1996

# A Study to Evaluate Individual Attributes and Correlate These Qualities with Investment Means to Compose an Appropriate Portfolio Mix

Paul J. House III

# A STUDY TO EVALUATE INDIVIDUAL ATTRIBUTES AND CORRELATE THESE QUALITIES WITH INVESTMENT MEANS TO COMPOSE AN APPROPRIATE PORTFOLIO MIX.

Paul J. House III,  B.S.

An Abstract Presented to the Faculty of the Graduate School of
Lindenwood College in Partial Fulfillment of the Requirements for the
Degree of Master of Business Administration

1996

# ABSTRACT

This applied learning plan will focus on the area of developing individual's financial profile and correlating these attributes with investment means to compose an appropriate portfolio mix.

Research has indicated a growing trend for individuals to "do-it-themselves" and use discount brokers to save money. The use of discount brokerage's supports the notion that there is no financial advice, and the investor must do the research to make the proper decisions.

The problem for individuals "doing-it-themselves" is that they sacrifice the interpretation of the objectives and goals. The individual utilizing a discount broker may alleviate the ethical concern and may even save money, but the individual is forfeiting the sound financial advice and expertise research to make proper decisions.

The purpose of the applied learning method is to develop the individual's financial profile and correlate attributes with investment means. The portfolio mix is created based upon the attributes to maximize return and minimize risk for the individual. The individual attributes that are considered include the objective, duration, risk tolerance, liquidity, tax status, knowledge, and lifestyle. The applied learning method develops the objectives and attributes by quantifying answers regarding the individual's financial profile, nonfinancial information, and emotional acceptance. The method correlates these attributes with defined

investment means based upon the investment pyramid. Once the individual attributes are correlated with the investment means, the investments are placed within a portfolio to minimize risk, maximize return, and achieve objectives.

There were three evaluators selected to evaluate the applied learning method. The evaluators were chosen for their years of experience, educational background in financial services, and expertise within financial planning. Questionnaires gathered data to perform statistical analysis for the applied learning plan. The evaluators choose a description that fit within each question, and the answer was assigned by a numerical response. The data was transformed into information utilizing data analysis, descriptive analysis, univariate analysis, and Chi-squared analysis.

Results of the analysis produces considerable evidence to suggest that the null hypothesis be accepted and to conclude that, within this sample pool, the applied learning plan develops the individual's financial profile and correlate individual attributes with investment means.

# A STUDY TO EVALUATE INDIVIDUAL ATTRIBUTES AND CORRELATE THESE QUALITIES WITH INVESTMENT MEANS TO COMPOSE AN APPROPRIATE PORTFOLIO MIX.

Paul J. House III, B.S.

## DEDICATION

To my wife and family members that supported my efforts.

# Table of Contents

# List of Tables

# List of Figures

Chapter I

INTRODUCTION

## Investment Objectives

There is a growing trend for individuals to "do-it-themselves" and use discount brokers to save money. The use of discount brokers supports the notion that there is no sound financial advice and the investor must do the research to make the proper decisions. The concern escalates when the investor tries to maximize return, rather than achieving stated goals and objectives. Maximizing return may be some investors' objective, but the rationale behind the objective may stem from other criteria, such as, risk, duration, liquidity, knowledge, and lifestyle.

Contrary to what many investment professionals and most individuals believe, individuals have many reasons for investing. By asking individuals the appropriate questions, the objectives and needs determine the rationale "why individuals invest the way they do" (Walker 350). Most individuals will claim to invest so that the money will grow. By careful questioning, however, one may learn that because of tax status, income or other events, some growth investments are appropriate, while others are not.

For many individuals, the single most important investment objective is the preservation of capital. Individuals want to maintain the assets they have worked so hard to accumulate and protect them from losses due to credit, or financial, risk (351). Investors, particularly retirees

1

and others on fixed incomes, want investments to generate additional current income either through dividend or interest payments (Armstrong 15). Growth objectives increase the value of an investment over time. This growth can come from increases in the value of the security, the reinvestment of dividends and income, or both. Investors seek growth to meet a variety of needs (entertainment, travel, education, or a vacation home). Tax deferment objectives allow investors to defer and reduce tax levels (16). The current tax rate increase by the Revenue Reconciliation Act of 1993, compels investors to acquire municipal securities (federally tax-free), federal securities (state tax-free), and retirement accounts (defer taxes). An investor may have reasons based on other than personal or financial factors for choosing an investment. Investment professionals frequently come across portfolios composed of only one or a few investments. Because such concentrations of investments expose the portfolio to much higher risks, portfolio diversification becomes an important objective (Ramaswami 287-288). Some investors always want immediate access to their money. A product is liquid if the investor can sell it quickly at face amount (or very close to it) or at a fair market price without losing significant principal (Chirinko 527-530). Among the investment objectives a customer might have, the need to speculate or gamble on higher than average returns in exchange for higher than average risks is a speculative objective.

The investment means fit within the investors' objectives. The appropriate objectives will designate the qualities possessed by each security to design a portfolio mix. The securities to be examined are

equity, debt, government and agency, money-market, options, investment companies, and retirement.

## Equity

Equity securities are common stock, preferred stock, rights offerings, warrants, and American Depository Receipts. Common stock is the representation of ownership or equity in a corporation. Growth is the almost unlimited potential for increase in the market price of shares owned, known as capital appreciation. Historically, owning common stock has provided investors with greater real returns than any other investment. (Montgomery 187). Preferred stock is a cross between an equity and a debt security. Although it is an equity security and represents ownership, it acts like a debt instrument providing a fixed income with stated dividends (Walker 10). A right offering is a short-term (typically 30 to 45 days) privilege a stockholder receives from a corporation to purchase new shares issued by the corporation in proportion to the number of shares already owned (19). A warrant is a long-term instrument giving the holder the right to buy securities at a stipulated price from the issuer. The investor can either exercise the warrant and buy the stock below the market price or sell the warrant in the market at a higher price based on the market price (21). American Depository Receipts (ADR's) facilitate the trading of foreign securities in US markets. An ADR represents a receipt of stock in a non-US corporation and, like a stock, bought and sold in the US securities markets on an exchange or over the counter (23).

## Debt

Debt securities include municipal securities and various corporate bonds. A municipal security is the debt obligations of state and local governments issued to raise capital to finance public works and construction projects that benefit the general public. Municipal securities provide fixed income and a tax-shelter to Federal income taxes (Mack 67-68). Corporations issue corporate bonds to raise money for working capital or capital expenditures, such as, plant construction, acquiring equipment, and expansion (Goldman "Quickie Mortgage Bonds" 179). Corporate issues identify bonds as either secured or unsecured. A secured bond is the issuer setting aside a certain identifiable asset as collateral for the prompt payment of interest and the repayment of principal (Grover "How to Own..." 182). Such examples include, mortgage bond, closed-end indenture, open-end trust indenture, prior-lien bonds, collateral trust bonds, and equipment trust certificates. Corporate unsecured bonds have no specific collateral backing and are classified into two primary types: debentures and subordinated debentures. Corporations back debentures by the general credit or investors simply believe that the corporation will pay its debts. A debenture is riskier than secured bonds, but safer than subordinated debentures or preferred stock. The issuing corporation promises to pay back principal and interest, just as it does with secured bonds. Subordinated debentures offer no general credit of the corporation and therefore, appeal to investors because the higher income and conversion features (183).

## Government and Agency

The federal government is the nation's largest borrower and is the most secure credit risk. The U.S. Government backs the government securities and agency issues by the full faith and credit of the government and by the government's almost unlimited powers of taxation (Walker 30). A Treasury bill is a short-term issue with maturity terms of one year or less (13, 26, 52 weeks) and issued in denominations of $10,000 to $1 million (70). A Treasury note is an intermediate-term bond maturing in one to ten years and issued in denominations of $1,000 to $1 million (71). A Treasury bond constitutes the smallest portion of the government's marketable debt. This long-term debt pays interest every six months, issued in denomination of $1,000 to 1 million, and maturity terms of ten years or more (71). Other examples of government securities include; Cash Management Bills (CMB's), Zero-coupon securities (STRIPS), and savings bonds (Series EE and Series HH bonds). Congress authorizes certain agencies of the federal government to issue marketable debt securities. Some of these agencies include; Federal Farm Credit Banks. Federal Home Loan Mortgage Association (FHLMC or Freddie Mac), Government National Mortgage Association (GNMA or Ginnie Mae), Inter-American Development Bank (IADB), Federal Home Loan Banks (FHLB's), Federal National Mortgage Association (FNMA or Fannie Mae), and Student Loan Marketing Association (SLMA or Sallie Mae). Agency issues sell at higher yields than do direct obligations of the federal government, but frequently sell at lower yields than those available on corporate debt securities (75).

## Money-Market

Money-market securities exist to provide very short-term funds to corporations, municipalities and the U.S. Government. Typically the maturity term is one year or less and a fixed income security. The short-term instruments provide a high degree of liquidity, safety, and credit rating for investors (Chirinko 529-531). Corporations issue, commercial paper, a short-term promissory note as a mean of accumulating the cash to finance both accounts receivable and seasonal or unusually large inventories. The rates are usually higher than comparable bank interest rates, require minimum investment of $250,000, and fixed maturity terms from 1 to 270 days (Biderman 50). Nonnegotiable certificate of deposits (CD) which most investors are familiar with are those offered by banks and savings and loans with set maturity term and fixed interest rates. Negotiable CDs represent time deposits with a bank; however, they must have a minimum face value of $100,000 and issued normally for $1 million or more.

## Options

An option is a contract between two individuals, the purchaser of the contract paying for the right to buy or the right to sell a security to the seller. Investors trade options on any item with a fluctuating market value, such as equity, index, debt, and currency options (Kumar 281). Option trading is a speculative trading practice and requires investors to accept higher risks for higher returns.

## Investment Company

An investment company is in the business of pooling investors' money and investing in securities to meet objectives. The management of an investment company attempts to invest and manage funds for individuals more effectively than the individual investors, given the limited time, knowledge of various securities markets, and resources (Bugen 57). Closed-end (publicly traded funds) specify the exact number of shares it intends to sell and the price the investor will receive or will have to pay for shares (58).

Open-end (mutual funds) is an unlimited and continuous offering of shares sold and redeemed by the fund only (58). The management of the investment company provides investors with diversification, small initial investment, and professional portfolio management with the fund objectives: growth, income, combination, specialized (sector), balanced, asset allocation, bond and preferred stock, tax-free bond, US Government agencies, index, dual purpose, and money market funds.

## Retirement

Retirement is an important goal for investors to provide retirement income. Many individuals accomplish this through corporate retirement plans, individual plans, or both individual and corporate (Lipp 12-13). The retirement plans offered to defer taxes, assists retirement income, and preserves capital include Individual Retirement Account (IRA),

Simplified Employee Pensions (SEP), Keough (HR-10) plans, Thrift and 401 (K) Plans, profit-sharing plans, annuity plans, and variable life insurance.

## Wall Street

Wall street is a marketplace where merchants, agents, and individuals of the financial industry meet to buy and sell stocks, bonds, and other securities. Buying and selling of stocks and bonds takes place on exchanges where stocks trade in a two-way auction process. The major exchanges include: the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and regional stock exchanges. Other trades take place in the nationwide network of broker-dealers known as the Over-The-Counter (OTC) market (Walker 141).

The oldest stock exchange in the country is the Philadelphia Stock Exchange, founded in 1790. Traders and merchants gathered on a street corner in Philadelphia to trade the newly issued bank stocks and government bonds. Security traders began to gather and trade in New York City two years later, and the two groups established an elaborate communications system (170). Often called the big board, the NYSE handles three-fourths of all exchange transactions (149). The rest of the trading is through the national exchange, regional exchanges, and over-the-counter. The AMEX controls about one-fifth of all the listed securities trades done in the United States. Besides the national stock exchanges, there are other stock exchanges that serve the financial community in different regions of the country. These regional stock exchanges include the Boston Stock Exchange (BSE), Chicago Stock Exchange (CHX),

Cincinnati Stock Exchange (CSE), Pacific Stock Exchange (PSE), and Philadelphia Stock Exchange (PHLX). Not all trading takes place through auctions on an exchange floor. The oldest continuous securities market is the 'over-the-counter' market, where broker-dealers negotiate trades directly with one another. Although, over the market has an old-fashioned ring to it, the modern OTC market is a sophisticated telecommunications and computer network connecting broker-dealers across the country. The computerized information system that keeps track of much of the OTC trading is Nasdaq -- the National Association of Securities Dealers Automated Quotation service (173).

