

Snapshot

*The Changing Financial Services Landscape:
The Life Insurance Company Perspective
A Research Program and Industry Forum*

On April 21 and 22, 1999, the WFIC hosted its initial sponsors meeting of the life insurance forum. Following earlier discussions with industry executives, a research agenda had been developed and this meeting focused on discussion of specific projects and a review of related research. A second sponsor's advisory meeting will be scheduled for the fall to report on research activities and continue to solicit direction, and reaction from industry sponsors.

The meeting opened with introductory remarks from the Center's Director, Anthony Santomero, and Peter Burns, Managing Director. Following a brief overview of the financial institutions Center's broader research agenda, they discussed the background of research activities leading up to the formation of this new research program and industry forum.

The Wharton school has a long and distinguished history in the insurance industry, dating back to Sol Heubner. Virtually since its inception in 1992, the Financial Institutions Center has been supporting a variety of research initiatives beginning with its landmark, large-scale assessment of "Strategic Choices, Firm Efficiencies and Competitiveness in the US Life Insurance Industry." This broad-based study was complemented by another field-based research program on issues in risk management. Results of these two programs were discussed in a variety of academic and industry conferences and findings were published in relevant journals.

This and other Center supported research in the area has been collected for a forthcoming book currently in press, "Changes in the Life Insurance industry: Efficiency, Technology and Risk Management," co-edited by Anthony Santomero and David Cummins. The Wharton faculty who contributed to this volume have been joined by other members of the research community in the new forum their goal is to extend previous research and develop new approaches to better understand the changing financial services landscape from the perspective of the participants from life insurance industry.

What follows is a "snapshot" summary of the recent meeting, highlighting the various research discussions. In a number of cases, relevant papers were distributed to the participants, copies of which can be obtained from our web-site at <http://fic.wharton.upenn.edu/fic/wfic/programs.html> under "The Changing Financial Services Landscape: The Insurance Company Perspective".

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**Successful Merger Integration:
Lessons Learned from the
Commercial Banking Industry**
**Harbir Singh, Professor and Chairperson,
Management Department**

Harbir Singh began his presentation with a review of his research into value creation through post-acquisition merger practices in the US commercial banking industry. The studies discussed were based on data from 50 institutions covering over 500 transactions. The goal was to better understand the drivers of value creation in the acquisition process.

The academic literature on acquisitions consistently shows little or no value creation to acquiring firms. But most of these studies are based on averages and

the performance distributions have large unexplained variances. In his work, Harbir found that the difference between successful and unsuccessful acquisitions was explained to a large extent by the specific post-acquisition strategies adopted by acquirers. Among the findings discussed with

the group was the fact that banks with routinized and codified integration practices tended to perform better than those institutions that treated acquisitions as discrete ad hoc events. In essence, the research revealed that there is a learning process within organizations, which increases the potential for value creation and the chances of a successful acquisition. Therefore firms that maintain teams and codify process experience better outcomes from the M&A process as a result.

The group discussion then focused on the forces driving the current consolidation in the life industry and the industry specifics that need to be

considered in examining similar merger integration issues. Additional discussions with industry executives will help inform the research design but as a group, there was general agreement that the issues are relevant and important for further work and examination in the context of the life insurance industry.

**Drivers of Efficiency:
Scale and Scope**

**J. David Cummins, Professor of Insurance
and Risk Management, Executive Director,
S. S. Huebner Foundation**

The changing structure of the financial services industry poses new challenges for life insurers: The emergence of non-traditional competitors threatens the industry with downward pressures

on profit margins, and challenges to the traditional systems of distribution. Insurers are under pressure to keep up with new technologies, and risk-based capital puts additional pressures on insurers to strengthen their financial statements.

Part of the industry response is reflected in the spate of mergers and acquisitions activities,

with the hope that economies of scale and scope will help firms emerge from the avalanche of change unscathed. To do so, they must strive to be as efficient as possible – being as productive as possible at the lowest possible cost.

But what drives efficiency in the life insurance industry, really? Does size – economy of scale – truly convey a cost advantage? Are mergers and acquisitions creating value or destroying it? What influences are the greatest at predicting these mergers and shedding light on their outcome? David Cummins' ongoing work has as its goal the shedding of light on these questions.

Harbir Singh has been examining value creation through post-acquisition merger practices in the US banking industry.

In the insurance forum, he will be focusing on the drivers of consolidation in the life insurance industry, and examining merger integration issues.

