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EARNINGS ANALYSIS BY PRODUCT AND SOURCE

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What are the differences in the reporting of product and source results between insurers and banks? What practical problems exist in interpreting gain by source or product-level results?

- o Banking approach to financial reporting by product and line
- o United States and Canadian approaches
- o Insurer experience with product analysis
- o Gain by source
  - Experience
  - Persistency
  - Investment
  - Expense
  - Tax
  - Distribution, etc.
- o How do such reporting systems assist management?
- o Frequency, systems required

MR. JOHN D. LADLEY: Actuaries are responsible for presenting and explaining earnings to many audiences including actuaries, senior nonactuarial management, boards of directors, or some other public. The importance of earnings analysis is that when properly done, it is often the difference in whether a company operates profitably or not. With today's orientation toward shorter-term products and services, reporting and management of results by source is probably at least of equal significance to original issue product development work. Rarely with bank certificates of deposit (CDs), single premium deferred annuities (SPDAs), universal life, or a claims-paying service operation are the initial financial parameters realized. Instead, proper monitoring of gains by source and appropriate adjustments will make a critical difference between profitable and unprofitable lines.

*Mr. Haydin, not a member of the Society, is Senior Vice President and Controller of Community Federal Savings and Loan in St. Louis.

The objectives of a useful system of reporting gains by source are several: (1) to monitor the pricing process, (2) to understand profitability of lack of it -- the reasons for the situation, (3) to make informed post-introductory adjustments to products and lines of business, and (4) to communicate results and management reactions to other publics.

Mr. Stuart F. Wason of Crown Life of Canada is an assistant actuary, responsible for the valuation of group pension liabilities amounting to one billion U.S. dollars.

MR. STUART F. WASON: We analyze earnings by product or source in order to make more effective management decisions. We want to identify and monitor the critical elements which drive the profitability of our business. Crown Life is a Canadian stock life insurer with assets from its internal operations totaling 3.4 billion U.S. dollars. The majority of our group pension business of one billion U.S. dollars is composed of guaranteed investment certificate (GIC) deposits sold to corporate pension funds.

ORGANIZE FOR RESULTS

No battery of analyses, procedures, or controls can succeed without a clear definition of the type of business we are in and an organizational structure conducive to the achievement of separate earnings objectives for each line of business.

Most companies wish to segregate major product lines such as individual life, group life, individual annuity, group pensions, and so on, but these categories may still be too broad for effective management. A company with more than one method of distributing its products may wish to monitor separately the earnings of the products sold by each major distribution method. For example, you may wish to monitor the earnings derived from direct marketing and general agents separately.

Other companies may view the differences between several product types within a major product line significant enough to require separate analysis. As an example, the discipline and controls required to effectively run a group pension GIC operation may demand separate analysis from other group pension products.

Still other companies may feel that the classification of business by type of client, such as the common split of group life and health business by size of employer, is more meaningful.

Each company must make its own decision on which methods are appropriate to define its business. This decision must be backed up by a clear statement of the company's goals, objectives, and strategy. Additionally, the company's organizational structure must support this environment.

In my company, each major product line has been organized as a separate center responsible for its own pricing, contract administration, sales, and marketing functions. While the investment, electronic data

processing (EDP) systems, and valuation functions remain centralized, they too are internally organized by profit center to better serve the differing needs of each. In this manner, each profit center manager has the responsibility and most of the tools under his control that are necessary for achieving his earnings objectives.

Even with the establishment of profit centers, an important issue impacting the analysis of earnings at my company is the allocation of corporate resources such as investments, the costs of corporate departments, and the capital to each profit center.

At Crown Life a weekly Funds Management Committee meeting of all of the profit center managers and the investment area negotiates the distribution of new asset acquisitions to each profit center to fund new liabilities. Assets are tagged and allocated to their respective profit center. The Funds Management Committee also reviews the funding lag for each profit center, asset default experience, and more effective methods of managing our cash position. Cash is used as a balancing item in our company equal to the difference between a profit center's funded liabilities and its tagged assets.

Centralized departments' expenses are allocated to each profit center based on estimated time splits prepared annually by employees in these departments.

Each profit center is allotted an amount of risk capital adequate to support fluctuations in earnings. For group pensions, this is equal to three percent of assets. This percentage is comparable to the capitalization ratio of Canadian banks. Each profit center has a specific earnings objective expressed as a certain percentage of its risk capital.

At my company, organization by profit center is conducive to results-oriented management. Earning analysis by product and source provide management with the critical data it needs to take action. Without the drawing of clear lines of responsibility by line of business, effective management decisions cannot be made.

GROUP PENSIONS ANALYSIS OF EARNINGS

Now that we have defined the type of business we are in and have organized in consonance with our business objectives, we can map out the types of earnings analyses needed for effective management. Specifically, I will review the analysis used in the group pension operation to:

1. Monitor the interest spread on a new business.

2. Evaluate the present value of future earnings on in-force business using cash-flow projects.

3. Determine the expected pattern of earnings on the in-force business through the use of an earnings projection.

4. Make reserve increases more understandable by analyzing their component parts.

INTEREST SPREAD ON NEW BUSINESS

At Crown Life, we measure the developing profitability of new business written in the current year by monitoring its interest spread every month. We have systems available which can summarize the term and yield of newly acquired assets and liabilities each month-end (Table 1).

