



Analysis of market data on sales of small businesses
by Steven Laing Ault

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in
Business Education
Montana State University
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Abstract:

The major purpose of this study was to determine if there is any significant correlation between the selling price paid for small businesses computed on a going-concern basis and the income streams generated by them in the year of sale. This study was limited to one transaction data base of sales of small businesses, all asset purchases, from 1986 to 1992. No attempt was made to verify the data, since, the companies listed in the data base are private. Several estimates and assumptions were made to compensate for the limited availability of data. Information was not available as to historical earnings, projected earnings, growth rates or specific details of the financing agreements.

The major findings of this study were: 1) there is a statistically significant correlation between the income streams and the selling prices of the businesses, 2) in order of strength of correlation, the variance in the selling price of the businesses were explained by Pretax Net Cash Flow to Invested Capital, Pretax Net Income to Invested Capital, Pretax Net Income to Equity, and Pretax Net Cash Flow to Equity.

In general, as the income streams increased so did the selling prices. Variance in selling prices were most related to the ability to finance the acquisition, and least related to returns to owners. It was not the purpose of this study to determine the predictive value of the correlation coefficient. These correlations relate to small businesses only as a group, and thus do not address correlations either by industry, business type, size or by time period. Accordingly, the results of the study indicate only that some basic financial valuation theory is present in the small business market in which the businesses in this study exist.

More extensive and reliable data should be obtained for use in small business transaction data bases. Future studies can then be focused on areas not addressed in this study, specifically individual company business and financial risk factors. Finally, information on small business valuations and comparative transaction data should be standardized and made readily available to the buyers and sellers of small businesses.

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This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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Date 7/21/94

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ABSTRACT

The major purpose of this study was to determine if there is any significant correlation between the selling price paid for small businesses computed on a going-concern basis and the income streams generated by them in the year of sale. This study was limited to one transaction data base of sales of small businesses, all asset purchases, from 1986 to 1992. No attempt was made to verify the data, since the companies listed in the data base are private. Several estimates and assumptions were made to compensate for the limited availability of data. Information was not available as to historical earnings, projected earnings, growth rates or specific details of the financing agreements.

The major findings of this study were: 1) there is a statistically significant correlation between the income streams and the selling prices of the businesses, 2) in order of strength of correlation, the variance in the selling price of the businesses were explained by Pretax Net Cash Flow to Invested Capital, Pretax Net Income to Invested Capital, Pretax Net Income to Equity, and Pretax Net Cash Flow to Equity.

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More extensive and reliable data should be obtained for use in small business transaction data bases. Future studies can then be focused on areas not addressed in this study, specifically individual company business and financial risk factors. Finally, information on small business valuations and comparative transaction data should be standardized and made readily available to the buyers and sellers of small businesses.

CHAPTER 1

INTRODUCTION

"Fair market value" as defined by Revenue Ruling 59-60 is the amount at which the property would change hands between a willing buyer and a willing seller when the former is not under compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of the relevant facts (Fishman, 1992:2-29). According to the Principle of Substitution, "the value of a thing tends to be determined by the cost of acquiring an equally desirable substitute" (Miles, 1991:1). The basic theory behind business valuation is that the value of a company is equal to the present value of the expected future benefits of ownership (Fishman, 1992:2-3). In regards to valuations of small businesses Pratt states that:

... value is based largely on what is there now, as opposed to what might be there sometime. Would-be sellers are misled when they think they should be paid now what the business may be worth after the buyer brings his own magic show to the party. (Pratt, 1993:315)

How do these statements relate to one another?

For the buyer or seller of a small business, the available literature on how to determine the value of a small business is extensive, yet at the same time the

various methods and approaches for determining value become overwhelming to even those with accounting and financial backgrounds. An alternative way to determine the value of a small business is to refer to data on recent or past sales of small businesses and compare the selling prices of similar businesses to the one currently being bought or sold. According to Miles;

The Direct Market Data Method, in which the value of a closely-held business is estimated directly from information on actual sales of other closely-held businesses, is the only truly objective method of appraising closely-held businesses. . . .

. All other appraisal approaches/methods involve significant amounts of subjective judgement on the part of the appraiser, with resulting potential for inaccuracy because of these judgements.

(Miles, 1992:1-2)

In regards to business valuations, the authors of the book *Selling Your Business* state that:

No valuation study, however exhaustive or detailed, can determine the actual market value of a company. Only buyers can do that. Regardless of the conclusions of any independent analysis and valuation, it takes two parties, a buyer and a seller, to agree on a price and complete a transaction. . . . Valuations are done in the abstract; transactions in the concrete, unless the person preparing the valuation of a company subsequently makes an offer themselves, the valuation may prove to be meaningless.

(Sperry and Mitchell, 1992:19-21)

Need for the Study

The interest in owning small businesses is increasing in the 1990's due to changes in cultural attitudes and values, corporate down-sizing and voluntary relocation.

There is also a trend towards buying an existing business rather than starting one. The reason for this is that buying an existing business is usually less risky and requires less time and energy compared to starting a business from scratch. At the same time, current demographics indicate that the supply of businesses for sale is increasing due to the large number of aging owners of the many businesses that were founded in the 1950's and 1960's. It has been estimated that the total market for small businesses is over \$200 billion dollars on a yearly basis (Joseph, 1993:2-9).

The small business acquisition process is not common knowledge to most business persons until they are actually ready to buy or sell a business. However, this is now changing very rapidly as information about the small business market has increased through magazine and newspaper articles, books, computer programs and data bases. Many national newspapers and magazines have classified sections of businesses for sale throughout the country. In addition, the Multiple Listing Concept has improved the flow of information between buyers and sellers. The market place for small businesses has been expanding to almost anyone who is interested in participating (Joseph, 1993:2-9).

A study by Raymond C. Miles in 1992 that analyzed the International Business Appraisers (IBA) Market Data Base

of small-to-medium-sized closely-held businesses had the following observations and conclusions:

1. Price-to-earnings and price-to gross [sales] are almost equally valid criteria for estimating market value of businesses. This conflicts with the conventional wisdom that price-to-earnings ratio is the most significant performance criterion of a business.
2. In practice, price-to-gross ratio is especially useful for appraising closely-held businesses. This is because price-to-gross ratios are available for all sales in the IBA Market Data Base, while price-to earnings ratio is only available for some sales.
3. Empirical data for all business categories in aggregate do not show any significant change in business value as a function of time. This is contrary to the conventional wisdom that only recent sales should be considered when choosing guideline (comparable) companies.
4. The data show no significant correlation between selling price and percentage down payment. This differs from the conventional wisdom that a business sold for cash should bring a lower total price than one sold for terms.
5. As expected, business values as measured by price-to-earnings and price-to-gross ratios differ from one kind of business to another. However, this difference is not as large as might have been expected. This suggests that the search for guideline companies does not need to be limited to businesses in the same SIC category as the business being appraised. Thus, the search for guideline companies can reasonably include SIC categories other than the category assigned to the business being appraised.
6. Empirical evidence indicates that the "most probable price" for a business is significantly different from the average price of businesses that have been sold. Thus, when the standard of value is "most probable price," use of the average selling price of guideline companies can lead to a value estimate that is in error by a significant amount. (Miles, 1992:1-3)

This researcher's concerns about the findings of the IBA Market Data Base study are as follows:

1. Many of the findings, if evident in the publicly traded company markets, would indicate an inefficient market based on current financial market theory.
2. If the small business market is inefficient, does reliance upon data bases of past small business sales perpetuate this market inefficiency?
3. If the small business market is inherently different from that of the publicly traded business market, what are these differences and is there still some basic financial basis for the value of small businesses as determined by the market?

