

THESIS

DETERMINING THE FINANCIAL PERFORMANCE
OF PRIVATE VETERINARY PRACTICES

Submitted by
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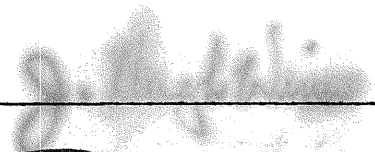
In partial fulfillment of the requirements
for the Degree of Master of Science
Colorado State University
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Spring, 1981


COLORADO STATE UNIVERSITY

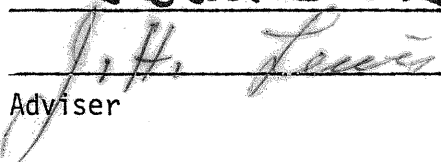
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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION
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of Private Veterinary Practices
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ABSTRACT OF THESIS

DETERMINING THE FINANCIAL PERFORMANCE OF PRIVATE VETERINARY PRACTICES

Determining the financial performance of a private veterinary practice requires first and foremost that a private practice be considered as a business enterprise. Veterinarians, while facing a maze of normal business problems, have for the most part neglected any type of formal financial performance analysis. The collection and summarization of financial data in the veterinary practice is an essential prerequisite for analyzing financial performance. This collection and data summarization can be amassed conveniently and concisely in three commonly used financial statements: The Balance Sheet, The Income Statement, and The Statement of Changes in Financial Position. From here the actual analysis begins.

Countless businesses in many industries utilize standard analytical techniques that provide business information for management decision making. Essentially, an analysis of the financial performance of the private veterinary practice is affected in three ways. First, the analyst calculates common-size percentages for all accounts on the balance sheet and income statement. Second, certain accounts are selected for an analysis of trend and growth rate, and third, a computation of certain relevant financial ratios is required for a comparison of accounts and account structure. Each of these three techniques can be performed for one instant in time and over several time frames

thus allowing the veterinarian to compare his practice to other veterinary practices as well as to other similar industries.

These analytical tools, while widespread in American business, are virtually non-existent in the veterinary industry. They should be computed and used for making managerial and financial decisions in the private veterinary practice.

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ACKNOWLEDGEMENTS

This analysis of the financial statements of private veterinary practices will utilize the format of L. A. Bernstein's Ph.D. C.P.A. approach to financial analysis. The intent of the work is to incorporate existing theory into the field of private veterinary practices. This investigator lays claim only to the data itself, the discussion of results and the incorporation of many existing theoretical concepts into this work. The theoretical concepts themselves belong to the accounting industry in general and in particular to L. A. Bernstein, Welsch and Anthony and Pyle, White and Larson.

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SECTION I

STATEMENT OF PROBLEM SITUATION, PURPOSE, OBJECTIVES, GENERAL PURPOSE

This section of the study describes the general problem situation and discusses the reasons why a study of this nature should in fact be carried out. Next, a statement of the purpose of this study is conducted, followed by the specific objectives for this analysis. The general procedure is then considered, with a discussion of the background, data collection procedures, and specific analytical procedure for the study.

CHAPTER I
THE PROBLEM SITUATION

Problem Statement

America's changing economic climate demands such a high degree of professionalism that the practicing veterinarian must develop skills in business as well as in animal medicine. Some authorities would even describe today's veterinarian as a businessperson with a specialty in animal medicine. Such a position is not at all unreasonable. For example, Harvey Sarner has summarized this line of thought so well that his ideas are worth quoting here at length:

"The professional man need not apologize for the fact that there is a business side to his practice and that he must devote some of his time to business matters. The Doctor should not hesitate to admit that he spends some time learning about the business management of his professional practice. Only by conducting an adequate business will he be able to provide professional services to his clients. If he cannot conduct the business side of practice in an efficient, time saving manner, he will not be able to practice his profession.

"At times it must appear to the private practitioner that the business aspects of operating his small animal hospital leave little time for the actual practice of veterinary medicine. The small animal practice is not immune to the complex problems which have crept into business life. Problems of credit, bookkeeping, and federal income taxation and the complexities of buying and selling a hospital or practice or arranging a group practice: all are of major concern to the doctor of veterinary medicine.

"The contented and successful veterinarian is one who has been able to reconcile his professional and business interests and responsibilities and has sensibly apportioned his resources - mostly time - between practice and the operation of his business office.

"Little comment is necessary concerning the plight of the rare veterinarian who so devotes himself to running the business office that he cannot adequately care for his patients. This not too frequent situation often is resolved when the doctor abandons private practice in the belief that one cannot earn a living in veterinary medicine because of the complexities of running the business side of practice.

"At the other end of the spectrum is the professionally competent veterinarian who believes that the mechanics of operating his business office are beneath his professional

dignity. This doctor is confident that if he can keep his schedule full, all his business problems will dissolve. Yet we know that some businesses fail even when sales volume is at an all-time high. There is no incompatibility between the art and science of veterinary medical practice and good management of the business office; each has its own place, but there is a place for each."¹

Another authority in this field, Harry Guthmann, goes on to divide the business aspect of the problem into two parts.

"Among the subjects important to those connected with the administration of business is that of financial statements, a subject that may be studied from either of two view points, - construction or analysis."²

Once a financial statement has been constructed, its analysis lends itself to a very important aspect of business operations: the actual analysis of a firm's financial performance. If a private, practicing veterinarian were asked how the financial performance of his business fared against the average clinic in his community or region, would he be able to substantiate or even formulate an answer? Probably not!

What are the sources of these problems? Why is the typical veterinarian unable either to accurately answer questions concerning the financial performance of his practice, or to compare his practice with other similar veterinary practices? These would be shortcomings in any business. The two most obvious reasons for them are (1) a lack of sufficient business training in practice management, and (2) the lack of an established method for comparing the financial performance of private veterinary practices that differ in size, resource use, intensity of production, and age, as well as in the type of the practice itself.

¹Sarner, Harvey, B.S. LL.B., The Business Management of a Small Animal Practice (Philadelphia and London: W. B. Saunders Co., 1967).

²Guthmann, Harry G., Analysis of Financial Statements, 4th edition (Englewood Cliffs, N.J.: Prentice Hall, 1962).

In a study completed in 1977, Dr. E. G. Kelman found that:

"Practice management should have been more emphasized or should have been included in the curriculum, according to 50 percent of the respondents. Operating a private practice requires substantial knowledge about business administration, and evidently this practical information has not been considered as a part of the professional veterinary programs."¹

This point would seem obvious, but as Sarner points out: "The crowded veterinary medical school curriculum leaves little time for educating students in the mechanics of operating their future business office."² Additionally, to gain a high level of competence in business administration requires in itself an intensive study of business. Thus, the acquisition of proficiency in practice management must come prior to or after the professional veterinary training.

The lack of an established method for comparing the financial performance of private veterinary practices comes about more as a deficiency in incorporating the standard analytical tools of financial analysis than as a lack of a method itself. The method has not been fully developed and applied specifically to veterinary medicine. An example makes the point by examining "industry" averages for specific financial ratios commonly computed by financial analysts. If a researcher desires this information from concerns such as Robert Morris and Associates, Dunn and Bradstreet or Troy and Associates, he merely gathers the needed information from the published annual statement studies by these companies. Human medical and dental practices are found in these studies, but veterinary medical practices are not,

¹Kelman, E. G., Ph.D. and P. M. Zellinger, M.S., "Veterinary Medical Practice in the Rocky Mountain Region," College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colorado, 1977.

²Sarner, op. cit.

leading to the conclusion that very little has been done in this critical area.

Of course, some studies have been undertaken and textbooks written on the business aspects of veterinary practice,¹ and also, income studies² including supply/demand analyses³ are known to exist. This investigator found, however, very little published information concerning the standard "industry" averages for often-used financial ratios such as those published for over 300 types of businesses in the United States. While textbooks such as Harvey Sarner's⁴ The Business Management of a Small Animal Practice and Pratt's Veterinary Practice Management⁵ mention financial statement analysis in certain chapters,

¹Sarner, op. cit.

²The following are some studies that include statistics on financial averages:

1. Vetec Editorial Panel, "Survey of the Bottom Line, An In-Depth Look at Practice," Veterinary Economics (March 1979).
2. Opperman, Mark, "What You Need, When You Need It," Veterinary Economics (August 1979).
3. "Statistical Picture of Veterinary Facilities," Veterinary Economics (May 1978).
4. Kelman and Zellinger, op. cit.
5. Wise, J. Karl, Ph.D., "Average Incomes of Veterinarians in Private Practice," Journal of the American Veterinary Medical Association (1977).
6. Wise, J. Karl, Ph.D., "Average Incomes of Veterinarians Not in Private Practice," Journal of the American Veterinary Medical Association (1977).
7. Tandy, J., BVSc, MRCVS, "Pounds, Pence, and Politics," Special Commentary, Journal of the American Veterinary Medical Association (1978).

³Arthur D. Little, Inc., "Summary of U.S. Veterinary Medical Manpower Needs--1978-1990," Cambridge, Mass.; U.S. Department of H.E.W., Bureau of Health Manpower, "A Report to the President and Congress on the Status of Health Professions Personnel in the United States," DHEW Publication No. (HRA) 78-93, 1978.

⁴Sarner, op. cit.

⁵Pratt, op. cit.

they fail to expand on the subject. In The Veterinarian and Certain Legal and Economic Decisions, a program by the Cooperative Extension Service and Department of Veterinary Science at South Dakota State University, some financial statement analysis is undertaken with a short discussion of return on investment. These sources provide little more than a beginning, but they do show that considerably more is needed and further analysis is essential.

Since it is quite obvious that a lack of sufficient data is the major cause for the deficiency in the financial analysis of private veterinary practices, this study collected empirical data from several similar private veterinary practices and developed, by the use of existing analytical procedures, a method for evaluating the financial performance of private veterinary practices. The final result will then provide a procedure, adapted to veterinary businesses, that incorporates standard analytical techniques commonly used by countless businesses to determine financial performance.

CHAPTER II
PURPOSE AND OBJECTIVES

Purpose

This study focuses on a procedure that will provide practicing veterinarians with the following analytical tools and concepts necessary to develop a solid quantitative estimate of their current financial position:

- an objective method for evaluating the financial performance of private veterinary practices with respect to past performance and in comparison to other veterinary practices in the region;
- a method for pointing out strengths, weaknesses, and potential trouble areas in the economics of a private practice; and
- some of the criteria necessary for projecting future financial performance.

To develop this procedure from a sound empirical background, this study collected the kind of data easily summarized for the uses specified above. What this study does not intend to provide is data to veterinarians wishing to make comparisons with their own clinics; in order to make that sort of comparison, a large regionalized study would be necessary to obtain a truly "typical" clinic. Therefore, this is a pilot study designed only to develop the procedure for adapting existing analytical theory specifically to private veterinary businesses.

Specific Objectives

The specific objectives of this study are:

- 1) to utilize existing theory and methods in the development of a procedure that will enable a comprehensive analysis of the financial statements of private veterinary practices;

- 2) to compare the financial performances of certain selected veterinary practices as a means of pointing out strengths and limitations of financial statement analysis as applied to private veterinary practices; and
- 3) to suggest how this type of analysis might be expanded to a larger regionalized study that would provide industry averages for certain often-used financial percentages and ratios.

CHAPTER III
GENERAL PROCEDURE

General Background

The veterinary practices that participated in this study provided services to populations averaging approximately 40,000 people with a mean per capita income of \$6030.00 per year as of July 1, 1977.¹

Located in the Rocky Mountain region, the veterinary practices that supplied the empirical data were small and mixed animal practices whose current physical facilities ranged from one to ten years of age.

Though several of the practices had existed for considerably longer, the one- to ten-year span was the listed purchase data range on the income tax depreciation schedules for their fixed assets.

General Data Collection Procedure

Initially, the veterinary practices were approached in a letter of introduction; those interested were contacted by telephone to set up appointment times for a personal discussion. Generally, the veterinarians contacted accepted the study proposal with interest (there was only one rejection). Several of the participating veterinary practices had at their disposal compiled balance sheets and income statements, and a few had statements of changes in financial position; others had income tax schedules with attached balance sheets. Unfortunately, not enough of the statements of changes in financial position were available for proper use in this sort of study. Yet, the balance sheet and the income statement, the two important financial statements, were available or could easily be compiled from tax schedules and when

¹Colorado Division of Planning, Population Estimates, Series CP-26, No. 8 (E)-3, April, 1980.

necessary, general ledgers. Financial statements were collected and copied, practice names removed, with assignments made of a code number to each participating practice.

Study Procedure

To establish a certain desired level of confidentiality and objectivity while at the same time providing actual empirical "dollar values," the financial statements for the participating veterinary practices were condensed into three sample veterinary practices: Practice or Clinic A, Practice or Clinic B, and Practice or Clinic C. Example Practice A is a single-man veterinary practice, with financial statements constructed from the financial statements of several similar¹ one-man, participating practices. Example Practice B represents a three-man, multi-veterinary practice and the financial statements for Practice B were constructed from several similar multi-veterinary practices. Example Practice C then describes another single-man practice, and its financial statements were developed from several similar one-man practices. However, the data for example Practice A from single-man veterinary practices are very different from those used for example Practice C. Therefore, each example practice contains aggregated data that comes from a unique population. This study will utilize the empirical data gathered, in the form of those three distinct example veterinary practices, A, B and C, to point out the methods used to conduct an analysis of the financial performance of private veterinary practices. By the use of three veterinary "practices," one can point

¹Similar with respect to type of practice, age of practice, sales volume and the number of veterinarians in the practice.

out the effects of differing accounting systems, intensity of production, resource use and age of practice on the final analysis of the practices. This procedure has advantages both for the practices studied and for readers who know the value of accurate actual numbers. It preserves confidentiality and also shows relative amounts in each account, a critical requirement of financial statement analysis.

A condensed copy of the final draft of this study will be given to the participating practices along with a summary of results as it pertains to each of the original participating practices.

SECTION II
COMPREHENSIVE ANALYSIS OF THE FINANCIAL STATEMENTS
FOR PRIVATE VETERINARY PRACTICES

This section includes, along with results and discussion of empirical data, a comprehensive look at the present theory of financial statement analysis. Each chapter presents a theoretical discussion of the topic at hand, the results of each example practice's data for that portion of the analysis, and a short discussion of that data. An effort has been made to make the discussion apply specifically to the veterinary industry, yet examples may be drawn from other industries to provide clarification.

Chapter IV involves a general analysis of the financial statements themselves. This discussion covers the balance sheet, the income statement and the statement of changes in financial position, and the specific accounts from which each statement is constructed. Chapter V is concerned with the analysis of comparative statements, their makeup and usages while Chapter VI will describe the analysis of financial ratios as they pertain to specific areas of financial analysis.

General Assumptions for This Section

Averaging

This is a procedural study. Averages were compiled for confidentiality. As stated previously, it is not the purpose of this study to provide data for "real world" comparisons and thus, distortions due to averaging are of minor concern.

Full-year adjustments

If a particular practice was not in operation for a full year, for a year in question, the data was expanded to a full-year basis. This was accomplished by multiplying all accounts times one plus the fraction* of the year not in operation. This helps to limit further distortion upon averaging.

Price level and revaluation adjustments

Price level adjustments were made for the various accounts as explained on page 135 of the Appendix. Revaluation of fixed assets to current market value was accomplished via a method developed by M. Tamari.¹ This procedure is fully diagrammed on page 140 of the Appendix.

Quality of medicine

It is assumed that all practices providing empirical data to this study practice a high level quality of medicine commensurate with the goals and ideals of the veterinary profession.

Accounting principles

All major principles of accounting as stated in many introductory texts hold for this study except where specifically modified. The reason for particular modifications will be dealt with as individual cases arise.

*Where the fraction not in operation is a percent of that part of the year in operation.

¹Tamari, M., Financial Ratios Analysis and Prediction (London: Paul Elek, 1978).

Veterinarians

All veterinarians can be assumed to work the same number of hours per day and the same number of days per year in all three example practices; however, the intensity of production and resource use (other than veterinary time) are not necessarily homogeneous.

CHAPTER IV

ANALYSIS OF THE THREE COMMONLY USED FINANCIAL STATEMENTS FOR PRIVATE VETERINARY PRACTICES

The manager of a private veterinary practice must have at his disposal a comprehensive set of the three major types of financial statements if financial decisions are to be made with any degree of accuracy and confidence. The three most commonly used financial statements are the balance sheet, the income statement, and the statement of changes in financial position. A discussion of these financial statements, their components and usages (as they pertain to this study, are the objectives of this chapter).

Theory of Financial Statements

Survival-oriented businessmen create and use financial statements to provide the kind of concrete, quantitative background necessary for sound economic decisions. Meigs, Johnson and Meigs support this claim when they state:

"Financial statements are the instrument panel of a business enterprise. They constitute a report on managerial performance, attesting to managerial success or failure and flashing warning signals of impending difficulties."¹

The three basic financial statements--the balance sheet, the income statement, and the statement of changes in financial position--are of great assistance in helping to determine a firm's over-all financial position with respect to its past performance and to its competitors. These statements also assist the experienced analyst in making projections of the enterprise's future activities.

The Balance Sheet and its Components

The balance sheet is constructed for reporting the financial position of a business at a particular time. Financial position is regarded as the amount of assets (resources) and the liabilities (debts) of a business entity on a particular date. Thus, the balance sheet is often called the statement of financial position. In the balance sheet, the financial position is shown by a listing of the firm's assets, its liabilities, and the equity of the owner or owners. An even more descriptive title for the balance sheet would be "the

¹Meigs, Johnson and Meigs, Accounting: The Basis for Business Decisions (Hightstown, N.J.: McGraw-Hill Company, 1977).

statement of assets, liability, and owner's equity for a specific point in time."

The two sides of the balance sheet must always be equal (hence, the "balance" sheet) because it shows the resources (assets) of the business on one side and who supplied those resources on the other side. Thus, the common equation--Assets = Liabilities + Owner Equity evolves.

Assets

According to Welsch and Anthony:

"Fundamentally, assets are the resources owned by the entity. They may be tangible (physical in character), such as the land, building, and machinery, or intangible (characterized by legal claims or rights), such as amounts due of customers (a legal claim called accounts receivable)¹ and patents (a protected right). In short, assets are the things of value, whether physical or not, owned by the entity."²

While it is true that medical skills are an indispensable asset to the practicing veterinarian, it is not the belief of this investigator that an accurate dollar value can be placed on this asset. Most accountants believe, therefore, that it is better to omit such items when analyzing a firm's financial performance, just as they would give little formal recognition to a dollar value placed on the entrepreneurial skills of a salesman. However, in one case example Practice C

¹A/R are small in dollar value for this study and will be considered as tangible.

²Welsch and Anthony, Fundamentals of Financial Accounting, revised edition (Homewood, Ill.: Richard D. Irwin, Inc., 1977).

has been given \$10,000.00 in goodwill¹ in an effort to show the effect of goodwill on financial statement analysis and to show that this asset has not been entirely overlooked. The dollar value chosen for the goodwill was arrived at arbitrarily and this goodwill is considered intangible.

Liabilities

Liabilities are debts owed by the business to its creditors. For veterinary practices, they come in two major forms: (a) notes payable, requiring repayment at specific times, and (b) accounts payable. As such, accounts payable are created on the credit purchases of goods and services.

Owner equity

Owner equity is the owner's residual claim on the firm's assets since creditors, by law, own the first claim. Owner equity is often known as net worth, or capital, and it will be called by any of these three names in this study.

Therefore, in summary, the total assets base for the private veterinary practice at any particular time is made up of liabilities (that portion of total assets supplied by creditors) and owner equity (that part of total assets supplied by owner's of the practice).

The balance sheets for years 1977, 1978 and 1979 for the three example veterinary clinics are shown in Table 1.

¹Goodwill is an asset sometimes included in a balance sheet. It is said to be generated internally at no accurately identifiable cost. It comes about as a result of such things as reputation, competency, customer confidence and quality of goods and services. Goodwill is recorded as an intangible asset only when it is actually purchased, i.e. when a veterinarian purchases an existing clinic. Goodwill is often bought in the form of client records and the associated clientele.

Table 1. Results of balance sheets for the empirical data.