The first stage of the spread calculation requires the determination of the effective yield on new asset acquisitions. Where there is a funding lag, assumptions must be made regarding the asset ultimately acquired.

In the second stage of the calculation the gross spread is reduced by required margins for future ongoing administrative expenses, investment expenses, as well as margins for asset default and mismatch risks. We include gains or losses on interim assets in our spread analysis. Funding lag costs are not included in this calculation, and as such, they fall through directly to the bottom line. The remaining net spread of .59 percent or 59 basis points is available for the amortization of acquisition costs or for profit.

This monthly analysis is a barometer of the profitability of new business. If the sum of planned margins for profit and the amortization of acquisition costs exceed 59 basis points, then plan profit targets will not be met. This analysis is reviewed jointly by the pricing and valuation actuaries to discuss the emerging spread, the degree of asset/liability mismatch and anticipated investment trends.

In Table 2 remember that Canadian statutory reserves are akin to United States generally accepted accounting principles (GAAP) reserves. Canadian reserves must be "adequate and appropriate." The valuation actuary can set assumptions that he feels are appropriate including the amortization of acquisition expenses. For group pension products, the deferral of acquisition costs is accomplished by raising the valuation interest rate and, hence, holding a negative reserve rather than holding an asset as in U.S. GAAP accounting.

Table 3 illustrates the relationships between the asset yield, the Canadian statutory valuation rate, and the contract credited rate of interest for new business. The spread between the asset yield and the credited rate must be sufficient to cover: (1) required margins and (2) acquisition costs, and (3) the remaining spread is profit.

Thus calculated, the valuation rate will allow profit to emerge annually through the difference between the asset yield and the valuation rate.

Due to the fierce competition among financial institutions for the right to administer a client's assets, profit margins are narrow. Efficient, automated, and accurate information systems are required to control, analyze, and understand the emergence of earnings for this line of business. Effective communication between the pension pricing actuary and his investment manager is mandatory. The impact of insufficient spreads of the mismatching of the term of the assets and liabilities resulting in the loss of even a few basis points can have a significant impact on the present value of future profits.

TABLE 1

Interest Spread for 1985 Group Pension Deposits

	Amount (thousands)	Yield (%)	Macaulay Duration (Yrs.)
Gross mortgages advanced in 1985	100,000	13.40	4.28
Gross bonds acquired in 1985	50,000	14.30	4.50
Total assets invested in 1985	150,000	13.70	4.35
Additional permanent assets required	100,000	12.73	4.15
Total sales in 1985	250,000	13.31	4.27

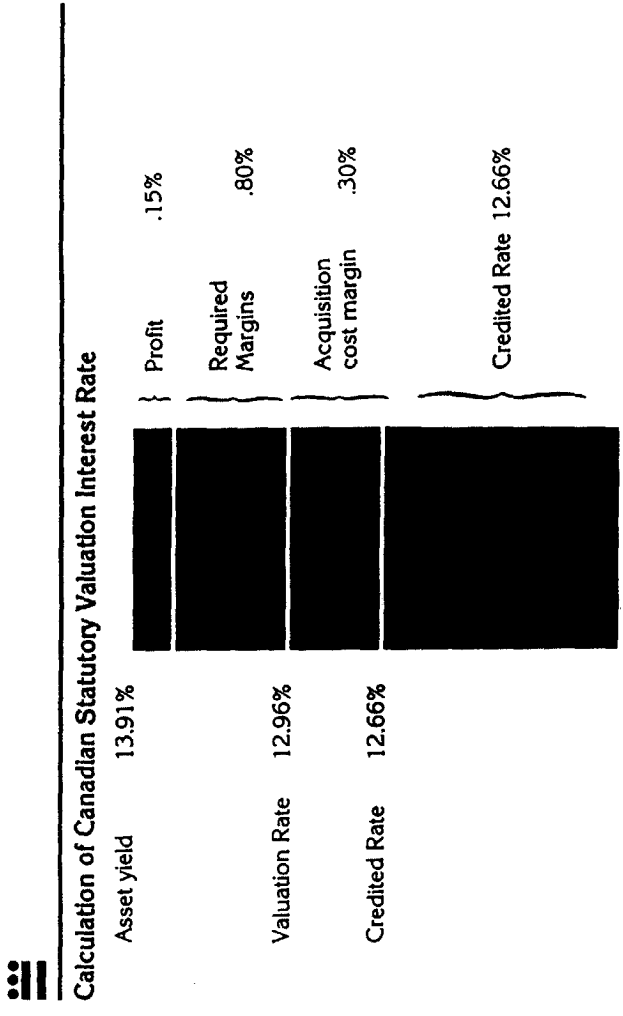
TABLE 2

Interest Spread for 1985 Group Pension Deposits

	Yield (%)	Macaulay Duration (Yrs.)
Yield on 1985 assets	13.91	4.27
Effective rate on 1985 liabilities	12.66	4.35
Gross interest spread	1.25	
Less required margins:		
On-going admin. expense	.20	
Investment expense	.20	
Asset default risk	.15	
Mismatch/other risks	.25	
Total margins	.80	
Net interest spread	.45	
Gains (losses) on interim funds amortized over the lifetime of the liabilities	.14	
Net spread available for profit and amortization of acquisitions costs	.59	

EARNINGS ANALYSIS BY PRODUCT AND SOURCE

TABLE 3



PRESENT VALUE OF FUTURE EARNINGS ON IN-FORCE BUSINESS

With our new business placed on a sound financial footing, we can turn our attention to measuring profits on our in-force block of business. The most powerful single technique available for this purpose is the projection of expected cash flows from both the assets and the liabilities (Table 4). The projection of these net cash flows provides valuable insight into upcoming reinvestment opportunities or liquidity shortfalls. Either of these situations entails investment risk, which must be quantified, and the potential impact on earnings, which must be measured. The value of this technique can be measured by the volume of research, papers, and seminars which have been available over the last decade.