## Stock Market History

During the early 1900's, America enjoyed a long-term bull market that promised to last forever. Attracted by the dream of easy money, Americans turned en masse to Wall Street, poring over stock price tables and learning the language of trading operations. For the first time, the general public became a significant factor in the market: but often bought securities knowing little or nothing about the issuing company or plans for spending the money. Investors borrowed heavily, buying securities on margin. Doing so was an act of faith in the perpetual bull market and an outcome of generous credit policies that allowed investors to borrow most of the purchase price of stock.

By the summer of 1929, over a million Americans held stock on margin and the rest is familiar history. Stock prices reached new heights in early September 1929. Then things fell apart. By the third week of September, tumbling prices brought the Dow Jones averages down 19 points. A month later, averages were 50 points below the September high mark. The downward spiral of prices gained momentum, breaking through crumbling layers of anticipated buying support. Rapidly declining prices meant investors' stocks were no longer adequate security for the loans. Stock dumping destroyed modest investors and wealthy traders alike, including those supposedly safe investment trusts, which sold holdings for whatever it could sell (104).

After the crash, the market continued to decline for several years. During that time, Congress examined the causes of the debacle and passed several laws meant to prevent its recurrence. This legislation included, among other acts, the Securities Act of 1933, Glass-Steagall Act of 1933, Securities Exchange Act of 1934, and Trust Indenture Act of 1939 (104-105).

## Ethical Issues

Throughout the 1940's until the 1990's, the rejuvenated bull market became concerned with ethical issues regarding the securities industry. The Insider Trading and Securities Fraud Enforcement Act of 1988 recognized the fiduciary responsibility of the insider to the issuer, stockholders, and others affected by trades made with insider knowledge.

Investors who have suffered monetary damage because of insider trading now have legal recourse against the insider and against any other party who had control over the misuse of nonpublic information. (357). Another ethical act was, The Ethical Behavior of Investment Advisors, which monitored investment recommendations corresponding with customer needs, financial capability and objective. It instituted that recommendations should reflect investments that make sense for the client, not just for the broker. The broker should fully explain and include a discussion of the investment's risks. Individuals should never own an investment that could put them at risk beyond their financial capacity (259). The National Association of Securities Dealers (NASD) Rules of Fair Practice and the laws of most states require broker-dealers, registered reps and investment advisers to inquire into a customer's financial situation before making any recommendation to purchase, sell, or exchange securities. The representative must determine such things as the client's other security holdings, income, expenses and financial goals and objectives (259). A survey conducted by the Gallup Organization reported that 53% of adults perceive trust and ethical behavior as the most important element of a relationship with a financial advisor. Only 9% value performance records (Warren 8). Last year, the NASD barred 491 brokers from practicing, a 72% increase over 1989. Customer complaints to the NASD jumped 37% from 1991, while punitive awards to disgruntled investors during the same period soared more than six-fold, to $12.3 million (Middleton "Demystifying the Role..." 95). The unethical behavior is a crucial reason why the full service brokerage firms have been witnessing

a decline in business. Also, a spokesman for the NASD says getting the cheapest price available is important for individuals ("Discount Brokers" 80).

## Investor Trends

The differences between a full and discount brokerage firm contain the level of service an individual will receive. The discount broker will execute orders individuals initiate and generally offer option investments only when asked. A full-service brokerage firm will offer more customized order entry and personalized service (Schuessler, 32-34). The biggest difference between the types of firms is the prices or commissions. Full-service firms charge the highest commissions, while discount brokers charge about 50% less. Besides the lower commissions, discount firms charge few or none of the miscellaneous fees that full-service firms add on (Welsh 170-171). According to the latest survey by Mercer Inc., discount brokers reduced the commission rates an average of 6% in 1994, while average commissions rose 3% at full-service brokers ("Commissions Shrink" C17).

As a result of the unethical issues and lower costs, the number of investors taking accounts to discount brokers have been growing rapidly (Jeffrey "Delving Into the..." C1). This growing trend for individuals to "do-it-themselves" and use discount brokers to save money supports the notion that there is no financial advice and the investor must do the research to make the proper decisions. The array of financial offerings is bewildering, even to professionals. Individuals need to know "what kind of a return they want, and how much risk they're willing to assume"

(Middleton "Demystifying The Role..." 95). If the individual is well informed, one must be prepared to "have the nerves to ride out market storms. Anyone can handle a rising market, but most individuals panic and turn tail when prices go down. That's usually the worst mistake, since markets have always bounced back." (98)

Before an individual makes an appropriate recommendation, one must understand their financial objectives, financial status, and investment constraints. The more individuals know about income, current investment portfolio, retirement plans, net worth, and other aspects of the current financial situation, the better investment recommendation will enable to be made. The more the individual knows about the risks and rewards associated with each type of investment, the better will be the investment decision. The financial advisor should lay out the best investment route, but it is the investor that should pick the destination (Hagaman 14).

## Summary/Statement of Purpose

The important points of this chapter were the investment objectives, investment means, and investment trading centers. The investment objectives include the preservation of capital (protecting assets from losses), current income (investments generating dividend or interest payments), growth (increasing the value of an investment over time), tax deferment (deferring and reducing tax levels), portfolio diversification (composing a portfolio to reduce risk), liquidity (allowing access to money), and speculation (speculating on riskier investments). The investment

means fit within the investors' objectives. The securities examined were equity, debt, government and agency, money-market, options, investment companies, and retirement. Wall street is the marketplace where merchants, agents, and individuals of the financial industry meet to buy and sell stocks, bonds, and other securities. The major exchanges include: the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and regional stock exchanges. Other trades take place in the nationwide network of broker-dealers known as the Over-The-Counter (OTC) market (Walker 141). The computerized information system that keeps track of much of the OTC trading is Nasdaq -- the National Association of Securities Dealers Automated Quotation service (173).

The design of a portfolio mix for individuals will be investigated. The different portfolio management strategies will be examined by leading theorist and authors to determine appropriate investment mixes for individuals. As a result of the unethical issues and lower costs, the number of investors taking accounts to discount brokers has been growing rapidly (Jeffrey "With Discount Brokers..." C1). This growing trend for individuals to "do-it-themselves" and use discount brokers to save money supports the notion that there is no financial advice, and the investor must do the research to make the proper decisions. The array of financial offerings is bewildering, even to professionals. Individuals need to know "what kind of a return they want, and how much risk they're willing to assume" (Middleton "Demystifying The Role..." 95). Before an individual makes an appropriate recommendation, one must understand the financial

objectives, financial status, and investment constraints. The more individuals know about their income, current investment portfolio, retirement plans, net worth, and other aspects of the current financial situation, the better investment recommendation will enable to be made. The more the individual knows about the risks and rewards associated with each type of investment, the better will be the investment decision. Therefore, the purpose of this study is to evaluate individuals attributes and correlate these qualities with investment means to compose an appropriate portfolio mix.

## Chapter II

## LITERATURE REVIEW

### General Area of Study

The growing trends for individuals to "do-it-themselves" and use discount brokers to save money supports the notion that there is no sound financial advice and the investor must do the research to make the proper decisions. The concern escalates when the investor tries to maximize return, rather than achieve stated goals and objectives. Maximizing return may be some investors' objective, but the rationale behind the objective may stem from other criteria, such as, risk, duration, liquidity, knowledge, tax rates, and lifestyle.

Contrary to what many investment professionals and most individuals believe, individuals have many reasons for investing. By asking individuals the appropriate questions, the objectives and needs determine the rationale "why individuals invest the way they do" (Walker 350). Most individuals will claim to invest so that the money will grow. By careful questioning, however, one may learn that because of tax status, income or other events, some growth investments are appropriate, while others are not.

Before an individual makes an appropriate recommendation, one must understand the financial objectives, financial status, and investment

16

constraints. Individuals need to understand financial income, current investment portfolio, retirement plans, net worth, and other aspects of the current financial situation. The individual also needs to understand the risks and rewards associated with each type of investment. The financial advisor should lay out the best investment route, but it is the investor that should pick the destination (Hagaman 14).

The different portfolio management strategies examined by leading theorist and authors determine appropriate investment mixes for individuals. As a result of the unethical issues and lower costs, the number of investors taking accounts to discount brokers have been growing rapidly (Jeffrey "With Discount Brokers..." C1). The array of financial offerings is bewildering, even to professionals. Individuals need to know "what kind of return they want, and how much risk they're willing to assume" (Middleton "How to Pick..." 95). The investment professional's business is to know the investor and what different investment vehicles achieve. The individual will need to determine the financial profile before examining the investment means.

## Financial Profile

The more an individual acknowledges the income, current investment portfolio, retirement plans, net worth and other aspects of current financial situations, the better the recommendation. The financial profile of an individual is composed of the income statement, balance sheet, nonfinancial information, and emotional acceptance. Each portion

profiles the individual to define the individual's attributes: risk tolerance, duration, liquidity, knowledge, tax rates, and lifestyle.

Peter Bernstein, journalist for <u>Financial Analysts Journal</u>, expressed that risk identifies the individuals ability to sustain volatile gains/losses. The individual's risk tolerance is computed quantitaively and based upon a scale from 1 (no risk) to 10 (extremely risky). Alan Viard, journalist for <u>Journal of Financial & Quantitative Analysis</u>, states the duration of holding periods pertain to the length of investment holding, either short-term (less than 3 year), intermediate-term (4-10 years), or long-term (more than 10 years). The duration of holdings determine the length of time necessary for the investment means to achieve stated objectives. Charles Biderman, journalist for Barron's, says that liquidity is the market's asset; refering to the ability to exchange securities into currency. Liquidity and duration connect since the quicker an investment can be converted into cash, the holding period is shortened. The knowledge attribute applies to the understanding of different types of investment means. Based upon the individual's investment background, this will define the use of higher sophiscated investment means ("Importance of Educating..." 26). The tax rates define the percentage of gross income dispersed to federal, state, and local governments. This calucated figure allows the individual to understand if tax-deferred and tax-free investment products should be utilizied within the portfolio. Lifestyle identifies the individual's financial situation forming from habit, usefulness, or spending. The lifestyle attribute defines the objectives and goals to be achieved.

## Income Statement

The individual's financial status is developed by the income statement. The income statement takes the form of a monthly, quarterly, or annual budget that measures the income and expenses. Gathering information about the individual's martial status, financial responsibilities, projected inheritances, pending job changes and the like is necessary to prepare the income statement (Brown 55-56). The income statement can be formed by answering questions similar to these in Table 1.

Table 1

Questions Examining The Income Statement For An Individual

------------------------------------------------------------------------------

1. What is your annual income?
2. What is your family annual income?
3. What is your dividends & interest income?
4. What is your family dividends & interest income?
5. What is your total gross income?
6. What is your total family gross income?
7. How stable is this income?
8. Do you see major changes taking place over the next few years? If yes, how much (%)?
9. What is your rent/mortgage expense?
10. What is your electricity/gas/fuel/water expense?
11. What is your homeowners/renters/automobile insurance expense?
12. What is your life insurance expense?
13. What is your day care expense?
14. What is your food expense?
15. What is your clothing/personal care/household expense?
16. What is your transportation/recreation/travel expense?
17. What is your education expense?
18. What is your allowance for other expenses?
19. How much do you pay total in expenses each month?

20. Is this a relatively stable figure?
21. Do you anticipate any change in this amount over the next few years? If yes, how much (%)?
22. How much income is paid toward taxes?
23. What is your net spendable income after expenses?
24. How much of your net spendable income is for savings?
25. How much of this is available for investments?

---

SOURCE: Series 7 Principles and Practices. Exhibit from "Know Your Customer," by Kimberly K. Walker-Daniels (1995).

James Bachman, author for Best's Review, states for optimal results, define the financial model of the individual's income statement. These questions develop the individual's income statement to equate the financial information to the individual attributes. The lifestyle attribute is examined by the spending and earning habits. The duration attribute recognizes the net income utilized for short, intermediate, and long term investments. The return of dividends and interest identify the knowledge of investment means for the individual. The taxes paid determine if the individual should utilize tax-deferred investments. Placing high percentages of income into mortgages and other assets determines the liquidity of the individual for the development of the portfolio.

## Balance Sheet

Before an individual enters the first trade, it is important to find out the individual's financial status. Individuals, like businesses, have a financial balance sheet "a snapshot of the financial condition at a point in time" (Plattner 94). The balance sheet contains a listing of the assets,

liabilities, and equity. The balance sheet lists the assets in order of

liquidity or the time to convert into cash. The balance sheet lists the

claims (liabilities and equity) in the order of being paid (96). The balance

sheet can be formed by answering the following questions in Table 2.