This study was undertaken to analyze actual market data on sales of small businesses to determine some general indication as to the relationship between the selling price and income streams of these companies based on current business valuation theory.

Problem Statement

The major purpose of this study was to determine if there is any significant correlation between the selling price of small businesses computed on a going-concern basis and the income streams generated by these small businesses in the year of sale.

Questions to be Answered

Data analyzed from this study were used to answer the following questions which pertain to the problem statement:

1. For sales of small businesses structured as asset purchases, is there any significant correlation between the reported earnings and the selling price in the year of sale?
2. For these same small businesses, with the sale price recalculated to a going-concern basis, and with adjustments made to the reported earnings, is there any significant correlation between the adjusted earnings and the selling price in the year of sale?
3. How does the correlation between the actual market data and the modified data compare and what are the ramifications if any?

Limitations of the Study

This study was limited by the researcher to one transaction data base of sales of small businesses, *BIZCOMPS*, by Jack Sanders. No attempt was made to verify the data since the companies listed in this data base are private. The data available is very limited compared to that available for the valuation of publicly held companies. As a result, the researcher had to make estimates and assumptions as to certain financial data that were not available within the original data base in order to analyze the selling price of the small businesses on a going-concern basis. All assumptions and estimates made are noted and

explained in the research procedures. Limitations on data in this study for which estimates were not made are:

1. Only the most current year's earnings data were available. No attempt was made to determine predicted growth, future earnings, or past historical earnings.
2. Due to the lack of historical earnings data, as well as limited information on the financing terms, no attempt was made to assess business risk or financial risk on an individual company basis and their effects on required rates of return for attracting debt and equity capital.
3. It was not possible to determine either deferred maintenance requirements or additional fixed asset expenditures necessary to sustain the existing level of earnings at the time of sale from the data.

This study was performed on the data base in total. Accordingly, information on subsets of data is not revealed by this study. If more data had been available, analysis could have been performed that involved separation of small business sales by industry, business type and time period. Finally, this study was limited to data available during the period of 1986 thru 1992.

Terminology

The following terms are defined by the researcher in order to insure clarity for the reader.

Beta: The covariance of the rate of return on the subject security with the rate of return of the market.
(Pratt, 1989)

Business Enterprise: A commercial, industrial or service organization pursuing an economic activity. (American Society of Appraisers, 1992)

Business Risk: The uncertainty of income flows caused by the nature of the firm's business. A firm's business risk is measured in terms of the coefficient of variation of operating earnings, which is a function of sales volatility and operating leverage. (Reilly, 1989)

Business Valuation: The act or process of arriving at an opinion or determination of the value of a business enterprise or an interest therein. (American Society of Appraisers, 1992)

Capitalization Rate: Any divisor (usually expressed as a percentage) that is used to convert income into value. (American Society of Appraisers, 1992)

Discount Rate: A rate of return used to convert a monetary sum, payable or receivable in the future, into present value. (American Society of Appraisers, 1992)

Financial Risk: The uncertainty introduced by the method of financing an investment. The increase in uncertainty due to fixed-cost financing is referred to as financial risk or leverage and causes investors to increase their risk premium. (Reilly, 1989)

Goodwill: That intangible asset which arises as a result of name, reputation, customer patronage, location, products and similar factors that have not been separately identified and/or valued but which generate economic benefits. (American Society of Appraisers, 1992)

Going Concern: An operating business enterprise. (American Society of Appraisers, 1992)

Going-Concern Value: 1. The value of an enterprise, or an interest therein, as a going concern. 2. Intangible elements of value in a business enterprise resulting from factors such as having a trained workforce, an operational plant, and the necessary licenses, systems and procedures in place. (American Society of Appraisers, 1992)

Income Stream: A generic term for any one of the many measures of economic income, i.e., seller's discretionary cash flow, net income, net free cash flow, etc. (Pratt, 1993)

Liquidity Risk: The uncertainty introduced by the secondary market for an investment. The ability to buy or sell an investment quickly without a substantial price concession. The greater the uncertainty regarding when the investment can be bought or sold, or the greater the price concession required to buy or sell it, the greater the liquidity risk is. (Reilly, 1989)

Rate of Return: An amount of income realized or expected on an investment, expressed as a percentage of that investment. (American Society of Appraisers, 1992)

Required Rate of Return: The minimum return necessary to attract a firm or investor to make an investment. Equals the risk-free rate plus a risk premium. (Pinches, 1990)

Risk: The degree of certainty or uncertainty as to the realization of expected future returns. Total risk is equal to systematic risk plus unsystematic risk. (Pratt, 1989)

Risk-free Rate: The interest rate on assets that are viewed as being free of any risk premium. In nominal terms, the risk-free rate equals the real rate of interest plus an inflation premium. It is often approximated by the return on Treasury bills. (Pines, 1990)

Small Business: For purposes of this study (based on the BIZCOMPS' data base) a business with less than \$5 million dollars in actual company value, with the average value of the businesses sold of approximately \$450,000. (Sanders, 1993)

Systematic Risk: That portion of stock risk that is unique to the company. Risk arises from unexpected events affecting the company. Also known as diversifiable risk or company-specific risk. (Cooley, 1994)

Unsystematic Risk: That portion of stock risk that arises from general economic conditions affecting all stocks simultaneously. Risk arises from unexpected changes in general economic conditions. Also known as nondiversifiable risk or market risk. (Cooley, 1994)

Working Capital: The amount by which current assets exceed current liabilities. (American Society of Appraisers, 1992)

CHAPTER 2

REVIEW OF LITERATURE

Introduction

The review of literature encompassed material that focused on normalizing the financial statements of a business, valuation theory, differences between large and small businesses, different concepts of value, common errors made in the valuation of small businesses, and existing data on sales of small businesses.

Review and Adjustment of the Financial Statements

The process of determining the price begins with normalizing the company's financial records. Neither the balance sheets nor the income statements of smaller, privately held companies necessarily bear any relationship to reality. (Murphy, 1982:208-209)

According to Schroeder, common items requiring adjustment when normalizing the financial statements include the following:

1. Eliminating expenses related to minimizing taxes. Adjustments may be required due to the owner legally expensing non-essential, business expenditures such as travel and entertainment, overpaid children on payroll, etc.
2. Eliminating items that are not a normal part of the business operations such as insurance settlements, sales of assets, unproductive assets, etc.