David has been pioneering a methodology for measuring performance: Data Envelopment Analysis, or DEA. DEA creates a measure of firm efficiency by comparing firms' practices with the "frontier" of best practices formed by other firms in the industry. If a firm is as efficient as possible, it lies directly on the frontier; otherwise, its performance could be improved upon by changing its practices. Using DEA, David measures how well the firm manages technology, how well it manages its costs given its output quantities and input process, and how well it manages revenue and profit. He also looks at whether the firm is at increasing, decreasing or constant returns to scale, i.e., whether it is at its most efficient size.

Some of David's findings contradict traditional industry lore. For example, he finds that the most efficient firms, on average, are ones with multiple means of distribution. This in fact contradicts the idea of "channel conflict", or competition between different distribution vehicles.

He also finds that the larger firms able to leverage market power in a geographic region are generally more efficient, though there are firms with constant returns to scale at every size.

As for economies of scope – the benefits gained from producing a wide variety of products versus the benefits gained from specialization – David finds that these are more generally associated with personal lines, where the agent advises on multiple products. Individuals also seem to prefer the convenience of "one-stop-shopping," and are willing to pay for it: firms can take advantage of this preference. For commercial or institutional customers however, the opposite holds true: scope economies are hard to identify as corporate

buyers of insurance tend to hire specialists, and so do not need multiple products.

David has also investigated the operating and financial condition of acquired firms. He finds that M&A targets are more likely to be operating with non-decreasing returns to scale, are firms that are financially vulnerable, and exhibit managerial entrenchment. Additionally, the targets may be relatively inefficient – giving the acquiring firms the opportunity to improve under-

performing assets. The data illustrate that firms with experience as acquirers tend to achieve greater efficiency gains than those insurers without acquisition experience.

Overall conclusions: large firms tend to be more efficient, operating with decreasing returns to scale. Some have succeeded in attaining constant returns to scale. Profit economies of

scope are present on average only for large firms, for personal lines firms, and for firms with vertically integrated distribution. Mergers can enhance efficiency.

IT Decision Making in Insurance Firms

**Lorin Hitt, Assistant Professor of
Operations and Information Management**

Success and failure stories abound in the use of IT technologies in the financial services world. There is no disputing that information technology has had positive benefits to the industry overall, but there is a wide range of variation at the individual firm level as to whom derives the most benefit relative to their investment. What explains this variation in success relative to IT spending across firms? Lorin Hitt's research interests focus on the relationships between organizational practices, information technology and productivity.

What drives efficiency in the life insurance industry? Does size convey a cost advantage? Are mergers and acquisitions creating value or destroying it? What influences are the greatest at predicting mergers? David Cummins' ongoing work aims to shed light on these questions.

Lorin and his colleagues recently completed a field-based study of IT decision-making practices in the banking industry, comparing these to the theoretical “best practice” behavior. He links decision practices to outcomes. The study finds that while banks are very good at some parts of standardized project discipline – idea generation, approval processes, and subsequent project management, he finds that they are less successful with up-front benefit evaluations, ultimate resource allocation and post project review. Their work suggests that banks can improve IT investment returns with greater attention to process and specifically by getting better at analytics, benefit metrics, and priority planning.

Lorin also looked at case studies of particular investment decisions with the goal of better understanding real as opposed to hypothetical practices, to compare plans to the reality of their implementation. One such investment, common to all the banks, is the establishment of PC banking services. The results parallel the broader findings: idea generation was developed effectively, generally the projects went through a structured approval process and implementation followed in a standard project management fashion. On the other hand, the project evaluation criteria with its emphasis on cost savings and revenue generation proved illusory and in most cases there was little or no after-the-fact evaluation.

Based on thousands of records culled from the banks’ customer records for both PC-banking and non-PC-banking customers, Lorin was able to empirically evaluate a number of performance measures against original expectations as articulated in the project evaluations. The data clearly show that none of the various revenue goals or cost objectives cited by the banks as part

of their justification for investment were achieved in practice. On the other hand, the analysis strongly demonstrated that PC-banking users were across the board better, more profitable customers. Among the conclusions of this analysis was that retention goals and /or customer segmentation objectives would have proven to be the more appropriate basis for project justification and likely would have led to different implementation strategies.

Lorin Hitt’s recent study of IT decision-making practices in the banking industry revealed that banks could improve the return on their investment in IT by paying greater attention to analytics, benefit metrics, and priority planning. Lorin plans to extend his research in the direction of the insurance environment.

During the group discussion, it was noted that these kinds of investments with complex business dynamics are more today’s norm in the industry. These projects are increasingly replacing the brick and mortar or equipment investment decisions where traditional cash flow analysis and cost savings objectives are more easily applied.