Table 2

Questions Examining The Balance Sheet For An Individual

------------------------------------------------------------------------------------------------

1. Value of assets you own?
2. Value of your home/second home?
3. Value of your automobiles/airplanes/boats/other vehicles?
4. Value of cash on hand?
5. Value of cash in checking accounts?
6. Value of savings account?
7. Value of investments?
8. Value of any marketable securities?
9. Value of household furnishings?
10. What are your liabilities?
11. Amount owed to credit cards/charge accounts?
12. Amount owed on personal loans?
13. Amount owed on consumer loans?
14. Amount owed on mortgages/second mortgages?
15. Value of equities (partnerships/proprietorships/corporations)?
16. Value that is liquid/accessible?
17. Value of any long-term investment accounts?
18. Value of any IRA, Keogh, pension, 401(k), or profit-sharing plan?
19. Amount contributing toward any annuities?
20. Cash value of your life insurance?

------------------------------------------------------------------------------------------------

SOURCE: Series 7 Principles and Practices. Exhibit from "Know Your
Customer," by Kimberly K. Walker-Daniels (1995).

The formation and understanding of the individual's balance sheet also

defines the portfolio limits. These questions develop the individual's

balance sheet to match the financial information to the individual attributes. The lifestyle attribute is characterisitzed by the borrowing and saving practices. The individual's risk tolerance is indicated by percentage change of liabilities and assets. The long-term investments and marketable securities determine the holding periods the individual has been managing. The net worth and investment assets identify the knowledge of the individual. The amount of assets placed in other investment products determine if the individual should utilize tax-deferred investments. The assets placed into marketable securities and cash establish the liquidity basis of the individual.

## Nonfinancial Information

After gathering information on an individual balance sheet and income statement, the non financial information supports the objectives and attributes. The non financial considerations frequently carry more weight than the financial information (Walker 349). The items needed to develop recommendations are offered in Table 3.

Table 3

Questions Examining An Individual's Non financial Information

---

1. Your age?
2. Marital status?
3. Spouse age?
4. Number of dependents/children?
5. Children's age?
6. How do you feel about saving for children's education?

7. How do you feel about work?
8. How do you feel about saving for retirement?
9. What age do you plan to retire?
10. How much yearly income will you need after retirement?
11. Current family educational needs?
12. Future family educational needs?
13. Current family health care needs?
14. Future family health care needs?
15. Tax bracket?
16. How do you feel about protecting your family?

---------------------------------------------------------------------------------------

SOURCE: Series 7 Principles and Practices. Exhibit from "Know Your Customer," by Kimberly K. Walker-Daniels (1995).

Robert Plattner, author for Real Estate Review, implies that the nonfinancial information develops an understanding for the single/family market. These questions develop the nonfinancial information and compensate the individual attributes to define the portfolio. The individual's lifestyle dictates the investment means to utilize for objectives. The ability to take upon risk stems from the objectives of retirement, children's education, health care needs, or etc. The individual's age determines the duration for the investments to be invested. The individual's tax bracket and objectives determine amount utilized in tax-deferred investments. The importance of current needs establish the liquidity basis of the individual.

**Emotional Acceptance**

No matter how many analyses are performed to determine the financial status describing the individual, it is the individual's emotional acceptance of investing and motivation to invest that will mold the

portfolio. The individual's aptitude for investment will be determined by the answers to questions in Table 4.

## Table 4

### Questions Examining An Individual's Emotional Acceptance

--------------------------------------------------------------------------------

1. What kind of risk can you afford to take?
2. How would you react to a loss of 5% of your principal? 10%? 50%?
3. Willing to take financial risk to make substantial monetary gains.
4. Can you tolerate market fluctuations?
5. The ups and downs of the stock market make me feel nervous.
6. Prefer to stay in a familiar situations, rather than take chances.
7. What combination of risk/return would you feel comfortable with?
8. What level of return do you consider good? Poor? Excellent?
9. Over the past three years, satisfied with return on investment's.
10. How liquid must your investment be?
11. How important are tax considerations?
12. Are you seeking long-term or short-term investments?
13. Do you get bored with stable investments?
14. What is your investment experience?
15. What types of investments do you currently hold?
16. What is your investment temperament?
17. Financial terminology is often confusing.
18. Lack knowledge about investments and financial planning.
19. Thoroughly research investments before deciding to invest.
20. Good understanding of financial planning principles.
21. Usually "gives in" when plans conflict with those around me.
22. Becoming an accomplished and active investor is important.
23. On most financial decisions, I follow my instincts.
24. Open to consider new investment opportunities and strategies.
25. Personal accomplishments motivate to become involved in financial planning and investment activities.
26. Put off making financial decisions because of making a mistake.
27. Investing is just too risky.
28. Optimistic about what the future holds for the economy.
29. Saving and investing are pointless unless with a lot of money.
30. Feel I don't have enough control over the direction my life.
31. Conversations about money and investing are boring to me.

32. Established a specific savings and investment goal

------------------------------------------------------------------------------------------------

SOURCE: Series 7 Principles and Practices. Exhibit from "Know Your Customer," by Kimberly K. Walker-Daniels (1995).

These questions develop the individual's emotional acceptance and define the investment mean characteristics within the portfolio. The lifestyle identifies the portfolio style and mixture of investment means. The risk tolerance identifies the ability to accept investment risk to generate higher returns. The duration determines the length of the investment holding; short, intermediate, or long-term. The knowledge of investment means allow the use of higher sophisticated investment products. The tax sentiment determines the use of tax-deferred investments. The liquidity determines the need for current money. The financial profile, nonfinancial information, and emotional acceptance defines the characteristics the investment means possess.

## Investment Means

Individuals that "do-it-themselves" and make investment decisions, need to design an investment portfolio. A good investment mix will select investments that meet an individual's risk level, investment goals, and investment duration. Jane White, journalist for The New York Times, says that each investment serves as a stand-alone portofolio and is intended for a certain stage of life, age, risk tolerance, investment goal or some combination of these factors.

The safest way for an investor to double money is to fold it over once. For the investor who lacks the time or expertise to select

individuals' securities for an asset allocation model, the Investment
Pyramid helps individuals understand the relationship between investment
means and individual attributes (Perritt 35). The investment pyramid
(Figure 1) breaks down the types of investment means into five categories:
speculation, growth, growth/income, income, and safety. The focus of
each portion of the investment pyramid will help develop the appropriate
portfolio mix for the individual's attributes.

Figure 1

Investment Pyramid
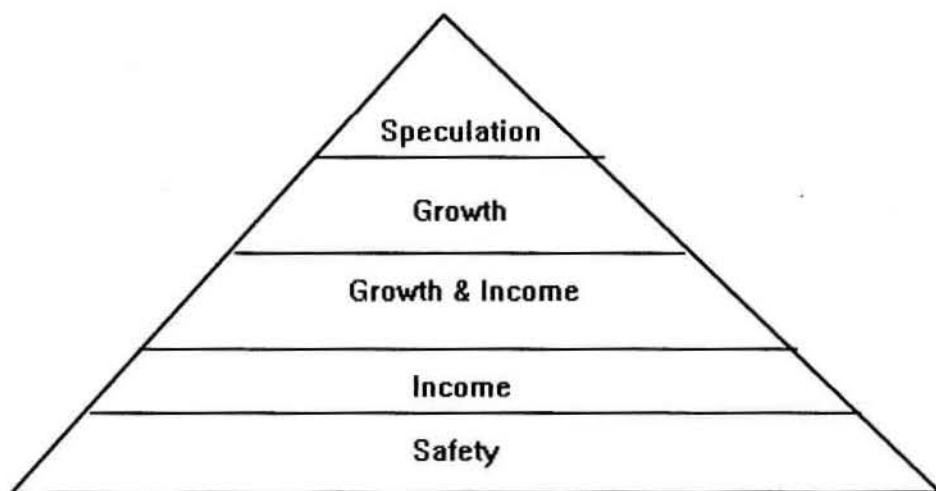
------------------------------------------------------------------------------------



Source: Diversity, The Investor's Guide to Asset Allocation Strategies.
Exhibit by Gerald W. Perritt.

The speculation portion of the pyramid includes investments such
as, commodity futures, strategic metals, options, lower credit-rated or

junk bonds, gold and precious metals, sector mutual funds and aggressive-stock mutual funds.

Speculative investments are among the riskiest investments. These investments have the potential to earn the greatest return, but can also rack up the heaviest losses. The investment objective of the speculation portion is to maximize the growth of investments (Ellis 147). The risk is abnormally higher compared to other portions of the pyramid, but the benefits are high growth potential in a short amount of time.

An example of a speculative fund is the AIM Fund aggressive stock fund. Which participates in investment opportunities in the world, foreign securities, expanding global economies, international components that complement domestic funds, regional economic growth, OTC funds, emerging growth stocks, and natural resources.

The growth portion of the pyramid includes investments, such as; real-estate and equipment-leasing limited partnerships, small-company growth stocks, blue-chip stocks, convertible bonds, precious-metals mutual fund, growth-stock mutual fund, and investment-grade corporate bonds.

Growth investments invest primarily in company stocks, seeking maximum long-term gains through capital appreciation (the increase in the value of the stock over time). The risk is lower than the speculation, but higher compared to the other portions due to a long-term growth strategy to provide high potential returns (Fama "The Cross-Section..." 436).

Growth investments are slightly less risky than speculative and invest in profitable growth companies. These investments have the potential to earn big profits, but may also suffer large losses. Over the past ten years, long-term growth funds have grown at an average 12.9% annual rate. The best return in one year was 37.1%, and the worst was a 4.7% loss (Fidelty 7).

Fidelty Investment Funds seek growth through capital appreciation primarily in common stock, preferred stock, and securities convertible to common stocks with above-average growth characteristics. Long-term capital growth investing assets in natural resources, cyclical and value stocks, and related stocks in the United States, Far East, Pacific Basin, Europe, and Latin America.

The growth/income portion of the pyramid includes investments such as; overseas stock and bond mutual fund, blue-chip stocks, growth and income mutual funds, balanced mutual funds, and corporate bond funds.

The objective of the growth/income segment is to achieve above-average current income, consistent with the prudent employment of capital, and seek a reasonable opportunity for growth of capital. This division possess higher potential returns than income funds and less volatility than growth funds (Grover 174).

Growth/income investments strive first for growth or long-term gains over income. These investments are less risky then growth investments. Over the past ten years, growth/income funds have grown

at 12.02% annual rate. The best return in one year was 28.7%, and the low was 4.6% loss (Fidelty 9).

MFS Mutual Funds invest in a combination of stocks and bonds seeking both high regular income and long-term growth. The strategy is to obtain reasonable income from a portfolio consisting primarily of income-producing equity securities, with a secondary emphasis on growth potential.

The income portion of the pyramid includes investments such as; U.S. federal-agency bond funds, U.S. Treasury security bond funds, and money-market mutual funds.

Income funds invest primarily in interest-paying government, corporate, and foreign bonds to provide a regular stream of high current income. The income portion provides low risk, medium/low return, and protection by investing primarily in a portfolio of securities issued or guaranteed by the US government, its agencies and instrumentalities. The duration of the investment holdings tend to fluctuate with current interest rates. Over the past 10 years, the average taxable income fund grew at an annual rate of 9%. The best one-year growth was 19.5% and the low was a 3.3% loss (Fidelty 5).

Putman Funds provide current income and total return through global diversification by allocating assets among US government securities (mortgage and government agency securities), corporate securities (high-yield bonds), and foreign fixed-income securities (emerging markets).

The safety portion of the pyramid includes investments such as; T-bills, U.S. government securities money fund, federally insured bank accounts and certificate of deposits.

The safety portion allows high liquidity, low/no risk, current interest income, and protection of investing. These investments tend to be lower-yielding but less risky than any other investments. Banks, credit unions, and the U.S. Government provide investments with guarantees of either the FDIC (Federal Deposit Insurance Corporation) or full faith of the U.S. Government taxing authority.

## Modern Portfolio Theory

Once the individual attributes are correlated with the investment means, the individual needs to know how to place different investments within a portfolio to achieve objectives and goals. The Modern Portfolio Theory (MPT) is the theory of placing different investments into a portfolio to minimize risk, maximize return, and achieve objectives.

MPT is a methodology for combining asset classes to achieve minimum risk exposure for incrementally increasing levels of return. The strategic allocation model provides for measurable added value and attributes the value to individual company decisions, such as the asset allocation model (Bachman 67-69).