3. Adjusting accounting data from historical cost to fair market value. Items affected may include plant, property and equipment, depreciation, inventory, receivables, intangibles, etc.
4. Adjusting owner compensation to separate return on investment from the value of the owner's work. This may include either excess or insufficient compensation for work as well as owner perks.
5. Adjusting for understated or overstated operating costs such as operating short-handed, excessive overtime, deferred repairs and maintenance, etc.
6. Taking into consideration financing decisions versus operating decisions. The earning capacity of a business is a totally separate concept from how it is financed. Adjustments may need to be made depending on how the new owner intends to finance the purchase (Schroeder, 1989:19-23).

Pratt recommends the following procedures for the review and adjustment of financial statements:

Balance Sheet:

1. Review the subject company's balance sheet as close to the valuation date as possible.
2. Restate each of the company's assets from their book value to fair market values.
3. Restate each of the company's liabilities from their book value to fair market values.
4. Restate the balance sheet to include any assets and liabilities of the company that are not on the original balance sheet.
5. Calculate the company's equity value by subtracting the fair market value of the liabilities from the fair market value of the assets (Pratt, 1993:90).

Income Statement:

1. Review copies of the company's income statements for a five-year period prior to the expected sale or valuation date.

2. Modify the company's historical income statements to a normalized basis to calculate the company's true earning power.
3. Eliminate any non-recurring items.
4. Modify the income statements to incorporate unrecorded expenses whether actual or potential.
5. Modify the latest income statement prior to the valuation date to take into account any predicted changes in business, such as the expected loss of a major customer.
6. Remove nonoperating income and expenses from the historical income statements (Pratt, 1993:106).

Valuation Concepts, Approaches and Methods

The researcher will rely heavily on the *Guide to Business Valuations* for the overview on valuation concepts, approaches, and methods. Published in 1992, this book is a joint effort between practicing business valuation practitioners in the public accounting profession and in financial consulting firms. This text provided an excellent overview of the theory behind business valuations, as well as the detailed steps to apply this theory to actual business valuation engagements.

Valuation Concepts

The three basic valuation concepts that are the basis for valuation approaches and methods are as follows:

Income Concept - This involves an estimate of the future benefits of ownership and discounts these benefits to

a present value using a rate that is appropriate for the specific risks involved in operating the business.

Market Concept - This involves analysis of comparative companies either public or private and/or comparative transactions as a basis for value. It is assumed that recent sales of similar businesses will provide an estimate of value.

Cost Concept - This involves an estimate of the cost of replacing or reproducing business assets less an allowance for physical wear and obsolescence, as a basis for value. This concept is used mainly for businesses with little value perceived beyond their tangible assets.

Valuation Approaches

One or more valuation approaches may be used in applying the valuation concept chosen, and, depending on the benefit stream used to estimate value, one or more valuation methods may be used to apply a valuation approach chosen.

These approaches are as follows:

Capitalized Returns - This approach involves dividing the company's current returns, either on an earnings or cash flow basis, by a capitalization rate. This approach is used when a company's future earnings are not expected to vary significantly from present earnings, or where future earnings growth is at a predictable rate. The

capitalization rate is determined by subtracting a company's average expected growth rate from its discount rate.

Discounted Future Returns - This approach may be used if the company's future returns are expected to be quite different from the present level due to changes in business structure, or expected economic changes, but only if reasonable estimates of future returns can be made. The company's future returns must be estimated, either on an earnings or cash flow basis, until these returns have reached a stable level. An estimate of the company's terminal value is made once it has achieved stable returns. A value for the company is then computed by determining the present value of the estimated future returns, including the terminal value, using a discount rate that reflects the total rate of return that investors would require given the inherent risks of ownership of the company.

Value Multiples Involving Comparative Data - This approach involves obtaining a list of comparable companies and determining a value multiple, i.e., price/earnings, and multiplying this value by the appropriate benefit stream or other variable for the business being valued. The earnings of the comparative companies should be measured in the same way, and for the same time period as the company being valued. Also, value multiples obtained from comparative companies must often times be adjusted to reflect

differences in operating characteristics such as size, expected growth, and financial risk.

Underlying Assets - This approach involves using individual asset values, either fair market value or liquidation value depending on whether the company is a going concern or not, to determine a company's value.

Other Methods

These are methods that are based on a combination of approaches, and are usually used to value very small businesses. They are described as follows:

Excess Earnings Method - This method was developed by the Treasury Department in Revenue Ruling 59-60. A fair rate of return (cost of debt plus 1-2 % premium) is computed on the company's tangible assets. Excess earnings are computed by subtracting the return on tangible assets from the company's net earnings. This excess earnings amount is then divided by an appropriate capitalization rate for the company to determine the present value. This present value amount is then added to the fair market value of the tangible assets to arrive at the company's value.

Seller's Discretionary Cash Flow Method - This method is used for small businesses where the owner is also the principal employee, so that the buyer is not only purchasing a business, but a job as well. The seller's discretionary cash flow is calculated by adding the business's pre-tax

earnings, the owner's salary and benefits, interest expense and non-cash expenses, less any expected capital purchases. This amount is multiplied by an appropriate value multiple related to the sale of similar businesses to determine a value for a potential owner/manager.

Rules of Thumb - These are formulas applied to specific operating measures within certain industries, i.e., a specific multiple of gross sales. Rules of thumb have many limitations, and should only be used as a measure of reasonableness of a value determined from another valuation approach or method. (Fishman, 1992:ch. 2, 4-10)

As was indicated in Chapter 1, the basic idea behind business valuation is that the value of a company is equal to the present value of the expected future benefits of ownership. There are many valuation methods, ranging from very sophisticated financial theory to rules of thumb, all of which are aimed at estimating the present value of future business ownership benefits.

Differences between Large and Small Businesses

An excellent introduction to the literature on valuations of small companies is addressed by Shannon Pratt in his book *Valuing Small Businesses and Professional Practices*. Pratt notes that there are many practical differences between small and large businesses that require the use of different valuation techniques, even though the

basic valuation theory is the same. These differences are as follows:

1. Generally, small business financial statements have a lower level of accounting procedures performed, such as a compilation report instead of a review or an audit.
2. Small businesses may be using cash basis accounting rather than accrual-basis accounting.
3. The track record of operations for smaller businesses tends to be shorter and more variable than for larger businesses.
4. Sales of small businesses usually involve seller financing and are on terms other than cash.
5. There is little reliable comparative transaction data available on small companies compared to that of publicly traded companies.
6. The role of the owner/manager during the critical transition process in a small business sale is unique to small businesses.
7. Small businesses are often times bought and sold for reasons other than investment purposes.
8. There is variation in accounting policies. Small businesses try to minimize taxable income while public companies try to maximize earnings for shareholders.
9. Owner's compensation in a small business, usually is more related to what the business can afford, whereas in larger companies the marketplace determines owner's compensation.
10. Business organization for small companies typically include sole proprietorships, partnerships and Subchapter S corporations.
11. Earnings analysis is usually performed on a pretax basis for small businesses versus an after-tax basis for larger businesses (Pratt, 1993:48-60).