It was also generally agreed that this work is directly relevant to the insurance environment. In identifying appropriate case studies for analysis, Lorin would be especially interested in IT projects that come in direct contact with customers, such as agency sales automation, computer enabled agent or customer service investments and call centers or internet applications. The work plan is to identify one or more of such applications and develop an interview schedule with participating firms.

Challenges and Trends in the Industry

Mike Tuohy, Managing Director, Tillinghast Towers-Perrin

Mike Tuohy gave a luncheon presentation focusing on the trends and challenges in the life insurance industry. Mike and his associates at Tillinghast are partners with Wharton in the

research program and add a complementary applied dimension to the academic perspective. In his overview remarks, Mike began with a description of the industry's evolution. Over the past two decades, traditional life premiums have remained flat, while income from investment products has increased rapidly. Consistent with the earlier picture, most of the growth in the insurance sector has been investment oriented.

Meanwhile, the balance of power has shifted dramatically among financial services intermediaries. During the same period, the competitive landscape of financial services has changed significantly, with greater convergence in the nature of service between the insurance, securities and banking sectors. More recently, M&A activity has been a prominent feature of the evolving landscape, and the pace shows no sign of abating.

Within this evolving and dynamic financial services environment, distribution productivity consistently emerges as the top strategic issue for most insurance CEOs. This issue presents a number of discrete and related challenges: most importantly, the alignment of interests, the problem of high costs and low productivity, customer information management, agent recruiting and retention, the integration of technology, regulatory compliance, and channel conflict.

Looking ahead, Tuohy sees a number of challenges and opportunities for the insurance industry: in terms of structure, the trend is towards globalization, consolidation, deregulation, demutualization, disaggregation of manufacture and distribution, and outsourcing. In terms of distribution, Tuohy sees a trend towards market segmentation and alignment, "open

architecture" systems, channel integration and management, and technology-enabled systems. The trend in products is towards a greater investment orientation, with an eye towards tax efficiency, transparency, and an emphasis on product performance with consideration of individual risk tolerance.

The implications for insurers are as follows: No

single strategy will insure success – good management is key. The firm must determine what strategy best suits its capabilities, its customers, and its ability to stand up to competitors, and follow the strategic plans with action. The firm must pay special attention to distribution, the competitive arena from which the winners and losers will likely emerge. Regardless of strategy, the firms that focus on creating a point of strategic differentiation will break away from the pack. Those that do not have or cannot create sufficient scale will be subsumed.

As insurance firms deal with the challenges and opportunities that accompany current trends in the industry, Mike Tuohy believes that no single strategy will insure success. Firms will have to determine what best suits their capabilities, their customers, and their ability to stand up to competitors, and follow strategic plans with action.

Risk Management in Life Insurance: The Application of Balance Sheet Valuation Models.

**David Babbel, Professor of Insurance and
Risk Management and Finance**

David Babbel began by reviewing his recent work in asset and liability valuation techniques. Babbel's research revolves around valuation models for life insurers. FASB has expressed a desire to eventually require marking both assets and liabilities to market. David Babbel has been working with the American Academy of Actuaries Committee on Valuation to study the feasibility and means by which this could be done. David has been working with the committee and others in developing the theoretical framework for an implementable

model for economic valuation of insurance assets and liabilities.

The most promising approach is one that has the most general application, i.e., uses both stochastic interest rates and stochastic cash flows. These are the only models capable of producing viable estimates of economic values for financial instruments that feature stochastic cash flows influenced by stochastic interest rates – characteristics which are exhibited by virtually all insurance company liabilities.

The stochastic interest/stochastic cash flow models satisfy the criteria necessary for a viable valuation model. They are clearly implementable: Wall Street has been using these types of models for nearly a decade in the valuation of mortgage-backed securities, which, like insurance liabilities, are subject to considerable cash flow uncertainty. These models are capable of producing consistent prices across all assets and liabilities, and calibrate well to observable market prices. While these models are more complex and painstaking to run, their valuation capabilities and scope make them far more useful to financial institutions. Finally, these models have been in use since 1979 and are now so ubiquitous that their use is non-controversial from the practitioner's standpoint. They have the further advantage of being specifiable and open to audit, since there is so little in these models that is subjective.