MPT is a fairly sophisticated approach to choosing investments that allow investors to quantify and control the amount of risk accepted and return achieved in the portfolios. It differs from traditional securities

analysis in that it shifts the emphasis away from analyzing the specific securities in the portfolio to determining the relationship between risk and reward in the total portfolio. Michael Lubatkin, journalist for Academy of Management Journal, extends MPT into the domain of corporate diversification by refering standard deviation to represent risk at the portfolio level. The conventional interpretation is that the greater the standard deviation, the more the return and risk vary.

However, research supports what many researchers and practitioners already know; returns for many assets are frequently normally distributed. This has significant implications for plan sponsors, investment managers, consultants and others who need to measure the risk as well as the return of investments (Rom 46-47). Given that non-normality in investment returns is so prevalent and that it can affect every important investment decision, Richard Grinold, writer for the Journal of Portfolio Management, maintains that MPT is the best way to measure the asymmetrical risk patterns.

According to MPT, portfolio returns correlate positively with risk as measured by beta and sigma. Measuring and ranking the returns of portfolios over stock market cycles is very useful in predicting rankings and returns over the next market cycle. This is generally more useful than employing portfolio betas and sigmas for prediction purposes. Predictions of portfolio returns are highly significant in all the market cycles (Bauman 31-34).

Harry M. Markowitz published a paper about the risk and return of portfolios, suggesting that the riskiness of a portfolio not only depends on

the riskiness of the individual securities but also on the degree to which the securities rise and fall. Markowitz won the Nobel Prize in economics for this idea, which gradually developed into the commonly accepted notion of risk-return analysis, known today as MPT (Schwartzman 24).

MPT which is used extensively in connection with securities, examining the following ingredients for each asset:

1. rate of return, measured of dividend/interest yield,
2. risk, measure by volatility of return, and
3. covariance of returns. (Larr 30)

The efficiency of the market portfolio implies that expected returns on securities are a positive linear function of the market betas (the slope in the regression of a security's return on the market's return) and market betas suffice to describe the cross-section of expected returns. The results show two easily measured variables, size and book-to-market equity. Further, when the tests allow for variation in beta that is unrelated to size, the relation between market beta and average return is flat, even when beta is the only explanatory variable (Fama "The Cross-Section..." 436-437).

## Diversification

Investors can do little to avoid system risk or inflation, but can temper nonsystematic risk. One important investment strategy is diversification. When establishing a diversified portfolio mix, individuals

need to vary the type of instrument (equity, debt, combination), industry, companies within an industry, length of maturity, investment rating, and geography. By mixing industries and types of assets, investors can spread the risk.

Diversification is the most important idea in portfolio risk management. Edward Schuck, journalist for <u>Real Estate Review</u>, deems that diversification is crucial for an efficient portfolio construction. MPT theorizes that diversification among and within broad investment categories can significantly reduce portfolio risk by including assets with low correlation to each other. Important forms of diversification include:

1. time diversification,
2. diversification within a specific asset class,
3. diversification across different asset classes, and
4. international diversification (Peavy 42).

Diversification of portfolios has been a topic of professional and academic concern since performance turned downward in the mid-1980's. The focus on diversification emerged twenty years ago among investors concerned with stock returns at a time of market difficulties. On both occasions the mathematical approaches embedded in MPT seemed to offer a rational solution to the simultaneous objective of minimizing risk while maximizing portfolio performance when other approaches to the balancing of risk and return seemed to have failed. MPT offers a way to think about the components of portfolio risk and a blueprint that investors can follow when constructing portfolios of risky assets (King 8-10).

About 140 to 200 million shares trade every day on the New York Stock Exchange. The institutional investors react most to daily events in the market. The category of institutional investors includes the brokerage firms, pension funds, insurance companies, and mutual funds; these provide three-fourths of the frenetic activity on the exchanges. Individual investors account for only about 25% of the trading volume in the financial markets (Carabell 8-11). Consequently, individuals should not place too much emphasis on monthly economic statistics when making investment decisions. Wayne Wagner, writer for <u>Journal of Portfolio Management</u> says that asset-allocation decisions are based upon the desired return and acceptable risk. After identifying the desired return and acceptable risk by the financial and nonfinancial information, then prepare an asset allocation model.

## Asset allocation

Portfolio Management Strategy is a portfolio of an individual's or a business' combined holdings of stocks, bonds, cash equivalent, packaged investment products and other investment securities. Gerald Perritt, author of <u>Diversity, The Investor's Guide to Asset Allocation Strategies,</u> says that portfolios build over time, and the compositions change as investor needs change. Many things influence the makeup of a portfolio, including personal and market factors. A portfolio for a twenty-five year old single man may not be appropriate for a forty-five year old married man with two children in college or a sixty-five year old woman

facing retirement. Similarly, a portfolio built during a recessionary period with safety and income oriented bonds may be inappropriate later when the economy is experiencing inflation and stocks are showing healthy growth.

When returns are dependent or non stationary over time, it is obvious that the assumed investment horizon affects portfolio composition. Even if returns are independent and stationary, the composition of the investor's portfolio will change in some systematic manner with the assumed holding period. Therefore, an individual who invests for a short time should focus on aggressive assets, while one who invests for a longer period should focus on defensive assets (Gunthorpe 51-53).

## Portfolio composition

Depending on objectives, goals, time frame, risk tolerance, tax situation, and other factors, investment recommendations divide the specific mix of investments. This asset allocation process can help create a customized portfolio of investments. As time passes, the investor will review the mix of investments to ensure needs are being fulfilled (Armstrong 15).

Developing an asset allocation model that is diversified based on the investor's attributes relies on the type of strategy taken. The strategies available are aggressive, balanced, and defensive portfolio strategies.

Investors willing to take risks with capital to maximize the returns on investment portfolios adopt what is called aggressive investment strategies. Aggressive investors place a high percentage of investable assets in equity securities in the belief that the stock markets will provide the best growth opportunities. These investors keep a much lower percentage in safe debt securities and cash equivalents that provide lower returns. Aggressive investors pursue aggressive policies to buy and sell securities including: selecting stocks with high betas, buying securities on margin, using put and call option strategies, and employing arbitrage techniques (Ellis 147-150).

## Figure 2

## Aggressive Strategy
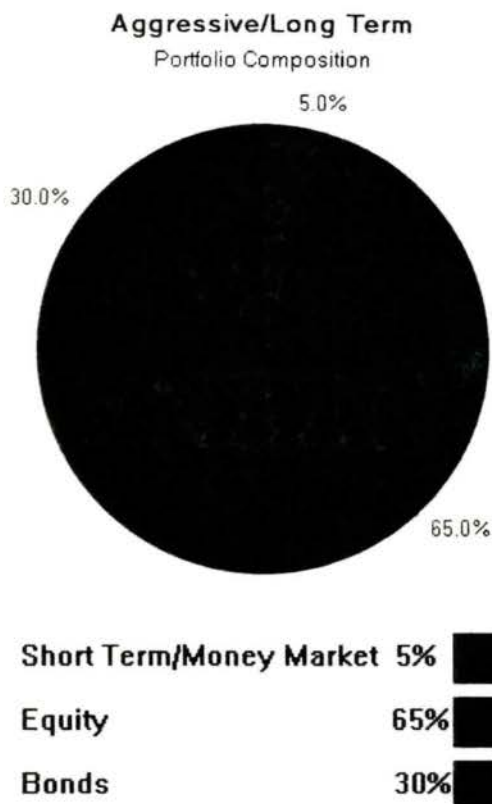
------------------------------------------------------------------------------------------

**Aggressive/Long Term**
Portfolio Composition

5.0%

30.0%

65.0%

| | | |
|---|---|---|
| **Short Term/Money Market** | **5%** | |
| **Equity** | **65%** | |
| **Bonds** | **30%** | |

------------------------------------------------------------------------------------------

Source: <u>Diversity, The Investor's Guide to Asset Allocation Strategies</u>.
Exhibit by Gerald W. Perritt.

Figure 2 illustrates an asset allocation example for an aggressive

strategy. As illustrated, 65% of the portfolio is invested within equities.

Therefore, a larger portion of the assets is within speculative and growth

investments of the investment pyramid. The remaining 35% will be

diversified within bonds and money market investments, as indicated on the growth and growth/income of the investment pyramid. The long-term investor should be willing to ride out the highs and lows of the market for higher potential returns. Investing for the long term, there is no better way to reduce short-term market fluctuations and increase potential returns (Muller 8).

Ibbotson Associates and Moneta Group for the St. Louis Post-Dispatch record the following figures showing how aggressive strategies have fared from 1945 to 1994.

| Best Year | 44% |
| Average Year | 12% |
| Worst Year | -18.7% |

Most investors adopt a combination of aggressive and defensive strategies when making decisions about the securities in the portfolios. A balanced or mixed portfolio, includes, bonds, stocks, packaged products and cash equivalents. An investor who creates a balanced portfolio will have securities that provide a hedge against the market no matter what its course.

The growth-and-income portfolio gives investors a more balanced asset allocation mix. This portfolio is designed to earn a better yield than a T-bill and outpace the rate of inflation. This strategy is suitable for investors in the peak earning years (retirment), already have accumulated wealth, or want to preserve purchasing power (Gardiner 126).

Figure 3

Balanced Strategy

------------------------------------------------------------------------------------

**Balance/Intermediate**
Portfolio Composition



20.0%

40.0%

40.0%

Short Term/Money Market 20% ■

Equity                            40% ■

Bonds                              40% ■

------------------------------------------------------------------------------------

Source:  <u>Diversity, The Investor's Guide to Asset Allocation Strategies</u>.
Exhibit by Gerald W. Perritt.

Figure 3 illustrates an asset allocation example for a balanced

strategy.   As illustrated, 40% of the portfolio in invested within equities,

40% within bonds, and 20% within money market.  Therefore, the

investment selection is more diverse throughout the investment pyramid.
Ibbotson Associates and Moneta Group for the St. Louis Post-Dispatch
record the following figures showing how balanced strategies have fared
from 1945 to 1994.

| Best Year | 28.9% |
|-----------|-------|
| Average Year | 9.5% |
| Worst Year | -9.5% |

The more conservative investor may want to keep a reasonable
portion of investments in growth, growth/income, and income investments.

Some investors financially and temperamentally are unable to
withstand the risks that accompany aggressive strategies. These
investors more likely adapt defensive investment strategies in making
investment decisions. Defensive investors are willing to accept potentially
lower total returns to minimize investment risk and preserve capital.
Investors who apply defensive strategies to portfolios place a high
percentage of the investable capital in bonds, cash equivalents and stocks
that are likely to fare well in recessionary times, including stocks in energy,
food, pharmaceuticals, and other defensive industry (Angrist C1).

## Figure 4

## Defensive Strategy
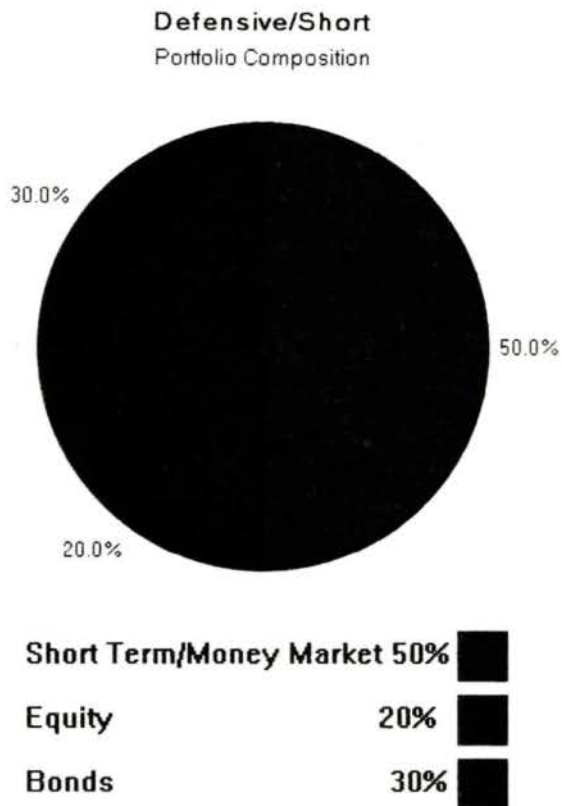
-----------------------------------------------------------------------

**Defensive/Short**
Portfolio Composition



30.0%

50.0%

20.0%

| Short Term/Money Market 50% | ■ |
| Equity | 20% ■ |
| Bonds | 30% ■ |

-----------------------------------------------------------------------

Source: <u>Diversity, The Investor's Guide to Asset Allocation Strategies</u>.
Exhibit by Gerald W. Perritt.