Differences in Risk between Closely-Held and
Publicly Traded Companies

According to Pratt, most owners of closely-held businesses would not have their investments diversified to the degree of investors owning publicly traded stocks. This would imply that a small business owners' required rate of return should include an additional risk premium due to the presence of unsystematic risk. Accordingly, the investor should analyze indicators of business and financial risk, such as, variability of earnings and return on equity, and leverage ratios, in order to assess the added risk premium.

Assessing the systematic risk, or that portion of risk related to movements in the overall market, is difficult to do for a non-public company, since a historical price series usually would not exist for closely-held businesses. One alternative, according to Pratt, involves comparative analysis with very similar businesses that do have a measure of systematic risk, or beta. The other involves adding a small stock equity risk premium over and above the equity risk premium for S&P 500 stocks to the risk free rate to arrive at a required rate of return. This would be a substitute for multiplying the equity risk premium by a beta factor. Neither of these alternatives would probably be very practical for this study, since both alternatives rely on comparisons with smaller publicly traded stocks which

would still be much larger in size, and hardly comparable to the businesses represented in this study.

Systematic risk may not be as big a risk factor for closely-held companies as it is for publicly traded companies. Pratt feels the average buyer of a closely-held company has a longer investment time horizon in mind than does the normal investor in public stocks. Accordingly, investors in closely-held companies are usually not as concerned with short-term swings in the expected rate of return in the stock market, but rather look at the average rate of return over time (Pratt, 1989: 51,76). In a somewhat related matter, Miles explains that studies in which price to earnings ratios of closely-held companies were found to be basically independent of the year of sale are possibly explained by the fact that "the total return required by investors on closely-held businesses is so large that changes in interest rates have relatively little effect on the total P/E ratio." (Miles, 1992:7)

Defining Value

According to Sperry and Mitchell, the value of a business is determined by a combination of factors which include a company's assets, past and expected future earnings, the outlook of its industry and geographic market, and intangibles such as quality of management and products. In addition, value is affected by the different perspectives

and motivations of potential buyers and sellers (Sperry & Mitchell, 1992:19-21). Pratt points out that the notion of only one value for a business is a myth since different standards of value may be applicable in different circumstances depending on buyer and seller objectives and perspectives (Pratt, 1993:35).

Standards of value are further modified by premises of value which are assumptions as to the circumstances surrounding the sale transaction that define under what conditions the buyer and seller will transfer the business interest. The value of a business is even more clearly defined when the business interest being valued is determined. Finally, value is affected by the terms of the sale transaction (Pratt, 1993:30-34).

Standards of Value

Pratt explains that a standard of value refers to the type of value being sought. It may be established by the wishes of the parties involved, law or legally binding contracts. Common standards of value are listed as follows:

Fair Market Value - As indicated in Chapter 1, fair market value is defined by Revenue Ruling 59-60 as the amount at which the property would change hands between a willing buyer and a willing seller when the former is not under compulsion to buy and the latter is not under any compulsion to sell, and both parties having reasonable

knowledge of the relevant facts. The definition implies that the parties have the ability as well as the willingness to buy or to sell. The market in this definition is considered as all potential buyers and sellers of similar businesses. The concept of fair market value also takes into account prevalent economic and market conditions at the date of the valuation. Fair market value assumes a value in cash or cash equivalents unless otherwise stated (Pratt, 1993:24-26).

Investment Value - The following definition of investment value by Boyce, is used in real estate appraisal:

value to a particular investor based on individual investment requirements, as distinguished from the concept of market value, which is impersonal and detached. (qtd. in Pratt, 1993:26)

Reasons why investment value to a buyer or seller may differ from the fair market value include:

1. Differences in estimates of future earning power.
2. Differences in perception of the degree of risk.
3. Differences in tax status.
4. Synergies with other operations owned or controlled.

Investment value is basically developed using the discounted future returns valuation method. This value may or may not represent fair market value depending on whether the assumptions used by an individual would be accepted by a majority of buyers and sellers. If after careful analysis the investment value of a business is greater to the buyer

than the market value, then the rational decision for the buyer is to purchase the business. The same scenario for the seller would result in not wanting to sell the business until the market conditions became more favorable.

The concept of investment value is not completely separate from that of fair market value. Eventually the actions of many specific investors will establish an equilibrium market price that represents the consensus value of the collective investors (Pratt, 1993: 26-27).

Intrinsic or Fundamental Value - This represents an analytical judgment of value based on the perceived characteristics inherent in the investment and how they are interpreted by one analyst versus another. Pratt refers to authors Lorie and Hamilton who comment on the notion of intrinsic value as follows:

The purpose of security analysis is to detect differences between the value of a security as determined by the market and a security's intrinsic value - that is, the value that the security ought to have and will have when other investors have the same insight and knowledge as the analyst. (qtd. in Pratt, 1993:29)

Again, the concept of intrinsic value is not completely separate from the concept of fair market value, since it is the actions of buyers and sellers based on their specific perceptions of intrinsic value which change market value over time (Pratt, 1993:28-29).

Premises of Value

Premise of value is described by Pratt as "an assumption as to the set of circumstances under which the sale transaction will take place." Examples include the status of the business being transferred, going-concern value versus liquidation value; and the degree of control transferred, majority versus minority interest.

Going-concern value refers to the business being sold as an operating entity with assets, inventory and workforce in place, ready to conduct business. Liquidation value is just the opposite, describing the net realizable value of the sale of assets if the business is terminated (Pratt, 1993:30-31).

Describing the Business Interest Being Valued

It is important to distinguish between equity and invested capital when describing value. Equity is the ownership interest. Invested capital, in the case of small businesses, includes both equity and all interest-bearing debt, both short-term and long-term.

It is also important to describe what is being purchased. Most small business sales are transferred on the basis of assets rather than stock. Assets commonly included in the sale of a small business include inventory, fixed assets such as leasehold improvements, furniture, fixtures, and equipment; and intangible assets such as patents,

goodwill copyrights, customer lists, etc. Usually sales exclude cash and the receivables which the former owner retains and collects. It is also common practice to separate the value of the business from the inventory. The inventory is handled either as a totally separate transaction or added on to the value of the business (Pratt, 1993:15-16,33).

Real estate may or may not be included in the sale. The preferred method of dealing with real estate is to separate the real estate value from the value of the other business assets, especially if the real estate is not an integral part of the business (Pratt, 1993:15-16,63).