What are the drawbacks to using these models? They require a high level of analytic capability, as they are highly complex. They also require valuation inputs that might not be readily

David Babbel has been working with the American Academy of Actuaries Committee on Valuation to study the feasibility of meeting FASB's planned requirement of having both assets and liabilities marked to market. He is currently developing a theoretical framework for an implementable model for the economic valuation of insurance assets and liabilities.

available, such as lapse functions and crediting rate algorithms – but these inputs are necessary for far less sophisticated models as well. Another difficulty is that the computer requirements for

data analysis using stochastic models are more extensive than those for simpler accounting models, but insurers already have tremendous data-processing capabilities, so this should not be much of an issue. There is also the short-term problem that regulators need to become familiar with these models. Finally there are short run costs, such as software, data assembly and modeling, as well as training. But as noted in the discussion, in a competitive environment, the insurance company that delays

adopting the economic focus will in the end incur greater costs due to mispricing of policies and asset/liability imbalances.

The Retirement Asset Market and Annuities

Olivia Mitchell, Professor of Insurance and Risk Management

Olivia Mitchell provided an overview of the changing nature of the retirement asset market and the implications for the insurance industry. Much of her research focus has been on the study of private and public pension structures in the US and abroad. The declining role of annuitized retirement income is raising a number of questions in public policy circles and is increasingly being seen as an area of opportunity for many in the insurance industry.

As Olivia noted, the goals of a retirement program are to insure income until death, to insure coverage for survivors, to maintain a certain level of consumption, and to reduce taxes as much as possible. Annuities meet these goals, converting a sum of money into a series of payments over a given time period. The payments

are determined by actuarial calculations, and are guaranteed to continue for life, or for a pre-

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specified period of time, with certain tax advantages.

Given the debate over the state of social security in this country today, and the rising longevity of the population as a whole, there is a distinct need to encourage retirement savings. Annuity driven products can play an important role in this process.

In her discussion Olivia raised a number of questions that speak to a need for better understanding of the economics of the annuity markets: what are the key drivers in the range of products? What is the role of adverse selection (that those who want annuities tend to live longer) in the supply and what is the money's worth of these annuities? Who buys annuities and why? What is the aggregate economic role of annuities in the retirement portfolio, and in estate planning?

Over the coming months, Olivia will be interested in working with one or more of the program sponsors to develop empirical studies examining the underlying pricing dynamics in this evolving market.

Post-Retirement Investment Decisions

Rachel Croson, Assistant Professor of Operations and Information Management
Mike Keller, Vice President – Individual Markets, Principal Life Insurance Company

Much has been discussed and written about consumer decision processes in the management of asset accumulation for retirement saving. On the other hand, there is little in the academic or business literature on how individuals think about the management of their post-retirement spending strategies in the "de-accumulation" stage of life.

A look at the near future shows that 20% of the population will soon be over 65. Retirees and the soon-to-retire control significant assets, and we will also be seeing transfers of assets between generations. At the same time the structure of post-retirement income management is changing dramatically. The old model of annuitized income from defined benefit plans and social security is giving way to a model where retirees must manage pools of capital on their own with an increasingly complex range of tax, health care and other financial issues.

Rachel Croson is looking at how individuals think about the management of their post-retirement spending strategies in the "de-accumulation" phase of their life.

Mike Keller, of the Principal group, has been working with this Croson to better identify how insurance companies can better address this growing population's needs.

In the design of this project, Mike Keller from the Principal group has begun to work with Rachel Croson from Wharton, whose research interests

focus on decision process theory. During the meeting they jointly led a discussion of the issues and explored alternative research designs.

In the discussion it was agreed that the insurance industry must view customer needs in a more holistic manner, considering the market as a whole and not just a series of independent products. In other words, the insurance industry will need to transition from the singular focus on accumulation by marketing individual investment vehicles to a more complete view of overall financial management for this population, considering the types of products and services that will be needed and consciously working to fill that demand. The industry must better understand how appropriate consumer education can be structured, and what the relevant product and services sets are. Consumer differences will have to be taken into account: how to deal with different levels of sophistication of the customer? How will customers' demographic characteristics affect their expectations and needs?

The rational model of consumer behavior assumes that individuals will follow behavior

based on rational economic analysis, to attain a flat or somewhat increasing income stream over their lifetime. But such rational assumptions are not always supported by the evidence in practice: individuals often make their decisions on non-rational grounds. They use rule-of-thumb measures, their cognitive biases affect their perceptions, and their decisions are often based on habit, or on what people they know are doing.

The goal of this project is to identify the non-rational factors that will operate in the de-accumulation process through the use of surveys and other data collection mechanisms to identify and document these factors. Next the project will attempt to derive implications for product design and pricing from these insights. Examples of potential decision influencing factors included over-optimism, overconfidence, and the status quo bias. Rachel will be in touch with participants for assistance in better defining the appropriate non-rational factors in this setting, which groups to target in the surveys, and the best way to deliver these surveys.