Figure 4 illustrates an asset allocation example for a defensive

strategy.   As illustrated, 50% of the portfolio in invested within short

term/money market investments.  Therefore, a larger portion of the assets

is within safety investments of the investment pyramid. The remaining 50% is diversified between equities and bonds to produce income, as indicated on the investment pyramid. The investor needing funds available for a period of time or preserving capital, may invest in income and safety investments.

Ibbotson Associates and Moneta Group for The St. Louis Post-Dispatch record the following figures showing how aggressive strategies have fared from 1945 to 1994.
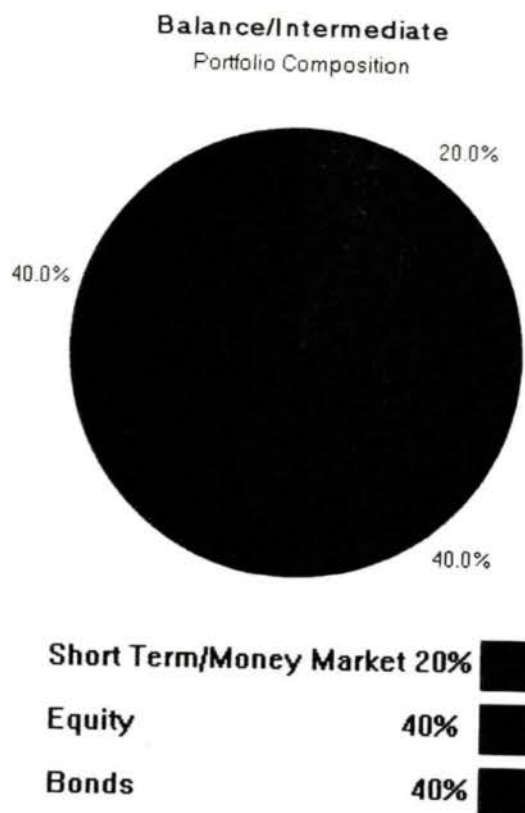
| Best Year | 26.7% |
|-----------|-------|
| Average Year | 8% |
| Worst Year | -2.7% |

Gordon Williams, author for Financial World, insinuates that identifying and applying the appropriate asset allocation strategy will result in the investor achieving stated goals.

## Summary & Problem Statement

Before buying 100 shares of a reportedly "hot stock" or setting up a personally tailored investment program, it is wise to take a few moments to decide objectives and goals. The problem for individuals "doing-it-themselves" is they sacrifice the interpretation of the objectives and goals. The individual utilizing a discount broker may alleviate the ethical concern and may even save money, but the individual is forfeiting the sound financial advice and expertise research to make proper decisions.

Individuals that are "doing-it-themselves" need a way to interpret the objectives and goals without losing financial advice. The array of financial offerings is bewildering, even to professionals. Individuals need to know "what kind of a return they want, and how much risk they're willing to assume" (Middleton "Demystifying The Role..." 95). Before making an appropriate recommendation, investors must understand their financial objectives, financial status, and investment constraints.

The purpose of the applied learning method is to develop the individual's financial profile and correlate attributes with investment means. The portfolio mix is created based upon the attributes to maximize return and minimize risk for the individual. The specific company investment is not analyzed, only the investment products. The individual attributes that are considered include the objective, duration, risk tolerance, liquidity, tax status, knowledge, and lifestyle.

The applied learning method develops the objectives and attributes by quantifying answers regarding the individual's financial profile, nonfinancial information, and emotional acceptance. The method correlates these attributes with defined investment means based upon the investment pyramid (Figure 1). Once the individual attributes are correlated with the investment means, the investments are placed within a portfolio to minimize risk, maximize return, and achieve objectives.

Depending on objectives, goals, time frame, risk tolerance, tax situation, and other factors, investment recommendations divide the specific mix of investments. This asset allocation process can help create

a customized portfolio of investments. As time passes, the investor will review the mix of investments to ensure needs are being fulfilled (Armstrong 15).

The applied learning method defines the individual's attributes and objectives. This approach to investing offers a carefully designed, diversified system that provides for financial growth and protection regardless of age, marital status, income, or level of financial sophistication (15). The method entails the development of a portfolio focusing on the individual's financial profile. The designed portfolio mix reflects the individual's objectives and needs.

Chapter III

METHODS & EVALUATION

**Materials**

The growing trends for individuals to "do-it-themselves" and use discount brokers to save money supports the notion that there is no sound financial advice and the investor must do the research to make the proper decisions. The concern escalates when the investor tries to maximize return, rather than achieve stated goals and objectives. Maximizing return may be some investors' objective, but the rationale behind the objective may stem from other criteria, such as, risk, duration, liquidity, knowledge, tax rates, and lifestyle.

Contrary to what many investment professionals and most individuals believe, individuals have many reasons for investing. The applied learning method asks individuals the appropriate questions to determine the investment objectives and the rationale "why individuals invest the way they do" (Walker 350). Most individuals will claim to invest so that the money will grow. By careful questioning, the applied learning method will discover the appropriate investment objective based upon tax status, income or other events.

Individuals that are "doing-it-themselves" need a way to interpret

45

the objectives and goals without losing financial advice. The array of financial offerings is bewildering, even to professionals. Individual's need to know "what kind of a return they want, and how much risk they're willing to assume" (Middleton "Demystifying The Role..." 95). Before making a recommendation, investors must understand their financial objectives, financial status, and investment constraints.

The purpose of this study is to evaluate individual attributes and correlate these qualities with investment means to compose an appropriate portfolio mix. The applied learning method was developed to examine an individual's financial profile and correlate these attributes with investment means. The portfolio mix is created based upon the attributes to maximize return and minimize risk for the individual. The specific company investment is not analyzed, only the investment products. The individual attributes that are considered include the objective, duration, risk tolerance, liquidity, tax status, knowledge, and lifestyle.

The applied learning method develops the objectives and attributes by quantifying answers regarding the individual's financial profile, nonfinancial information, and emotional acceptance. The method correlates these attributes with defined investment means based upon the investment pyramid. Once the individual attributes are correlated with the investment means, the investments are placed within a portfolio to minimize risk, maximize return, and achieve objectives.

Depending on objectives, goals, time frame, risk tolerance, tax situation, and other factors, investment recommendations divide the specific mix of investments. This asset allocation process can help create

a customized portfolio of investments.  As time passes, the investor reviews the mix of investments to ensure needs are being fulfilled (Armstrong 15).

The more information concerning the individual's financial profile, the better the recommendation.  The applied learning method examines the composition of the income statement, balance sheet, nonfinancial information, and emotional acceptance.  Each portion profiles the individual's attributes:  risk tolerance, duration, liquidity, knowledge, tax rates, and lifestyle.

The applied learning method offers a carefully designed, diversified system that provides for financial growth and protection regardless of age, marital status, income, or level of financial sophistication (15).  The method entails the development of a portfolio focusing on the individual's financial profile.  The designed portfolio mix  reflects the individual's objectives and needs.

The applied learning method makes investment decisions necessary to design an investment portfolio.  A good investment mix will select investments that meet an individual's risk level, investment goals, and investment duration.  The applied learning method is intended to develop an appropriate portfolio mix for a certain stage of life, age, risk tolerance, investment goal.  For the investor who lacks the time or expertise to select individuals' securities for an asset allocation model, the Investment Pyramid helps individual's understand the relationship between investment means and individual attributes (Perritt 35).

Depending on objectives, goals, time frame, risk tolerance, tax situation, and other factors, investment recommendations divide the specific mix of investments. The asset allocation process helps create a customized portfolio of investments. As time passes, the investor will review the mix of investments to ensure needs are being fulfilled (Armstrong 15).

The individual's objectives, risk tolerance, duration, liquidity, lifestyle, and knowledge will be analyzed to enable the program to develop a portfolio mix for individuals. The "Financial Analyzer" (Appendix A) was reviewed by three evaluators and critiqued by completing a questionnaire. The applied learning method is designed into three sections: developing the financial and nonfinancial information including the Balance Sheet, Income Statement, and Personal Traits; constructing the emotional acceptance by defining the individual characteristics of Risk Tolerance, Knowledge, Lifestyle, and Liquidity; and building the portfolio mix by utilizing the proper Investment Means, Investment Pyramid, and Asset Allocation Model.

## Subjects

There were three evaluators selected to evaluate the applied learning method. The evaluators were chosen for their years of experience, educational background in financial services, and expertise within financial planning.

Jay McAtee has worked as a broker for eight years with BMR Brokerage Firm, Inc. He is an acclaimed professional and expert in Financial Planning. His educational background includes a Bachelor of Arts Degree in Business Management from the University of Western Kentucky. He was chosen to be an evaluator because of his work in the field with clients and his knowledge to make proper investment allocations for his clientele.

Rick Burnett has worked as the Chief Executive Officer (CEO) and broker for seven years with BMR Brokerage Firm, Inc. He is a recognized professional and expert in Financial Planning and Small Business Entrepreneurship. His educational background includes a Bachelor of Science Degree in Business Management from Eastern Illinois University. He was chosen to be an evaluator because of his training abilities in the field and financial understanding for clientele needs.

Tony Carter has worked as the Regional Manager for thirty-one years with The Franklin Company. He is a prominent professional and a Financial Consultant. His educational background includes a Master of Science Degree in Management from American College, a Master of Science Degree in Financial Services from American College, an Accredited Estate Planner, a Chartered Life Underwriter, a Chartered Financial Consultant, and a Life Underwriting Training Council Fellow. He was chosen to be an evaluator because of his teaching experience in financial services.

## Instruments

The instrument (Appendix C) used to evaluate the applied learning plan was a questionnaire. The questionnaire allowed the evaluators to choose either (1) Strongly Disagree, (2) Disagree, (3) Average, (4) Agree, or (5) Strongly Agree with a statement concerning a section of the applied learning plan. The evaluator could also write comments toward that particular section. The sections questioned were the financial and nonfinancial information, emotional acceptance, portfolio mix, and overall performance of the applied learning method. The statements questioned the accuracy, appropriateness, and usefulness used in Table 5.

Table 5

Evaluation Statements From Questionnaire

---

1. The accuracy indicating the financial goal/objective?
2. The accuracy defining the financial goal/objective?
3. The accuracy computing the income statement?
4. The accuracy computing the balance sheet?
5. The accuracy determining the financial position?
6. The accuracy measuring the emotional acceptance?
7. The appropriateness of the questions to develop a portfolio mix?
8. The appropriateness of the portfolio mix?
9. The appropriate investments that fit within the portfolio mix?
10. The appropriate questions determining individual characteristics?
11. The ease of the program?
12. The plan accuracy designed a portfolio mix for my attributes?

---

Source: Appendix C

## Procedure

The method of evaluation was each evaluator tested the applied learning methodology and completed a questionnaire. The evaluator had the ability to comment on each section of the applied learning method through the questionnaire and the follow-up interview. The location for the testing was at the office of BMR Brokerage Firm, Inc. in Mt. Zion, Illinois and at the Franklin Regional Office in Springfield, Illinois. The cover letter/procedure (Appendix B), applied learning diskette (Appendix A), and questionnaire (Appendix C) were sent to each evaluator on May 22, 1996 and returned by each on June 7, 1996. The time to review the applied learning method was approximately twenty-five minutes and the questionnaire was approximately fifteen minutes. The follow-up interview was conducted immediately after each evaluator reviewed the applied learning method. Each evaluator was contacted to contribute any changes within the applied learning method, problems running the program, and comprehension of procedure instructions.

Chapter IV

RESULTS

## Overview

The questionnaire gathered data to perform statistical analysis for
the applied learning plan.  The evaluators choose a description that fit
within each question, and the answer was assigned by a numerical
response.  The categories examined were: accuracy indicating the
financial goal, accuracy defining the financial goal, accuracy computing the
income statement, accuracy computing the balance sheet, accuracy
determining the financial position (net income, net worth), accuracy
measuring the emotional acceptance (Zone Type), appropriateness of
questions to develop the portfolio mix, composition of the proposed
portfolio mix, accuracy defining investments, appropriateness of questions
to determine individual characteristics, easy-to-use (user-friendly) program,
and accuracy of applied learning plan for designing a portfolio mix to
individual attributes.   The data was transformed into information utilizing
data analysis, descriptive analysis, univariate analysis, and Chi-squared
analysis.

## Data Analysis

The data were compiled into tabular form for the responses of each

evaluator and question. Table 6 illustrates the actual responses for each
evaluator and question and Table 7 indicates the frequency percentages.