When estimates of future expenses are included with the liability cash flows, the resulting new present values represent the present value of future profits. By discounting the asset and liability cash flows using a variety of interest scenarios, the actuary can get a feel for the sensitivity of profits to changing interest scenarios. This type of sensitivity analysis also provides the valuation actuary with valuable insight into the level of reserves needed to protect against the C-3 risk arising from changing interest rates.

We have found it useful to update our group pension asset and liability cash-flow projections monthly while the projections for other lines of business can be done less frequently.

The projection of cash flows would appear to be a relatively simple task, but in our experience, the present value of cash flows is extremely sensitive to spurious inconsistencies between our accounting, administrative, investment, and liability systems. A single transaction is commonly of the order of say $200,000 for us, and inconsistent treatment of this transaction between our interrelated systems will seriously distort the cash-flow analysis. In order to eliminate the time-consuming effort involved in manually correcting for these items, we are in the middle of a program to create an integrated group pension administrative system.

INCIDENCE OF FUTURE EARNINGS ON IN-FORCE BUSINESS

To get a better understanding of earnings incidence in the future, we prepare a projection of group pension earnings twice a year. The presentation of earnings differs from the traditional insurance company method and is more akin to that used by banks. This is because group pensions is a "spread" business generating its earnings from the excess of investment income over the cost of the funds -- the interest required to support the liabilities.

MAKING RESERVE INCREASES UNDERSTANDABLE

A fairly recent development is our attempt to clarify reserve increases for the group pension profit center manager accustomed to running a spread business. We have decided to break up the reserve calculation into more meaningful component parts (Table 5).

TABLE 4

Group Pension Projection of Earnings

	1985		1986	
	Amount	% of Mean Assets	Amount	% of Mean Assets
Gross investment income	140,000	12.72	160,000	13.33
Fee income	1,000	.09	1,100	.09
Cost of funds	130,500	11.86	149,200	12.43
Gross spread	10,500	.95	11,900	.99
Acquisition expenses	2,500	.23	3,000	.26
Investment expenses	2,000	.18	2,200	.18
On-going admin. expenses	2,000	.18	2,200	.18
Total expenses	6,500	.59	7,400	.62
Earnings before tax	4,000	.36	4,500	.37

Group Pensions Calculation of Cost of Funds

Reserve = Fund balance + Reserve margins

Reserve margins = Fund balance x (I-R) x D

where D is an interest volatility factor similar
to the Macaulay duration.

Cost of Funds = Contract interest credited to fund balance
+ change in reserve margins

In common-sense as well as mathematical terms, the reserve can be considered as the sum of the client's fund balance plus reserve margins. The reserve margin is equal to the fund balance multiplied by the difference between the credited and valuation rates and also multiplied by an interest volatility fact, D, similar to the Macaulay duration. The advantage of using this type of breakdown of the reserves is that it allows:

1. Verification that the cash flows used to generate the liabilities can also be discounted at the credited rate of interest to replicate the fund balance on the administrative system (i.e., the data is consistent on each system).

2. Separate analysis and reasonability trending to be performed on the changing interest rate margin, I-R as well as D.

The cost of funds can be expressed as the sum of contract interest credited to the fund balance and the change in the reserve margins. The break-up of the reserve and cost of funds calculations into their component parts enables more informed analysis of the source of earnings.

At Crown Life we find that each of the four analyses (interest spread on new business; present value of future earnings; earnings projections; and the break-up of reserves into component parts) are complimentary and help us to ensure the most effective management of the group pension line.

MR. LADLEY: Mr. Alvin L. Haydin is the Senior Vice President and Controller of Community Federal Savings and Loan in St. Louis -- the largest savings and loan (S&L) in Missouri. He's a graduate of the University of Missouri and is also a certified public accountant (CPA). His prior work experience includes accounting, auditing, and financial consulting for a steel products manufacturer, state government, big eight accounting firm, and two midwestern bank holding companies.

MR. ALVIN L. HAYDIN: Accounting and cost accounting at a bank is similar to that at insurance companies. Cost accounting reports show the philosophy behind cost accounting in banks and some basics of cost systems that banks have found necessary to develop.

FINANCIAL REPORTING

Generally, financial reporting in banks has been bottom-line oriented, but with the deregulation of the banking and financial institution industry, that has changed. In the United States, the government no longer controls the rate that financial institutions pay on deposits, the yield that they earn on assets, and the terms of those assets and liabilities. We can do anything we want to do, effective March 1986, even with the passbook accounts. (Right now, we have to pay 5.25 percent in banks and 5.5 in savings and loans.)

An income statement of a typical bank is shown in Chart A. There are income, interest on loans, interest on investments and other income.