Assets	1979	1978	1977
<u>Practice A (December 31st for each year)</u>			
Current Assets:			
Cash	2,793	3,585	3,009
Hospital Supplies	1,969	1,483	2,000
Drugs on Hand	4,841	3,644	5,000
Surgical Supplies	1,149	865	1,237
Office Supplies	246	186	200
Accounts Receivable	2,772	2,650	1,080
Total Current Assets	13,770	12,413	12,526
Purchase Data 1975			
Fixed Assets:			
Land	21,742	19,344	18,065
Building	78,865	70,167	65,528
Equipment	22,686	20,184	18,849
Total Fixed Assets	123,293	109,695	102,442
Less Accumulated Depreciation	34,393	25,145	16,148
Net Fixed Assets	88,900	84,550	86,294
Other Assets:			
Goodwill	--	--	--
Total Other Assets	--	--	--
Total Tangible Assets	102,670	96,963	98,820
Total Assets	102,670	96,963	98,820
<hr/>			
Liabilities	1979	1978	1977
Current Liabilities:			
Current Portion LT Debt	10,598	10,598	10,598
A/P	700	530	1,310
Total Current Liabilities	11,298	11,128	11,908
Long Term Liabilities:			
Notes Payable	60,643	71,241	81,839
Less Current Portion	10,598	10,598	10,598
Total Liabilities	61,343	71,771	83,149
Tangible O/E	41,327	25,192	15,671
O/E	41,327	25,192	15,671
Total Equity	102,670	96,963	98,820

Table 1. Continued

Assets	1979	1978	1977
<u>Practice B (December 31st for each year)</u>			
Current Assets:			
Cash	2,640	4,818	8,038
Hospital Supplies	1,680	3,066	2,000
Drugs on Hand	3,440	6,278	5,211
Surgical Supplies	40	73	1,000
Office Supplies	201	219	100
Accounts Receivable	--	--	-- 85
Total Current Assets	8,001	14,454	16,434
Purchase Data 1972			
Fixed Assets:			
Land	27,256	24,297	21,750
Building	112,000	99,840	89,900
Equipment	38,500	34,320	31,900
Total Fixed Assets	177,756	158,457	143,550
Less Accumulated Depreciation	74,551	61,964	48,450
Net Fixed Assets	103,205	96,493	95,100
Other Assets:			
Goodwill	--	--	--
Total Other Assets	--	--	--
Total Tangible Assets	111,206	110,947	111,534
Total Assets	111,206	110,947	111,534
<hr/>			
Liabilities	1979	1978	1977
Current Liabilities:			
Current Portion LT Debt	7,027	7,114	5,280
A/P	600	571	1,460
Total Current Liabilities	7,627	7,685	6,740
Long Term Liabilities:			
Notes Payable	59,472	66,015	68,720
Less Current Portion	7,027	7,114	5,280
Total Liabilities	60,072	66,586	70,180
Tangible O/E	51,134	44,361	41,354
O/E	51,134	44,361	41,354
Total Equity	111,206	110,947	111,534

Table 1. Continued

Assets	1979	1978	1977
<u>Practice C (December 31st for each year)</u>			
Current Assets:			
Cash	1,007	879	2,700
Hospital Supplies	700	641	601
Drugs on Hand	2,000	1,971	1,342
Surgical Supplies	124	107	87
Office Supplies	540	444	479
Accounts Receivable	--	--	--
Total Current Assets	4,371	4,042	5,209
Purchase Data 1976			
Fixed Assets:			
Land	--	--	--
Building	12,400	11,100	10,300
Equipment	39,291	35,172	32,637
Total Fixed Assets	51,691	46,272	42,937
Less Accumulated Depreciation	15,321	10,385	5,234
Net Fixed Assets	36,370	35,887	37,703
Other Assets:			
Goodwill	10,000	10,000	10,000
Total Other Assets	10,000	10,000	10,000
Total Tangible Assets	40,741	39,929	42,912
Total Assets	50,741	49,929	52,912
<hr/>			
Liabilities	1979	1978	1977
Current Liabilities:			
Current Portion LT Debt	4,707	4,707	4,707
A/P	--	171	211
Total Current Liabilities	4,707	4,878	4,918
Long Term Liabilities:			
Notes Payable	39,510	44,217	48,924
Less Current Portion	4,707	4,707	4,707
Total Liabilities	39,510	44,388	49,135
Tangible O/E	1,231	(4,459)	(6,223)
O/E	11,231	5,541	3,777
Total Equity	50,741	49,929	52,912

Discussion of balance sheets for the empirical data

By observation one can easily see that total current assets plus net fixed assets in addition to any "other" intangible assets comprise the total assets base of the veterinary practices. In the same manner, current liabilities plus long term liabilities sum to the total liabilities of the firm, the difference being the equity of the owner(s).

Veterinary Practice B has the largest assets base of the three clinics shown. Although not shown here, it is worth noting that in the fixed assets accounts, Practice B had the highest original costs, even though the physical facilities were purchased in 1972, as opposed to Clinic A, purchased in 1975, and C, purchased in 1976. Practice A had the second highest original cost of facilities. Depreciation will differ among the various clinics depending on age, type of asset, and type of depreciation schedule used.

The average total current assets holding was highest for Practice B with an average of \$12,903 in current assets. However, this is a multi-veterinary practice, so current assets per veterinarian were \$4321.00, making Clinic B the lowest (on average) holder of current assets per veterinarian and Clinic A the highest. One must keep in mind that a certain inventory level must be held for operating purposes, yet as near a minimum as possible should be considered desirable. The efficient level of inventory holdings at any one time could be estimated from a large sample size, with sales of inventory as a guideline. This sort of discussion will be taken up in Chapter VI where the analytic tool is financial ratio analysis.

The Income Statement and its Components

Welsch and Anthony define the income statement nicely:

"The income statement is designed to report the profit performance of a business entity for a specific period in time, such as a year, quarter or month. Profit, or net income, represents the difference between revenues and expenses for the specified period. An income statement presents the results of operations; that is, it reports, for a specific period of time, the items that comprise total revenue and the total expense and the resulting net income."¹

Revenues

Revenues are inflows of cash for services rendered or goods sold. Revenues, by the revenue principle of accounting, are recognized in the period in which the sale was made, and not necessarily in the period in which cash for that sale is collected. This practice allows the buildup of accounts receivable.

Expenses

Expenses are outflows of resources or the accruing of debt for services or goods used to generate the revenue of the firm. Expenses may require immediate payment or they may be deferred to another time period, thus causing the firm to build up accounts payable. When the goods or services are received, the expense is incurred. Other expenses may be reflected in actual cash outlay or in the non-cash costs such as depreciation.

Net income

Excess of revenues over expenses in total represent net income or profit, so the equation, Revenues - expenses = Net Income evolves from the above considerations.

¹Welsch and Anthony, op. cit.

Owner draw

Owner draw for the purposes of this study constitutes the amount that the individual practitioner arbitrarily withdraws from the earnings of the firm for his personal needs. This is a highly variable figure, depending as it does on the personal needs of the veterinarian, yet it does have an ultimate effect on owner equity. It can be quite instructive to observe the effect on owner equity as a result of withdrawing different amounts in owner draw. It is for this reason that the amount of owner draw is allowed to vary between the three Practices A, B and C.

The results of the income statements for the example practices for the years 1977, 1978, and 1979 are presented in Table 2.

Table 2. Results of income statements for the empirical data.

Practice A (12/31 for each yr.)	1979	1978	1977
Sales of Services	94,311	98,717	84,721
Operating Expenses:			
Salaries	11,273	16,019	11,672
Drugs	9,293	10,050	7,378
Hospital Supplies	6,690	7,236	5,313
Surgical Supplies	2,603	2,815	2,066
Diagnostic Services	623	936	760
Utilities	2,853	2,783	2,711
Professional Services	858	715	1,610
Insurance	2,366	2,203	2,729
Office Supplies	900	893	1,250
Repairs and Maintenance	1,983	1,730	1,747
Taxes and Licenses	3,062	1,782	1,830
Donations	--	--	20
Miscellaneous Expenses	750	368	478
Depreciation	9,248	8,997	9,575
Dues and Meetings	333	618	378
Contract Labor	1,045	1,000	1,500
Travel and Entertainment	50	30	1,200
Educational Expenses	140	120	150
Automobile	900	1,180	1,000
Advertising	--	400	--
Bad Debt	300	--	--
Total Operation Expenses	55,270	59,875	53,367
Income	39,041	38,842	31,354
Other Expenses:			
Bank Charges	150	150	150
Interest	8,300	8,232	9,177
Other Income:			
GS-11 Salary	20,611	19,585	18,559
Net Income	30,591	30,460	22,027
Net Income after GS-11	9,980	10,875	3,468
Owner's Equity Beginning Year	10,518	5,744	2,101
Less Actual Owner Draw	24,501	25,680	18,384
Owner's Equity from Operations End of Year	16,608	10,518	5,744
Owner's Equity Due to Revaluation	41,327	25,192	15,671

Table 2. Continued

	Practice B (12/31 for each yr.) 1979	1978	1977
Sales of Services	221,654	230,306	209,817
Operating Expenses:			
Salaries	36,457	30,181	26,181
Drugs	32,698	34,460	30,580
Hospital Supplies	2,784	3,621	2,100
Surgical Supplies	1,411	2,002	1,703
Diagnostic Services	--	--	--
Utilities	5,700	5,318	5,223
Professional Services	5,811	8,411	4,836
Insurance	5,800	6,002	5,433
Office Supplies	2,250	1,737	2,293
Repairs and Maintenance	1,042	1,187	1,440
Taxes and Licenses	6,409	5,803	3,600
Donations	--	--	110
Miscellaneous Expenses	1,740	3,675	3,945
Depreciation	12,587	13,514	14,554
Dues and Meetings	722	604	938
Contract Labor	--	--	15
Travel and Entertainment	307	318	200
Educational Expenses	912	750	836
Automobile	4,781	4,536	3,884
Rent	9,941	8,472	5,300
Retirement Plan	2,000	2,000	2,000
Total Operation Expenses	133,352	132,591	115,171
Income	88,302	97,715	94,646
Other Expenses:			
Bank Charges	180	180	180
Interest	6,300	6,772	5,021
Other Income:			
GS-11 Salary	61,833	58,755	55,677
Net Income	81,822	90,763	89,445
Net Income after GS-11	19,989	32,008	33,768
Owner's Equity Beginning Year	9,722	11,840	9,740
Less Actual Owner Draw	84,641	92,887	87,345
Owner's Equity from Operations End of Year	6,903	9,722	11,840
Owner's Equity Due to Revaluation	51,134	44,361	41,354

Table 2. Continued

Practice C (12/31 for each yr.)	1979	1978	1977
Sales of Services	53,832	50,441	45,191
Operating Expenses:			
Salaries	7,187	6,877	5,671
Drugs	3,477	2,852	3,143
Hospital Supplies	2,503	2,053	2,263
Surgical Supplies	974	798	880
Diagnostic Services	400	721	370
Utilities	1,600	2,514	1,701
Professional Services	490	751	409
Insurance	600	511	303
Office Supplies	715	740	385
Repairs and Maintenance	125	17	408
Taxes and Licenses	1,500	1,396	2,039
Donations	20	--	--
Miscellaneous Expenses	900	747	876
Depreciation	4,936	5,151	5,234
Dues and Meetings	200	187	114
Contract Labor	--	72	--
Travel and Entertainment	107	--	110
Educational Expenses	110	57	137
Automobile	1,600	1,478	1,376
Employee Benefit	45	40	30
Advertising	--	120	--
Rent	4,500	4,000	3,700
Total Operating Expenses	31,689	31,082	29,149
Income	22,143	19,359	16,042
Other Expenses:			
Bank Charges	80	80	80
Interest	2,018	1,997	1,930
Other Income:			
GS-11 Salary	20,611	19,585	18,559
Net Income	20,045	17,282	14,032
Net Income after GS-11	(-566)	(-2,303)	(-4,527)
Owner's Equity Beginning Year	1,985	2,681	2,365
Less Actual Owner Draw	17,838	17,978	13,761
Owner's Equity from Operations End of Year	4,192	1,985	2,681
Owner's Equity Due to Revaluation	11,231	5,541	3,771

Discussion of income statements for the empirical data

Practice A grossed the highest revenues per veterinarian, and it also incurred the greatest operating expenses per veterinarian. Clinic B had the highest net income per veterinarian, an average of \$29,114.00 for the three years while Clinic A was second with \$27,693.00. Non-veterinary salaries appear to consume the greatest portion (as a category) of revenues in most cases with Clinic A paying the most in 1978 per veterinarian and Clinic B paying the most in salaries in 1979 per veterinarian. The advantage of an income statement is that it is basically self-explanatory once the user has acquired a minimal vocabulary for the terms used in the statement. The concepts of GS-11 salary and net income after GS-11 will be discussed in Chapter VI: the analysis of return on investment and utilization of assets.

Statement of Changes in Financial Position

The funds for operations arise from three general sources: (1) sales and subsequent profit returned or non-cash assets sold, (2) credit, and (3) owner investment. Generally these are very important for the complex financial activities of a firm. The statement of changes in financial position is constructed to show the effect of changes in credit, owner investment, and sales of non-cash assets and only indirectly to sales. In this study, sources of funds other than sales of goods and services are not of major importance since they themselves are not used in financial ratio and comparative statement analyses.

CHAPTER V

ANALYSIS OF COMPARATIVE FINANCIAL STATEMENTS

Chapter IV focused on the types of commonly used financial statements, i.e. the balance sheet, the income statement, and the statement of changes in financial position. An analysis of the general types of accounts contained in each statement and the results, showing the relative dollar values for each example practice, set the stage for further analysis. By showing the kinds of statements used in financial statement analysis and the accounts contained therein, the analysis can progress to more powerful analytical tools and techniques that will reveal the internal structure of the financial workings of the private veterinary practice. Chapter V contains a discussion of the theory of comparative financial statements which are constructed using trend analysis, growth rate comparisons, and common size percentages. Considerable information about the financial performance and structure of a private veterinary practice can be derived from the next topic in this analysis.

Theory of Comparative Statements

Because financial statements contain a vast array of quantitative data, individual statement items are rarely significant in and of themselves; however, significance derives from relationships between various items or groups of items in addition to changes in account amounts. A technique widely used to assist in interpreting financial statements is the construction of comparative statements. Trends, growth rates, and common-size percentages are utilized in developing comparative statements. A fourth tool is that of computing financial ratios, which will be discussed in the next chapter.

Trends and Growth Rates

L. A. Bernstein has suggested that:

"The most important factor revealed by comparative financial statements is trend. The comparison of financial statements over a number of years will also reveal the direction, velocity, and the amplitude of trend. Further analysis can be undertaken to compare the trends of related items."¹

The trends and growth rate percentages of certain selected balance sheet and income statement accounts afford a basis for judging the financial progress of a firm. As Welsch and Anthony have asserted:

"Financial analysts constantly search for some standard of comparison against which to judge whether the relationships that they have found are favorable or unfavorable. Two such standards are 1) the past performance of the company, and 2) the performance of other companies in the same industry."²

Trends and growth rates are two excellent methods for comparisons of the past year's performances of a veterinary practice. This type of

¹Bernstein, Leopold A., Ph.D., C.P.A., The Analysis of Financial Statements (Homewood, Ill.: Dow Jones-Irwin, 1978).

²Welsch and Anthony, op. cit.

"historical" comparison is known as horizontal analysis where static analysis is the review of financial information for one accounting period. Table 3 is a trend index table of selected accounts for the three example veterinary practices.

Table 3. Results of trends for selected accounts for the empirical data.

Trend Index of Selected Accounts						
	Practice A		Practice B		Practice C	
	1978	1979	1978	1979	1978	1979
Cash	119	93	60	33	33	37
A/R [†]	245	257	0	0	0	0
Inventory	73	97	115	63	134	139
Total Current Assets	99	110	88	49	78	84
Total Current Liabilities	93	95	114	113	99	96
Working Capital	207	400	70	39	--	--*
Net Fixed Assets	98	103	101	108	95	96
Other Assets	0	0	0	0	100	100
Long-term Debt	87	74	96	87	90	81
Total Liability	86	74	94	86	90	80
Equity Capital	161	264	107	123	146	297**
Net Sales	117	111	109	105	112	119
Cost of Goods Sold	151	112	113	119	80	108
Gross Profit	124	125	103	93	121	138
Interest Expense	90	91	135	125	103	104
Total Expenses	112	104	115	116	107	108
Net Income	138	139	101	91	123	143

Number of veterinarians per practice: Practice A, 1; Practice B, 3; and Practice C, 1.

Index: 1978 = $\frac{1978 \text{ (amount)}}{1977 \text{ (amount)}}$; 1979 = $\frac{1979 \text{ (amount)}}{1977 \text{ (amount)}}$; and 1977^{††} = 100.

[†]Accounts receivable.

*No working capital.

^{††}Accounting dates are December 31st for each year.

**Only in 1979 does equity capital exist, refer to practice C's balance sheet.

Source: Adapted from Bernstein, op. cit.

Discussion of trends for selected accounts for the empirical data

The method used for calculation of the trend index can be located in the Appendix on page 127. In discussing the accounts from top to bottom, the user gains insight into the yearly trend of these "selected" accounts. Using 1977 as the base year, this table represents 1978 and 1979 data for each account and these two years for each practice, A, B and C.

Practices A and C are single veterinarian practices while Practice B is a multi-veterinarian practice with three full-time veterinarians. Practice A increased its cash holdings from 1977 to 1978 while decreasing its cash overall from 1977 to 1979. For Practices B and C, cash holdings declined throughout. For Practice A, A/R (accounts receivable) increased by 245 percent from 1977 to 1978 and increased an additional 12 percent in 1979 (see calculations for trends in Appendix, page 127). Total current assets declined for all practices except for Practice A, in 1979, where total current asset holdings were 10 percent higher than 1977 holdings. Current liabilities declined for the two single veterinary practices, A and C, while they increased for the multi-veterinary Practice B. In Clinic B for both years and in Clinic A for 1979, the fixed assets base increased, while for Clinic A 1978 and for Clinic C for both years, it declined. It should be noted that if no new purchases of fixed assets occur in a particular time frame, the fixed assets base will usually decline from year to year by the amount of depreciation for that year. This argument will hold if the historical cost is the actual dollar value listed on the balance sheet for those fixed assets. Since this study has revalued the fixed assets at current market value based on the consumer

price index (see revaluation calculation Appendix, page 140), then the trend index for a given current year will be greater than a previous base year if and only if the revaluation value is greater than the depreciation over the time span in question. For example, if the revaluation raises the fixed assets base by \$10.00 and the depreciation is only \$7.00, then the index for that year will be greater than 100, meaning that the net fixed assets from the base year to the year in question have increased.

Long-term debt declined in all cases as the veterinary *practices* paid off their debt and, as a result, owner equity (equity capital) increased. Owner equity also increased as a result of the revaluation of fixed assets versus a fixed dollar value on liabilities. This revaluation constitutes the greatest contribution to increasing equity. Net sales (sales of veterinary services) increased throughout from 1977, yet 1978 was the best year for the older Practices A and B. Sales for Practice C increased from 1977 to 1978 and from 1978 to 1979. Total expenses in 1978 increased by 15 and 7 percent for Practices B and C, respectively, and remained fairly constant from 1978 to 1979. However, while Practice A had increases from 1977 to 1978 and 1979, 1979 total expenses were lower than 1978 (112 vs. 104). Net income increased in all cases except 1979 for Practice B. The reader must remember that it is imperative to know the relative magnitude of each account before the index is of any value whatsoever. If sales were \$10.00 in 1977 and \$20.00 in 1978, the index will read 200. On the other hand, if sales were \$100,000.00 in 1977 and \$200,000.00 in 1978, the index will also read 200. It is quite obvious that the latter case is more desirable than the former. Therefore, one must observe the

index values in clear view of the balance sheet and income statements for the firms in question.

Table 4. Results of per year growth rates of selected accounts for the empirical data.

	Veterinary Practices					
	Two-year Growth Rates of Selected Accounts					
	Practice A		Practice B		Practice C	
	1977 to 1978	1978 to 1979	1977 to 1978	1978 to 1979	1977 to 1978	1978 to 1979
Sales %	16.5	(4.5)	9.8	(3.8)	11.6	6.7
Operating Expenses %	8.9	(6.7)	15.9	0.20	6.4	1.9
Net Income %	38.3	0.43	1.5	(9.8)	23.1	16.0

Source: Adapted from Bernstein, op. cit.

Discussion of per year growth rates of selected accounts for the empirical data

This table represents yearly changes in growth of selected accounts for Practices A, B and C. The first column for each practice is the growth from 1977 to 1978, and the second column is the growth from 1978 to 1979. Practice A had a sales growth of 16.5 percent from 1977 to 1978 while Practices B and C had sales growth of 9.8 and 11.6 percent, respectively. The operating expense increased in 1978 from 1977 in all cases except for Practice A (as was indicated in the trend index) from 1978 to 1979. The expenses of operation increased only slightly from 1978 to 1979 for both Practices B and C.

The relative ages of the practices must be considered when viewing growth rates. This is because an older practice under normal circumstances will usually have a more stable and often higher sales volume.

