want too much in this asset or all these governmental constraints. We now are top-down rather than bottom-up. How have we done it in the past? What happens as the segmented level becomes de facto corporate policy? Now, it's probably not that bad, but in many respects it is. Why not just change the way we do it and go top-down?

Segments can remain autonomous, but subject to that corporate governance. Risk management can be at both a segment and a corporate level. If a line wishes to reduce risk, but in the context of the total company the overall level of risk is tolerable, then the line can reduce risk. Reducing risk in that context may mean managing earnings. Purchasing notional derivatives or taking other actions might allow them to recognize this without changing the total company profile. In contrast, the line may not want to reduce risk (usually because it is too expensive), but the total company risk exposure can be reduced through corporate risk management actions. We go through all this trouble to create these things called corporate segments, yet we do not use them. That is the greatest facility we have for managing total company risk and activities. Even without segmentation, the asset allocation process can start top-down, and instead of buying assets for segments, you can buy assets for the company and then allocate them through some process to the various segments.

Regarding expense savings, does desegmentation really reduce expenses? Administratively, I am not sure that we are going to reduce expenses. How much will it cost to maintain these model portfolios? Isn't this another scheme just to allocate investment income? And what are these model portfolios anyway? They look like asset segmentation. I am not sure where all these expense savings are coming from. It is true, and I have heard this a number of times. You walk into the larger companies and see thousands of investment people and the portfolio manager at one end of the hall trading all this stuff, and the guy down at the other end of the hall is buying all this stuff, and it turns out that he's buying what the other guy's selling and so forth. It actually does happen and it is a problem, but is that a problem of segmentation or the way we built the organizational structure? I just think we need to look at the way we function. I think too much is to be gained from segmentation to lose it.

The whole subsidy debate really emerges when you create all these model portfolios. You may hear the argument, "The model portfolio really isn't the asset we would have had our portfolio manager buy, so our earnings are understated because that model portfolio really does not reflect the appropriate assets for my liabilities, and they are not real earnings anyway. They come from these fictitious assets." I do believe that the use of model portfolio techniques is extremely valuable when doing investment performance attribution. You have to be very careful when constructing them. If you construct model portfolios as a proxy for investment income allocation and then use them as a basis to attribute value that has been created by the investment organization, you may be attributing to the investment organization something that is more appropriately attributable to the line of business, and it may not really be value-added.

Helen did make the point about asset defaults and hits at the segment level. There are ways around that. You can transfer the defaulted assets out of a segment into a corporate segment. You can make charges to the segments to fund those defaults when they occur.

In summary, it is my belief that segmentation is valuable. It fosters good financial management in a product line structure. There are benefits to be gained by managing our assets and liabilities in aggregate, but we can do that within the segmentation framework.

Ms. Galt: I would like to remind you of Frank's report card. If you recall he gave us a C+ for product pricing, an A– on asset/liability management and, an A+ for financial reporting, all due to asset segmentation. I do not know whether he is saying that some of the irrational things that have happened on the portfolio management side are going to suddenly go away now that we are smarter, but I was really interested to see that we have an A+ in financial reporting and some questionable results on the product pricing side, all due to segmentation.

He also thought that segmentation has brought investment and actuarial professionals closer together. My belief in that is somewhat less optimistic. I have not seen actuaries and their portfolio managers walking off into the sunset hand in hand. I do agree that the better job you do of defining your liability characteristics and trying to communicate those to your portfolio manager, the better off you are. But I think there is still a sense of two separate worlds, and I think there are other ways of accomplishing good communication and bringing more discipline to this process than continuing with the segmentation strategy.

Frank also talked a little bit about value-added management. Is the problem here really segmentation? How do we tackle the whole issue of value-added management? I think there are a couple points to be made about this. Some of the arguments that I made in favor of desegmentation were really oriented toward portfolio efficiency, and I believe this is an area where we do agree. You can definitely end up in a position where one portfolio manager is selling something and the other guy down the hall is buying exactly the same thing. A lot of inefficiency is associated with those kinds of situations.

Another point that we agree on is that the name of the game here may be to get into an environment where you can objectively look at this question of value-added strategy by your portfolio manager. My contention would be that if you can define something such as a model portfolio to support your liability, then that forces you as the liability manager to look carefully at the characteristics of those liabilities, and the kinds of dividend and interest-rate-crediting strategies that you intend to have for those liabilities. It is up to you to define, or work with an investment professional to define, what kind of portfolio will support those dividend and interest-rate-crediting strategies within some appropriate risk boundaries. Once you have done that, you have clearly made a statement of your expectations with respect to portfolio performance. If you define this in your model portfolio context, much of the other noise goes away. I think that really clarifies the question of whether the actual portfolio has delivered returns through the value-added investment strategy. It takes away much of the noise around this discussion of why your investment returns were not what you expected, because you clearly differentiated what an appropriate portfolio strategy would be from the so-called value-added activity that your portfolio managers are engaging in. I think the approach that I had recommended would reduce some of that noise.