Table 6

Data Matrix for Responses

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Evaluator 1 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 |
| Evaluator 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Evaluator 3 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 |

Source: Appendix D

Table 7

Percentage Tabulation for Responses

| | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Strongly Agree (5) | 75.00% | 100% | 58.33% |
| Agree (4) | 25.00% | 0% | 41.67% |
| Average (3) | 0% | 0% | 0% |
| Disagree (2) | 0% | 0% | 0% |
| Strongly Disagree (1) | 0% | 0% | 0% |

Source: Appendix D

## Descriptive Analysis

Describing responses or observations is the first form of statistical
analysis. The analysis contains the calculation of averages, frequency
distributions, and percentage distributions to summarize data (386). The
descriptive analysis, displayed in Tables 8 and 9, state the mean,

variance, standard deviation, and standard error of mean for each question.

The mean is a measure of central tendency; the arithmetic average (Zigmund 388). The mean is calculated by summing the actual responses and dividing by the number of observations. The variance is a measure of variability or dispersion (393). This measure is useful to describe the sample variability. The variance will be equal to zero if and only if each and every observation in the distribution is the same as the mean. Variance is computed by summing the mean squared deviation score of each observation, that is, its difference from the mean squared, and summing each score, then dividing by the sample size minus one. The standard deviation is a quantitative index of a distribution's spread or variability (392). The standard deviation eliminates the drawback of having the measure of dispersion in squared units rather than in the original measurement units. The standard deviation is computed by taking the square root of the variance.

Table 8

Response Descriptive Analysis

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 5.0 | 4.67 | 4.67 | 4.67 | 4.67 | 5.0 | 4.67 | 4.67 | 4.33 | 5.0 | 5.0 | 5.0 |
| Variance | 0 | .33 | .33 | .33 | .33 | 0 | .33 | .33 | .33 | 0 | 0 | 0 |
| Standard-Deviation | 0 | .58 | .58 | .58 | .58 | 0 | .58 | .58 | .58 | 0 | 0 | 0 |

Source: Appendix E

Table 9

Evaluator Descriptive Analysis

|  | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Mean | 4.75 | 5.00 | 4.58 |
| Variance | 2.19 | 0.00 | 2.76 |
| Standard-Deviation | 1.48 | 0.00 | 1.66 |
| Standard - | | | |

Source: Appendix F

## Univariate Analysis

Univariate statistics is an analysis that assesses the statistical significance of a hypothesis about a single variable (Zigmund 494). A hypothesis is an unproven statement or an assumption about a status quo that asserts that any change from what has been thought to be true will be due entirely to random error (487). The alternative hypothesis is a statement indicating the opposite of the null hypothesis. To warrant support of a null hypothesis, a significance level was chosen between the null and alternative hypotheses (488).

A significance level is a critical probability in choosing between the null and alternative hypothesis. The level of significance determines the probability level that is to be considered too low to warrant support of the null hypothesis (489). The significance level of .05 or 5% was used for the statistical analysis study on the applied learning. The significance level is used to determine the critical value at specified confidence level for upper and lower values. These values lie exactly on the boundary of the region of rejection (497). The upper and lower value is computed as sample

mean plus/minus the product of the critical value times standard error of the mean. The standard error of the mean is the standard deviation divided by square root of the number of observations.

The t-test is a Univariate hypothesis test, using the data from the sample and confidence estimates to determine if the sample mean is included in the region of rejection. The t-test uses the t-distribution, since the population standard deviation is unknown and the sample size is small (499). The t-distribution, assumes the normal distribution is a symmetrical, bell-shaped distribution with a mean of zero and a standard deviation of one. The t-test upper and lower values are computed as population mean plus/minus the product of the critical value times standard error of the mean. The standard error of the mean is the standard deviation divided by square root of the number of observations. Table 10 and Table 11 identifies the confidence interval estimates and confidence level for the responses and evaluators.

Table 10

Response Univariate Analysis

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper | 5.0 | 6.09 | 6.09 | 6.09 | 6.09 | 5.0 | 6.09 | 6.09 | 5.75 | 5.0 | 5.0 | 5.0 |
| Lower | 5.0 | 3.25 | 3.25 | 3.25 | 3.25 | 5.0 | 3.25 | 3.25 | 2.91 | 5.0 | 5.0 | 5.0 |
| t-value | | 4.303 | | | | | | | | | | |
| Upper | 5.0 | 6.42 | 6.42 | 6.42 | 6.42 | 5.0 | 6.42 | 6.42 | 6.42 | 5.0 | 5.0 | 5.0 |
| Lower | 5.0 | 3.58 | 3.58 | 3.58 | 3.58 | 5.0 | 3.58 | 3.58 | 3.58 | 5.0 | 5.0 | 5.0 |
| t-value | | 4.303 | | | | | | | | | | |

Source: Appendix E

Table 11

Evaluator Univariate Analysis

|  | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Upper | 5.69 | 5.0 | 5.64 |
| Lower | 3.80 | 5.0 | 3.52 |
| t-value |  | 2.201 |  |
| Upper | 5.95 | 5.0 | 6.06 |
| Lower | 4.05 | 5.0 | 3.94 |
| t-value |  | 2.201 |  |

Source:  Appendix F

## Chi-squared Analysis

Another form of univariate analysis is the Chi-squared test.  The Chi-square test determines significance in the analysis of frequency distributions.   Chi-squared determines if the difference between the observed frequency distribution and the expected frequency distribution can be attributed to sampling variation (Zigmund 500).  To determine the Chi-square; formulate the null hypothesis and determine the expected frequency of each answer, determine the appropriate significance level (.05 or 5%), calculate the Chi-squared value using the observed frequencies from the sample and expected frequencies, and compare the calculated Chi-squared value with the critical Chi-squared value.  In Table 12 and 13, the Chi-squared and critical value is illustrated for the responses and evaluators.

Table 12

Chi-squared Response Analysis

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chi-squared | 0 | .3 | .3 | .3 | .3 | 0 | .3 | .3 | 1.3 | 0 | 0 | 0 |
| Critical Value | | | 5.991 | | | | | | | | | |

Source: Appendix G

Table 13

Chi-squared Evaluator Analysis

| | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Chi-squared | .8 | 0 | 2.1 |
| Critical Value | 19.675 | | |

Source:  Appendix H

The application of statistics to generalize from the sample to the population is inferential statistics.  Inferential statistics is used to make inferences or judgments about a population on the basis of a sample (Zigmund 386).

## Evaluator Comments/Suggestions

Inferential statistics will generalize the evaluator comments and suggestions.  After each response in the questionnaire, the evaluator provided comments toward the applied learning plan.  In Figure 14, evaluator comments are illustrated  for each question.

Figure 5

Evaluator Comments

-------------------------------------------------------------------------------------------

(1) "A very important question for an investor, 'What are your investment objectives'...presented very effectively".

(2) "My children (ages 16&19) did not fit perfectly well in the choices offered".

(3) "Questions were simple and accurate".

(4) "I would not have included the face amount of my life insurance ... the day after death. The face amount might be included, but today, only the cash value".

(5) "I would not have included the face amount of my life insurance ... the day after death. The face amount might be included, but today, only the cash value".

(6) "Right on!". "Surprisingly well".

(7) "Could have asked a few more thought provoking questions". "Good questions...well presented".

(8) "Could have shifted higher % to equities". "Picked up 98% of what investments I have".

(9) No comments.

(10) "For the depth the survey attempted to go, the questions were very appropriate".

(11) "Very". "Simple-very easy to use" .

(12) "I found the Financial Evaluator surprisingly accurate in identifying my "suitability" for the portfolio mix offered".

-------------------------------------------------------------------------------------------

Source: Appendix I

The evaluator comments and responses toward each question determine whether the applied learning plan is an accurate tool for designing a portfolio mix for individual attributes. The data tables, univariate, Chi-squared, and descriptive analysis were performed to statistically explain the accuracy of the applied learning plan. The null hypothesis was tested with 5% significance levels for the t-test and Chi-squared.

# Chapter V

## DISCUSSION

### Summary

Statistical analysis for the applied learning plan gathered the data from the questionnaires. The evaluators choose a description that fit within each question and assigned a numerical response. The categories examined and the results presented in Chapter IV reveal the evaluator comments and responses toward the applied learning plan. Various forms of analysis; data tables, descriptive, univariate, Chi-squared, and inferential analysis were performed on responses by each evaluator and each question. These statistical analysis were performed to explain the accuracy of the applied learning plan. The null hypothesis was tested with 5% significance levels and provide results, limitations, and suggestions for future applied learning plans. Due to repetitive responses, questions Group One contains questions one, six, ten, eleven, and twelve; Group Two contains questions two, three, four, five, seven, and eight; and Group Three contains question nine.

### Data Analysis

The data compiled in table form provides the frequency of the responses. Appendix D indicates the actual responses and percentage frequencies for each occurrence. The response "Strongly Agree" (5)

occurred twenty-eight times and the response "Agree" (4) occurred eight
times. The other responses of "Average", "Disagree", and "Strongly
Disagree" were not selected by the evaluators. The Evaluators
responded 78% as "Strongly Agree" and 22% as "Agree". Evaluator One
responded nine "Strongly Agree", three "Agree", and none "Average",
"Disagree", or "Strongly Disagree". Based upon the data compiled,
Evaluator One strongly agrees that the applied learning method does
develop the individual's financial profile and correlate individual attributes
with investment means. Evaluator Two responded with twelve "Strongly
Agree" and none "Agree", "Average", "Disagree", or "Strongly Disagree"
responses. Based upon the data compiled, Evaluator Two strongly agrees
that the applied learning method does develop the individual's financial
profile and correlate individual attributes with investment means.
Evaluator Three responded seven "Strongly Agree", five "Agree", and
none "Average", "Disagree", or "Strongly Disagree" responses. Based
upon the data compiled, Evaluator Three strongly agrees that the applied
learning method does develop the individual's financial profile and
correlate individual attributes with investment means.

## Statistical Analysis

Statistical analysis is completed by utilizing descriptive, univariate,
and Chi-squared analysis. The answers to the survey were tested to
determine whether they were statistically significant. The hypothesis, an
unproven statement, asserts that any change from what has been thought
to be true will be due entirely to random error. The null hypothesis : "The

applied learning method does develop the individual's financial profile and correlate individual attributes with investment means". The alternative hypothesis: "The applied learning method does not develop the individual's financial profile and correlate individual attributes with investment means." The statistical null hypothesis: "Mean = 5". The statistical alternative hypothesis: "Mean < 5."

The significance level of .05 or 5% was used for the statistical analysis. The significance level determines the level of significance for the confidence interval estimates, which these values lie exactly on the boundary of the region of rejection. The t-test uses the data from the sample and confidence estimates to determine if the sample mean is included in the region of acceptance.

The range of acceptance identifies those acceptable values with a difference between the hypothesized mean in the null hypothesis. Also, the values show a difference in this range to be so minuscule that we would conclude that this difference was due to random sampling error, rather than a false null hypothesis. If the sample mean lies within the region of acceptance, then the null hypothesis is true. More precisely, fail to disprove the null hypothesis and reject the alternative hypothesis.

## Chi-squared Analysis

Another form of univariate analysis is the Chi-squared test. The Chi-square test determines goodness of fit in the frequency distribution. Chi-squared determines if the difference between the observed frequency distribution and the expected frequency distribution can be attributed to

sampling variation. The null hypothesis: "The number of observed respondents will equal the number of expected responses of 'Strongly Agree'". The alternative hypothesis: "The number of observed respondents will not equal the number of expected responses of 'Strongly Agree'". The statistical null hypothesis: "Mean = 5". The statistical alternative hypothesis: "Mean < 5."

The significance level of .05 or 5% was used for the Chi-squared analysis. The significance level determines the tabulated Chi-square. The tabulated Chi-square for the Evaluators is 19.675 and the Questions is 5.991.