Younger practices, in favorable conditions, will grow more rapidly than older, established practices until they plateau in initial growth. Many veterinarians feel that this "plateauing" will occur under normal conditions in approximately four to five years from the time the practice opens its doors for business. This condition does not appear operative here in that Practice C is only four years old in 1979, while Practices A and B are five and eight years old in 1979, respectively. However, many factors yield their ultimate effect on sales and sales growth, so it is quite difficult to determine from age alone the reason for sales trend. The net income improved considerably for Practices A and C, with Practice A capturing 38.3 percent more of sales in 1978 over 1977 and Practice C capturing 23 percent more of revenues in 1978. Practice B, on the other hand, had net income growth of only 1.5 percent in 1978 and actually had a decline in net income for 1979 of 9.8 percent. Practice A had a growth in 1979 for net income, although negligible. Practice C was able to capture an additional 16 percent of revenues in 1979. Yet one must not forget that the absolute net income amounts are vitally important. Without the actual dollar figures, the percentage can be enormously misleading.

Actual year statistics, trend indices, and growth rate percentages are all forms of horizontal analysis. The user of this type of analysis can view these statistics and derive a certain feeling for the direction and magnitude of the firm's financial progress. The analyst can also couple other analytical tools with the horizontal technique and derive more useful information from the financial statements of a veterinary practice.

Common-size Percentages from the Balance Sheet and Income Statement

A major weakness in the horizontal analysis of comparative statements lies in the fact that comparisons with the past do not provide an evaluation of performance in absolute terms. If return to total investment was 6 percent last year, and it is discovered to be 7 percent this year, one might interpret this as improvement for the firm. But if evidence suggests that the return on total investment should have been at least 10 percent, then both years are unfavorable.

A standard of performance that helps to overcome the limitations of horizontal analysis is the comparison of one firm with a "yardstick" of other like firms--a pre-established standard or an average of similar firms. Known as common-size financial statement analysis, this often-used technique expresses each item in a particular statement as a percentage of a single base amount. Total assets are the base amount on the balance sheet, while net sales are the base amount on the income statement. Thus, each asset and liability on the balance sheet is shown as a percentage of a common component as is each expense item on the income statement. Hence, this type of analysis is known as vertical analysis as we vertically analyze each account item on the financial statements. Common-size percentages are useful in interpreting the reported financial data of business enterprises. Such percentages can be used to compare veterinary practices with respect to size of asset base, resource use, intensity of production, and age and type of the business.

An advantage of using common-size analytical techniques is that it points out efficiencies and inefficiencies in the types and amounts of

accounts held in a business's account structure. As a result, this type of analysis will prove to be a valuable tool to management.

In adapting Professor Bernstein's arguments on structural analysis to this study, two major considerations arise as a result of viewing the analysis of common-size financial statements as "an analysis of the internal structure of the financial statements."¹

"1) What are the sources of capital of the enterprise, that is, what is the distribution of equities between current liabilities, long term liabilities and equity capital?

"2) Given the amount of capital from all sources, what is the distribution of assets (current, fixed and other) in which it is invested? Stated differently, what is the mix of assets with which the enterprise has chosen to conduct its operations?"²

Common-size financial statements derived from a balance sheet and an income statement provide a very useful means for inter-company comparisons because the financial information of various companies can be "recast into uniform common-size format regardless of the size of individual accounts."³

In addition, this type of analysis allows for comparisons of firms within an industry as to the variation in account structure or distribution of capital among various assets. For this reason, common-size financial statements should be constructed and understood. Common-size statements do not, however, reflect relative magnitudes of accounts and therefore, the actual comparability to other firms can become somewhat dubious. It is for this reason that this study includes the actual dollar amounts in the balance sheet and income statements shown on

¹Bernstein, op. cit.

²Ibid.

³Ibid.

pages 22 and 28, respectively. Ratios and percentages can be misleading if the relative amounts in the ratios are unknown. Thus, when observing the empirical results, the reader again is advised to consider each common-size percent in full view of the actual dollar amounts used in its computation. (Those values are found in the actual balance sheets and income statements themselves.) It will prove useful to return to the empirical data and observe the common-size balance sheets for the example Practices A, B and C.

Table 5. Results of common-size balance sheets for the empirical data (percents).

(12/31 for each year)	Practice A			Practice B			Practice C		
	1979	1978	1977	1979	1978	1977	1979	1978	1977
Ave. # Vets/Practice:	1	1	1	3	3	3	1	1	1
Account									
C.A.									
Cash	2.7	3.7	3.0	2.4	4.3	7.2	2.0	1.8	5.1
Hospital Supplies	1.9	1.5	2.0	1.5	2.8	1.8	1.4	1.3	1.1
Drugs	4.7	3.8	5.0	3.0	5.5	4.7	3.9	3.9	2.5
Surgical Supplies	1.1	0.89	1.3	0.04	0.07	0.90	0.24	0.21	0.16
Diagnostic Supplies	0.23	0.19	0.20	0.17	0.19	0.09	1.1	0.90	0.91
A/R	2.7	2.7	1.1	--	--	0.08	--	--	--
Total C.A.	13.4	12.8	12.7	7.2	13.0	14.7	8.6	8.1	9.8
F.A.									
Land									
Building									
Equipment									
Total F.A.									
Net F.A.	86.6	87.2	87.3	92.8	87.0	85.3	71.7	71.9	71.3
O.A.									
Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	19.7	20.0	18.9
Total O.A.	0.0	0.0	0.0	0.0	0.0	0.0	19.7	20.0	18.9
Total A.	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5. Continued

(12/31 for each year)	Practice A			Practice B			Practice C		
	1979	1978	1977	1979	1978	1977	1979	1978	1977
Ave. # Vets/Practice:	1	1	1	3	3	3	1	1	1
C.L.									
Current Liabilities	10.3	10.9	10.7	6.3	6.4	4.7	9.3	9.4	8.9
A/P	0.68	0.55	1.3	0.54	0.51	1.3	--	0.34	0.39
Total C.L.	11.0	11.5	12.1	6.9	6.9	6.0	9.3	9.2	9.3
L.T.L.									
N/P	59.0	73.5	82.8	53.5	59.5	61.6	77.8	88.6	92.5
Total L.	59.7	74.0	84.0	54.0	60.0	62.9	77.8	88.9	92.9
O.E.	40.3	26.0	16.0	46.0	40.0	37.1	22.1	11.1	7.2
TAE	40.3	26.0	16.0	46.0	40.0	37.1	2.4	(8.9)	11.7
Total E.	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

See calculations for common-size balance sheet in Appendix, page 129.

Discussion of common-size balance sheets for the empirical data

In addition to viewing trend, one can gain considerable insight into the distribution of accounts and their structure through this technique. As the trend index has shown us, for most years in all three clinics, cash holdings declined. This is advisable to a certain point as cash, held in small amounts, earns relatively little return; however, holding too little cash can cause problems in itself. When the cost of illiquidity is greater than the cost of additional transactions to obtain cash, then more cash should be held. Cash holdings for all three years ranged from a low of 1.8 percent of total assets held on Dec. 31, 1978 for Clinic C, to a high of 7.2 percent on Dec. 31, 1977, for Clinic B. On Dec. 31, 1979, all clinics held from 2 to 2.7 percent of their total assets in cash. With respect to actual dollar amounts, and in comparison to Clinic A, Clinic C held less than one-half the current assets for all three years.

If the data for prices charged and the sales volume for each of the revenue-generating facets of the practice were available for a large sample, one might gain insight into the average inventories held for all practices and thus, project what a practice should hold in inventories. Apparently the clinics hold on average 11.4 percent of their total assets in current assets. If cash and other non-inventory items are removed, the average inventory* holding as a percent of total assets equals 5.7 percent for the three practices. Drug inventories are by far the greatest component of current assets and, as we will see, the largest component of cost of goods sold (this is seen in the

*Office supplies are not considered as "saleable" inventory in this study.

common-size income statement). Of the total assets base, fixed assets comprise the greatest portion of total assets. Clinic C would have an average of 91 percent of total assets as fixed assets if goodwill were not included; with goodwill included, fixed assets were 71.7 percent for Clinic C on Dec. 31, 1979. On Dec. 31, 1979, liabilities averaged 56.25 percent of total assets for Clinics A and B, and approximately 78 percent for Clinic C. This is reasonable, as Clinic C was only four years old in 1979, when Clinic B was nine years old and Clinic A was five years old.

The discussion now turns to the common-size income statement for the empirical results and an explanation of the income statement accounts.

Table 6. Results of common-size income statements for the empirical data (percents).

	Practice A		
	1979	1978	1977
Ave. # Vets/Practice:	1	1	1
Account Sales	100.00	100.00	100.00
Operating Expenses:			
Salaries	12.0	16.2	13.8
Drugs	9.8	10.2	8.7
Hospital Supplies	7.0	7.3	6.3
Surgical Supplies	2.8	2.8	2.4
Diagnostic Supplies	0.60	0.94	0.89
Utilities	3.0	2.8	3.2
Professional Services	0.9	0.73	1.9
Insurance	2.5	2.2	3.2
Office Supplies	0.95	0.90	1.5
Repairs and Maintenance	2.1	1.75	2.1
Taxes and Licenses	3.9	1.8	2.2
Donations	--	--	0.02
Miscellaneous Expenses	0.79	0.37	0.56
Depreciation	9.8	0.91	11.3
Dues and Meetings	0.35	0.63	0.45
Contract Labor	1.1	1.0	1.8
Travel and Entertainment	0.05	0.03	1.4
Educational Expenses	0.14	0.12	0.17
Automobile	0.95	1.2	1.2
Advertising	--	0.41	--
Bad Debt	0.31	--	--
Total Operating Expenses	58.6	61.0	63.0
Income	41.4	39.0	37.0
Bank Charges	0.15	0.15	0.17
Interest	8.8	8.3	10.8
Net Income	32.4	31.0	25.9
Owner Draw	25.9	26.0	21.7
To Equity from Operations*	6.5†	5.0†	4.2†

*Due to sales and not revaluation except for new depreciation.

Table 6. Continued

	Practice B		
	1979	1978	1977
Ave. # Vets/Practice:	3	3	3
Account Sales	100.00	100.00	100.00
Operating Expenses:			
Salaries	16.5	13.1	12.4
Drugs	14.8	14.9	14.6
Hospital Supplies	1.3	1.6	1.0
Surgical Supplies	0.64	0.87	0.81
Diagnostic Supplies	--	--	--
Utilities	2.6	2.3	2.5
Professional Services	2.6	3.7	2.3
Insurance	2.6	2.6	2.6
Office Supplies	1.0	0.75	1.1
Repairs and Maintenance	0.47	0.52	0.69
Taxes and Licenses	2.9	2.5	1.7
Donations	--	--	0.05
Miscellaneous Expenses	0.79	1.6	1.9
Depreciation	5.7	5.9	6.9
Dues and Meetings	0.33	0.26	0.45
Contract Labor	--	--	0.01
Travel and Entertainment	0.14	0.14	0.09
Educational Expenses	0.41	0.33	0.39
Automobile	2.2	2.0	1.9
Rent	4.5	3.8	2.5
Retirement	0.90	0.87	0.95
Total Operating Expenses	60.2	57.6	54.9
Income	39.8	42.4	45.1
Bank Charges	0.08	0.08	0.05
Interest	2.8	2.9	2.4
Net Income	36.9	39.4	42.6
Owner Draw	38.2	40.3	41.6
To Equity from Operations*	(1.3)+	(0.91)+	1.0+

*Due to sales and not revaluation except for new depreciation.

Table 6. Continued

	Practice C		
	1979	1978	1977
Ave. # Vets/Practice:	1	1	1
Account Sales	100.00	100.00	100.00
Operating Expenses:			
Salaries	13.3	13.6	12.5
Drugs	6.5	5.7	7.0
Hospital Supplies	4.6	4.1	5.0
Surgical Supplies	1.8	1.6	1.9
Diagnostic Supplies	0.74	1.4	0.82
Utilities	2.9	4.9	3.8
Professional Services	0.91	1.5	0.91
Insurance	1.1	1.0	6.7
Office Supplies	1.3	1.5	0.85
Repairs and Maintenance	0.23	0.03	0.90
Taxes and Licenses	2.8	2.8	4.5
Donations	0.04	--	--
Miscellaneous Expenses	1.7	1.5	1.9
Depreciation	9.2	10.2	11.6
Dues and Meetings	0.37	0.37	0.25
Contract Labor	--	0.14	--
Travel and Entertainment	0.19	--	0.24
Educational Expenses	0.20	0.11	0.30
Automobile	3.0	2.9	3.0
Rent	8.4	7.9	8.2
Advertising	--	0.24	--
Employee Benefit	0.08	0.08	0.06
Total Operating Expenses	58.8	61.6	64.5
Income	41.2	38.4	35.5
Bank Charges	0.15	0.16	0.17
Interest	3.7	4.0	4.3
Net Income	37.2	34.24	31.1
Owner Draw	33.1	35.6	30.5
To Equity from Operations*	4.1†	(1.4)‡	0.70†

*Due to sales and not revaluation except for new depreciation.

Discussion of common-size income statements for the empirical data

Net sales are the base amount for the common-size income statement. Salaries usually consume the greatest amount of revenues of any single cash expense other than the total cost of inventories with drugs, as a single expense item, in second place. Keep in mind that one should constantly view the actual dollar amounts to get a realistic concept of the percents. Interestingly, professional services consume an average of 1 percent of revenues. Total operating expenses consume on the average 60 percent of total revenues. Clinic A pays the largest interest expense; however, Clinics B and C rent some facilities, thus having lower interest payments. Clinic A averaged 28 percent net income from revenues, and actual owner equity increased in all three years. Note that the equity calculation uses tangible equity before revaluation, since the only change on the income statement as a result of revaluation is to depreciation. Therefore, the cost basis level for equity minus the increase in depreciation* is used on the income statement while the full equity value after revaluation is used on the balance sheet. The difference in equity from the income statement to the balance sheet is a result of the increase in value of the assets base due to revaluation. The income statement only considers increases (decreases) in owner equity due to operations, however, the new depreciation value as a result of revaluation is used in the income statement. Clinic B averaged 39.6 percent net income for the three years, and it had owner draw greater than net income for 1978 and 1979. Therefore, equity fell by the difference in net income minus owner draw.

*Depreciation is a non-cash expense, but an expense nonetheless.

The common-size statement analysis allows us to observe a three-year trend in every account for all three practices. In addition, as previously stated, it is essential to compare the performance of one clinic with other similar clinics, to have a "yardstick" with which to gauge, for example, the adequacy of earnings versus expenses. This study compares three clinics' statistics. The method used by many businesses, large and small, is to compute these statistics and compare them with "industry" averages. Since it was noted earlier that no such industry averages for the veterinary industry apparently exist in published form, the impetus then is to expand a study of this nature to a larger scale that would provide these needed statistics.

While it is true that horizontal and vertical analyses afford the user a basis for the comparison of the financial progress of private veterinary practices in terms of account structure and earnings/expense relationships, the analyst finds it necessary to extend beyond surface analysis of the financial statements. What is essential at this time is to evolve into an account comparisons analysis to reveal the dynamic nature of the financial workings of the private veterinary practice.

CHAPTER VI
ANALYSIS OF FINANCIAL STATEMENTS
USING FINANCIAL RATIOS

Financial ratio analysis is the backbone of the analysis of an enterprise's financial performance. However, today's veterinarian may be hard-pressed to answer questions that require detailed information contained in his business records. To overcome this deficiency, the manager would require at his fingertips a convenient monitoring system for operating his business. Referring to the components of such a system, Barry, Hopkins, and Baker have said,

"Over the years, business analysts have developed a series of ratios which they compute and compare in determining business progress. Ratios can be computed with a minimum of difficulty and recorded in a form convenient for comparisons. They provide an overview without requiring a deep understanding of the economic or financial concepts involved. If properly calculated, ratios can be readily compared with: (1) the firm's past ratios in order to show trends; (2) ratios of other firms of similar size, larger size, or smaller size; (3) community averages or industry standards; and more importantly, (4) the projected goals as reflected in plans for the future."¹

¹Barry, Peter J., John A. Hopkins, and C. B. Baker, Financial Management in Agriculture (Danville, Ill.: The Interstate Printers and Publishers, 1979).

Theory of Financial Ratio Analysis--Building-Block Approach

Some of the figures contained in financial statements, such as net income or sales, are significant in and of themselves; however, the significance of many other figures is highlighted by their direct relationship to other amounts. These meaningful relationships can be pinpointed effectively in many instances through the use of financial ratio analysis.

In addition to the use of comparative statements, there are a number of financial ratios that can be computed from a set of financial statements; nevertheless, only a select number may be useful in any given situation. The method commonly employed is one that computes certain often-used financial ratios and incorporates any additional ratios that are relevant to the particular type(s) of decisions contemplated.

Ratios, while among the best known and most widely used tools of financial analysis, will only show significance if they express meaningful relationships between accounts. As Professor Bernstein says:

"There is a clear, direct and understandable relationship between the sales price of an item on one hand and its cost on the other. As a result, the ratio of cost of goods sold to sales is a significant one.

"On the other hand, there is no a priori or understandable relationship between freight costs incurred and the marketable securities held by an enterprise; and hence, a ratio of one to the other must be deemed to be of no significance."¹

It can be considered then that in the final analysis the utility of financial ratios is dependent on their "intelligent and skillful interpretation" by the user and analyst. Dr. Bernstein further states:

¹Bernstein, op. cit.

"Ratios, like most other relationships in financial analysis, are not significant in themselves and can be interpreted only by comparison with (1) past ratios of the same enterprise, or (2) some predetermined standard, or (3) ratios of other companies in the industry. The range of a ratio over time is also significant as is the trend of a given ratio over time."¹

A very useful approach to organizing and using the various financial ratios is by way of the standard "building-block" approach to financial ratio analysis. Components of the building-block approach* are: (1) veterinary short-term liquidity, (2) veterinary practice capital structure and long-term solvency, (3) return on investment in private veterinary practice, and (4) assets utilization in veterinary operations. The building-block approach involves determining the objectives of a particular financial analysis and judging which areas are important and their level of priorities. At this point we turn to an in-depth discussion of the above-named building blocks as they apply to veterinary practice management.

Analysis of Short-term Liquidity--Block One

Liquidity can be discussed in terms of degrees of liquidity. The short-term liquidity of a firm is usually measured by the firm's ability to meet short-term obligations. The importance of short-term liquidity can be examined best when the firm fails to meet short-term obligations. A lack of liquidity in the short-run may mean that the firm is unable to take advantage of discounts or profitable business opportunities as they present themselves, thus implying a lack of

¹Bernstein, op. cit.

*There are actually six major building blocks as first utilized by L. A. Bernstein; however, funds flow analysis and operating performance are subjects for future studies. Also, in this study, return on investment and asset utilization will be combined and discussed together.

freedom of choice for management. A more serious condition is a firm's failure to meet its current obligations, which can ultimately cause forced sale of long-term assets or even insolvency and bankruptcy.

To owners of the firm, illiquidity means lower profits, loss of control over decisions, or even loss of capital investment. In cases where the owners maintain unlimited liability, the loss can reach beyond the original investment. For our purposes, it is crucial to note that veterinarians are all too often subject to this situation.

To the lenders of credit, lack of liquidity implies inhibition of interest repayment and principle obligations, leading to partial or even total loss of creditor's investment. To the veterinarian, a loss of relationships with suppliers of inventories or creditors due to inability to meet those current obligations would severely hamper operations. Thus, the significance of short-term liquidity surfaces as an important consideration in veterinary business operations.

Working capital

In accounting, an enterprise is assumed to be an on-going concern that will not liquidate in the near future but will continue to carry out its business objectives in an orderly fashion. So "the financial analyst must always submit the validity of such assumptions to the test of the enterprise's liquidity and solvency."¹ A widely-used measure of liquidity is the principle of working capital, defined as the excess of current assets over current liabilities. This definition is qualitative in character since it shows the potential availability of current assets as exceeding current liabilities, and it also represents an

¹Bernstein, op. cit.

index of financial soundness or "margin of protection" for creditors and future operations.

Yet, even the concept of working capital has three major limitations. First, the immediate availability of working capital depends on the type and liquid nature of the current assets. Second, the absolute significance of amounts of working capital is only viable when compared to other variables such as total assets, tangible assets, net income, and gross sales. A good example that highlights this situation follows.

	Practice R	Practice Z
Modified Balance Sheet		
1) current assets	\$ 30,000	\$ 60,000
2) current liabilities	<u>20,000</u>	<u>50,000</u>
3) working capital (1-2)	\$ 10,000	\$ 10,000

Both practices have \$10,000 in working capital, yet a surface comparison might suggest that firm R is in a superior position, since its debts are as few as \$20,000.00. The addition of a few other accounts helps to clarify the picture.