Can holistic ALM be done within a segmented world? I think Frank and I do agree that creating good liability models is critical no matter how you approach this problem. I think we also agree that if you are going to do holistic portfolio managing, you need to be able to roll up the results of that modeling into some aggregate strategy. However, I would also caution you that if you try to do holistic portfolio management within a segmented approach, if you are a New York company and you want to use one of these corporate accounts to perform that holistic general account portfolio management, then you will have to do a surplus management account filing. Again, that has many implications for how you will manage a company. I would caution you that you cannot set up a corporate account and not file it.

Mr. Howell M. Palmer, III: Presumably there are challenges to applying this segmentation to smaller companies, Frank, and I was wondering if you could comment on some of the ways this needs to be adapted in smaller environments.

Mr. Sabatini: Perhaps for some perspective, let's get a sense of who does what. If you are not a monoline company, if you are not primarily 80% or 90% one product—how many people here have segmented portfolios? (Most attendees indicated they do.) My general view on segmentation is that it really comes down to managing your business. I think frequently you will find that the product management process becomes very difficult and the whole subsidy question that I talked about is very real. This is not necessarily related to mutual as to stocks, but it is hard to know what assets are supporting what liabilities, and without segmentation it is hard to do that. If a $1-billion company, for example, has sizable liabilities and is 40% one product line, 60% another, I think you need to segment, but you need to think through how to do it. You probably will have to have extra rules. You would not have portfolio managers selling one asset and buying another, so many of those administrative issues go away. I think those are the greatest benefits—to be able to look at product lines' profitability. The implementation side of it is something that says you end up with this small portfolio, which is hard to deal with. But I think you can share assets and do other things that allow you to create a viable segment, even for a relatively small product line.

Mr. Donald M. Pearsall: A few years ago, some actuaries tried to get rid of our motto by Ruskin about the work of science, and we decided to keep it. Of course the work of science is also to publish and to be verified by other people. One of the problems that insurance departments, and especially the New York department, have is trying to go on and approve new types of plans and new ideas, some of which have merit, but have no background in the way of publications or anything else. We have been working with things like synthetic GICs and asset-based compensation. When we get to the allocation of investment income, I think we have some severe problems. Our biggest worry is that you could set up a desegmented account and set up model investments, somehow find the product line that needs some extra investment income, and feed it through this synthetic model.

The need for publications is very great. I believe it was a member of the New York Insurance Department who wrote the paper in the Society *Transactions* that was the basis of our segmentation. But it would be nice, with our reduced staff, to have people in the industry sit down and write papers. When I first started going to meetings, there used to be presentations of papers and active debate. My first meeting as a Fellow was in 1970, and that meeting went on for an extra half hour because of intense debate. However, that type of discourse doesn't exist anymore, and it should come back.

Ms. Galt: I understand the position of the New York department. The idea I threw out with the model portfolios is a way that one could approach an unsegmented environment in a manner that would preserve some discipline, but you would have to have discipline surrounding the creation of those model portfolios. I think one of the dangers is constructing unrealistic portfolios. Would they be purchasable, would they really meet the dividend and interest-rate-crediting strategies of the products in a rational way, and would they have suitable risk limits? I understand that there would have to be an incredible amount of discipline associated with the actual creation of portfolios and using them as the basis for allocating investment income. I am sympathetic to any concerns that the New York department would have about policyholder equity and other issues. Please recall that I agreed to take the desegmentation part of this debate to stimulate thinking about this subject, and I certainly do appreciate your concerns.

Mr. Harold H. Summer: By definition, segmentation means communication with the investment people. Helen, you said that you were not too optimistic, especially in an unsegmented environment, about the communication between the actuarial people and the investment people. We have to somehow foster communication, because the purpose of investment is to back the liability. How would you foster communication and the ability to get the investment people to invest in the assets that we need?

Ms. Galt: I think that one of the things we require in an unsegmented world is some kind of risk management or ALM unit that would work with the investment people to determine an appropriate investment policy and set risk constraints for your unsegmented general accounts. As I said in my presentation, I think that, as a practical matter, if you were to go to something like the model portfolio route, the actual portfolio could not deviate too much from the sum of those model portfolios. Otherwise, you would have a big disconnect between the demands of your liabilities and the kinds of assets that you have supporting them. One approach would be to have a unit that would be charged with the responsibility of working with your portfolio managers to set up a suitable investment policy statement for your general accounts that would include all the appropriate constraints around the actual portfolio.