CHART A

ABC BANK
INCOME STATEMENT
FOR THE MONTH ENDED MARCH 31, 1985

INCOME:	
Interest on Loans	$ 80,000
Interest on Investments	100,000
Other Income	50,000
Total	230,000
EXPENSE:	
Interest on Deposits	135,000
Interest on Borrowings	20,000
Operating Expenses	25,000
Total	180,000
Net Operating Income Before Gains and Losses	50,000
Operating Gains and Losses	5,000
Net Operating Before Taxes	55,000
Income Taxes	25,000
NET INCOME	$ 30,000

There also are loans, investments, and other income such as check service charges. On the other hand, banks have expenses, interest on deposits, and interest on borrowing. In our case, the loans are what we borrow from the Federal Home Loan Bank. Operating expenses, i.e., the overhead of the organization, brings us down to a net operating income. In the financial institution business the net operating income is what we all center on because items below that line are nonrecurring; you can't count on them period after period. So below the net operating income line are the operating gains and losses, which are nonrecurring items. Below them are net income before taxes, a tax item line, and a net income line. There is little data that an outsider or even a manager, a banker, or an S&L can use to analyze what's going on in the institution. As a result, bankers want more detailed information in order to finish their business.

Chart B shows the balance sheet of the typical bank. On the annual reports, there are very common things: cash, investments, securities, commercial loans, real estate loans, consumer loans, other assets such as building equipment, and so on. The balance sheet shows total assets and liabilities and capital, demand deposits, interest bearing deposits, borrowing (advances from Federal Home Bank), other liabilities (creditors of the S&Ls or banks), and a capital section, which is pretty basic when compared to an insurance company. We have common stock, paid-in capital and total capital. The basic balance sheet of a bank follows a text book approach. The balance sheet income statement is put together for the annual report to be very vague so that nobody can figure out what is going on in a bank or S&L. That is probably true of insurance company annual statements also.

The American Banker, a daily newspaper published for the banking and financial institutions in the United States and Canada published an article on a study of the tables showing asset and liability matching and duration. The study determined that those charts were totally in error and had no value at all to the credit analyst.

Management discussions get into ratio analysis, yields, and rates. These discussions are to give the credit analyst some idea of the rates and yields and interest rate spread in an institution.

COST ACCOUNTING

Banks got into cost accounting in the 1960s before savings and loans. The reason banks got involved was because they did a lot of off balance sheet services like lockbox processing and correspondent bank processing. Lockbox processing is a very good example. When you write checks to make credit card payments and send them to a P.O. box that is assigned to a bank, that bank will collect those remittances every morning at five o'clock and probably again at nine or ten o'clock. The bank processes the remittances, puts the checks in a checking account, and sends the remittance slips back to the customer (VISA, MasterCard, or American Express). The banks can clear those checks much faster, and the customer can get the credit on his cash, and you in turn get charged a lot faster. Lockbox processing is a competitive business in banking; savings and loans are getting into it, and it's

CHART B

ABC BANK
BALANCE SHEET
MARCH 31, 1985

ASSETS	
CASH	$ 2,500,000
INVESTMENT SECURITIES	10,000,000
COMMERCIAL LOANS	7,800,000
REAL ESTATE LOANS	3,500,000
CONSUMER LOANS	500,000
OTHER ASSETS	350,000
TOTAL ASSETS	$24,650,000

LIABILITIES AND CAPITAL	
DEMAND DEPOSITS	$ 8,000,000
INTEREST BEARING DEPOSITS	12,000,000
BORROWINGS	2,600,000
OTHER LIABILITIES	655,000
TOTAL LIABILITIES	$23,255,000
CAPITAL	
COMMON STOCK	500,000
PAID IN CAPITAL	250,000
RETAINED EARNINGS	645,000
TOTAL CAPITAL	1,395,000
TOTAL	$24,650,000

very costly. The reason I call it "off balance sheet" is because generally it's a manual, labor intensive business. A lot of people cost is involved, but you don't capitalize people and put them on your balance sheet. It shows up on the operating expenses on the income statement. Likewise, in correspondent processing, the bank will process checks for other banks. As a result, there are many services that banks have been providing that have no balance sheet effect at all. That's when banks first got into cost accounting. They needed to know what their costs had been for processing lockboxes, so they could charge the costs back to their customers. In correspondent banking, you need the same thing.

Through the early 1960s and into the 1970s, banks continued to see other reasons for cost accounting: profit center reporting, product line reporting, and branch reporting. In the late 1970s and middle 1980s when Congress decided to deregulate all the financial institutions, S&Ls got into cost accounting and off balance sheet services. Before that, S&Ls put your money in a passbook at 5.25 to 5.5 percent and loaned the money to mortgage people at 6 or 7 percent. Because of deregulation and the increased competitiveness of the financial world, the S&L was thrown into the same arena with banks. Now they are becoming more competitive and more price and cost conscious.

S&Ls make a lot of mortgage loans which banks tend to avoid. Banks do a lot of commercial lending and a lot of short-term lending (one to three years). S&Ls make thirty year mortgage loans and fifteen year fixed-rate loans, and now they are getting stronger into one year adjustable rate loans. But if you look at a portfolio of a typical S&L right now, most of their loans are in long-term fixed-rate loans similar to some insurance company assets. Banks have the shortest-term assets, then savings and loans, and probably the insurance companies have the longer-term assets. But S&Ls have got into cost accounting just in the last four or five years because of the need to figure out what loan origination costs.