4) sales	60,000	200,000
5) total assets	90,000	120,000
6) assets utilization	0.67	1.67
7) net income	20,000	40,000
8) return on investment	22%	34%

Now it is quite obvious that practice Z is in the better position, since return on investment (discussed in Chapter VI) is 34 percent for

practice Z and 22 percent for practice R. Therefore, one must not draw general conclusions from just one statistic, but rather observe many other related criteria before making decisions on a firm's financial position.

The third drawback to the concept of working capital is that veterinary practices sell a service, as do many types of business, and yet they do not account for this in the balance sheet. The selling of the service generates by far the greatest revenue for practicing veterinarians. In a study conducted in 1977 on a sample of 225 mixed animal practices in the Rocky Mountain region, Dr. Kelman¹ found that an average of 32 percent of a veterinarian's time generated 30 percent of his income on office calls alone. Surgery, which includes a considerable amount of labor time, took 20.7 percent of his time and generated 24.4 percent of his income. Ambulatory calls required 34.7 percent of his time and generated 31 percent of his income. In summary, while realizing that not all of the total bill to the customer is charged for labor, a considerable amount of the bill is labor. This service (labor), provided to the community, is not accounted for in terms of assets in the balance sheet, yet without the asset of being a licensed practicing veterinarian, the service could not be provided. Therefore, the idea of working capital in veterinary business practices, while still important to some extent, becomes somewhat dubious since it does not include the main revenue-generating asset of the practice--the veterinarian. Ralph Kennedy extends a few potential reasons for the inadequacy of working capital in business of any kind:

¹Kelman, op. cit., Table 33, p. 29.

"An inadequacy of working capital may be the result of operating losses as shown by the income statement or direct changes to earned surplus. A business may incur operating losses because of (a) insufficient sales volume relative to the expense of obtaining sales, (b) depressed sales prices due to competition or depressions without a proportionate decrease in the cost of sales and expenses, (c) excessive current doubtful accounts expense, (d) increases in expense not accompanied by a proportional increase in sales or revenues, and (e) increases in expense while sales or revenue decrease, (f) an adverse court decision, (g) an unfavorable income tax decision, (h) increasing prices requiring the investment of more dollar capital to maintain the same physical quantity of inventories and fixed assets as to finance the same credit sales."¹

Although this is a lengthy list of potential reasons for changes in working capital, the idea is that working capital can be affected by a multitude of factors. All of these should be considered and evaluated to determine their affect on the operations of a business.

Having discussed some of the pertinent aspects of short-term liquidity and its importance in the building-block approach to financial analysis, what is crucial now is to construct a method with which to judge the level of liquidity of a business. This concept follows next in the discussion.

Current ratio

A ratio that is often used by managers to show the margin of protection to the owners of a business, in a slightly different manner than the working capital concept, is that of the "current ratio." The current ratio--current assets to current liabilities--shows the number of times current assets will cover current liabilities in the event of liquidation of the business. The calculation is as follows:

¹Kennedy, Ralph Dale, Ph.D., Financial Statement Analysis, Firm Analysis, and Interpretation (Homewood, Ill.: Richard D. Irwin, Inc., 1954).

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}} = \frac{\text{cash and cash equivalents} + \text{accounts receivable} + \text{inventories and supplies}}{\text{current liabilities}}$$

Since the current ratio is a description of the firm's ability to generate adequate inflows of cash to meet required cash obligations as they arise, including unexpected interruptions in cash inflows, one must ask: does the current ratio measure future inflows of cash, does it predict cash inflows, and does it give any estimate of the adequacy of future inflows to cover outflows?

The current ratio is a static concept relating resources to debts at one given time. The pool of resources measured does not have a logical relation to future funds. If the accounting principle of on-going operations is valid and liquidity is a concern as in this ratio, then the most important aspect of meeting obligations as they arise, namely, inflows of future funds is neglected. Inflows of funds depend heavily on sales, profits, costs, and dynamic business conditions; however, these variables are excluded in this ratio.

The conclusions* that can be drawn from the above arguments are that (1) liquidity in the veterinary practice depends significantly on future cash inflows and not so significantly on cash holdings and equivalents; (2) static balances of working capital and the pattern of future cash inflows have no particular, definable relationship; and (3) if optimizing sales and accounts receivable is a major objective of the business, then assets utilization or turnover of inventories should be the primary goal. Accordingly, these arguments, along with the fact

*These conclusions are drawn from L. A. Bernstein.

that veterinary practices, as stated previously, maintain few receivables and generate the greater amount of revenues from sales of services as opposed to sales of inventories, suppose the conclusion that the current ratio will exhibit limited value in the financial analysis of private veterinary practices.

A better way to use the current ratio is to consider its limitations and restrict its use to measuring the ability of present current assets to cover existing current liabilities; then if an excess exists, consider it a surplus for meeting unexpected obligations, should they arise. In addition, one might incorporate other ratios, as commonly used by financial analysts, to offset the deficiency in the analytical prowess of the current ratio, for example, that of the quick ratio.

Quick ratio

A measure which helps to supplement the current ratio is the "quick ratio" which excludes long-term inventories which require time for liquidation. The mathematical relationship is as follows:

$$\text{Quick Ratio} = \frac{\text{cash and cash equivalents} - \text{long-term inventories}}{\text{current liabilities}}$$

Quick assets then are those assets that can be readily converted to cash at near their proper value, including cash and "very" liquid assets. Accounts receivable exemplify a liquid asset, while short-term investments held in lieu of cash, certificates of demand, and common stock are considered "very" liquid. The quick ratio provides, at a glance, an indicator of the "margin of protection" to creditors in the event of unforeseen liquidation, in other words, a gauge of protecting creditors from perils of forced liquidation. It does not, however,

predict or measure future cash flows and, therefore, is useful only as a static measure.

Because liquidity position itself occurs more as a function of future funds flow and to a considerably lesser degree on the static holdings of working capital, discussion of inventory and sales of inventory is applicable. Sales of inventory for veterinarians, while not constituting as great a revenue-generating aspect of veterinary sales as does veterinary services, is nonetheless a very important source of funds to the veterinary practice.

Measures of inventory turnover

Other measures of liquidity that are useful for financial analysis include activity or "turnover" ratios. Obtaining a return, based on expected profits, is the major reason for considering inventories as a form of investment. Generally, inventories must be kept in stock in order to enhance optimum sales. In veterinary medicine, inventories are held specifically for that reason, assuming that sales of goods and services entail a high level of quality of medicine.

Excessive inventories resulting from over purchase or under sales result in unintended inventory holdings, and this translates into excessive costs. In addition, loss of value of inventories can occur due to obsolescence and physical deterioration of inventory stock. More importantly, inventories tie up funds that could earn a return in other investments.

A major consideration for observing inventory levels, from an economic point of view, is the risk involved in holding inventories since they generally comprise the largest component of the current assets

holdings. Inventories, usually the least liquid of the current assets, must be sold before they can generate revenue and profits. A good measure of the average rate of speed with which inventories move through and out of an enterprise are inventory turnover ratios, exemplified by the average inventory turnover ratio, computed as follows:

Average Inventory Turnover

$$\text{Average inventory turnover} = \frac{\text{cost of goods sold}}{\text{average inventory}} *$$

The average inventory level is equal to the beginning level (ending prior period) plus the ending level for the period in question, divided by two for the average. The days required to sell the stock of inventory are also vitally important, a subject considered next.

Days to Sell Inventories

This ratio measures the number of days it takes to sell the average inventory holding in a given time period, calculated as follows:

$$\text{Days to sell inventory} = \frac{\text{days in time period (one year usually)}}{\text{average inventory turnover}}$$

This ratio is a gauge of liquidity in the sense that it measures the speed with which inventories can be converted into cash via sales if needed.

*When calculating financial ratios from balance sheets and income statements, the balance sheet amounts relate to one instance, while income statements refer to transactions and events that occur over a period of time. Because of this discrepancy, care must be exercised when calculating ratios that use amounts from both statements. When an income statement amount is compared to a balance sheet amount, a balance sheet average is often used to compensate for the difference in time periods.

An incorporation of the above two ratios will reveal an index that measures trends in liquidity: the liquidity index.

The Liquidity Index

Another measure of liquidity, in a comparative manner, is the construction of a liquidity index, compiled as follows: (Clinic A, 1978, 1979 will be used as an example with 365 days possible per year).

Table 7. Liquidity index calculation.

$$\text{amount} \times \text{days removed from cash} = \text{product dollar days}$$

Year 1979

cash	2,793			
inventories	7,959	x	153.4	= 1,220,602.9 (b)
supplies	2,461			
A/R	2,772			
Total (a)	<u>13,770</u>			

Days removed from cash

$$\frac{\text{Cost of goods sold}}{\text{Average inventory}} = \frac{16,619}{6,976} = 2.38, \frac{365}{2.38} = 153.4 = \frac{\text{Possible days/yr.}}{\text{inventory turnover}}$$

$$\text{Index for 1979} = \frac{b}{a} = \frac{1,220,602.9}{13,770} = 88.6$$

Year 1978

cash	3,585			
inventories	5,992	x	116.2	= 696,522 (b)
supplies	186			
A/R	2,650			
Total (a)	<u>12,413</u>			

Days removed from cash

$$\frac{\text{Cost of goods sold}}{\text{Average inventory}} = \frac{22,346}{7,114} = 3.14, \frac{365}{3.14} = 116.2$$

$$\text{Index for 1978} = \frac{b}{a} = \frac{696,522}{12,413} = 56.1$$

Source: Adapted from Bernstein, op. cit.

Liquidity has deteriorated in 1979 from 1978 as the index is a larger number in 1979. This index maintains significance only in trend analysis, as the number is insignificant by itself. The degree of deterioration must be analyzed by looking at the individual parts that make up the index, namely, cost of goods sold, changes in working days (if any), large differences in average inventory levels, and substantial changes in cash and office supplies.

Another supplementary ratio that is commonly computed by analysts is the current debt to tangible net worth ratio.

Current Debt to Tangible Net Worth Ratio

This ratio expresses the percent of tangible* equity that would have to be converted to cash for payment of current debt obligations (liabilities) if such payment were required. The calculation for this ratio is shown below:

$$\frac{\text{current debt}}{\text{tangible net worth**}}$$

With this information in mind, the empirical results derived from the data for the three example Clinics A, B and C may be examined and discussed.

*Tangible in this study will mean that if liquidation occurs, a tangible asset is one that can be sold for near its proper stated value. Goodwill, for purposes of this study, will not be considered as tangible.

**Tangible net worth = tangible owner equity.

Table 8. Results of analysis of short-term liquidity for the empirical data.

		Financial Ratios for Short-term Liquidity								
		Practice A			Practice B			Practice C		
		1979	1978	1977	1979	1978	1977	1979	1978	1977
No. of Vets per Practice:		1	1	1	3	3	3	1	1	1
Code	Ratio									
T	Current Ratio	1.22	1.12	1.05	1.04	1.9	2.4	0.93	0.83	1.06
T	Quick Ratio	0.51	0.58	0.36	0.37	0.66	1.22	0.32	0.27	0.65
T	Inventory Turnover	2.4	3.1	1.8	5.6	4.4	4.2	2.4	1.8	3.1
D	Days in Inventory	152	117	203	65	83	87	153	203	117
N/A	Liquidity Index	88.6	56.1	133.3	41.9	54.1	43.5	99	137	45.6
%	Current Debt Tan. Net Worth	27.3	44.2	76.0	14.9	17.3	16.3	382.3	--	--

T = Times; % = Percent; D = Days (365) per Year; and N/A = Not Applicable.

Discussion of results of analysis of short-term liquidity
for the empirical data

According to J. W. Judy,¹ the current ratio should never fall below 1.5 nor rise above 5; generally 2 to 3 is recommended. If the ratio is high, the make-up of current assets as well as current liabilities should be observed to determine why it is high. Often, accounts receivable can be a large contributing factor if the account has a high amount. Also, if accounts receivable is high and bad debt is also high, then a high current ratio must be questioned, as forced liquidation may be so quick that complete collection of accounts receivable is impossible. Thus, the trade-off appears between demand based on credit allowance by the veterinarian and loss due to bad debt.

In this study all current ratios are below the recommended 2 to 3 ratio. The quick ratio as advised by Dr. Judy² should at least be 1 and not more than 2. All except Clinic B in 1977 have a ratio of less than 1. This could be critical if forced liquidation was to occur; thus, veterinarians in this study might do well to increase current assets slightly to approximately 1.0.

Inventory turnover for a study published in Veterinary Economics Magazine³ shows that for 1977 the average inventory turnover was 3.55 times per year, and for 1978 it was 3.70 times per year for a sample of

¹Judy, J. W., The Veterinarian and Certain Legal and Economic Decisions, Department of Veterinary Science Publication, South Dakota State University, Brookings, South Dakota, p. 66.

²Ibid., p. 67.

³"An In-Depth Look At Practice," Veterinary Economics Magazine (March 1979), pp. 24-28.

158 respondents. This investigator's study shows a range of 1.8 to 5.6 in turnover, Robert Morris suggests that

"High inventory turnover can indicate better liquidity or superior merchandising. Conversely it can indicate a shortage of needed inventory for sales. Low inventory turnover can indicate poor liquidity, possible overstocking, obsolescence, or in contrast to these negative interpretations a planned inventory buildup in the case of material shortages. A problem with this ratio is that it compares one day's inventory to costs of goods sold and does not take seasonal fluctuations into account."¹

The days a unit is held in inventory are an important consideration: this ranges from as low as 65 days for Clinic B in 1979 (B has a high turnover) to a high of 203 days for both Clinic A (1977) and Clinic C (1978). According to Dr. Judy,² an inventory turnover of, for example, 5.6 divided into 12 months means a 2.14 months supply of inventory which he says is more than adequate. The liquidity index for Clinic A improved from 1977 to 1978 and declined from 1978 to 1979. Clinic B has a much lower liquidity index at 41.9 for 1979 than Clinic A, 88.6 for 1979 and Clinic C, 99 for 1979, accounted for by the fact that Clinic B has a much higher inventory turnover--a reasonable proposition because a higher turnover will yield a lower liquidity index (i.e. the calculation of the index, page 62). Clinic C, because of the addition of goodwill to its total assets base and its relatively young age, has many more times current debt than tangible net worth (see balance sheet for Clinic C, 1979) in 1979 and no tangible net worth in 1977 and 1978. If Clinic A were to have suddenly liquidated on December 31, 1979, 27.3 percent of its tangible net worth would have

¹Robert Morris and Associates, Annual Statement Studies, Philadelphia, Pennsylvania, 1978, p. 7.

²Judy, op. cit., p. 68.

gone to pay current liabilities, whereas Clinic B would only have to pay 14.9 percent of its tangible net worth into current debt.

This completes the types of financial ratios that are commonly used for short-term liquidity analyses. Before moving on to the next chapter, it might prove instructive to quickly retrace our steps from the beginning.

The financial analysis of business activities starts with the construction of a balance sheet and income statement from the general accounting ledger of the business. Once these two statements have been accurately compiled, the actual analysis begins. Horizontal analysis, made possible by the formulation of comparative statements, allows the user to inspect the year-to-year financial progress of the practice. The balance sheets and income statements for a series of years, trend analysis, and growth rate computations are all forms of horizontal analysis. The construction of common-size balance sheets and income statements, yielding percentages that reveal internal account structure, are forms of vertical analysis. All of the above were discussed in Chapters IV and V. Chapter VI examines actual financial ratio analysis with the first major area of concern being short-term liquidity, aspects of which included the current ratio, the quick ratio and measures of inventory turnover, average inventory turnover, days to sell inventory, the liquidity index, and a current debt ratio. Incorporated were empirical data from practicing veterinary clinics to show how these analytical tools and techniques are actually used and to show what kinds of information these facts will reveal to the user.

The next major area of concern is the analysis of veterinary capital and long-term solvency, a further progression into further financial ratio analysis. There follows a theoretical discussion of the concepts behind the analytical techniques, the empirical results for the example clinics, and a short discussion of those results.

Analysis of Capital and Long-term Solvency--Block Two

"The process of evaluation of long-term solvency of an enterprise differs markedly from that of the assessment of short-term liquidity. In the latter the time horizon is short and it is often possible to make a reasonable projection of funds flow. It is not possible to do this for the longer term, and thus the measures used in the evaluation of longer term solvency are less specific but more all-encompassing."¹

An unfavorable long-term financial condition may completely offset a favorable current financial condition in the same manner that the reverse is true. So, as the years progress, many of the changes in the financial position of a firm may be reflected in items on the balance sheet that are usually considered as "non-current." Various transactions may cause these changes, and the analyst and user should attempt to detect both favorable and unfavorable influences. Kennedy and McMullon² cite a few examples of these conditions:

"Fixed operating assets may have (1) increased as a result of the acquisition, construction, or revaluation of the assets or the erroneous capitalization of ordinary repairs and maintenance; and (2) decreased because of the sale, abandonment, or revaluation of the assets or the recognition of depreciation. Long-term investments may have increased or decreased because of additional acquisitions or sales of holdings or revaluation of investments. Net sales may have increased or decreased because of changes in physical volume of goods sold

¹Bernstein, op. cit.

²Kennedy and McMullon, Financial Statements; Form, Analysis and Interpretation, Revised edition (Homewood, Ill.: Irwin Series, 1954), p. 264.

(or quality of services offered), price level amount of profit included in sales prices. Cost of goods sold and operating expenses may have increased or decreased because of changes in the physical volume of goods sold (or quantity of services offered); price-level changes (including wages); changes in accounting methods; variations in efficiency of production, selling, and administrative managements, and of employees; policies with respect to doubtful accounts, maintenance, repairs, and depreciation; and taxation."

It is obvious that there are numerous aspects involved in changes in the financial position of a firm. Utilization of trend analysis, common-size percentages, and the following financial ratios will be of great assistance in selecting those reasons that seem to have the greatest effect on long-term financial position.

Long-term earnings and earning power (cash generation) are two of the most important and reliable indicators of financial strength. Earnings become the most reliable source of long-term repayment of principal and payment of interest. Earnings, often overlooked, are the yardstick with which interest coverage and other fixed expenses are measured. Upward trend in earnings is a very favorable position and hence one of the best indicators of good credit risk. To derive equity, a firm must generate earnings in excess of expenses.

The basic characteristic of equity, in the operations of a firm, is that no mandatory return must be paid out to equity. Debt, in contrast to equity, must be repaid. The true significance of capital "structure" derives from the essential difference between debt and equity. The larger the proportion of debt to total capital, the greater the resulting commitments to repayment, and the greater the probability of a firm's inability to remain solvent in times of crises.

Debt is nearly always voluntarily accumulated under the assumption that if the rate of return on total investment is greater than the

interest cost of debt, then the excess return accrues to the owners of equity. Subsequently, the firm enjoys what is known as positive leverage (a subject to be dealt with later in this chapter). In addition, interest expense is tax deductible. Therefore, from the point of view of a veterinarian considering debt employment (borrowing), the first two considerations must be that of earnings power and tax implications on earnings. The subjects of earnings and return on investment are also discussed later in this chapter.

Capital structure and long-term solvency analysis
using selected capital accounts

A useful method for analyzing capital structure is through a selected account common-size statement, a technique which, as seen earlier, reveals the relative magnitudes of the sources of enterprise funds and allows a convenient method for comparisons with other firms. The veterinarian can select major accounts on the balance sheet, convert the dollar values into percentages of total assets, and compare the past structure of his practice with other veterinary practices or even other types of businesses with similar investments. The use of studies such as the published annual statement by Robert Morris and Associates is a good example. The reader can locate businesses with similar capital investments and sales volumes and thus, have an indicator of what other businesses are doing with their investment. The results of the example clinics (A, B and C) prove to be an excellent means of pointing out this capital structure by comparison technique.

Table 9. Results of selected capital accounts for the empirical data using common-size percentages.

Common-size Balance Sheets for Selected Accounts									
Account	Common-size Percentages								
	Practice A			Practice B			Practice C		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
Total Current Assets	13.4	12.8	12.7	7.2	13.0	14.7	8.6	8.1	9.8
Net Fixed Assets	86.6	87.2	87.3	92.8	87.0	95.3	71.7	71.9	71.3
Total Assets	100	100	100	100	100	100	100	100	100
Total Current Liabilities	11.0	11.5	12.1	6.9	6.9	6.0	9.3	9.7	9.3
Total Long-term Liabilities	59.0	73.5	82.8	53.5	59.5	61.6	77.8	88.6	92.5
Total Liabilities	59.7	74.0	84.0	54.0	60.0	62.9	77.8	88.9	92.9
Owner Equity	40.3	26.0	16.0	46.0	40.0	37.1	22.1*	11.1*	7.2*

*Includes intangible assets.