One reason for purchasing only the assets of a business is to avoid legal liability for past activity of the business that can be transferred under a stock purchase. In addition, the purchase of assets from an incorporated business allows the purchaser to write-up the value of the assets, providing a higher depreciable basis producing a tax advantage over a stock purchase (Joseph, 1993:163).

Adjusting Value for the Terms of Sale

According to Pratt, most small business sales typically include a cash down payment somewhere between 20 and 40 percent of the transaction price, with the balance financed by the seller on a contract to be paid usually over a few years. This type of arrangement is common since the buyer

of a small business usually does not have the personal resources to pay the full purchase price in cash, and most lending institutions would not regard the business being purchased as adequate collateral to support a long-term loan. These contracts are usually interest-bearing contracts, but the rate of interest on them is almost always below a market rate. Most third-party lenders would charge higher rates on loans with comparable collateral and the same terms as those in seller-financed contracts. As a result, the fair market values of these contracts in terms of cash or cash equivalents are usually less than their face values. Therefore, it is worthwhile for parties dealing with small business transactions to convert the price to an equivalent cash value (Pratt, 1993:284).

An appropriate market interest rate must consider both the high levels of financial risk employed in many of these seller-financed purchases, as well as the illiquid nature of the small business investment. According to Pratt, an installment note receivable, secured by the stock and/or assets of a small business is almost always considered to be more risky than corporate bonds or well-secured short-term loans to small businesses and, therefore, must have a higher market interest rate. In addition, there is no secondary market for installment contracts receivable for small businesses. As a result, an installment contract receivable on a small business sale usually would not have a quality

rating any better than grade Caa to C for corporate bonds, if that high (Pratt, 1993:288).

Common Errors in Valuations of Small Businesses

According to Pratt, the following errors are commonly made in valuations of small businesses:

1. Failure to identify what an individual is receiving for the purchase price.
2. Failure to estimate a realistic normalized earnings base.
 - a. Reliance on past results without judgment.
 - b. Failure to recognize any depreciation expense.
 - c. Not allowing compensation to owner/operator.
3. Failure to consider the full cost of the purchase.
 - a. Working capital requirements.
 - b. Deferred maintenance.
 - c. Other investment needed.
4. Assuming that the buyer will pay the seller for increases in future earnings related to the buyers management skills and strategy, or additional investment.
5. Failure to clearly identify and/or adhere to the applicable standard of value. (fair market value, investment value or intrinsic value, etc.).
6. Reliance on real estate appraisal methods.
7. Indiscriminate use of price/earnings (P/E) multiples.
8. Failure to recognize the different characteristics of publicly traded P/E multiples versus closely-held businesses P/E multiples.
9. Applying P/E multiples to earnings that are not comparable.
10. Applying P/E multiples when time periods are not comparable.

11. Using the reciprocal of the P/E multiple as the required rate of return.
12. Using capitalization rates from an earlier time period.
13. Other Errors in Deriving Capitalization Rates.
 - a. Applying rates on safe investments to small business investments.
 - b. Failure to match the capitalization rate with the earnings base.
 - c. Mistaking historical results for required rates of return (Pratt, 1993:302-316).

Comparative Transaction Data Bases

As mentioned earlier, one of the problems with valuing small businesses is due to the lack of comparative transaction data. This is due mainly to the fact that there is no legal requirement that transfer of ownership of closely-held businesses be reported, whereas transactions in publicly traded securities and real estate are reported. Pratt mentions that to date there has been little data gathered, and that information available today is not much better than what was available several years ago. Information within available data bases are limited compared to what is normally available on publicly traded companies. In addition, it is usually not possible to verify the information on private companies. However, Pratt indicates that there are some promising new data bases that may improve the information available, and the existing data bases can be used to determine a reasonable range of value for a business (Pratt, 1993:490-505).

CHAPTER 3

RESEARCH PROCEDURES

Introduction

The major purpose of this study was to determine if there is any significant correlation between the purchase price paid for small businesses on a going-concern basis and the earnings streams generated by these small businesses in the year of sale. The literature review in Chapter 2 indicates that the valuation theory underlying business valuations is based on sound financial theory. The major areas of concern in assessing whether or not the small business market is efficient are:

1. Nonfinancial motivations of buyers and sellers of small businesses may prevent a consistent standard of value from being established.
2. There is a lack of comparative data on sales of small businesses that is reliable and comprehensive.

This chapter will describe: 1) sources of data; 2) selection and content of the secondary research data base of actual small businesses sales; 3) the statistical analysis to determine if there is any significant correlation between the sale prices and the earnings streams for these two sets of data; and 4) adjustments made to the

secondary research data for purposes of this study based on current valuation theory to produce a modified set of data on these same small business sales.

Sources of Data

The review process began with literature recommended by the Practitioners Publishing Company - a technical and educational publisher for certified public accountants; and the Institute of Business Appraisers, Inc., an international professional organization of individuals who appraise businesses. INFOTRAC, CATTRAC and the Business Periodical Collection at Renne Library on the campus of Montana State University were reviewed via subject and keyword searches for business valuation literature.

Selection of Secondary Research Data

Originally, the data on sales of small closely-held companies was going to be obtained from business brokers and public accounting firms using a survey instrument. After conversations with several of these firms it was determined that the information needed was considered confidential client information and could not be released. No readily available transaction data on sales of small businesses was available from the Montana Department of Commerce, Montana Department of Revenue, the Small Business Administration

office in Helena, Montana, and the Internal Revenue Service office in Bozeman, Montana.

In preparation to survey the business brokerage firms a 1993 directory of the International Business Brokers Association (IBBA) was obtained. This IBBA directory contained two advertisements concerning business valuation information and support. At this point in time, the literature review which had included material published up through July 1992 had not revealed any sources of information concerning recent actual sales of small closely-held companies that would provide the data necessary for this study. The first contact was Business Equity Appraisal Reports, Inc., in San Carlos, California. They recommended contacting Jack Sanders in San Diego, California, who is the author of the study, *BIZCOMPS*, an annual data base of recent small business sales. Sanders is a Certified Business Intermediary, a professional business appraiser, and a member of the Institute of Business Appraisers, and is an active business broker with a commercial brokerage firm in San Diego, California.

The *BIZCOMPS'* data base contains information on sales of small businesses including selling price, terms of sale, normalized earnings, date of sale and type of business. Sanders indicated that his *1993 National Industrial Edition* would probably be the most appropriate data base for this study. This data base focuses on larger manufacturing,

wholesale/distribution and service companies. These companies differ from his other annual studies of smaller businesses in that they tend to have more management in place as well as having larger asset bases.

Sanders has developed relationships with reliable information suppliers (other business brokers) directly involved in the sale of small businesses who provide sales transactions on a regular basis to make up his data base.