## Evaluator One

The descriptive and univariate analysis for Evaluator One shows that the mean (average) is 4.75, variance (degree of dispersion) is 2.19, standard deviation (measure of dispersion) is 1.48, standard error of mean is .86, population interval estimate is (5.69, 3.80), sample interval estimate is (5.95, 4.05), and calculated Chi-squared is 0.8. It may be concluded with 95% confidence that the population mean of response for Evaluator One is between 5.69 and 3.80. The sample mean of 4.75 is included in the region of acceptance, 4.05 to 5.95. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Evaluator Two

The descriptive and univariate analysis for Evaluator Two shows that the mean (average) is 5.0, variance (degree of dispersion) is 0, standard deviation (measure of dispersion) is 0, standard error of mean is 0, population interval estimate is (5.0, 5.0), sample interval estimate is (5.0, 5.0), and calculated Chi-square is 0.0. It may be concluded with 95% confidence that the population mean of response for Evaluator Two is between 5.0 and 5.0. The sample mean of 5.0 is included in the region of acceptance, 5.0 to 5.0. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Evaluator Three

The descriptive and univariate analysis for Evaluator Three shows that the mean (average) is 4.58, variance (degree of dispersion) is 2.76, standard deviation (measure of dispersion) is 1.66, standard error of mean is .48, population interval estimate is (5.64, 3.52), sample interval estimate is (6.06, 3.94), and calculate Chi-square is 2.1. It may be concluded with 95% confidence that the population mean of response for Evaluator Three is between 5.64 and 3.52. The sample mean of 4.58 is included in the region of acceptance, 3.94 to 6.06. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Questions: Group One

The descriptive and univariate analysis for questions one, six, ten, eleven, and twelve have a mean (average) of 5.0, variance (degree of dispersion) is 0, standard deviation (measure of dispersion) is 0, standard error of mean is 0, population interval estimate is (5.0, 5.0), sample interval estimate is (5.0, 5.0), and calculated Chi-square is 0.0. It may be concluded with 95% confidence that the population mean of response for Group One is between 5.0 and 5.0. The sample mean of 5.0 is included in the region of acceptance, 5.0 to 5.0. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Questions: Group Two

The descriptive and univariate analysis for questions two, three, four, five, seven, and eight have a mean (average) of 4.67, variance (degree of dispersion) is .33, standard deviation (measure of dispersion) is .33, standard error of mean is .33, population interval estimate is (6.09, 3.25), sample interval estimate is (6.42, 3.58), and calculated Chi-square is 0.3. It may be concluded with 95% confidence that the population mean of response for Group Two is between 6.09 and 3.25. The sample mean of 4.67 is included in the region of acceptance, 6.42 to 3.58. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Questions: Group Three

The descriptive and univariate analysis for question nine has a mean (average) of 4.33, variance (degree of dispersion) is .58, standard deviation (measure of dispersion) is .33, standard error of mean is .33, population interval estimate is (5.75, 3.25), sample interval estimate is (6.42, 3.58), and calculated Chi-squared is 1.3. It may be concluded with 95% confidence that the population mean of response for Group Two is between 5.75 and 3.25. The sample mean of 4.33 is included in the region of acceptance, 6.42 to 3.58. Also, the calculated Chi-squared is less than the tabulated Chi-squares. Therefore, based upon the sample, the null hypothesis cannot be rejected.

## Solving the Problem

This revised applied learning plan solves the problem for individuals to utilize a suitable tool to enhance investment decision-making. As a result of the unethical issues and lower costs, the number of investors taking accounts to discount brokers has been growing rapidly (Jeffrey "Delving Into the..." C1). This growing trend for individuals to "do-it-themselves" and use discount brokers to save money supports the notion that there is no financial advice and the investor must do the research to make the proper decisions. The concern escalates when the investor tries to maximize return, rather than achieving stated goals and objectives. The array of financial offerings is bewildering, even to professionals.

Individuals need to know "what kind of a return they want, and how much risk they're willing to assume" (Middleton "Demystifying The Role..." 95). If the individual is well informed, one must be prepared to "have the nerves to ride out market storms. Anyone can handle a rising market, but most individuals panic and turn tail when prices go down. That's usually the worst mistake, since markets have always bounced back." (98)

Contrary to what many investment professionals and most individuals believe, individuals have many reasons for investing. By asking individuals the appropriate questions, the objectives and needs determine the rationale "why individuals invest the way they do" (Walker 350).

The purpose of the applied learning method is to develop the individual's financial profile and correlate attributes with investment means. The portfolio mix is created based upon the attributes to maximize return and minimize risk for the individual. The individual attributes considered include the objective, duration, risk tolerance, liquidity, tax status, knowledge, and lifestyle.

The applied learning method develops the objectives and attributes by quantifying answers regarding the individual's financial profile, nonfinancial information, and emotional acceptance. The method correlates these attributes with defined investment means based upon the investment pyramid (Figure 1). Once the individual attributes are correlated with the investment means, the investments are placed within a portfolio to minimize risk, maximize return, and achieve objectives.

Depending on objectives, goals, time frame, risk tolerance, tax situation, and other factors, investment recommendations divide the specific mix of investments. This asset allocation process can help create a customized portfolio of investments. As time passes, the investor will review the mix of investments to ensure needs are being fulfilled (Armstrong 15).

This approach to investing offers a carefully designed, diversified system that provides for financial growth and protection regardless of age, marital status, income, or level of financial sophistication (15). The method entails the development of a portfolio focusing on the individual's financial profile. The designed portfolio mix reflects the individual's objectives and needs.

## Evaluator Comments/Suggestions

Evaluators had an opportunity to provide comments and suggestions after each question on the questionnaire. Appendix I notes the evaluator comments for each question. In general, the evaluators commented that the applied learning plan did develop the individual's financial profile and correlate individual attributes with investment means. The evaluators found the applied learning plan to be very effective, simple, accurate, well presented, appropriate, and suitable.

The questionnaire examined several points in the applied learning plan for accuracy and appropriateness. The comments toward the accuracy indicating the financial goals were, "A very important question for

an investor, 'What are your investment objectives'...presented very effectively". The comments toward the defining the financial goal were, "My children (ages 16&19) did not fit perfectly well in the choices offered". The applied learning grouped the children's ages in brackets, the revision will ask each child's age. The comments toward computing the income statement were, "Questions were simple and accurate". The suggestions toward computing the balance sheet were, "I would not have included the face amount of my life insurance ... the day after death. The face amount might be included, but today, only the cash value". The applied learning combined the face amount and cash value of life insurance as an asset, the revised will consider only the cash value amount. The comments determining the financial position (net income, net worth) were, "Same as #4". The revised plan will exclude the face amount of life insurance from the net worth statement. The comments measuring the emotional acceptance (Zone Type) were, "Right on!" and "Surprisingly well". The comments toward the questions developing the portfolio mix were, "Could have asked a few more thought provoking questions" and "Good questions...well presented". The comments concerning the composition of the proposed portfolio mix were, "Could have shifted higher % to equities" and "Picked up 98% of what investments I have". The applied learning plan emphasizes all types of investors, equity products (higher risk) will increase for active investors. No comments were given toward defining investments. The comments toward the appropriateness of the questions to determine individual characteristics were, "For the depth the survey attempted to go, the questions were very appropriate". The comments

easy-to-use (user-friendly) program, "Very" and "Simple-very easy to use".
The comments toward the overall applied learning plan to meet it's
purpose were, "I found the Financial Evaluator surprisingly accurate in
identifying my "suitability" for the portfolio mix offered".

## Limitations

The applied learning plan was completed over an eight month
process and problems were encountered while completing the study. The
procedures were flawed since the evaluators were sent questionnaires to
evaluate the plan before the Advisor and Reader's were able to review and
provide suggestions. The design flaws were entailed in the programming
of the applied learning study on QBasic. The errors consisted of grouping
children's ages versus identifying each child's age, computing the face and
cash value amount of life insurance products into the balance sheet and
net worth statement, and running the program with different
software/hardware devices. The data collection was timely, each
evaluator reviewed the applied learning plan, responded to the
questionnaire, returned the material, and fulfilled a follow-up interview
within two weeks. Evaluator bias was present because each evaluator
wanted to give high marks toward the plan. Although, each evaluator was
highly impressed with the plan, each gave insignificant negative criticism.

## Suggestions for future research

Given an opportunity to replicate the study, there are a few areas that need to be addressed for the study. The importance of building a portfolio, must contain life insurance. Life insurance should be considered an asset within a portfolio mix. Questioning in regard to life insurance was prevalent, but need more emphasis on the construction of an allocation model. The sample size should include more professional evaluators. Instead of three, utilize at least ten. This could eliminate evaluator bias, increase ability to perform other statistical analysis, and provide more professional comments and suggestions. Also, should survey individual's to seek comments and statistical data to supplement that the applied learning plan does provide recommendations of investment portfolio mixes for different individual attributes. The instrument is designed for professional individuals and evaluators, the average individual may not understand the use of investment jargon.

## Appendix A

## MANUAL/PLAN

I am Paul J. House III, a graduate student at Lindenwood College, working toward the Master Degree in Business Administration.

The purpose of this study is to evaluate individual attributes and correlate these qualities with investment means to compose an appropriate portfolio mix. The individual's objectives, risk tolerance, duration, liquidity, lifestyle, and knowledge will be analyzed to enable the program to develop a portfolio mix for YOU!!

At this point, I would like to ask you some specific questions concerning your financial data, nonfinancial information, and emotional acceptance. Because of the personal questions, the information is strictly confidential and will be utilized solely for the purpose of identifying investment means to achieve your goals!!

The Financial Analyzer is divided into three sections:
The first section will develop your financial and nonfinancial information. The financial information constructs your Balance Sheet and Income Statement through responses given during the examination. The nonfinancial information discloses your Personal Traits defined as a type of Zone. The second section will develop your emotional acceptance. The individual attributes of risk tolerance, knowledge, lifestyle, and liquidity are examined to put together your objective and characteristics. The third section will develop your portfolio mix. Your responses design an asset allocation model utilizing the proper investment means according to the investment pyramid.

72

Each question will be answered by a numerical response. Indicate which

response fits your description the best and Press <Return>.

(1) What is your age range?
    (1) Under 18
    (2) 18 to 30
    (3) 31 to 45
    (4) 46 to 54
    (5) 55 & over

(2) What is your marital status?
    (1) Single
    (2) Single Parent
    (3) Married
    (4) Married, Children

(3) What is your spouse's age range?
    (1) Under 18
    (2) 18 to 30
    (3) 31 to 45
    (4) 46 to 54
    (5) 55 & over

(4) How many children do you have?
    (1) 1
    (2) 2 to 3
    (3) 4 to 5
    (4) 6 to 7
    (5) 8 or more

(5) What is each of your children's age range?
    (1) Under 18
    (2) 18 to 30
    (3) 31 to 45
    (4) 46 to 54
    (5) 55 & over

(6) How do you feel about saving for your children's education?
    (1) Strongly Disagree
    (2) Disagree
    (3) Neutral
    (4) Agree
    (5) Strongly Agree

(7) Are you retired?
    (1) Yes
    (2) No

(8) How do you feel about work?
    (1) Very Unsatisfied
    (2) Unsatisfied
    (3) Neutral
    (4) Satisfied
    (5) Very Satisfied

(9) How long have you been employed there?
    (1) Less than 5 years
    (2) 6 to 10 years
    (3) 11 to 15 years
    (4) 16 to 20 years
    (5) More than 21 years

(10) What is your annual income?

(11) My income is very stable?
    (1) Strongly Disagree
    (2) Disagree
    (3) Neutral
    (4) Agree
    (5) Strongly Agree

(12) Do you own your home?
    (1) Yes
    (2) No

(13) What is your monthly rent/mortgage payment?

(14) What is the value of your home?

(15) What amount do you owe on your mortgage?

(16) What monthly amount do pay on credit cards/charge accounts?

(17) What monthly amount do you pay on personal/consumer loans?

(18) What monthly amount do you pay for other expenses?

(19) Have you established a specific savings and investment goal?
    (1) Yes
    (2) No

(20a) How much money could you set aside each week for your goals?

(20b) How much money do you set aside each week for your goals?

(21) Do you have life insurance?
   (1) Yes
   (2) No

(22) What is the face amount of your policy?

(23) What is your monthly premium for your policy?

(24) What type of life insurance do you have?
   (1) Term
   (2) Universal Life
   (3) Variable Life
   (4) Whole Life
   (5) Don't know

(25) What is the cash value of your life insurance policy?

(26) How much cash do you have on hand?

(27) What is the value of your checking account?

(28) What is the value of your savings account?

(29) Do you own any taxable investments?
   (1) Yes
   (2) No
   (3) Unsure

(29a) Do you own any of these taxable investments:
   Stocks              Future Contracts
   Bonds               Certificate of Deposit (CD)
   Mutual Funds        Money Markets
   Options             Other

   (1) Yes
   (2) No

(30) What is the value of your taxable investments?