Discussion of selected capital accounts for the empirical data using common-size percentages

Net fixed assets comprise over 85 percent of the total capital structure of Practices A and B, quite reasonable in view of the earlier discussion on the low amount of current assets in veterinary practices. Current liabilities will consume an average 11.5 percent of Practice A's total equity, 6.6 percent of Practice B's equity, and 9.4 percent of Practice C's equity. Due to revaluation and age of the clinics, Practice B, the oldest clinic, has the least long-term debt in 1979 (53.5 percent of total assets). This means that if the practices were sold and the sellers received the actual assets listing, Practice B's owners would derive 46 percent of the projected selling price. This type of approach can be utilized to analyze the common-size balance sheet for all clinics. (Note, Practice C has 19.7 percent of its total assets in goodwill in 1979. If veterinarian C sold his clinic and the new owner/buyer did in fact agree to pay for that goodwill, then veterinarian C would receive 22.1 percent of his assets as equity. However, if the goodwill was not purchased by the new owner, then veterinarian C would receive only 2.4 percent of the amount of his tangible equity.)

Capital structure and long-term solvency analysis using financial ratios

Another approach to analyzing capital structure is by means of financial ratios concerning capital structure. The analyst can use them to compare the yearly trends in these ratios as well as to compare them with other similar firms on an industry average. Some of the

commonly-used financial ratios that deal with capital structure are discussed below.

Total Debt to Equity Capital Ratio

This widely-used financial ratio describes a relationship between the dollars of debt that a firm owes to the dollars of equity that have accrued to the owner(s) of the practice. The choice of the figure used as the numerator is left to the analyst though it is suggested that the larger value be used in the numerator for explanatory purposes; it is generally easier to understand a ratio of 2:1, 2 to 1, rather than 1:2 = 0.5 to 1, 1 to 2. This ratio is sometimes known as debt to net worth where net worth equals equity. This ratio is calculated in the following manner:

$$\text{Total Debt to Equity Capital} = \text{Total Debt/Equity}$$

Total Debt to Total Assets (Capitalization) Ratio

This financial ratio is calculated as follows:

$$\text{Total Long-term Debt} / \text{Total Assets}$$

The ratio shows the percent of total assets owned by creditors, the complement of this ratio being equity to total assets; yet it becomes redundant in nature to state both the equity to total assets and total debt to total assets ratios. For, if 68 percent of total assets are owned by creditors (68 cents of each asset dollar belongs to creditors), then it is transparent that 32 percent of the total assets belong to the owners of equity (32 cents of each asset dollar belong to the owners).

What is the effect of intangible assets* on the total capitalization of the practice? This question is pertinent because intangible assets, as stated previously, are items of dubious value. Problems usually arise when they are included as part of the total assets base. To the extent that the analyst finds it difficult to form an opinion on the present or future value of intangibles, he/she may choose to exclude them from consideration and thus, if intangibles were formerly present in the total assets base, reduce the total assets base by the amount of the excluded intangibles. However, if intangibles are included in the total assets base as was done in this study with Practice C, then all analyses, computations, and conclusions are subject to scrutiny based on their inclusion. This study includes intangible "goodwill" in an effort to show that the balance sheet (a "non-public" statement) and many calculations and conclusions become distorted when such intangibles are included in the total assets base. These distortions will ultimately affect the decisions of the veterinarian-manager-businessmen if they are not constantly considered.

Other ratios used in common financial analyses can be used to analyze in greater depth the debt structure of an enterprise. Some of the more pertinent ratios are included in the following discussion.

Fixed Assets to Tangible Net Worth Ratio

This and the next ratio, debt/worth, are often considered leverage ratios in that many firms utilize debt to generate revenues. Firms that have heavy debt in relation to net worth (equity) are considerably more vulnerable to business downturns than those with lower debt to net

*Goodwill in this case study.

worth positions. Robert Morris and Associates state, however, that "while leverage ratios help to measure this vulnerability, it must be remembered that they vary greatly depending on the requirements of particular industry groups."¹ Veterinarians are usually quite highly leveraged, and this is evident in their ratios. The calculation of the fixed assets to tangible net worth ratio is conducted in the following manner:

$$\text{Net fixed assets} / \text{Tangible net worth (equity)}$$

This ratio measures the extent to which the owners' portion of total equity is invested in the land, building, and equipment of the firm.

A lower ratio, as suggested by Morris and Associates,

"indicates a proportionately smaller investment in fixed assets in relation to net worth, and a better 'cushion' for creditors in case of liquidation. The presence of substantial leasing of assets which does not appear on the balance sheet will give a lower ratio than might otherwise exist."²

Another ratio, debt to tangible net worth, provides the user with relationship of the amount of investment by creditors compared to the tangible investment by owners of the firm's total assets.

Debt to Tangible Net Worth Ratio

$$\text{Total liabilities} / \text{Tangible net worth}$$

The higher the ratio, the riskier is the creditors' position. Robert Morris further states that "a lower ratio generally indicates greater

¹Robert Morris and Associates, op. cit.

²Ibid.

long-term financial safety" and the business "usually has greater flexibility to borrow in the future."¹

One last commonly used ratio is the times interest earned ratio.

Times Interest Earned Ratio

This simple yet widely-used coverage ratio tells the user the extent to which earnings can decline without the resultant financial embarrassment to the enterprise of an inability to meet annual interest expense. This ratio,

$$\text{Income before taxes plus interest expense} / \text{annual interest expense}$$
uses earnings before interest and taxes, since interest is a tax-deductible expense and was deducted in arriving at net income. This ratio has significance to creditors in that the interest expense must be covered. If a firm has a marginal times interest earned ratio (i.e., less than average), then creditors may evaluate this firm as being a greater credit risk than other firms with a higher earnings-to-interest relationship, and borrowing capacity diminishes.

To this point in the discussion of veterinary capital structure and long-term solvency, the focus has been the theory behind commonly-used ratios and techniques and the equations for their calculations. There follows a discussion of the results of the empirical data for the three example clinics.

¹Ibid.

Table 10. Results of capital structure and long-term solvency financial ratios for the empirical data.

		Financial Ratios for Long-term Solvency								
		Practice A			Practice B			Practice C		
		1979	1978	1977	1979	1978	1977	1979	1978	1977
No. of Vets per Practice:		1	1	1	3	3	3	1	1	1
Code	Ratio									
T	Debt to Equity	1.48	2.84	5.3	1.2	1.5	1.7	3.5	8.0	13.0
%	Debt to Total Assets	59.7	74.0	84.0	54.0	60.0	62.9	77.8	88.9	92.9
T	Fixed Assets to Tang. Net Worth	2.15	3.4	5.5	2.0	2.2	2.3	3.2	6.5	9.9
T	Debt to Tangible Net Worth	1.48	2.84	5.3	1.2	1.5	1.7	32.1	--	--
T	Times Interest Earned	5.1	4.9	3.6	22.1	20.4	23.7	11.7	10.4	9.4

T = Times; and % = Percent.

Discussion of capital structure and long-term solvency
financial ratios for the empirical data

Practice B has the best debt/equity position and, because it has no intangible assets listed, debt/equity = debt/tangible net worth, a result of its being an older practice where debt has been paid off. Practice B has ownership of 46 percent of its practice at the end of 1979, while Practice A owns 41.3 percent of its assets. Practice C owns only 21.2 percent of its assets if goodwill is allowed, or if not only 2.4 percent at the end of 1979. Practice C has an extremely high debt to tangible net worth ratio in 1979 as it has only \$1231 in tangible equity. For years 1978 and 1977, Practice C has negative equity and so no ratio is listed. Practice B has an extremely high times-interest-earned ratio, as three veterinarians were involved in generating the income. It is still quite high when divided by three to get a per veterinarian ratio, and this is due to a low interest payment, presumably due to borrowing funds in 1972 when rates were lower than in 1975 and 1976 when A and C borrowed funds, respectively.

For physicians, in 1978 Robert Morris and Associates list a figure of 0.8 for fixed assets to tangible net worth, a percentage lower than the veterinary clinics in this study which indicates more equity in fixed assets. They list 1.2 for debt to tangible net worth comparable to Practice B and 4.0 for the times interest earned ratio which is less than in 1978 for all three clinics in this study.

An exploration of the concepts of "debt" in both the short-term and the long-term reveals that liquidity can have many potential meanings. In the short-term, liquidity can be examined best by failure to meet obligations, failure to be in a position to take advantage of

profitable opportunities, ultimately resulting in a lack of choice for management. To creditors, short-term illiquidity implies credit risks. Several commonly-used financial ratios were incorporated into the empirical study. In the long-term, solvency differs "markedly" from short-term liquidity: While in the short-term, the time horizon is short and funds flow can be projected fairly accurately, in the long-term this is quite difficult. Therefore, measuring devices for the long-term must be more "all-encompassing" and less specific. The financial ratios used in long-term solvency analyses are mainly concerned with total debt and total asset relationships. However, more detailed measurements have also proved useful.

Earning a sufficient return on investment must be considered the mark of success for any business enterprise. The next subject recounted in the analysis of the financial performance of private veterinary practices is the all-too-important subject of return investment.

Analysis of Return on Investment and Utilization Assets-- Blocks Three and Four

In this part of the chapter there will be a minor departure from the standard method of presentation in each of the previous chapters as outlined in the introduction to this section. This chapter will start with a theoretical discussion of some of the arguments surrounding profits and profitability and a statement of the concept of profitability used in this study. Continuing with the theory, the idea of return and investment is discussed in two major ways: (1) diagrammatically via a duPont chart, and (2) graphically via an iso-return line. A short discussion of some of the advantages gained by using these two

analytical techniques is followed by a calculation of the leverage index by way of return on investment and return on equity as well as a few auxillary financial ratios. Finally, the empirical results of the three example Clinics A, B and C for the diagram, graph, index, and auxillary ratios are reviewed with a discussion of the results for the empirical data after each set of results.

Most investors would like to identify a single measure of profitability that would be meaningful in all situations; as of now, however, no single criterion has been devised to meet such a need. Thus, a series of comprehensive ratios and comparisons are needed to adequately judge financial performance in terms of return on investment and assets utilization. If a high level of "quality of medicine" is achieved, and a profit on operations is obtained, then the argument becomes one of determining sufficiency of profit level.

Profitability versus profits

Solomon has developed a useful distinction between the concepts of profits and profitability. "Profits are that amount or share of national wealth which is allocated to those who provide the equity capital for the enterprise."¹ The concept of maximizing profits is concerned, then, with creating and distributing maximum wealth to the owners of the enterprise. This concept of profits has generated considerable criticism of late, and it stems from the distinct separation between owners and managers in the modern corporation. As McGuigan and Moyer point out,

¹Solomon, Ezra, The Theory of Financial Management (New York: Columbia University Press, 1963).

"many believe that management should serve not only the interests of the owners, but also those of such other groups as labor, community neighbors, suppliers and creditors. To a large extent the interests of these groups are not in conflict, but where conflicts do arise, management is forced to choose a way that balances among the interests of the constituencies."¹

Profitability, as McGuigan later suggests, "provides the criterion for economizing in the use of social resources; that is, it becomes a measure of the efficiency with which resources are utilized."² The above approach eliminates the arguments of distribution of benefits to society or maldistribution of benefits, as it considers optimum social utility or satisfaction as having been achieved when optimum profitability occurs.

Others argue for the concept of "satisficing"* in which Simon³ proposed that maximizing an objective function should not be the explicit desire of the firm. Rather, the firm should build minimum levels or standards of achievement, through which it provides satisfactory levels of profits which guarantee the firm's existence in the long run. As McGuigan adds, "Instead of seeking to 'maximize' some objective function, the firm is said to 'satisfice', or seek acceptable levels of performance."⁴

It is quite obvious that there are many arguments against the profit maximizing standard of performance concept so widely used in

¹McGuigan, James R. and R. Charles Moyer, Managerial Economics (St. Paul, Minn.: West Publishing Co., 1979), p. 11.

²Ibid.

*An economic term implying satisfactory levels.

³Simon, Herbert A., "Theories of Decision Making in Economics," American Economic Review, Vol. 49, No. 3 (June 1959): 53.

⁴McGuigan and Moyer, op. cit.

today's business decision policies and financial analyses. The approach that this study takes toward profit generation and returns to investors assumes a high level of performance (quality of medicine) by all veterinarians along with a satisfactory profit level as a necessary condition for the survival of the firm. That is, the practice must generate sufficient revenues in excess of costs in order to survive, while at the same time providing a high level quality of medicine to the community. Further, it is assumed that the tests of profitability focus on measuring the "sufficiency of income" by comparing this income with one or more "primary activities"* as derived from the financial statements of the practice. Greater profit, in this study, is considered a result of greater efficiency in operation (for many reasons), done so without disadvantage to the consuming public.

The computation and analysis of financial ratios for many similar firms that deal with return on investment and assets utilization might prove quite instructive in determining an appropriate level of return to investors and utilization of the practice's total assets. According to a publication in 1979 by the American Veterinary Publications, Inc., "Management Consultant Donald R. Dooley feels that the profit figure should be no less than 10 percent of gross income in a healthy practice; a higher figure is easily justified on the basis of unusually high investment in equipment or specialized skills."¹ This investigator assumes that by profit Mr. Dooley means that portion of revenues

*Primary activities are the major accounts on the income statement and balance sheet, such as sales, expenses in total, net income, total assets, etc.

¹DVM Management, "Establishing Fees," In-Depth Report, American Veterinary Publications, Inc., P.O. Drawer KK, Santa Barbara, California, 1979.

left after all costs inclusive of the opportunity cost of veterinary labor. The level of appropriateness of return on investment is indeed a difficult question. It is this investigator's opinion that the "sufficiency" of return on investment can be approximated only by establishing the actual return on investment for an empirical survey of veterinary practices coupled with a survey of what similar investments captured in return in other related industries (i.e., human medical and dental practices), while being sure that the calculations for the return on investment are significantly similar.

Return on investment and assets utilization

Because measures of assets utilization are used to determine the actual return on investment for a veterinary practice, the discussion of assets utilization and return on investment will be combined.

If veterinary medical performance has as its primary objective the contribution of a high level of "quality of medicine" to society, then from a business point of view a high level of "financial performance" must necessarily be the main objective of the business aspect of the practice. Therefore, the veterinarian must be a good businessman as well as a good veterinarian.

If a veterinary education were provided cost free and if licensed veterinarians required no payment to exist, then the business aspect of a veterinary career would demand little attention. This, however, is not the case. Veterinarians do expend a considerable amount of time, effort, and money obtaining the skills with which to practice veterinary medicine. This expense in full view of the opportunity cost* of

*Amount foregone in the next best alternative as a result of the choice made and carried out.

the time, effort, and dollars spent on that education cannot be taken lightly. That investment must derive a return: a profit per sale and an adequate number of sales. However, the opportunity cost of an education is only part of the total cost of investing in a private veterinary practice. The actual capital investment is equally as important and must also be considered.

In the analysis of financial statements, L. A. Bernstein states that "the relationship between net income and the capital invested in the generation of that income is one of the most valid and widely recognized measures of enterprise performance."¹ The earning of a return, whether adequate or superior, depends on the skill, ingenuity, resourcefulness, and motivation of management. Therefore, return on investment offers a means of evaluating the quality of the management of business activities. The basic formula for the calculation of return on investment is as follows:

$$\text{Return on Investment (ROI)} = \frac{\text{Income}}{\text{Investment}}$$

More accurate estimates of the actual return on investment for the veterinary practice can be derived if modifications of this basic formula are made. As established before, when calculating financial ratios from balance sheets and income statements, the analyst must remember that balance sheet amounts relate to one time, while income statements refer to transactions and events that occur over a period of time. Because of this discrepancy, care must be exercised when calculating ratios that use amounts from both statements. Thus, when an income

¹Bernstein, op. cit.

statement amount is compared to a balance sheet amount, a balance sheet average is often used to compensate for the difference in time periods; for example, add beginning and ending total assets and divide by two to get an average total assets base over the time interval of the accounting period. An even more accurate method is to average monthly figures (if available) and divide by 12. Unfortunately, in smaller businesses these figures are rarely readily available.

When calculating ROI, the investment base is comprised of total assets; therefore, income before interest is used. This ratio measures the rate of return on the firm's total investment. Investment is the amount of resources provided by the owners and creditors; therefore, this ratio is the rate of return on all resources employed during the year. The interest expense is added back, since it is the return on creditor's investment. However, interest net of tax is used because it is the net cost to the practice of the funds provided by creditors. This study assumes a 23 percent tax rate, and thus we add back 77 percent of the interest expense. Reflecting these refinements, the ROI formula takes the form:

$$\text{ROI} = \frac{\text{Net income} + \text{interest expense} (1 - \text{tax rate})}{(\text{Beginning total assets} + \text{ending total assets}) / 2}$$

One further modification is necessary before incorporating this ratio into the study. The type of income statement used in this study does not remove any remuneration for the veterinarian(s) before the calculation of net income (profit). When observing the financial statements of corporations, all expenses are removed inclusive of salaries to all management and personnel. It is then necessary to extract

some common figure from the net income for the veterinary practices that will constitute payment to the veterinarian for his services. Owner draw is a highly inconsistent figure among veterinary clinics; thus, it becomes a poor number to use for comparative purposes. The payment to veterinarians might best be justified in terms of the opportunity cost of working in (and in most cases owning) a private practice. The opportunity cost is the amount foregone in the next best alternative by choosing to work as a private practitioner. The opportunity cost used in this study will be the classification of a GS-11 federal employee¹ = the lowest possible classification a veterinarian will hold in federal employment as a licensed veterinarian. The average annual salary for a beginning GS-11 employee in the years of this study was \$18,559 in 1977, \$19,585 for 1978, and \$20,611 for 1979. These common figures will now be subtracted (per veterinarian) from their respective year's net income (in addition to the previously stated refinements). The final refinement to the ROI that is used in this study is as follows:

$$\text{ROI} = \frac{\text{net income} + \text{interest expense} (1 - \text{tax rate}) - (\text{GS-11 salary for the year in question per veterinarian})}{\text{average total assets}}$$

Because the analytical tool of ROI is particularly useful in evaluating managerial effectiveness (from an economic point of view) and profitability, one must consider in depth the complexity involved in such a calculation. The general formula will now be considered and broken down into its constituent parts. If, for purposes of

¹Statistics provided by the Federal Labor and Wage Division, Larimer County, Colorado.

discussion, net income' equals net income + interest (1-tax rate) - (GS-11) and total assets' equals average total assets, the formula takes the form:

$$\text{ROI}' = \frac{\text{net income}'}{\text{total assets}'}$$

Since sales, in gross, are considered a most important yardstick in measuring profitability and activity (a subject to be dealt with later in this chapter), one can break this formula down into:

$$\text{ROI}' = \frac{\text{net income}'}{\text{gross sales}} \times \frac{\text{Gross sales}}{\text{total assets}'}$$

(profitability) (assets utilization)

Net income' to gross sales is a ratio that measures operating performance in terms of profitability, where net income' is profit above all costs. The relationship of gross sales to total assets' is a measure of assets utilization (or as sometimes considered, activity or turnover). This ratio provides a measure of how effectively the assets were utilized in terms of sales or revenue generation. The intensity with which assets are utilized, in generating returns, is measured by means of asset turnover ratios. Assets utilization has as its ultimate measure the amount of sales generated, since sales in most enterprises form the first essential step towards profits. Hence, a ratio that measures profitability (net income to sales) coupled with an assets utilization ratio (sales to total assets) is effectively a measure of returns to total investment.

There have been developed two excellent methods for exhibiting and analyzing the return on investment for a business enterprise. The

first is a diagrammatic representation of ROI, and the second is a graphic representation of the concept.

Diagrammatical Representation of ROI

E. I. duPont has developed a diagrammatic representation of the components that make up return on investment. Figure 1 is such a representation and includes the major factors which influence the final return on total investment. Briefly, the components of the income statement are summed up on the left-hand side of this diagram, while on the right-hand side are components of the balance sheet. The two statements come together for a calculation of return on investment in the first level.

Graphical Representation of ROI

A graphic relationship between profitability and asset turnover can also prove to be quite instructive. As stated earlier, a profitability ratio (net income to gross sales) multiplied by an assets utilization ratio (gross sales to total assets) results in the ROI ratio (net income to total assets). By the very nature of a dynamic mathematical model, such as the one provided for ROI, there are varying combinations of profitability (as a percent) and assets utilization (as the number of times assets turned over) that will yield a constant level of return on investment. This is shown in Figure 2.

A few beginning assumptions are necessary before we analyze ROI graphically.

1) The veterinary practices D, E, F, G, H, I, J, K, and L used in the graphical analysis are provided purely for explaining the model.