The *1993 National Industrial Edition* was ordered from Sanders for initial review. While waiting to receive the study, a copy of the book *Valuing Small Businesses and Professional Practices*, published in 1993 was obtained. This book, referred to several times in this study, includes a new chapter on transaction data bases, added since its first edition. The *BIZCOMPS'* data base was reviewed in this new chapter, as well as several other data bases. Pratt referred to the *BIZCOMPS'* data base as a "potentially promising recent development."

Secondary Research Data Contents

The *BIZCOMPS' Third Annual Study of Recent Small Business Sales National Industrial Edition for 1992* is a collection of transaction data on 136 small businesses sold during the period of 1986 through 1992. All sales of companies listed within the *BIZCOMPS'* data base were structured as asset sales. Sanders explained that in these

business sales the buyer is purchasing only furniture, fixtures and equipment, goodwill and possibly the existing inventory. Information used in this study from the *BIZCOMPS'* data base is presented in Appendix A. Transaction data listed for each business include:

- SBIC - Small Business Industry Code
- BUS TYPE - Business type
- ANN GR - Annual gross sales for the most current fiscal year.
- SDCF - Seller's discretionary cash flow; [net income before income taxes plus amortization, depreciation, other non-cash expenses and non-business related expenses (normally to one working owner), for the most current fiscal year.]
- DATE - Date of business sale.
- SALE PR - Actual sale price of business excluding inventory.
- % DOWN - Down payment required of buyer by seller as a percentage of the actual selling price of the business.
- TERMS - Terms of financing the remaining balance of the business to be purchased (usually through the seller) including term of loan, and the interest rate.
- INV - Actual inventory (at cost) at time of business sale.
- FF&E - Market value of fixtures, furniture and equipment operating in place.

During the various stages in this study, many of the companies from the original *BIZCOMPS'* data base were eliminated due to lack of complete information which is explained in Appendix A. From the original 136 businesses

listed in the *BIZCOMPS'* data base, 61 were eliminated, and 75 remained in the study.

Correlation Analysis of *BIZCOMPS'* Data

The research design included a statistical correlation analysis performed on the small businesses from the *BIZCOMPS'* data base by comparing seller's discretionary cash flow (SDCF), defined as normalized pretax income plus depreciation and amortization expense, with the actual sale price, made up of the fair market value of the fixed assets plus goodwill. Again, since it is uncertain from the *BIZCOMPS'* data base if the buyer purchased the existing inventory at cost, it has not been added to the sale price. The statistical correlation analysis is presented in Chapter 4.

Correlation Analysis of Modified Data

Comparisons were made using the various modifications explained later in this chapter to the original sales prices and SDCF from the *BIZCOMPS'* data base. The correlations compare the following adjusted earnings streams against the calculated going-concern price:

1. Pretax Net Income to Equity - This is a measure of return on equity (ROE). Pretax net income defined as SDCF minus depreciation, amortization and management salary. Equity defined as the buyer's downpayment on the business purchased.

2. Pretax Net Income to Investment - This is a measure of return on investment (ROI). Pretax income is computed on a debt free basis, that is before interest expense on both the seller financed note and working capital loan. Invested capital defined as the buyer's downpayment plus the amount of the seller financed loan and the working capital loan.
3. Pretax Net Cash Flow to Equity - This is a measure of return on equity (ROE). Pretax net free cash flow defined as pretax net income plus depreciation and amortization expenses, minus principle and interest payments on both the seller financed note and working capital loan.
4. Pretax Net Cash Flow to Invested Capital - This is a measure of return on investment (ROI). Pretax net free cash flow defined as pretax net income plus depreciation and amortization expenses. Invested capital defined as the buyer's downpayment plus the amount of the seller financed loan and the working capital loan.

Modification of BIZCOMPS' Data

There were two basic sets of modifications made to the BIZCOMPS' market data, modifications to convert the original selling price from an asset purchase to a going-concern basis, and modifications to the original seller's discretionary cash flow (SDCF) amount to several commonly used financial income streams.

Modification of Selling Price

As indicated in the review of literature, sales of small businesses usually involve only the transfer of fixed assets, inventory and goodwill, as is the case with all the businesses in the BIZCOMPS' transaction data base. As a result, to have an ongoing business, the buyer would have to

generate sufficient working capital to operate the business. In terms of the selling price of the business, this working capital amount would need to be added to the asset sale price to truly provide a selling price based on a going-concern basis. The reference source used to provide an estimate of working capital requirements for these businesses was *RMA Annual Statement Studies*. Since the businesses in the *BIZCOMPS'* data base included SBIC#, date of sale, and gross annual sales data, it was possible to estimate the working capital requirements for each business listed in the *RMA Annual Statement Studies*. *RMA* cautions that its studies be regarded as only general guidelines and not necessarily as industry norms. This is due to limited samples within categories, categorization of companies by their primary SIC code only, and different methods of operations by companies within the same industry.

RMA reports a Sales/Working Capital ratio. A listing of *RMA* data used in this study is presented in Appendix B. This ratio was inverted and multiplied by the gross annual sales for each company in the study. This calculation provides an overall estimate of total working capital. Although it is not stated whether the buyer of the business has purchased the inventory on hand at the time of sale, the working capital requirements were reduced by the inventory listed at cost to arrive at the net additional working capital requirements which are presented in

Appendix C. Whether the inventory level owned by the business at the time of sale was at a normal level for the size of business involved cannot be determined from the data used in this study.

Several assumptions were made concerning the financing of the required working capital. For those businesses that were purchased entirely with cash, it was assumed that the buyer would personally provide the working capital. For those businesses where the seller financed a portion of the purchase price, it was assumed that the buyer would have to take out a loan to finance the required working capital.

The second major adjustment to the asset purchase price involves the seller financing terms. As brought out in the review of literature, most interest rates provided by the seller are well below market rates for investments with similar risk. For purposes of this study, the market rate of interest for installment contracts for the purchase of a business was estimated to be that of an actively traded junk bond.

Barron's Market Laboratory section for bonds was used as the source to determine actively traded junk bond rates at the time of each business sale. For the years of 1989 thru 1992, the firm of Donaldson, Lufkin & Jenrette provided a Treasury Junk Yield (TJY) Spread which calculated the difference between interest rates on actively traded, liquid

high yield bonds and 7-year treasury notes. This interest rate spread was added to the 10-year treasury bond yield (a listing of 7-year treasury note interest rates could not be found) to provide a market interest rate for the installment contracts. During the period of October 1990 thru February 1991, there was a large increase in the junk bond interest rate of almost 3 percentage points. For this study, the junk bond interest rate during this period of time was modified to reflect an average of those junk bond rates before and after this volatile period which would probably not have affected small business financing. For the years of 1987 and 1988 the firm of Solomon Bros. provided a TJY Spread index in the form of a graph. The interest rate difference was read as accurately as possible from a visual graph. Again, this interest rate spread was added to the 10-year treasury bond yield to provide a market interest rate for the installment contracts. An index for junk bond interest rates was not found for the year 1986. The listing of modified junk bond interest rates used in this study is shown in Appendix D.