Incentive compensation also became a big issue. A branch manager is held responsible for a certain level of profitability in that branch and is paid a quarterly bonus based upon the level of profitability in that branch.

As cost accounting systems developed, several objectives were identified that can be used to sell a cost accounting system to a bank chief executive office (CEO) or S&L CEO. The most obvious objective is cost control. You can monitor costs on a monthly and quarterly basis. Most banks start-out on a quarterly basis. As they see the need for more up-to-date cost accounting information, they will move to a monthly cost measurement system. There is a measurement of actual full absorption unit costs to standards or maybe to the prior year's actual unit costs.

PRICING

Another reason for cost accounting in banks and S&Ls is pricing of products. For example, lockbox prices are generally developed from

the costs. Because of the competitive nature of lockbox processing, we have had to look at the market a little closer for pricing, but we generally start with the cost results.

CHANGES AND OPERATIONS

If you wanted to move to a new deposit system, a new software system, or a new way of doing things in branches, cost accounting could tell you what it's going to cost. It will show what it's going to do to unit cost and what the incremental costs will be. New products and services is a logical next step.

ROLE IDENTIFICATION

Before cost accounting and even today, certain functions of the organization will have a tendency to run the whole organization regardless of the value of that function in the organization to the bottom line because the person in charge of that operation is a strong leader and his wheel squeaks the loudest. Cost accounting helps you determine the profitability of each function and each product in the organization so you can easily determine who is getting things done. It helps identify who are the profit makers in the organization.

One of today's major functions of cost accounting in financial institutions is the input of the cost area into asset and liability management.

COST ACCOUNTING REPORTS

Chart C is a general review of a typical monthly lockbox cost accounting report showing lockbox income at the top of the report. Those are the fees generated by the lockbox function -- nothing more than the items processed that are billed out to the customer and the billing coming back from the customer. Direct expenses are all the costs: the people, the equipment, the space, and whatever may make the profits of those items clear to the lockbox department for the month.

Funds provided show that the lockbox department is receiving checks being deposited in a bank; the department gets a credit for providing funds to that bank. The cost department will go through and state, on the average, that those deposits are staying in the bank two days. Corporate controllers are mindful of cash flows just like banks are. They'll move those funds just as fast as they can get them out of the bank. Generally when you set up a lockbox function, you negotiate for a time period with the customer. You may need those funds for one day in order to give a certain rate on a lockbox profit. In general, the overall deposits in that bank and lockbox function will average two days. They take those two days to average collected balances and multiply them times an earning rate. Often they are dead funds because in two days, you can't reinvest the money in anything but the overnight funds through the federal reserve system. This determines the earnings credit that goes into a lockbox.

EARNINGS ANALYSIS BY PRODUCT AND SOURCE

CHART C

ABC BANK

LOCKBOX PERFORMANCE REPORT -- RETAIL

MARCH, 1985

Lockbox Income	$ 400,000
Direct Expenses	(150,000)
Net	$ 250,000
ALLOCATED INCOME:	
Funds Provided (Two Days Average Collections)	$ 35,000
ALLOCATED EXPENSES:	
Float (One Day Average Collections)	(4,000)
Check Processing (1,350,000 X .10)	(135,000)
Deposit Administrative Overhead	(4,000)
Institution Overhead (15%)	(44,000)
Net Income	$ 98,000

Estimated Break-even (1,000,000 to 1,500,000)

Fixed Costs	$228,000
Variable Costs	,016/M Units
Break-even Volume	1,200,000

Under allocated expenses, there's float on the funds that are deposited in the lockbox function, and banks charge for that float. Because all the checks are deposited in the bank, check processing has to process those checks through the system. The rate in this case for March is 1,350,000 items at 10 cents an item, a $135,000 expense. Generally a lockbox function is located near the deposit function of a bank. The head of the deposit function generally is over the function of the lockbox because the deposit function is similar in collecting checks, and so on. So there is an allocation of that departmental overhead.

Institution overhead is the overall corporate overhead of the association of the bank. Finally net income for the month of March is $98,000, which is totally unrealistic because lockbox processing is not nearly that profitable. Essentially those are the basic elements that go into costing out a lockbox function in a bank. As you get further and further into cost accounting, those items will evolve, and there will be more esoteric types of allocation and credits that go into that statement.

BREAK-EVEN ANALYSIS

At the bottom of Chart C there is pricing information. The break-even analysis is important to the manager of the lockbox function, the marketing area, and the business development area. For example, the estimated break-even analysis shows the range of operations that the lockbox function is geared to process. With no more volume than 1,000,000 to 1,500,000 items, my fixed cost won't increase. As long as I can operate within that level, the fixed cost and variable cost will stay in the range. For example, fixed cost for the month is currently $28,000. My variable cost, as long as I stay within a range of 1,000,000 to 1,500,000 items a month, is 6 cents per 1,000 units which results in a break-even volume of 1,200,000. If the bank wants to generate new business in lockbox processing, it will use these costs to determine the charge.

BRANCH PROFITABILITY

Another area of interest is branch profitability (Chart D). There is the United States Banking System, but each state has different banking laws. In Missouri, branch banking is not allowed; it has what is called unit banking. Each branch has to be a stand-alone bank with its own board of directors. In Missouri, S&Ls can branch anywhere they want to, and branch profitability is important.