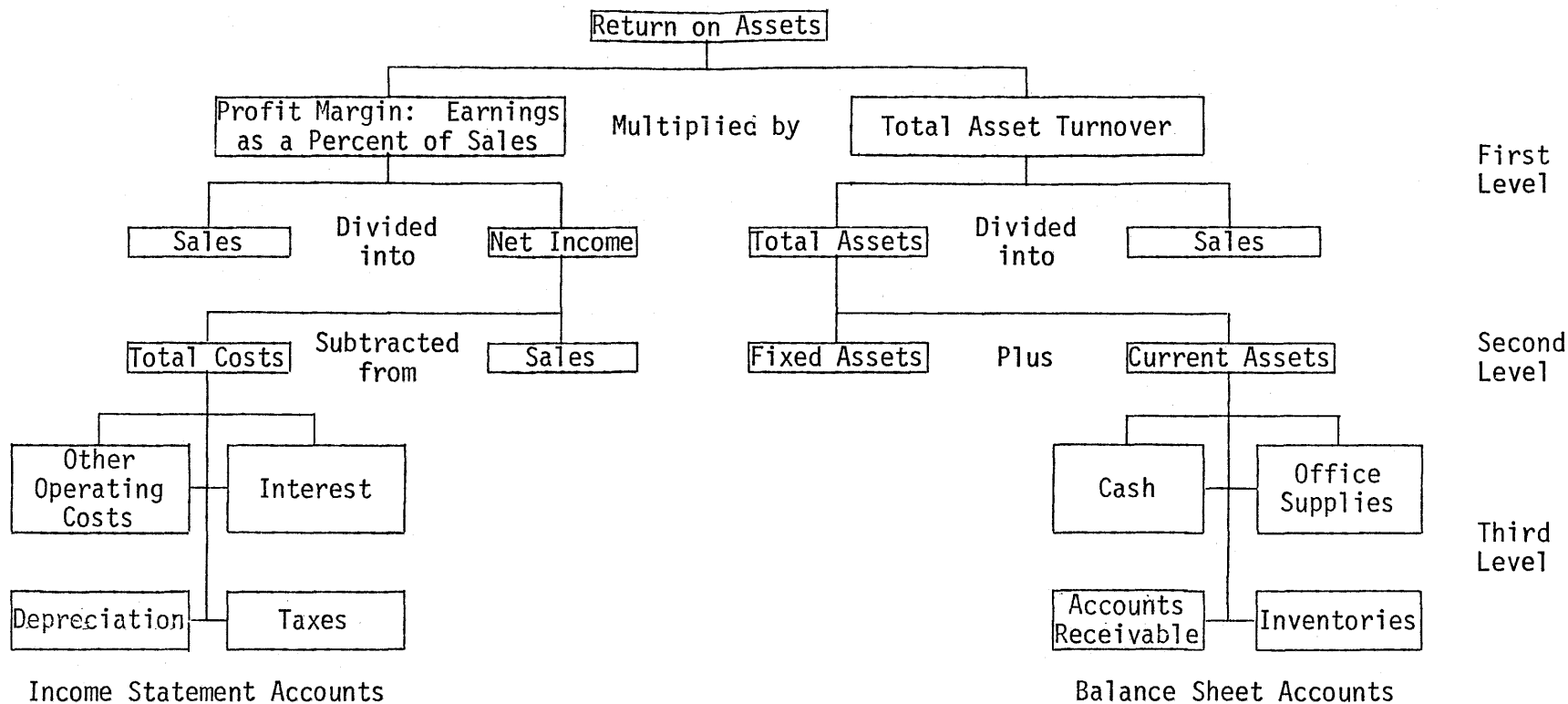


Figure 1. Diagrammatical Representation of Return on Investment.

Source: Brigham, Eugene F., Financial Management, Theory, and Practices, 2nd edition (Hinsdale, Ill.: The Dryden Press, 1979), p. 200.

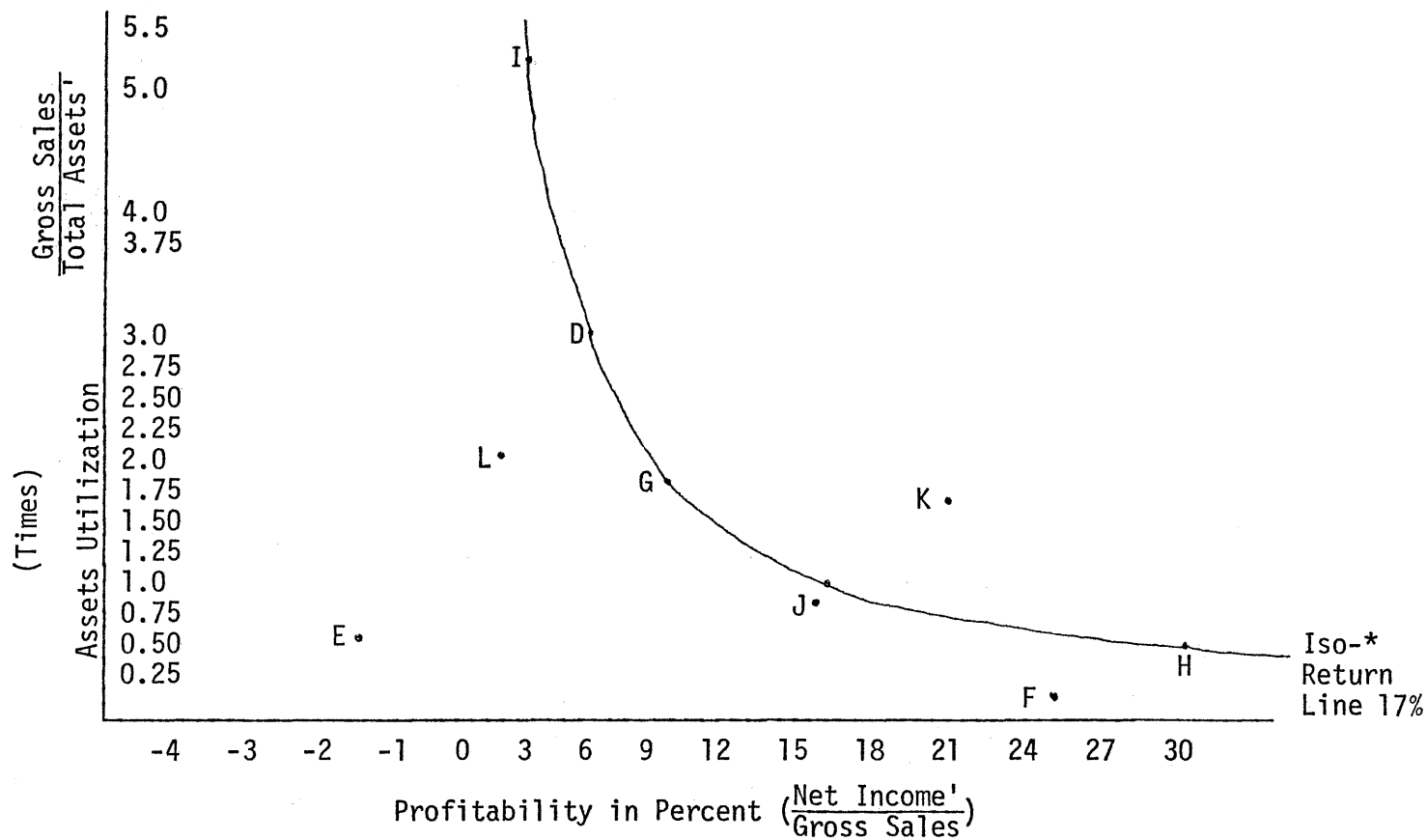


Figure 2. Graphical Representation of Return on Investment

Source: Bernstein, op. cit.

*The iso-return line is a line connecting common levels of return on investment, i.e. here it is 17 percent.

They are not part of the empirical data in the results portions of this study.

2) Let veterinary practice G be the seemingly desirable practice that is enjoying nearly full capacity and changing what is considered a fair price for goods and services.

3) Assume that all veterinary practices and veterinarians provide the same high level quality of medicine except possibly practice K. The reason for this condition will soon become apparent.

4) Assume for explanatory purposes that an arbitrary return on investment of 17 percent is considered desirable and achievable.

5) Assume that all veterinarians have roughly the same capacity for their load but that some will accommodate more clients to generate more revenue up to capacity. This of course can have implications for the level of quality in medicine.

As one can easily see, companies G, H, and I all have returns on investments of 17 percent. Company I has by far the greatest assets turnover of 5.0 but a low profit margin on sales of 3.4 percent. Two major reasons for this may be: (1) a low sales price with respect to the cost of providing average goods or services, and/or (2) a high level of cost for those same goods or services. Let us assume further that veterinarian I has comparable cost structures to veterinarians G and H. From this it follows that price is his problem. Further, let us assume that all veterinarians do, in fact, face a downward sloping demand curve* and that they have estimated that they are in the

*A downward sloping demand curve is indicative of an inverse relationship between the price charged and quantity demanded. If price rises, demand falls. If the percentage increase in price, when price rises, is greater than the percentage decrease in quantity demanded, total revenue will increase where total revenue = price x quantity.

inelastic portion of that demand curve. If this is so, veterinarian I could increase his price (within reason as price increases will cause upward movement along the demand schedule and move him to a less inelastic or more elastic position) and lose (presumably to his competitors) a disproportionate demand for his services. His present position might indicate that he is seeing more clients than he can adequately handle and charging, in competitive terms, too low a price. Veterinarian H, on the other hand, might be charging such a high price for his services that he loses demand. It follows that he might be seeing too few clients. He might try to reduce costs, if they are in fact the problem, such that he could reduce price (or increase it over time at a much slower rate than he otherwise might have) and hopefully capture a greater market share and move up along the line toward veterinarian G's position. Veterinarian K presents an interesting situation because he is returning 31.5 percent to total investment. A plausible explanation might be that he is a specialist who can charge more per service and in addition maintain the minimal inventory that lowers overhead.

Analysis Combining the Diagram and the Graph

The diagrammatic representation of the factors that contribute to the final ROI is a very practical method for laying out the path to return on investment. This diagram points out explicitly how the various major accounts on the two all-important financial statements (i.e., balance sheet and income statement) come together to form ROI and in what order. It can be seen that in the first level, profitability times asset turnover will yield return on assets. The diagram is

definitive: these are the accounts, this is their order in the chain, and this is how they come together to form ROI.

The graphical representation adds a new dimension to the analysis of return on investment. Once the diagram has been completed, the graphical analysis will point out the major areas of concern when a certain return is desired in contrast to what is actually earned. That is, if profitability is low and asset turnover is average, then the practitioner can return to the left side of the diagram to analyze what components of profitability are causing a low profit. On the other hand, if profit is high and asset turnover is low, then the right side of the diagram can be used to analyze deficient turnover. This point can be highlighted by returning to the graph on Figure 2. Practice E should concentrate first and foremost on profitability. If all sales, in aggregate, are yielding a negative return, as they must be, then an analysis of the price level per sale and cost structure of practice E must occur in order to determine why profit suffers. Practice E also has a lower asset turnover level. Since sales to total assets equal the asset turnover, then sales (i.e., demand for services) and/or total assets (i.e., dollar value investment) must be examined to determine the reason for low turnover. If sales are the problem, then all factors affecting sales must be considered. This has implications on the current price level charged per sale and thus on profitability. If the dollar value invested in total capitalization is high, then sales must be high to yield turnover. In addition, if the dollar value of assets is high, then chances are that fixed costs (i.e., insurance, depreciation, taxes and utilities) are also high, indicating that costs may be excessive and therefore lower profitability is further implicated. As

easily seen, the factors involved in asset turnover have great influence on profitability. Hence, price and cost structures are of vital concern to the welfare of the practice.

One further point can be made in regard to these diagrammatic and graphical analyses. Veterinary practices in the same community or region invariably differ in the number of veterinarians per practice. This condition arises in the empirical data for this study which examines two single veterinary practices (A and C) and one three-man practice (B). A most significant contribution to ROI analysis of these two analytical techniques is that they can help to reveal efficiencies and inefficiencies in multi-veterinary practices versus single veterinary practices. This argument will be highlighted in the empirical results at the end of this chapter.

Return on total assets (investment), as previously discussed, is a topic of great concern to both the owners and creditors of a veterinary practice. Another measure of management performance that is of importance primarily to owners is the return on owner equity.

Return on owner equity

The difference between return on investment and return on owner equity is that portion of total capitalization that is financed by creditors (i.e., liabilities). The calculation of return on owner equity is:

$$ROE = \frac{\text{net income}^*}{\text{average owner equity}}$$

*Net income' is the same figure as for ROI.

Like ROI, the ROE equation has two components:

$$\begin{array}{c} \text{(profitability)} \\ \frac{\text{net income}^1}{\text{gross sales}} \end{array} \times \begin{array}{c} \text{(equity utilization)} \\ \frac{\text{gross sales}}{\text{average owner equity}} \end{array}$$

The difference between ROI and ROE is that though profitability is the same, total assets utilization is replaced with equity utilization. A diagrammatic and graphical analysis similar to that for return on investment can be supplied for return on equity, as easily derived in the same manner as ROI. Another concept that is more revealing, however, is the analytical technique known as analysis of financial leverage, a technique incorporating both ROE and ROI.

Financial leverage index

In percentage terms, the difference between ROE and ROI is known as the amount of financial leverage.

"Financial leverage means the use in the capital structure of an enterprise of debt which pays a fixed return. Since no creditor or lender would be willing to put up loan funds without the cushion and safety provided by the owners' equity capital, this borrowing process is also referred to as 'trading on the equity', that is, utilizing the existence of a given amount of equity capital as a borrowing base."¹

Leverage is considered to be positive (not in the strict algebraic sense) when the return on owner equity exceeds the return on total assets. Thus, leverage is positive when return on total assets is higher than the cost of debt, so the differential between ROI and debt accrues to the benefit of the owners of equity.

A financial leverage index can be computed from a ratio of ROE and ROI. The leverage index is calculated in the following way:

¹Bernstein, op. cit.

$$\text{Financial leverage index} = \frac{\text{return on owner equity}}{\text{return on total assets}}$$

"A financial leverage index greater than 1 is positive, that is, it indicates that the use of borrowed and other uncommon equity funds increases the common stockholder's* return. A leverage index below 1 has the opposite effect."¹ Thus, when a leverage index greater than 1 exists, creditors are usually more willing to loan additional funds on demand than they would be if a negative index occurs.

Additional ratios often used for further insight into return on specific components include the following which are, with minor exceptions, self explanatory.

- 1) net income to sales
- 2) sales to net working capital
- 3) sales to owner equity (net worth) all turnover ratio included earlier
- 4) fixed assets turnover = sales to fixed assets
- 5) tangible assets turnover = sales to tangible assets

It will be useful at this time to return to the empirical results and apply theoretical concepts to the data.

*In the corporate sense, for our purposes, it would mean "owner's share of the business."

¹ Bernstein, op. cit.

Table 11. Results of duPont diagram for the empirical data.

Diagram of duPont Chart for Practices A, B and C for 1979										
			ROI							
			Return on Assets							
			16.4							
			22.4							
			1.9							
			Profit Margin'		Multiplied By		T.A. Turnover			
			17.4				0.95			
			11.2				2.0			
			1.8				1.07			
			Sales		Net Income'		Average Total Assets		Sales	
			94,311		16,371		99,817		94,311	
			221,654		24,840		111,206		221,650	
			53,832		988		50,741		53,832	
			Total Costs		Sales		Fixed Assets		Current Assets	
			63,720		94,311		88,900		13,770	
			139,852		211,654		103,205		8,001	
			33,787		53,832		36,370		4,371	
			Other Costs		Interest		Cash		Off. Supplies	
			43,110		8,300		2,793		246	
			114,536		6,300		2,640		200	
			25,333		2,018		1,007		540	
			Depreciation		Taxes		A/R		Inventory	
			9,248		3,062		2,722		7,959	
			B 12,587		6,409		--		5,160	
			C 4,936		1,500		--		2,824	

*Legend: Account Clinic A, Clinic B, and Clinic C.

Source: Brigham, op. cit., p. 200.

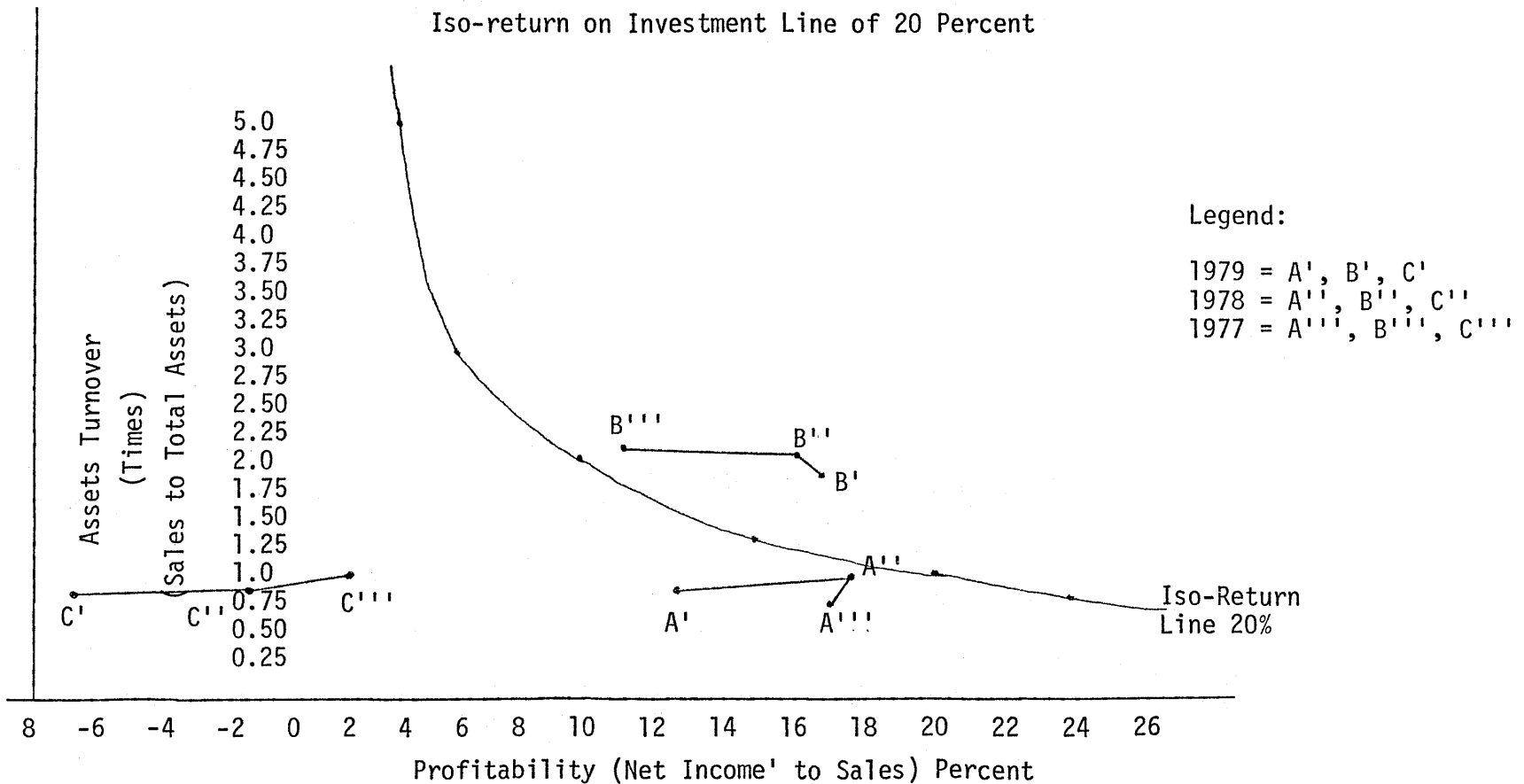
Discussion of diagrammatical analysis of ROI
for the empirical data

The duPont diagram is a convenient method for arriving at return on investment as it allows a visual scan of the major components that derive return on investment. Additionally, it gives the prescribed mathematical method for the calculation of ROI. This diagram presents the empirical Practices A, B and C in columnar form with Practice A's data at the top of each column. Practice A has total costs of \$63,720 with sales of \$94,311 and a net income' of \$16,371, yielding a profit margin of 17.4. Practice A also has an average total assets base of \$99,817 coupled with sales of \$94,311 to yield an assets turnover of 0.95 times. The profit margin of 17.4 percent multiplied by the assets turnover of 0.95 for Practice A provides a return on investment of 16.4 percent--a return to the practice in general and not necessarily to the practice on a per-veterinary basis. The ROI for Practice B is 22.4 percent. This presents an excellent opportunity to discuss the advantages and/or disadvantages of operating a practice with one veterinarian versus more than one veterinarian. It is more than obvious that a given amount of capital will derive greater usage (turnover) if the sales volume for the multi-veterinarian practice is larger than the single veterinarian practice (the opposite also holds). In this empirical study, Practice B (the multi-veterinarian practice) has three full-time veterinarians. The return on investment earned by Practice B is larger than that for Practice A or C for one major reason: Practice B has only 11.4 percent more dollars invested in assets and generates 2.35 times more revenues. This yields a turnover of assets of 2.0 times for Practice B and only 0.95 times for Practice A. The

implication for this limited sample size is that there is a greater ROI obtainable for multi-veterinarian practices than single veterinary practices. On the other hand, that Practice B did not generate three times the sales volume of Practice A might imply that demand starts to diminish at some point above one or two full-time veterinarians. A larger sample size and extended study is needed to provide data to answer these and other questions.