Once these market rates of interest were determined, it was possible to determine the present value of the purchase price of the business on a going-concern basis. The present value calculation involved discounting the future principal and interest payments to the seller according to the contract terms using the calculated junk bond market rate of

interest. For purposes of this study, it was assumed that the installment contract would call for equal monthly payments over the loan period. These calculations are presented in Appendix E.

The selling prices of the businesses on a going-concern basis were determined by adding the original down payment, the present value of the balance of the seller-financed note and the estimated additional working capital required. These calculations are also shown in Appendix E.

Modification of Seller's Discretionary Cash Flow

The next set of modifications relate to the seller's discretionary cash flow figures from the *BIZCOMPS'* data base. In the analysis of returns on equity and on invested capital, depreciation and amortization expense must be subtracted from SDCF to produce a net income figure. The *BIZCOMPS'* database does not have the actual depreciation or amortization data for each business. Accordingly, the *RMA Statement Studies* were used to get an estimate of this data based on the percentage of gross sales that these expenses represent for similar sized business during the same time period. The *RMA* data are presented in Appendix B, and the calculations are presented in Appendix E.

Secondly, the SDCF figures do not take into account the actual value of the owner services to the business. As was indicated in the review of literature, this is a common

error in the valuation of a business. An attempt was made to estimate the value of the owner's services. Reliable data to estimate a management salary for the businesses in this study was not obtained. Neither local employment agencies or temporary personnel service firms had the necessary data. The data on owner's compensation in RMA is based on total owner's compensation, which in small businesses is related to minimizing taxes of the business rather than compensating the value of the services, and accordingly, was not used, although it was used as a comparison for reasonableness. As a last resort, a best estimate of the value of the owner's services was developed. It was estimated that a business with sales of \$250,000 or less would have to pay a manager at least \$30,000 per year. This base scale would be increased or decreased by 1 percent of sales that varied from the base of \$250,000. In addition, it was assumed that the business would pay at least 10 percent of the gross wage as payroll tax expense in the form of FICA taxes, and State and Federal unemployment taxes. Due to differences in state requirements as to required coverage of owners, as well as rates, no allowance was made for worker's compensation insurance. In addition, no allowance was made for health care benefits since it varies from business to business as to whether health care benefits are offered, and the extent of the health care

benefits if provided. The calculations of the value of owner service are presented in Appendix F.

Finally, a calculation of the estimated annual interest expense on the seller-financed note as well as on the loan for additional working capital required was made. Instead of determining the actual first year interest expense, an average interest expense calculation over the period of the loans was made. The interest rate used for the seller note was the actual rate listed in the note terms from the *BIZCOMPS'* data base. For the working capital loan, it was assumed that the seller would not finance, and the buyer would have to find financing elsewhere and pay an interest rate at the junk bond rates used in the present value calculations. These calculations are presented in Appendix E.

In the analysis of returns on equity and returns on invested capital involving net free cash flow as the income stream, the value of the owner's services to the business was subtracted from SDCF. In addition, the calculation of return on equity includes an estimate of the total annual principal and interest payments on the respective loan amounts outstanding, and these were subtracted from SDCF.

CHAPTER 4

RESEARCH FINDINGS

Introduction

This chapter presents the statistical analyses of the research data. The selling prices and income streams compared in the correlation analysis are presented in Appendix G. The results are presented in Table 1 below.

Table 1. Correlation between Income Streams and Selling Prices of Small Businesses

Income Stream	Modified Going-Concern Selling Price		Actual Selling Price	
	r	r^2	r	r^2
Pretax Net Income to Equity	.69	.48		
Pretax Net Income Before Interest to Invested Capital	.71	.50		
Pretax Net Cash Flow to Equity	.57	.32		
Pretax Net Cash Flow to Invested Capital	.85	.72		
Seller's Discretionary Cash Flow (SDCF)			.82	.67

Note: For all correlation coefficients $p < .0001$, $n=75$

The table lists the correlation coefficient (r) and the coefficient of determination (r^2) for each of the five comparisons of income streams to selling prices for the small businesses. The Pearson product-moment correlation coefficient was used to calculate the correlation coefficients. The range of a Pearson correlation coefficient is from -1.00 to +1.00 with a negative number indicating negative or inverse relationship, 0.00 indicating no linear correlation and a positive number indicating a positive correlation between the variables. The larger the magnitude of the number in either direction the greater the correlation between the variables, income stream and selling price. The coefficient of determination indicates what percentage of the variance in the selling price of the business is explained by knowledge of the income stream.

Analysis of Individual Correlations

All correlation coefficients were positive, indicating some degree of positive relation between an increase in the income stream and an increase in the selling price of the business. Although it was not the purpose of this study to determine the predictive value of the correlation coefficient, an indication as to the relative strength of the individual correlation coefficients was based on the guidelines set forth in *A Practical Guide to Educational Research* (Cates, 1985:90). Finally, all correlation

coefficients tested as statistically significant, and not attributable to chance.

Pretax Net Income to Equity versus
Going-Concern Selling Price

The coefficient of determination indicates that 48 percent of the variance in the modified going-concern selling price is explained by the knowledge of pretax net income to equity. The coefficient of correlation was .69 and indicates a fairly reliable relationship between the variables which could be useful for a reasonably accurate group prediction. The scatter diagram shown in Figure 1 illustrates this relationship.

Pretax Net Income to Invested Capital
versus Going-Concern Selling Price

The coefficient of determination indicates that 50 percent of the variance in the modified going-concern selling price is explained by the knowledge of pretax net income to invested capital. The coefficient of correlation was .71 and also indicates a fairly reliable relationship between the variables which could be useful for reasonably accurate group prediction. The scatter diagram shown in Figure 2 illustrates this relationship.