Each banking unit of an S&L has to develop a philosophy of branch profitability. Generally, branches are thought of as funds providers. Few branches for banks and S&Ls generate much loan volume; most of the loan volume is handled out of the main office. In banks that's because they are commercial-loan oriented as opposed to consumer-loan oriented. In S&Ls, most of the mortgage loan activity comes from realtors who deal directly with people at the home office; very few branches provide many loans. The philosophy of branching is them, how much in deposits can be attracted in that branch by bringing people to that branch? How are earnings allocated to that branch? How does the branch become profitable? What measurements determine

EARNINGS ANALYSIS BY PRODUCT AND SOURCE

CHART D

ABC BANK

BRANCH A PROFITABILITY

MARCH, 1985

Service Charges	$ 10,000
Direct Expenses	(100,000)
Net	$ (90,000)
ALLOCATED INCOME:	
Loan Income	$ 4,000
Funds Provided	85,000
Teller Servicing	65,000
ALLOCATED EXPENSES:	
Branch Maintenance	(2,000)
Branch Administration	(1,000)
Data Processing Services	(10,000)
Cash Balances	(1,000)
Float	(2,000)
Institution Overhead (15%)	(17,000)
Net Income	$ 31,000

whether the branch is profitable? The first item is service charges for some travelers checks or cashier checks. Direct expenses are the interest expense on the deposits, the people cost, the billing cost, utility cost, and other things of that nature. Next is allocated income. If they generate any loans at all, which they will, there's interest income on those loans. Generally, branches are fund providers as opposed to fund users. As a result, you have to give some credit for funds that the branches provide to the rest of the organization to fund assets. A rate or yield is used to pay the branches internally for providing those funds to other areas of the organization which use those funds. Teller servicing is next. One of the major elements of the branch will be service to customers. Not only are they fund providers, but there's also an element of quality to them. They provide a service to the customers because many people will bank where it is convenient. So a convenience element must be built into the profitability of that branch. Branches get credit for the services they provide to their customers.

All those items add up to income, and the branch is allocated expenses for branch maintenance. Branch administration is also in the administrative offices with someone who's in charge of other branches. There is the overhead related to that. There is an allocation to branches of data processing costs for handling all the checking accounts and handling the bottom-line teller equipment.

That all comes down to the cash balances. Because the branch has to maintain a certain amount of cash, it gets charged for those cash balances because cash built up in the branch can't be invested at the main office. That's an incentive for branches to keep those cash balances as small as possible.

We'll charge a branch for the float on a deposit made at the branch as well as institutional overhead. The net income of that branch for the month is $31,000 (an unrealistic number). There are few branches that make money these days. Those branches are looked at as separate stand-alone entities, so we try our best to sort out the cost of running that branch office. If that branch is not making money, we ask why. If deposits are the reason, we try to increase the deposit base. If there's no way to turn that branch around, it will close.

Some basics about the developing cost system in banks are probably the same in S&Ls and insurance companies. The delivery system in the financial institutions generally requires an automated general ledger system, and the smaller banks usually don't have one. The advent of the microcomputer has helped the smaller banks. The computer helps them allocate the cost through the organization. In a smaller organization, cost accounting will probably be done on a quarterly basis and a larger organization likes to watch the cost and the performance of the managers more closely on a monthly basis.

TRANSFER PRICING

Cost accounting systems in financial institutions often will allocate everything out to all the functional units of the organization. The

organization then is functionalized. The data processing will allocate things out to the loan producing areas, branches, and so on. We try to do that under logical units of measure. We try to charge managers based on a unit that he or she feels that they have some control over. For example, in a branch, if we charge the data processing costs out, it will be based upon what it costs to cash a check or what it costs to make a deposit. We try to hold these managers in the branches and functional areas responsible for that function area. Invariably, cost accounting systems will start allocating things out, and the manager will say that they don't have any control. The way to get around that is to charge things out in units that they can control.

We try to keep our cost accounting as consistent as possible from period to period. The one thing that will ruin the credibility of the cost accounting is changing your application basis every month because you're improving it. The manager counts on the way we did it last month and works towards those aims. If we change them so he shows a loss this month, he'll throw that cost report in the corner and won't use it at all.

It's important that these allocations are as fair as possible. It should be easy for managers to understand. They've got to understand how the allocation is developed, so they feel like they've got some control over it, and that it is fair and consistent from period to period.

FUNDS ALLOCATION

Insurance companies deal with capital allocation. Banks don't deal with that much because our leverage is so high and our capital percentage is so small that we only deal with allocating deposit costs. There are three basic methods we use. When you first get into cost accounting, the method used to allocate funds, i.e., the cost of deposits, will be through an average cost basis. An average cost of deposits allocated to all the funds doesn't given an actual measurement of product line costs. Different product lines use different deposits, but you have an average rate for everything, and everybody is getting credit for all the cheap rates but are getting charged higher rates.

The next best method that financial institutions have found to allocate deposit costs is to take the incremental or new-money costs and use those to allocate all the costs. When putting assets and liabilities on the books, banks are starting to match the asset with the liability and keeping historical records. If I put loans on the books at 10 percent and match the notes against deposits at 8 percent, those deposits and loans will be matched all the way through the duration lives of those assets and liabilities on the books.