Mr. Sabatini: Helen, I'm going to agree with you. I've been involved in ALM-type activities most of my career. I think one of the hardest things to do is to get actuaries and investment professionals to communicate, and it's a matter of perspective. Now, the only thing the actuaries can relate to is 30 years ago and 30 years from now, and the investment professionals are worried about yesterday, today, and tomorrow. Now that was meant to be funny, but those differing perspectives, in reality, hurt our ability to communicate. They know assets, we know liabilities, and it is awfully hard. As Helen said, the companies that have been successful are the ones that have formalized risk management committees that have fairly disciplined ALM processes. One disadvantage of segmentation, especially in larger companies, is that the consistency of ALM activities varies at the product line level. The holistic approach does establish more discipline and does provide the opportunity to develop more consistent application of the ALM science across the company.

David J. Fishbaum: I guess there is some consensus between both of you. The model portfolio is a forum of asset segmentation, so that this model portfolio would be the asset segmentation that the product or the separate business unit manager would have created if he or she had asset segmentation. From that perspective, asset segmentation is a good idea. The problem is that real assets get bought. When you were talking about holistic ALM, you start rolling it up. The difficulty is that if you have real asset segmentation, real assets have been bought, and therefore you really don't have the opportunity to do a holistic ALM.

I will give you an example. In Canada we have a whole life product that has no cash values; it’s called term to 100. What you do is create as long a portfolio as possible. In that kind of environment, your annuity department can actually back 1-year GICs with a 30-year bond, and you're actually improving your asset/liability matchings of your whole organization. The problem is that when you're buying real assets and you're doing segmentation at the individual business unit level, you will never see that and you never have the opportunity to bring it up. The model portfolio actually works as long as you're disciplined in allocating and saying this is what the investments really are for that division, and then allowing the investment department to manage and really add value, because it sees the company as a whole. No business unit manager ever does. Only the investment partner does. You are providing in a model portfolio environment real cash flows to the investment department, then the investment department sees all the cash flows of all the different units and can better manage them. The benefits of a model portfolio do use asset segmentation. It's the ability not to buy real assets to back those at the business unit level, but at the total company level, where you get real ALM that works.

Mr. Sabatini: I think your point is that you are agreeing with the model portfolio approach and the idea of holistic ALM. My point was that you can get there if you start managing the assets and liabilities of the total company from a top-down perspective. Segmentation does not preclude that. From a management point of view and your example, you may end up combining those two segments, the 1-year GIC segment and the term-to-100 segment, because when you looked at it from a holistic point of view, you realized that they would benefit each other.

Mr. Timothy W. Verschelden: Both sides have discussed the importance of communication between the investment and actuarial side. Ms. Galt, I wasn't sure I understood who is responsible for developing these model portfolios? Is that the investment or the actuarial side or something in between?

Ms. Galt: I think it has to be a joint effort between the liability managers and some investment professionals. Whether that is the actual portfolio manager or not is, I think, an open question. I do not think that you would want to be in a position where the actuarial staff did this independently without any reality checks on the construction of those portfolios. I really do think it has to be a joint effort.

Mr. Marc I. Whinston: Could you have a segment that has GIC and single-premium group annuities, which is GIC short duration, group annuities long duration? Is that an example of a segment, or is that an example of two model portfolios?

Ms. Galt: In theory you could have two product lines such as those in one segment. The question is how to allocate investment income between the two product lines.

Mr. Sabatini: It really becomes an issue. Those products historically were married because they had complementary risk characteristics. But if they are in a segment together, and you want to start worrying about the inherent profitability of those two separate products, you end up with debates about allocation of investment income and the creation of model portfolios.

Mr. Whinston: I think that is correct, and we do have a segment that has both those products. Fortunately, they are in the same business unit, so we don't have to figure out how to allocate the profits. But it is an example of the segment where the whole is greater than the sum of its parts. Fortunately, we don't have to deal with the allocation problem.

Mr. Sabatini: In theory there are other problems that can be created by combining those. That is a subject for another session.

From the Floor: It seems to me that if you do have a segmentation strategy, then the products that are supported by relatively stable portfolios are implicitly providing some sort of insurance to the products that are supported by relatively unstable portfolios. In a general account, you can get defaults on one type of product or defaults on guarantees and say the assets backing that went bust. How do you deal with the expenses and the insurance costs of that implicit insurance?

Ms. Galt: I think that one of the things that we did not bring up about any segmentation strategy is that, bottom line, all the assets of the company have to support all the liabilities. Just because you are in a segmented environment, you cannot declare that this product line is insolvent and you will not do anything about it. That is one point that I do not think we made until now.