Table 12. Results of graphical analysis of ROI for the empirical data.

Iso-return on Investment Analysis, per Veterinarian



Source: Bernstein, *op. cit.*, p. 161.

Discussion of graphical analysis of ROI for the empirical data

The graphical analysis of iso-return on investment provides an excellent method for mapping progress, to be most effectively completed on a monthly basis. If profitability per sale can be maintained at a certain desired level, then demand and resultant sales volume can be concentrated on in subsequent months.

For the three years in the empirical analysis the yearly progress is mapped for each practice. Practice C did improve profitability from a "negative" figure to 1.8 percent--a percentage still conceivably unacceptable in normal business terms. Practice A improved profitability in 1978 to 17.5 percent and declined in 1979 to 17.4 percent. The major effect on the return on investment in 1979 for Practice A was an assets utilization drop from 1.0 in 1978 to 0.95 in 1979. Practice B had a profitability decline each year with the year 1979 dropping to 11.2 percent. Practice B's turnover remained fairly constant with a slight increase in 1978 and that same magnitude decline in 1979.

Table 13. Results of other assets categories and financial ratios for the empirical data.

		Financial Ratios for Profitability and Asset Utilization								
		Practice A			Practice B			Practice C		
		1979	1978	1977	1979	1978	1977	1979	1978	1979
# of Vets per Practice:		1	1	1	3	3	3	1	1	1
Code	Ratio									
%	Return on Investment	16.4	17.5	10.7	22.4	33.5	33.7	1.9	(-1.5)	(-5.7)
%	Return on Equity	30.0	53.0	25.0	42.0	75.0	82.0	74	(-49.4)	(-119.8)
N/A	Leverage Ratio	13.6	35.5	14.3	19.6	41.5	48.5	(-8.6)	(-50.9)	(-125.5)
%	Net Income' to Sales	17.4	17.5	12.4	11.2	16.1	16.8	1.8	(-1.5)	(-6.7)
T	Sales to Owner Equity	3.3	4.8	6.1	4.6	5.4	5.1	12.0	10.8	6.4
T	Sales to Net Work C.	38.2	76.8	137.1	592.7	34.0	21.6	--	--	155.3
T	Sales to Total Assets*	0.95	1.0	0.86	2.0	2.1	1.9	1.07	0.98	0.85
T	Sales to Fixed Assets	1.06	1.2	0.98	2.2	2.4	2.2	1.5	1.4	1.2
T	Sales to Tangible Assets	0.95	1.0	0.86	2.0	2.1	2.0	1.3	1.3	1.1

*Asset utilization.

T = Times; % = Percent; and N/A = Not Applicable.

Discussion of other asset categories and financial ratios
for the empirical data

The chart of financial ratios is quite useful for comparative purposes. This chart provides a vertical analysis of the ratios used to derive ROI: net income' to sales (profitability) and sales to total assets (turnover). In addition, it also lists the auxillary ratios that allow a more in-depth insight into the internal returns to various categories of assets.

A final comment: it is interesting to note that Practice C had negative returns in 1977 and 1978. The intriguing point is that for years 1977 and 1978, Practice C had a net income listed on its income statement less than what the veterinarian could have earned as an employee of the government; yet, in 1979 sales and costs were such that the reverse condition existed. It would be extremely interesting to see how this clinic ends the year 1980 with respect to ROI.

In the last portion of this chapter in the analysis of return on investment and utilization of assets sections, profitability and sales were discussed as the desired goals of the veterinary practice. However, this profitability implied a high-level quality of medicine. It was noted that return on investment can be broken down into two major parts: profitability and assets utilization. Profitability (profits) is that amount of revenues left over after all costs are paid and utilization is the number of times that sales equaled investment dollars in assets. This concept of ROI deals with the total investment in the business by both owners and creditors. Next, the discussion involved two forms of representations of ROI, the first diagrammatic, containing the two most important financial statements--the balance

sheet and the income statement. The second representation was graphic and presented the two mathematical components that make up the ROI calculation, namely, profitability and asset utilization. Finally, the empirical results were again incorporated to show explicitly how the theory works in practice.

SECTION III

LIMITATIONS OF FINANCIAL ANALYSES: EXPANSION OF THIS STUDY TO OTHER COMMUNITIES, TWO MAJOR QUESTIONS UNATTENDED IN THIS STUDY, AND SUMMARY AND CONCLUSIONS

That limitations commonly exist in financial analyses argues for the concept of financial "position versus condition" along with a discussion of some of the limitations of the accounting procedures incorporated in the construction of financial statements. The second area of interest for this section concerns the third and final objective of this study, that is, the expansion of this study to other communities and regions and a probable method for such an expansion. A few arguments on the two major questions unattended in this study, i.e., funds flow analysis and an analysis of operating performance are noted. A broad summary, a condensed table of results, and a few remarks conclude this study.

CHAPTER VII
LIMITATIONS, EXPANSION, OTHER QUESTIONS

Limitations

During specific sections of this study, limitations of certain concepts and accounting procedures have been pointed out as these matters arose. However, there are general limitations to financial statement analysis that need to be entertained so that an individual, upon reading and applying this study, can interpret the data and procedures in full view of their major limitations. J. N. Myer puts it well when he says:

"Upon looking at the financial statements and observing that they contain many numbers, those untrained in accounting naturally associate it with mathematics. Mathematics is the most precise of all the sciences; in fact, it is the ideal science in that it deals, for instance, with such matters as lines that have no width and points without dimensions. Accounting, in contrast to this, since it operates on a series of contentions and postulates applied by the exercise of judgment, as has been shown, arrives at conclusions which are largely opinions rather than facts. The unfortunate ascribing of the attributes of mathematics to accounting is the cause of many of the mistaken notions about accounting."¹

Precision in the accounting of financial statement data is largely due to the assumptions and postulates of generally accepted accounting principles of the accounting industry. For this very reason, the precision of statement data is subject to conjecture. Moreover, businesses within the same industry, however closely related, may differ in their method of accounting and operations, which directly relates to and influences their respective financial statements. Many factors that have an ultimate effect on the financial condition of a business are not usually reflected in the individual accounts in the financial

¹Meyer, John N., Financial Statement Analysis, Third edition (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), p. 37.

statements. It is for this reason that the financial statements present the financial "position" and not necessarily the financial condition of the firm. This study takes the point of view of financial position in favor of financial condition.

The assets shown on balance sheets are usually recorded based on "historical costs" and not on current market values; therefore, the balance sheet does not reflect the actual worth of the business. (This study has attempted to neutralize this effect by the revaluation of assets.) Further, the difficulty of interpretation of financial statements caused by the instability of the dollar has long been the subject of considerable concern. This investigator has dealt with this limitation by incorporating price level adjustments.

The interpretation of individual accounts is a matter of concern in the analysis of financial statements. For instance, Myer points out that

"...the net income shown in the income statement is not absolute, but relative, dependent as it is on the particular conventional procedures used in its accounting by the enterprise for which the statement is compiled, these procedures having been selected from among various alternatives."¹

When referencing standard industry averages such as those found in the annual statement studies by Robert Morris and Associates, Dunn and Bradstreet, and Troy and Associates, the user should be aware that:

- a) The financial statement data is not selected by any statistically reliable procedure. Banks in association with the above analysts voluntarily supply the raw data that they have available each year.

¹Ibid.

b) Some of the composites used in these studies come from relatively small sample sizes, and it is possible that this can distort the "true" industry average.

It is for reason (b) above that this study has repeatedly pointed out that the data contained within this analysis is for instructive and procedural purposes and not comparative purposes (comparative in the sense of using this data as an industry average). A large scale study would be needed for those purposes.

A further point brings out the nature of averages themselves. As Eugene F. Brigham has highlighted in his text:

"Most firms want to be better than average (although, by definition, half must be above and half below), so merely attaining average performance is not necessarily good. As a target for high-level performance one might want to look at the industry leader's ratios."¹

However, in studies by Robert Morris, there is a listing with a sample size of the upper, median, and lower quartiles for each percentage and ratio. Additionally, there is also listed for each of the above categories a total assets and gross sales category. One of four or five particular sets of percentages and ratios will be for an assets base of \$100,000 and an annual gross sales of \$200,000. The next set will be for assets of \$500,000 and sales of \$500,000 and so on. This is done for "better" comparisons.

Dr. Brigham further argues that:

"Different operating practices will distort ratio comparisons. For example, if one firm leases a substantial amount of its productive equipment, then its assets will be low relative to sales since leased assets do not appear on the balance sheet."²

¹Brigham, op. cit., pp. 189-90.

²Ibid., p. 190.

This was the case with both example Practices B and C. Practice B leased at a cost of \$9941, and Practice C leased at a cost of \$4500 of their productive assets for 1979; therefore, the ratios that utilized total assets are slightly distorted.

One final comment on the limitations of financial statement is applicable concerning generalization of ratios.

"It is difficult to generalize about whether a particular ratio is 'good or bad'. For example, a high current ratio may show a strong liquidity position, which is good, or excessive cash, which is bad because cash in the bank is a nonearning asset. Similarly, a high turnover ratio may denote either a firm that uses assets efficiently or an under-capitalized firm that simply cannot afford to buy enough assets."¹

Therefore, one must observe as many ratios and percentages as possible before making judgments and generalizations. Financial analyses themselves point to further analytical investigations. "Some investigation and experimentation has been undertaken to determine to what extent ratios can be used as predictors of failure."² Thus, it seems obvious that newcomers to veterinary practice, as well as the old, should have an accurate estimate of the kind of business they are entering and its potential in terms of financial capabilities.

Financial ratio analysis is useful in spite of these limitations, but analysts should be aware of them and make adjustments as necessary. Ratio analyses conducted unthinkingly and mechanically can be disastrous; however, used intelligently and thoughtfully, ratios will provide useful insight into the operations of the private veterinary practice.

¹ Ibid.

² Bernstein, op. cit., p. 140.

Expansion of This Study to Other Communities

Expansion of this subject to a larger scale was the main reason for performing this study. Industry averages, while accepting their limitations, are very useful indicators of the financial position of the industry itself (on average) as of a certain date. To expand this study would require, first and foremost, a grant to finance the study and the backing of an interested concern such as a school of veterinary medicine or the AVMA itself. A survey could be developed and sent to interested veterinary practices, stating specifically a date on which the financial figures are needed. This survey could be in the form of modified balance sheet and income statements with a few additional questions concerning the age of the practice, the number of full-time veterinarians working at the practice, and the type of community they serve. The data received could then be held in computer data storage and processed by a simple, easily-written computer program.

The incoming data on participating veterinary practices should be categorized into groups based on gross sales, total assets (once revalued to current market), the number of full-time veterinarians in the practice, and the type of practice. Approaching the expansion of this study by the above methods would yield the results of the expanded study quickly and with a minimum of effort.

It is difficult to understand why the financial community, such as Robert Morris, Dunn and Bradstreet, and Troy and Associates, have not or seemingly do not provide financial statistics for private veterinary practices. It might be that the veterinary industry is the cause for this failure, an interesting question in itself.

Other Questions Unattended

Two major areas of concern that have been excluded from this study are the concepts of funds flow analysis and operating performance. Funds flow analysis--a superior alternative to static studies such as the analysis of short-term liquidity in Chapter VI--is unique in that it incorporates the dynamic model of cash and funds flows so desperately needed in day-to-day activities. When the inflow of revenues is not sufficient to meet the outflow requirements due to cash obligations, severe problems usually arise. It is for this reason that cash flow projections become all too important to the veterinarian and his strategy for the future. The nature of this particular study is that of financial position and performance in the past and not of projections into the future.

The income statement summarizes the results of operations of a business enterprise. Operating performance is analyzed by subjecting the income statement to detailed scrutiny. To do so, the analyst must have access to data that concerns the internal operations of the business, including statistics on all phases of revenue generation. A breakdown of all assets and their cost structure is required in order to assess the cost incurred in selling each and every sale item in the practice. The analyst must account for all sales variations and the effect management had on those variations. This leads to analysis of changes in gross profits and the profit margin on each sales item. Break-even analysis, the basis of the above argument, needs extensive discussion, especially in private veterinary medicine.

The projections of funds flow for future activities as an area of financial analysis is dictated for other extended studies. The

analysis of the operating performance of private veterinary practices, like all small businesses, requires data that is not available at first hand and must therefore be "dug out" of the records of the practice. This is another area of the financial analysis of private veterinary practices that is left to future studies.

CHAPTER VIII
SUMMARY AND CONCLUSIONS

Summary and Conclusions

To be most economically successful, the private veterinary practice must be regarded as a business enterprise; operating any business requires meaningful information. This study is an analysis of business information, specifically, veterinary business information. As Steven E. Permut concludes: "Business information is expected to expand four-fold by the end of the decade. The competitive edge will go to those managers who are able to interpret, analyze and apply that information in the most effective way."¹ It is commonly accepted that the analysis of the financial statements of a business is an excellent method for deriving usable business information; yet, the analysis of such information in private veterinary practices must be considered in its infancy. The collecting, assembling, and reporting for management purposes of useful financial information in veterinary practices is, for the most part, nonexistent.

Because the future is unpredictable, the veterinarian of the eighties faces many unique challenges, expressed well in the following statement:

"While it sometimes seems that there is nothing more than a maze of problems to sort through, there will be tremendous opportunities for constructive change and dramatic progress for those businesses that face these challenges in the most creative way. You as a manager, will be forced to focus on more cost-effective ways to manage your time, people and resources because these are really the only elements over which you can exercise any degree of control in your challenge of enhancing the competitive posture of your firm."²

¹Permut, Steven E., "Doing Business in the 80's: A Handbook on Time and Territory Management," Mountain Bell Pamphlet, 1980.

²Ibid.

Veterinarians sell goods and services in a competitive industry. The costs incurred in selling these goods and services and the assets used therein must be analyzed to determine their effect on the operating structure of the practice. Before the manager of a veterinary practice can adequately judge the effect of such factors as rising costs on the operations of the practice, he or she must know the level of costs in accordance with the relationship of debt to equity, the investment that was required to generate those sales, as well as many other intra-firm relationships. Before an objective, overall conclusion can be drawn as to the type and direction of management decisions, the manager must have the information with which to make sound, accurate, and confident decisions. The incorporation of financial statement analysis into the business procedure of the private veterinary practice will provide the manager with a means of monitoring the various financial accounts in the practice. The techniques and tools explained and utilized in this study will establish a method for deriving much of this financial information.

The preceding study was originally conceived as an analysis of "industry averages" for commonly-computed financial percentages and ratios of private veterinary practices; however, it was ascertained that no such published averages were available for veterinary medicine as they are for human medical and dental practices. Thus, to survey several successful veterinary practices, collect the necessary data, and perform the financial analysis would prove, in fact, that such procedures could be established. The next goal was to explain this facet of business decision making to the veterinary community where, it is hoped, enterprising, efficient managers of private veterinary practices

will incorporate these tools and techniques into their planning processes. Further, it is projected that the financial community, such as Robert Morris and Associates, will realize that veterinary practices, for the same reasons as human medical and dental practices, vitally need this financial information and will collect and publish the industry averages for veterinary medicine.

This study contains three sections. Section I is designed to substantiate the reasons that an analysis of this nature should be performed and how it was effected, beginning with a statement of the problem situation. Large-scale financial analyses of private veterinary practices are few in number and shallow; however, studies concerning incomes and supply/demand analyses do exist. This study focuses primarily on developing a procedure specifically for adapting existing analytical theory to private veterinary businesses. The empirical data fulfills the second objective of this study: namely, to allow comparisons of actual data as a means of pointing out strengths and limitations of statement analysis. The third objective is to suggest a method for expanding this study to a larger scale for the development of industry averages, so often performed for other medical businesses. The data collection procedure was to survey several successful veterinary practices and condense the data into three exemplary practices, "A," "B," and "C." Practices A and C are one-person veterinary practices while Practice B is a multi-veterinarian practice. The purpose of aggregating data was to maintain confidentiality and, at the same time, to show actual dollar values for the accounts that are utilized when computing percentages and ratios.

Section II of this study--the actual analysis section--offers a comprehensive look at the analysis of the financial performance of private veterinary practices. Divided into Chapters IV, V, and VI, each chapter comprises a theoretical discussion of the major concepts behind the analysis of financial statements with accompanying tables of empirical results and a discussion of the results.

With the general assumptions for the study intact, Chapter IV examines actual financial statements--the balance sheet, the income statement, and the statement of changes in financial position--and their respective components are discussed (the third statement is not used in this particular type of analysis). Once an understanding of terms is attained, the researcher conducts the comparative analysis techniques documented in Chapter V. This analytical tool identifies trends, growth rates, and common-sized percentages of selected accounts which reveal significant information about the internal financial structure of the veterinary practice. From this data, it is possible to "horizontally and vertically" analyze the past performance of the practice and to compare that performance with other veterinary practices. Chapter VI, then, provides the in-depth financial statement analysis--the analysis of financial ratios--and incorporates commonly-used, easily-understood indicators of financial progress and performance. The approach adopted for ratio analysis, as defined by L. A. Bernstein, utilizes the "building block" approach to financial ratio analysis. Though there are usually six building blocks to this kind of analysis, this study incorporates only four: 1) analysis of short-term liquidity, 2) capital structure and long-term solvency, 3) return on investment, and 4) utilization of assets.

Any analysis of short-term liquidity must be discussed in terms of degrees of liquidity and whom the liquidity affects. Ultimately, there is a major flaw in normal, short-term liquidity analysis because short-term analyses generally concentrate on one instance in time. Liquidity, in veterinary practices as well as other businesses, depends significantly on future cash in-flows; yet the concept of working capital and ratios that incorporate this "static" measure ignore future in-flows of cash. In addition, if optimizing sales for future funds flow is the goal of the practice, then utilization of assets and inventory turnover (sales of inventory) should be the primary objective of the practice, not higher levels of working capital. Realizing, once again, that limitations do exist in static liquidity analysis, two ratios then can be utilized as indicators of liquidity position for one particular instance--the current ratio (current assets to current liabilities) and the quick ratio (current assets minus inventories divided by current liabilities). Because liquidity is viewed in terms of the practice's ability to meet short-term obligations which come about as a result of future sales of goods and services, the manager can better analyze liquidity by analyzing inventory sales. Though veterinary practices do sell inventory, the service provided is the major billable item; therefore, gross sales of goods and services must be examined. In the discussion of short-term liquidity, static ratios are supplemented with some financial ratios to indicate inventory turnover and year-to-year liquidity position. The subject of gross sales in general appears later in this chapter under return on investment and utilization of assets.

The second building block in this study is that of capital structure and long-term solvency. Short-term earnings and earning power are the true indicators of financial strength, and in the short run these earnings can be approximated. This is not the case with longer-term earnings, and therefore, evaluating long-term solvency differs markedly from assessing short-term liquidity. Using financial ratios that describe the capital structure of the practice enhances understanding of long-term solvency. Creditors often own a considerable portion of new veterinary practices, and veterinarians must be aware of their equity position. The capital structure of a veterinary practice results from the difference between debt (creditor's portion of the total capitalization of the practice) and equity (owner's claim on total assets). Two very useful methods for analyzing capital structure and, thus, distinguishing debt from equity are: 1) common-size statements for selected accounts, and 2) financial ratios. Common-size percentages, compared to the actual dollar values, reveal the proportions of the total assets base owned by creditors and owners of the practice. The financial ratios, on the other hand, allow comparisons of different accounts such as total debt to total assets, total debt to total equity, and many other specific ratios that separate certain desired accounts. The end result is a delineation of the capital structure of the practice and an estimate or "spot check" on the long-term solvency position of the veterinary practice.

The analysis of return on investment and utilization of assets comprises the critical section of this chapter, the third and fourth building blocks for financial statement analysis. Because the assets utilization ratio is used to determine the return on investment, the

concepts of Return on Investment (ROI) and assets utilization are discussed together. The relationship between net income and the total assets base that was used to generate income is the most valid and universally accepted measure of enterprise performance. This relationship, known as ROI, has two major components: profitability and assets utilization. Profitability is recognized as the surplus of revenues in relation to gross revenues after all costs while utilization of assets is a comparison of gross revenues to total assets. These two components combined derive a direct comparison of net income to total assets or ROI. After all particulars are resolved concerning which figures and accounts are to be used in the actual ROI calculation, the analyst can utilize the two components of ROI to diagram and graphically analyze the real return on investment--a very powerful and usable analytical tool. In addition, other ratios are often used that separate assets and equity bases into their respective components and allow greater insight into the specific accounts and their relative structures.