Cost accounting is a management tool to be used by managers to control their areas of organizations. The chief function of a cost accounting system is to control the business. That means that you have to have a budget system in place and you have to have a business plan in place. In smaller banks, the business plan is probably carried around in the head of the CEO. In larger organizations that plan is probably formalized.

That's the way banks have developed their internal financial reporting; develop cost accounting first, then budgeting, and then a business plan. The S&Ls have had a little better approach to it because they have the history of the banks to go by.

MR. WASON: Mr. Haydin, what measures does your savings and loan use to monitor the impact of your mismatch between assets and liabilities?

MR. HAYDIN: There are two things that we use. First, we use the Macauley duration. We've found that on our fixed-rate long-term loans for thirty years in the mortgage industry, the average time that those loans are on the books is twelve years. This has a duration of about sixty-six months. That matches reasonably close to a five-year CD. Payout of interest shortens that, but most interest is left to compound.

We also match assets and liabilities on short-term instruments where the rate is redetermined each year by matching them against the one-year CDs even if it is a thirty year loan. The mortgage loan is indexed off the T-bill rate off of which the CD is priced as well.

MR. HENRY W. SIEGEL: I have a couple of examples of what the Equitable put together for gains by source analysis for two of its businesses -- the group insurance business and the individual life business.

Exhibit A is about group insurance. We break our group insurance earnings down into three main sources of earnings and a fourth catchall. The first source is our underwriting results. We compare our risk charges to our underwriting losses on cases -- net of recoveries on those cases. We hope to achieve some earnings from that comparison. We add in gains from pooled coverages and we add in our gain from stop-loss policies separately. This gives us our total underwriting earnings for the group insurance business.

The exhibit shows earnings from the sources as we manage them. We manage our pools separately from our experience rated business, and we manage our stop-loss policies separately from our regular policies.

The next source of earnings we recognize is our services, or expense gain. We compare the expense charges we make to customers with our expenses. We manage our self-insured business, separately from our nonadministrative services only (ASO) business and try to make sure that each segment of that business has an acceptable profit margin.

We also manage our finance gains on group insurance -- the classic gain from interest. We take our net investment income after expenses and add in capital gains or losses because we believe that capital gains or losses are part of our earnings. We then subtract what we credit to our policyholders on funds we hold for them. The net of those items is our gain from interest.

The "Other" category might consist of reserve destrengthening, increase in nonadmitted assets, and reserve corrections or errors. The

EARNINGS ANALYSIS BY PRODUCT AND SOURCE

EXHIBIT A

1983-1985 Earnings by Source
(in millions)

	1983 ACTUAL	1984 PLAN	1984 FORE-CAST	1985 PLAN
Underwriting	(3.0)	1.0	6.5	4.5
Risk Charges	13.0	13.5	14.0	14.5
Underwriting Losses	(15.0)	(13.5)	(10.0)	(10.0)
Net Underwriting Result	(2.0)	(0.0)	4.0	4.5
Pooling Charges	30.0	31.0	31.0	32.0
Pooled Claims & Expenses	29.0	29.0	29.5	32.0
Gain from Pooling	1.0	2.0	1.5	0.0
Gain from Stop-Loss Policies	(2.0)	(1.0)	1.0	0.0
Service	10.0	19.5	15.0	30.0
Total Incurred Expenses	200.0	240.0	240.0	250.0
Expense Charges	175.0	200.0	195.0	210.0
Incurred Expenses (Non-Administrative Services Only [ASO])	170.0	190.5	190.0	200.0
Expense Gain-(Non-ASO)	5.0	9.5	5.0	10.0
ASO Fees	35.0	60.0	60.0	70.0
ASO Incurred Expenses	30.0	50.0	50.0	50.0
Expense Gain -(ASO Business)	5.0	10.0	10.0	20.0
Finance	20.0	27.0	15.0	18.0
Net Investment Income	180.0	190.0	193.0	200.0
Capital Gains (Losses)	5.0	7.0	2.0	(7.0)
Net Income	185.0	197.0	195.0	193.0
Interest Credits Less Charges	165.0	170.0	180.0	175.0
Finance Gain	20.0	27.0	15.0	18.0
Subtotal (Recurring Items)	27.0	47.5	36.5	52.5
Other	10.0	(2.0)	10.0	(3.0)
1. Surplus & Capital Adjustments	(5.0)	(5.0)	(3.0)	(3.0)
2. Increase in Non-Admitted Assets	(5.0)	(2.0)	(2.0)	0.0
3. Reserve Destrengthening			10.0	
4. Reserve Errors/Corrections	0.0	5.0	5.0	0.0
TOTAL EARNINGS	17.0	45.5	46.5	49.5

basic idea of this structure is to put anything in the "Other" section that is one time only. We're trying to manage our business on the recurring items, on our underwriting service and finance results, not on these one time only items.

This is an exhibit that went through tremendous amounts of changes at the Equitable, starting from a more or less random set of numbers that we put together about twelve years ago to this point where we have it fairly well-categorized. It's still too complex to show to your average board of directors, so you might wonder if gains by source is totally useless for that purpose. What we have found is the board of directors relate well to this exhibit if you take out all the numbers (Exhibit B).