Figure 1
(ROE) NET INC. VS. SALE PRICE

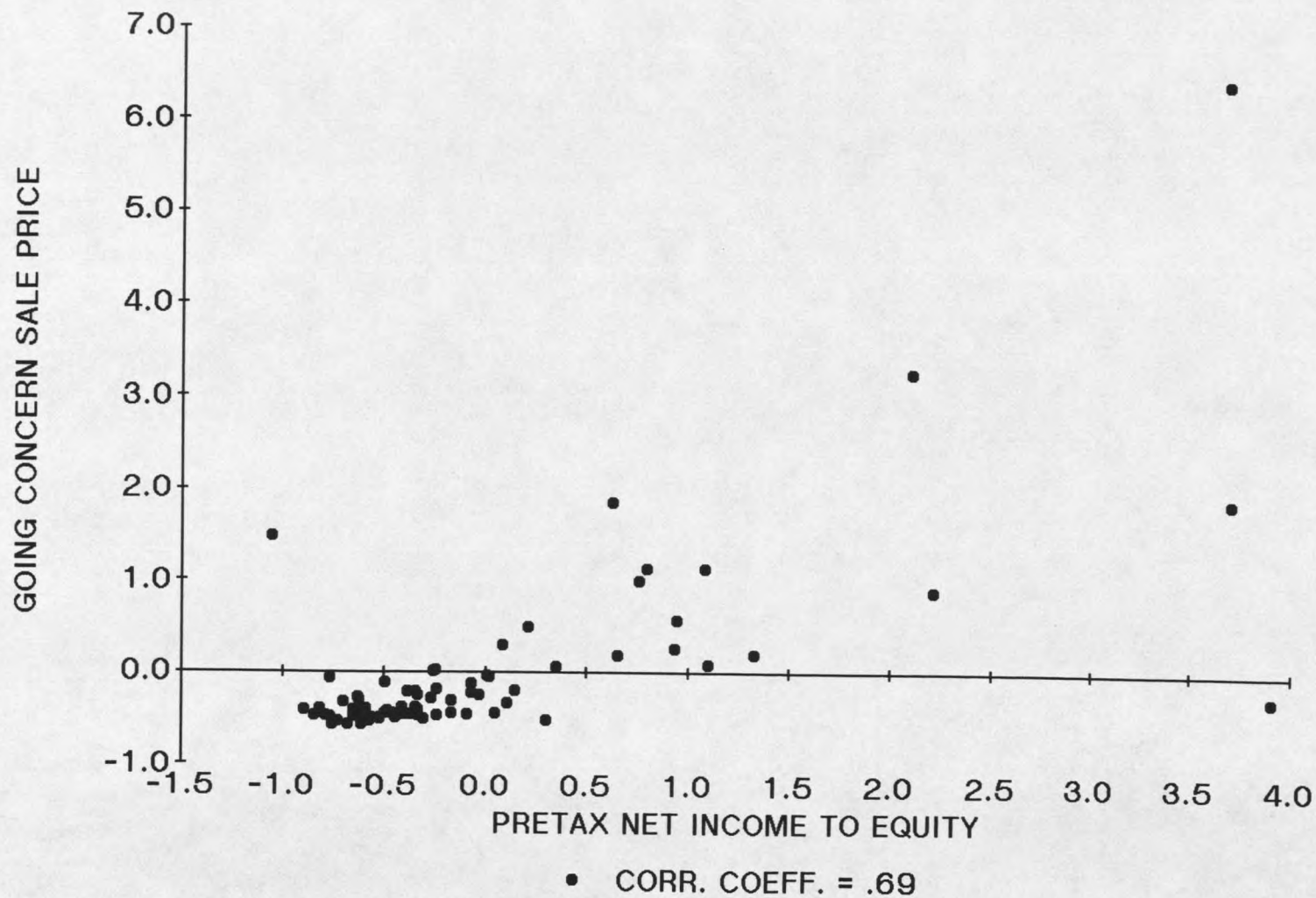
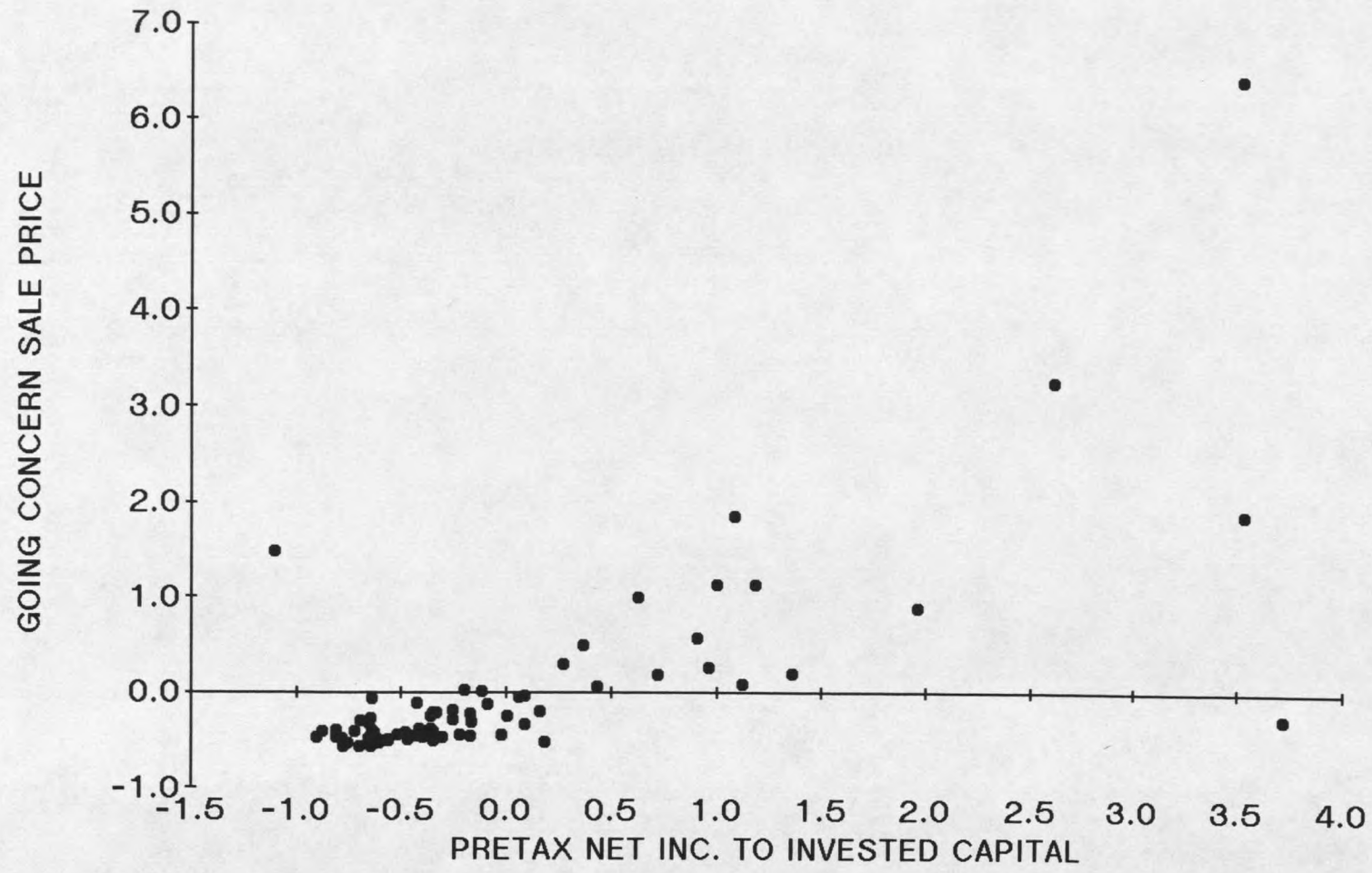


Figure 2
(ROI) NET INC. VS. SALE PRICE



• CORR. COEFF. = .71