Section III of this study examines the limitations of financial statement analysis and suggests how this type of study might be expanded to other communities. These limitations generally arise as a result of the assumptions and generalizations made by accountants, analysts, and financial statement users. That accounting procedures can vary greatly from business to business will have great impact on the final analysis. On the other hand, if the user of these analytical tools realizes that limitations do exist and uses the techniques in an intelligent and thoughtful manner, the percentages and ratios will provide useful insight into the financial operations of the private

veterinary practice. Such in-depth analysis can and should be expanded by the use of a simple survey. The survey should take the form of a modified balance sheet and income statement in which the resultant data is processed by computer program. Veterinarians need this sort of information if they are to grow and prosper in the decade of the 1980s. As one veterinarian stated, "I'm afraid of the future and only because I don't know where I'm at right now, financially. My medical skills generate my income but that is all I know about the financial workings of my practice."

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APPENDIX

APPENDIX

All calculations are provided using empirical Practice "A," 1979 and 1978 where applicable.

I. Calculation for Trend Index of Selected Accounts and Growth Rates of Selected Accounts.

A. Trend Index,¹ Practice A, 1979, 1978. The Index is calculated as follows:

$$\text{Index Number} = \frac{1979\text{amount}}{1977\text{amount}}, 1977 = 100$$

	<u>Equation</u>	=	<u>1979 Index</u>
Cash,	$\frac{2793}{3009}$	=	93
A/R,	$\frac{2772}{1080}$	=	257
Inventory,	$\frac{7959}{8237}$	=	97
Total Current Assets,	$\frac{13770}{12526}$	=	110
Total Current Liabilities,	$\frac{10598}{10598}$	=	100
Working Capital,	$\frac{2472}{618}$	=	400
Net Fixed Assets,	$\frac{88900}{86294}$	=	103
Other Assets,	0	=	0
Long-Term Debt,	$\frac{60643}{81839}$	=	74
Total Liabilities,	$\frac{61343}{83149}$	=	74

¹Two major rules must be followed in this analytical technique. If a negative number or a zero appears in a base year, a percentage can not be computed. In addition, if a figure is present in the base year and none exists in the latter year, the change is a decrease of 100 percent.

	<u>Equation</u>	<u>1979 Index</u>
Equity Capital,	$\frac{41327}{15671}$	= 264
Net Sales,	$\frac{94311}{84721}$	= 111
Cost of Goods Sold,	$\frac{16619}{14757}$	= 112
Gross Profit,	$\frac{39041}{31354}$	= 125
Interest Expense,	$\frac{8300}{9177}$	= 91
Total Expenses,	$\frac{55270}{63367}$	= 104
Net Income,	$\frac{30591}{22027}$	= 139

B. Growth Rates for Selected Accounts

	<u>1978-1979</u>	<u>Growth Rate</u>
Sales,	$(94311-98717)/98717$	= -4.5
Net Income,	$30591-30460 / 30460$	= 0.43
Operating Expense,	$55370-59875 / 59875$	= -6.7

II. Calculation for Common-size Balance Sheet and Income Statement.

All figures on the Balance Sheet are divided by total assets to yield common-size percentage figures.

A. Balance Sheet--Practice A, 1979.

<u>Assets</u>	<u>1979</u>	<u>Base</u>	<u>Common-size percentage</u>
Current Assets:			
Cash	2793 ÷	102670	2.7
Hospital Supplies	1969 ÷	102670	1.9
Drugs on Hand	4841 ÷	102670	4.7
Surgical Supplies	1149 ÷	102670	1.1
Office Supplies	246 ÷	102670	0.23
Accounts Receivable	<u>2772 ÷</u>	<u>102670</u>	<u>2.7</u>
Total Current Assets	<u>13770 ÷</u>	<u>102670</u>	<u>13.4</u>
Net Fixed Assets	<u>88900 ÷</u>	<u>102670</u>	<u>96.6</u>
Total Tangible Assets	<u>102670 ÷</u>	<u>102670</u>	<u>100.00</u>
Total Assets	<u>102670 ÷</u>	<u>102670</u>	<u>100.00</u>
<u>Liabilities</u>			
Current Liabilities:			
Current Portion LT Debt	10598 ÷	102670	10.3
A/P	<u>700 ÷</u>	<u>102670</u>	<u>0.68</u>
Total Current Liabilities	<u>11298 ÷</u>	<u>102670</u>	<u>11.0</u>
Long-Term Liabilities:			
Notes Payable	60643 ÷	102670	59.0
Less C. Portion	<u>10598 ÷</u>	<u>102670</u>	<u>10.3</u>
Total Liabilities	<u>61343 ÷</u>	<u>102670</u>	<u>59.7</u>
Tangible O/E	<u>41327 ÷</u>	<u>102670</u>	<u>40.3</u>
O/E	<u>41327 ÷</u>	<u>102670</u>	<u>40.3</u>
Total Equity	<u>102670 ÷</u>	<u>102670</u>	<u>100.00</u>

All figures on the Income Statement are divided by total sales to yield common-size percentage figures.

B. Income Statement--Practice A, 1979.

	<u>1979</u>	<u>Base</u>	<u>Common-size Percentage</u>
Sales of Services	<u>94311</u> ÷	<u>94311</u>	<u>100.00</u>
Operating Expenses:			
Salaries	11273 ÷	94311	12.0
Drugs	9293 ÷	94311	9.8
Hospital Supplies	6690 ÷	94311	7.0
Surgical Supplies	2603 ÷	94311	2.8
Diagnostic Services	623 ÷	94311	0.60
Utilities	2853 ÷	94311	3.0
Professional Services	858 ÷	94311	0.90
Insurance	2366 ÷	94311	2.5
Office Supplies	900 ÷	94311	0.95
Repairs and Maintenance	1983 ÷	94311	2.1
Taxes and Licenses	3662 ÷	94311	3.9
Donations	-- ÷	--	--
Miscellaneous Expenses	750 ÷	94311	0.79
Depreciation	9248 ÷	94311	9.8
Dues and Meetings	333 ÷	94311	0.35
Contract Labor	1045 ÷	94311	1.1
Travel and Entertainment	50 ÷	94311	0.05
Educational Expenses	140 ÷	94311	0.14
Automobile	900 ÷	94311	0.95
Advertising	-- ÷	94311	0.0
Bad Debt	<u>300</u> ÷	<u>94311</u>	<u>3.1</u>
Total Operating Expenses	<u>55270</u> ÷	<u>94311</u>	<u>58.6</u>
Income	<u>39041</u> ÷	<u>94311</u>	<u>41.4</u>
Other Expenses:			
Bank Charges	150 ÷	94311	0.15
Interest	<u>8300</u> ÷	<u>94311</u>	<u>8.8</u>
Other Income:	<u>--</u>	<u> </u>	<u> </u>
Net Income	<u>30591</u> ÷	<u>94311</u>	<u>32.4</u>
Owner's equity beg. year	<u>10518</u>	<u> </u>	<u> </u>
Less owner draw	<u>24501</u> ÷	<u>94311</u>	<u>25.9</u>
Owner's equity end of year	<u>16608</u>	<u> </u>	<u> </u>

III. Calculations for all financial ratios as they appear in the text. Empirical Clinic A, 1979, will be used for calculations.

A. Ratios for Short-Term Liquidity.

1. Current ratio:

$$\frac{\text{current assets}}{\text{current liabilities}} = \frac{13770}{11298} = 1.22 \text{ times}$$

2. Quick ratio:

$$\frac{\text{cash and cash equivalents} - \text{inventories}}{\text{current liabilities}} = \frac{13770-7959}{11298} =$$

0.51 times

3. Average Inventory Turnover:

$$\frac{\text{cost of goods sold}}{\text{average inventory}} = \frac{16619}{6976} = 2.4 \text{ times}$$

4. Days to Sell Inventory:

$$\frac{\text{days in time period (1 year usually)}}{\text{average inventory turnover}} = \frac{365}{2.4} = 152$$

5. Liquidity Index:

$$\frac{\text{product dollar days}}{\text{total current assets}} = \frac{1220602.9}{13770} = 88.6$$

(See page 62 for actual derivation.)

6. Current Debt to Tangible Net Worth:

$$\frac{\text{current debt}}{\text{tangible net worth}} = \frac{11298}{41327} = 0.27, 27\%$$

B. Ratios for Capital Structure and Long-Term Solvency.

1. Total Debt to Equity Capital:

$$\frac{\text{total liabilities}}{\text{owner equity}} = \frac{61343}{41327} = 1.48$$

2. Total Debt to Total Assets:

$$\frac{\text{total liabilities}}{\text{total assets}} = \frac{61343}{102670} = 59.7$$

3. Fixed Assets to Tangible Net Worth:

$$\frac{\text{fixed assets}}{\text{tangible net worth}} = \frac{88900}{41327} = 2.15 \text{ times or } 215\% \text{ more fixed assets than tangible net worth}$$

4. Debt to Tangible Net Worth:

$$\frac{\text{total liabilities}}{\text{tangible net worth}} = \frac{61343}{41327} = 1.48 \text{ times}$$

5. Times Interest Earned:

$$\frac{\text{income before taxes plus interest expense}}{\text{total interest charges}} = \frac{42103}{8300} = 5.1 \text{ times}$$

C. Ratios for Return on Investment and Asset Utilization

1. Return on Investment:

$$\frac{\text{net income} + \text{interest expense (1-tax rate)} - \text{GS11 salary}}{\text{average total assets}} =$$

$$\frac{30591 + 6391 - 20,611}{\frac{102670 + 96963}{2}} = 16.4\%$$

2. Return on Equity:

$$\frac{\text{net income} - \text{GS11 salary}}{\text{average equity}} = 30.00\%$$

3. Leverage Index Ratio:

$$\text{return on equity} - \text{return on investment} = 30 - 16.4 =$$

$$13.6 \therefore \text{positive leverage}$$

4. Net Income to Sales (Profitability):

$$\frac{\text{net income} + \text{interest expense (1-tax rate)} - \text{GS11 salary}}{\text{sales}} =$$

$$\frac{30,591 + 6,391 - 20,611}{94,311} = 17.4\%$$

5. Sales to Owner Equity:

$$\frac{\text{sales}}{\text{average equity}} = \frac{94,311}{33,260} = 2.8 \text{ times}$$

6. Sales to Net Working Capital:

$$\frac{\text{sales}}{\text{net working capital}} = \frac{94311}{2472} = 38.2 \text{ times}$$

7. Sales to Total Assets:

$$\frac{\text{sales}}{\text{average total assets}} = \frac{94311}{\frac{102670 + 96963}{2}} = 0.95 \text{ times}$$

8. Sales to Fixed Assets:

$$\frac{\text{sales}}{\text{fixed assets}} = \frac{94311}{88900} = 1.06 \text{ times}$$

9. Sales to Tangible Assets:

$$\frac{\text{sales}}{\text{average tangible assets}} = \frac{94311}{\frac{102670 + 96963}{2}} = 0.95$$

IV. Price Level Adjustments for All Accounts.

"Accounts have for many years given serious consideration to the problem of how to overcome the difficulty in interpretation of financial statements caused by the instability of the measuring unit used in accounting, in the United States the dollar. The solutions proposed may be divided into two classes: (1) to adjust the accounting records to show changes in the purchasing power of the dollar,* and (2) to continue adherence to the traditional procedure but to supplement the customary financial statements with data stated in current dollars. It is generally agreed that for price-level adjustment the purchasing power of the dollar is to be measured by index numbers such as are compiled by the United States Bureau of Labor Statistics and other organizations."¹

This discussion has been placed in the Appendix because it can be adequately handled here. This process is to be performed before the analysis starts. The main objective of price-level adjustments is to obtain comparability of data by stating the accounts on each statement in uniform purchasing power. Myer² points out that there are two phases in this process. They are:

"(1) The conversion of all items in each statement in terms of the purchasing power of the dollar at the end of the year in order to obtain comparability of the data of that year.

(2) The conversion of all items in comparative statements in terms of the purchasing power of the dollar at the end of the last year in order to obtain comparability of the data of more than one year."

The conversion to the last year, 1979 in our case, is done so because the last year (most current) is of greatest interest in most situations.

*This study will use the "adjusted" figures only. We will not provide the historical cost statements. This is so because it is felt that the adjusted statements are the pertinent statements.

¹Myer, op. cit., p. 37.

²Ibid., p. 41.

The objectives of price-level adjustments, as pointed out by Myer, are approached in the following manner. Assume two years data are under consideration. Call them year X (the earlier year) and year Y (the present year). The Bureau of Labor Statistics might have given the following statistics in the table below as regards the Consumer Price Index (CPI) for years X and Y.

<u>Year</u>	<u>CPI</u>		<u>Conversion Factor (Ending X = 100.00)</u>
Average Year X	120.0*	$\frac{121.5}{120.0}$	= 1.013
Ending Year X	121.5	$\frac{121.5}{121.5}$	= 1.00

All accounts are multiplied by 1.013 to force the dollar value in the balance sheet and income statement from average dollar to ending dollar values. Then adjust ending year X to ending year Y and average year Y to ending year Y.

<u>Year</u>	<u>CPI</u>		<u>Conversion Factor (Ending Y = 100.00)</u>
Ending Year X	121.5	$\frac{124}{121.5}$	= 1.021
Average Year Y	122.6	$\frac{124}{122.6}$	= 1.011
Ending Year Y	124.0	$\frac{124}{124}$	= 1.00

In the balance sheet and income statement for year X (previously converted for average to ending dollars) all accounts are adjusted by a

*Assume for argument's sake that year Q is several years prior to year X. Also, year Q is considered the base year for the CPI. Year Q is then considered equal to 100. If this is so, then the 120.0 given to average year X states that on average all consumer goods cost 20 percent more in year X than they did in the base year Q. Also, at the end of year X, the CPI is 121.5. This says that all consumer goods at the end of year X cost 21.5 percent more than in the base year Q.

factor of 1.021. Then the average Y statements are multiplied by 1.011 to adjust average year Y's statements to ending year Y. Now we have two statements, all in ending year Y dollars.

Summary:

- (1) Average Year X \longrightarrow Ending Year X
- (2) Ending Year X \longrightarrow Ending Year Y
- (3) Average Year Y \longrightarrow Ending Year Y

(2) and (3) are the adjusted statements of concern. Both years statements are now in uniform dollars and are thus comparable. This procedure was done for the example Practice's A, B and C and the balance sheet and income statements shown in the study are all "price adjusted" statements.

V. Revaluation: Market Value Versus Book Values.

In a study completed in July of 1977, Edward P. Douglas and Owen McCafferty state:

"There are several reasons why veterinarians should be able to determine how much a practice is worth. The most obvious is that such knowledge is necessary when a practice is being sold, or apportioned for group ownership. There is no recognized medium--such as the Stock Exchange for stock and bond sales--to guide seller and buyer of a practice in their attempts to reach an agreement. At some point, they must establish a value for the assets, before ownership can be transferred.

"But, even if a change in ownership is not under consideration, knowledge of practice value is important to every veterinarian. Throughout a doctor's career, the practice is the main, if not the only, source of income. And it is the primary contributor to retirement security. Unless practice value is known, it is virtually impossible for an owner to determine whether or not there are sufficient resources for present and future financial goals.

"There are three generally used procedures for valuing property--the income method, the market method and the cost method. They are defined as follows;

"Income method--capitalization of expected earnings at a reasonable return on investment, based on relative risk and current interest rates.

"Market method--comparison with results of similar property sold. (For a professional practice, it is the comparison with results of other practices purchased, sold, merged, bought into, bought out, or valued for estate purposes. This method is generally expressed in terms of a percent of gross receipts, or net earnings.)

"Cost method--determination of replacement cost, less depreciation or obsolescence, if any, of all tangible assets."¹

The authors go on to complete an extensive evaluation of each of the three methods and provide a case study that incorporates all three methods of valuations in their final analysis. While these authors establish the need for determining how much a practice is worth, their methods are both time-consuming and also require a significant amount

¹Douglas, E. P., CPA and Owen E. McCafferty, CPA, employees of Haskins & Sells, a Cleveland-based small business services group, "How Much Is Your Practice Worth," Veterinary Economics, Vol. 18, No. 7 (July 1977), pp. 19-51.

of data that is only available to individual practices. Only then can their methods revalue the fixed assets. For the purposes of this study, Tamari's analytic methods are much more useful.

It is suggested here that the analyst, investor, or lender may correct these effects of inflation* on the financial statements by using the following methods.

"If information is available concerning the years in which the major investments were made, the fixed assets could be revalued to reflect the changes in the general cost of living index from each year till the present. Alternatively, the revaluation might be made on the basis of an index of prices of investment goods. Naturally, the depreciation reserve will also have to be re-calculated on the same basis. The result of these calculations is a new figure for the net fixed assets; the difference between this and the original balance sheet item is then transferred to equity--except for that portion covered by debt legally linked to some price index or to the rate of exchange--thus providing a current figure for the owners' investment in the firm. By adding the current allocation to depreciation shown in the profit and loss account to profit and then deducting a new allocation on the basis of the revalued gross fixed assets, it is then possible to obtain a more accurate figure for current profits."¹**

*By inflation, he means the appreciation of fixed assets due to inflation.

¹Tamari, op. cit.

**This study used Mr. Tamari's method. The calculation for revaluation can be found on page 140.

VI. Example Calculation for Revaluation of Assets

One further adjustment has been made in the statements for Practices A, B and C shown in this study. The fixed assets, after being price level adjusted, are now revalued at current market values based on the Consumer Price Index. The price adjustment levels all prices in terms of constant purchasing power for the years 1977, 1978 and 1979. Now, once in constant dollars the fixed assets are adjusted from their historical cost, as shown in the original balance sheets, to approximately what the Bureau of Labor Statisticians say the fixed assets are now worth on the open market. Consider 1967 as the base year; 1967 dollars are given a value of 100.00. Clinic A was purchased in 1975, Clinic B in 1972 and Clinic C in 1976. The table below illustrates the revaluation of fixed assets and depreciation.

Table A-1. Revaluation of fixed assets and depreciation for 1979.

Practice	Asset	Year Purchased	Original Cost Factor*	Revaluation
A	Land	1975	\$15987 x 1.36	\$ 21742
	Building	1975	\$57989 x 1.36	\$ 78865
	Equipment	1975	\$16681 x 1.36	\$ 22686
	Depreciation		\$25289 x 1.36	\$ 34393
B	Land	1972	\$15575 x 1.75	\$ 27256
	Building	1972	\$64000 x 1.75	\$112000
	Equipment	1972	\$22000 x 1.75	\$ 38500
	Depreciation		\$42600 x 1.75	\$ 74551
C	Land	1976	-- x 1.28	--
	Building	1976	\$ 9687 x 1.28	\$ 12400
	Equipment	1976	\$30696 x 1.28	\$ 39291
	Depreciation		\$11969 x 1.28	\$ 15321

*Factor Calculation:

CPI

1967 = 100
 1972 = 125.3
 1975 = 161.2
 1976 = 170.5
 1977 = 181.5
 1978 = 195.3
 1979 = 218.9

$$A = \frac{1979}{1975} = \frac{218.9}{161.2} = 1.36$$

$$B = \frac{1979}{1972} = \frac{218.9}{125.3} = 1.75$$

$$C = \frac{1979}{1976} = \frac{218.9}{170.5} = 1.28$$

For revaluation of assets from 1975 to the year(s) 1977 and 1978 the factors would be the following:

<u>Year</u>	<u>Practice</u>	<u>Calculation</u>	<u>Factor</u>
1977	A	$\frac{181.5}{161.2}$	= 1.13
1978	A	$\frac{195.3}{161.2}$	= 1.21
1977	B	$\frac{181.5}{125.3}$	= 1.45
1978	B	$\frac{195.3}{125.3}$	= 1.56
1977	C	$\frac{181.5}{170.5}$	= 1.06
1978	C	$\frac{195.3}{170.5}$	= 1.15

Therefore, for Practice A, the original cost of \$15,987 for land is multiplied by 1.13 to get the value of the land in 1977 dollars. The original cost of \$15,575 for land in Practice B is multiplied by 1.45 to get the 1977 land value. For Practice B, this procedure is followed for each fixed asset and depreciation. The new revalued fixed assets then replace the original cost values in the balance sheet. The revalued depreciation is also placed in the income statement. From here the analysis of financial statements begins.