Focus for a minute on the two middle sets of bars, the first one being the 1984 plan and the second one being the 1984 forecast, in Exhibit C. It's hard to believe that this is the same business. The plan was put together expecting a certain level of underwriting, service, finance, and other earnings while the actual is turning out totally different. I am a great believer in graphs as long as you don't try to learn anything from them other than something is going on in them that needs more explanation. The message of this graph is that things are changing in our business, and we better find out a little bit more about it if we care.

Individual life insurance is harder to do, particularly in a mutual company where you have dividends. The basic problem with traditional gains by source derived from the statement blank for a mutual company is that nobody knows how to handle dividends. If you compare actual to expected on a statutory basis, you're comparing to mortality bases, loadings, and interest rates that have absolutely no relevance to your business.

We stopped that, but that didn't get us off the hook for explaining to our board of directors what earnings are all about, so we developed what we call a marginal approach to earnings by source. For each change in an item, we indicate to our senior management or board what happened to our bottom line.

The hardest thing we had to explain to our board of directors was, on a statutory basis, why if sales are up, earnings are down and why if surrenders are up, earnings are up.

Replacements and surrenders were up 150 relative to plan. (Incidentally this table is all relative to plan figures.) What effect does that have on our earnings for the year? Revenues go down by a certain amount; product costs go down by a certain amount. We have additional expenses of 3 million dollars for acquisition due to costs on internal replacements, and we had the expense of actually running the business which went down somewhat. Of course, since surrenders are up, our dividends are also down. The net effect of all this was a gain of 10 million dollars at the bottom line.

When our board saw this, they understood all of a sudden that if you paid out surrenders, it didn't come immediately off your bottom line.

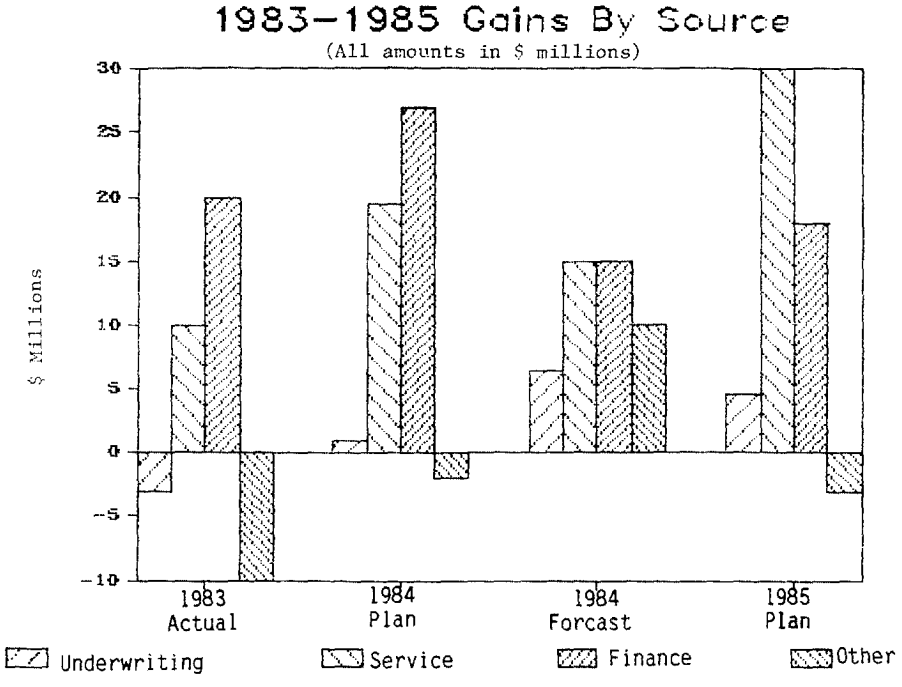
EXHIBIT B

LIFE INSURANCE

ANALYSIS OF 1984 ACTUAL TO PLAN EARNINGS

Item	Change in Item	Effect on Revenues	Product Costs	Acquired Expenses	Other Expenses	Dividends	Earnings
New Business -First Year Commissions (FYCs)	8	150	142	11	4		- 7
-Reserve Adjustment	10		-10				-10
Replacements/ Surrenders	150	-18	-16	3	-5	-10	10
Death Benefits	15		10				-10
Investment Income and Capital Gains	23	17	-6		3		20
Other							2
TOTAL				14	2		25

EXHIBIT C


1983–1985 Gains By Source
(All amounts in $ millions)
$ Millions
30
25
20
15
10
5
0
-5
-10
1983 Actual
1984 Plan
1984 Forcast
1985 Plan
Underwriting
Service
Finance
Other

EARNINGS ANALYSIS BY PRODUCT AND SOURCE

One of the hardest things for an insurance company to decide is: (a) how much capital to allocate to a business, (b) what return the company should have on that capital, and (c) whether the company is making it. One way of approaching these three things is to work backwards from the gains by source exhibit. It is not too difficult to get management to agree, for instance, that they want to have earnings on expense items - to say that they want to charge 10 percent more than they spend. You can take that earnings goal and translate it into a formula like dividing it by your expected return. If you have an expected return, pretax of 30 percent, you take a 10 percent expected return, divide it by .3, and that gives you a feeling for how much capital as a percentage of expenses you can handle.

You then can go similarly through all your various sources of earnings. You can then make that comparison to the theoretically developed formula, and that would give you a range of how much out of sync your capital needs and the earnings of your business are. This can lead to valuable insight into how your business operates and how much capital you really need.