(31) What is your most important financial goal?
- (1) Preservation of Capital
- (2) Tax Savings
- (3) Growth
- (4) Income
- (5) Portfolio Diversification
- (6) Liquidity
- (7) Speculation
- (8) Don't Know

(32) How many years until you retire?
- (1) Less than 10 years
- (2) 10 to 24 years
- (3) 25 to 34 years
- (4) 35 to 45 years
- (5) More than 45 years

(33) How much yearly income will you need after retirement?
- (1) Less than $15,000
- (2) $15,000 to $25,00
- (3) $25,000 to $45,000
- (4) $45,000 to $65,000
- (5) More than $65,000

(34) How do you feel about saving for retirement?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(35) I want my money to grow for future uses?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(36) I need to reduce the taxes I pay?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(37) I need to diversify my investment portfolio?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(38) I want to preserve my capital/assets?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(39) I need income to supplement my current income?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(40) I like to gamble my money?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(41) I want access to my money all the time?
- (1) Strongly Disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly Agree

(42) Do you own any tax-deferred investments?
- (1) Yes
- (2) No
- (3) Unsure

(42a) Do you own any of these tax-deferred investments:

| 401 (k) | Individual Retirement Account (IRA) |
| Keogh Plan | Simplified Employee Pensions (SEP) |
| Annuity | Other |

- (1) Yes
- (2) No

(43) What is the value of your tax-deferred investments?

(44) Indicate the level of knowledge for each investment type:
Certificate of Deposit (CD)"
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(45) Indicate the level of knowledge for each investment type:
Money Market
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(46) Indicate the level of knowledge for each investment type:
Mutual Funds
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(47) Indicate the level of knowledge for each investment type:
Stocks
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(48) Indicate the level of knowledge for each investment type:
Bonds
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(49) Indicate the level of knowledge for each investment type:
Options
(1) None/Don't Know
(2) Below Average
(3) Average
(4) Above Average
(5) Significant

(50) Indicate the level of knowledge for each investment type:
Futures
  (1) None/Don't Know
  (2) Below Average
  (3) Average
  (4) Above Average
  (5) Significant

(51) I usually 'give in' when my plans conflict with those around me.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(52) I often feel I don't have enough control over the direction of my life.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(53) Conversations about money and investing are boring to me.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(54) Financial terminology is often confusing to me.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(55) Saving and investing are pointless unless you have a lot of money.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(56) The ups and downs of the stock market make me feel nervous.
  (1) = Exactly like me.
  (2) = Somewhat like me.
  (3) = Not very much like me.
  (4) = Not at all like me.

(57) I prefer to stay in familiar situations, rather than take chances.
- (1) = Exactly like me.
- (2) = Somewhat like me.
- (3) = Not very much like me.
- (4) = Not at all like me.

(58) I often put off making decisions because of making mistakes.
- (1) = Exactly like me.
- (2) = Somewhat like me.
- (3) = Not very much like me.
- (4) = Not at all like me.

(59) I think investing is just too risky.
- (1) = Exactly like me.
- (2) = Somewhat like me.
- (3) = Not very much like me.
- (4) = Not at all like me.

(60) On most financial decisions, I follow my instincts.
- (1) = Exactly like me.
- (2) = Somewhat like me.
- (3) = Not very much like me.
- (4) = Not at all like me.

(61) Over the past year, I have been satisfied with my return.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(62) I am open to considering new investment opportunities.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(63) I like to thoroughly research an investment before investing.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(64) I have a good understanding of financial planning principles.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(65) Personal accomplishment motivates me to become involved in activities.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(66) I think it is very important to become an accomplished and active investor.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(67) My knowledge about investments keeps me involved in financial planning.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(68) I am optimistic about what the future holds for the economy.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(69) I am willing to take substantial risks to make substantial gains.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

(70) I get bored with stable investments.
- (1) = Not at all like me.
- (2) = Not very much like me.
- (3) = Somewhat like me.
- (4) = Exactly like me.

## Results

Once the individual has responded to each question, then the manual will

calculate and illustrate the correct objective, balance sheet, income

statement, invidivdual characteristics, proper asset allocation model, and

similiar investment types.  The computer screen will show the following:

According to your responses, your **investment objective** is:

## PRESERVATION OF CAPITAL
This means that you want to maintain the assets you have worked so hard
to accumulate, and protect them from losses due to credit or financial risk.

## TAX SAVINGS
This means that you want your investments to defer and reduce your tax
rate and/or payments.

## GROWTH
This means that you want your investments to grow from increases in
value and/or reinvesting dividends to meet a variety of needs.

## INCOME
This means that you want your investments to generate additional current
income either through dividend income or interest payments.

## PORTFOLIO DIVERSIFICATION
This means that you want a diverse investment mix that will generate a
higher return with lower risk exposure.

## LIQUIDITY
This means that you want immediate access to your investments.

## SPECULATION
This means that you want to speculate or gamble with your investments to
gain a higher than average return.

According to your responses, your **Income Statement** looks like:

INCOME

Monthly Salary =                                    $

EXPENSES

Rent/Mortgage Payment =                $
Credit Card Payments =                    $
Personal/Consumer Loans =            $
Money Set Aside for Goals =          $
Life Insurance Premium =                $
Other Expenses =                            $
Approximate Taxes =                        $

NET INCOME PER MONTH =                    $

According to your responses, your **Balance Sheet** looks like:"

ASSETS

    Home Value =                        $
    Life Insurance =                    $
    Cash on Hand =                      $
    Checking Account =                  $
    Savings Account =                   $
    Investment Accounts =               $

TOTAL ASSETS =                          $

LIABILITIES

    Mortgage Balance =                  $
    Credit Card/Charge Cards =          $
    Personal/Consumer Loans =           $

TOTAL LIABILITIES =                     $

NET WORTH =                             $

According to the test, you are in the

**CAUTION ZONE** !!!!

CAUTION ZONE CHARACTERISTICS"

You may be too occupied with the ups and downs of daily living to spend time planning and investing for your future..

You may feel that investing is pointless because you do not have a lot of money to work with or feel that only guaranteed and liquid investments are right for you..

You may tend to concentrate on your short-term needs rather than long term..

Your cautious nature and preference for the familiar may keep you from exploring investment choices that offer the potential for higher returns..

According to the test, you are in the

**COMFORT ZONE** !!!!

COMFORT ZONE CHARACTERISTICS"

You tend to feel in control of the direction of your life..

You are likely to be optimistic about the future and realize the importance of taking responsibility for your own financial future..

There is one problem with being in the comfort zone, it's too comfortable. If you are not careful, you may fail to change your investment strategy as your situation changes or as the markets change. Don't let complacency keep you from insuring your own financial security..

According to the test, you are in the

**ACTIVE ZONE** !!!!

ACTIVE ZONE CHARACTERISTICS

You are either an active and accomplished investor or ready to become one..

You are likely to be open to a full range of investment choices..

You also recognize the importance of planning and preparing for the future..

According to your responses your **ASSET ALLOCATION MODEL** should represent:"

      Equity Investments     =      %

      Debt Investments     =      %

      Money Market Investments =      %

SAMPLE INVESTMENTS

      Equity         Debt         Money Market

------------------------------------------------------------------

Thank You for participating with the FINANCIAL ANALYZER!!

## Appendix B

## COVER LETTER

May 22, 1996
1640 State Hwy 121
Mt. Zion, IL 62549

Dear Evaluator

As per our conversation, enclosed herewith is the diskette, survey, and procedure to evaluate the thesis project. Please complete the evaluation as soon as possible, and return all forms to me in the enclosed envelope.

Please read over the procedure instructions and answer the questions by selecting the appropriate answer within the Financial Evaluator. The Financial Evaluator is, for the most part, self-explanatory; however, if you should have a problem, please do not hesitate to call me at 864-5600 (work) or 864-2218 (home). Remember to answer all questions as a blank answer will negate a portion of the scoring procedure. The average time for completing the Financial Evaluator is approximately twenty-five minutes.

After completing the Financial Evaluator, you may proceed to the survey. The survey is relatively short in comparison to the Financial Evaluator and should take you approximately fifteen minutes to complete. Please be sure to answer all twelve of the self-descriptive statements by circling only one number for each statement.

The procedure instruction to begin the Financial Evaluator are as follows:
    (1) Go to the C:\ prompt in MS-DOS,
    (2) Type QBASIC,
    (3) Insert the diskette and go to FILE, using the mouse or <ALT>,
    (4) Open the file A:\PROGRAM.BAS,
    (5) Press <F5>, now the Financial Evaluator should begin,

I am extremely grateful for your participation in this study. Thanking you in advance and anxiously awaiting your reply, I remain,

Respectfully,

Paul J. House III

## Appendix C

### Questionnaire

The survey is relatively short in comparison to the Financial Evaluator and should take you approximately fifteen minutes to complete. Please indicate the response that best fits your description of the Financial Evaluator.

1. The Financial Evaluator accurately indicated my financial goal/objective?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

2. The Financial Evaluator accurately define my financial goal/objective?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

3. The Financial Evaluator accurately computed my income statement?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

4. The Financial Evaluator accurately computed my balance sheet?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

5. The Financial Evaluator accurately determined my financial position (net income, net worth)?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

6.   The Financial Evaluator accurately measured my emotional acceptance (Zone Type)?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

7.  The Financial Evaluator asked the appropriate questions to develop my portfolio mix?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

8. The Financial Evaluator composed an appropriate portfolio mix for me?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

9. The Financial Evaluator accurately defined investments that fit within my portfolio mix?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

10. The Financial Evaluator asked appropriate questions to determine my characteristics?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

11. The Financial Evaluator is an easy-to-use (user-friendly) program?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

12. The Financial Evaluator is an accurate tools for designing a portfolio mix to my attributes?
(1) Strongly Disagree
(2) Disagree
(3) Average
(4) Agree
(5) Strongly Agree

Comments:_____

_____

## Appendix D

## QUESTIONNAIRE RESPONSES

|                        | Evaluator 1 | Evaluator 2 | Evaluator 3 |
| ---------------------- | ----------- | ----------- | ----------- |
| Strongly Agree (5)     | 9           | 12          | 7           |
| Agree (4)              | 3           | 0           | 5           |
| Average (3)            | 0           | 0           | 0           |
| Disagree (2)           | 0           | 0           | 0           |
| Strongly Disagree (1)  | 0           | 0           | 0           |
| TOTAL                  | 12          | 12          | 12          |

|                        | Evaluator 1 | Evaluator 2 | Evaluator 3 |
| ---------------------- | ----------- | ----------- | ----------- |
| Strongly Agree (5)     | 75.00%      | 100%        | 58.33%      |
| Agree (4)              | 25.00%      | 0%          | 41.67%      |
| Average (3)            | 0%          | 0%          | 0%          |
| Disagree (2)           | 0%          | 0%          | 0%          |
| Strongly Disagree (1)  | 0%          | 0%          | 0%          |
| TOTAL                  | 100.00%     | 100.00%     | 100.00%     |

## Appendix E

## RESPONSE STATISTICAL DATA

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Evaluator 1 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 |
| Evaluator 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Evaluator 3 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 |
| TOTAL | 15 | 14 | 14 | 14 | 14 | 15 | 14 | 14 | 13 | 15 | 15 | 15 |
| Number of Observations (N) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

Mean = Total / Number of Observations (N)

| Mean | 5.0 | 4.67 | 4.67 | 4.67 | 4.67 | 5.0 | 4.67 | 4.67 | 4.33 | 5.0 | 5.0 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Variance = [(Observation-Mean)^2] / (N-1)

| Variance | 0 | .33 | .33 | .33 | .33 | 0 | .33 | .33 | .33 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Standard Deviation = Square root of Variance

| Standard-Deviation | 0 | .58 | .58 | .58 | .58 | 0 | .58 | .58 | .58 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Standard Error of Mean = Stamdard Deviation / Square root of N

| Standard-Error of Mean | 0 | .33 | .33 | .33 | .33 | 0 | .33 | .33 | .33 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

95

95% Confidence Level
t-value = 4.303

t-test limits = Mean +/- (t-value)*(Standard Error of Mean)

---

| Upper | 5.0 | 6.09 | 6.09 | 6.09 | 6.09 | 5.0 | 6.09 | 6.09 | 5.75 | 5.0 | 5.0 | 5.0 |

===================================================================

| Lower | 5.0 | 3.25 | 3.25 | 3.25 | 3.25 | 5.0 | 3.25 | 3.25 | 2.91 | 5.0 | 5.0 | 5.0 |

===================================================================

t-test limits = 5.0 +/- (t-value)*(Standard Error of Mean)

---

| Upper | 5.0 | 6.42 | 6.42 | 6.42 | 6.42 | 5.0 | 6.42 | 6.42 | 6.42 | 5.0 | 5.0 | 5.0 |

===================================================================

| Lower | 5.0 | 3.58 | 3.58 | 3.58 | 3.58 | 5.0 | 3.58 | 3.58 | 3.58 | 5.0 | 5.0 | 5.0 |

===================================================================

## Appendix F

## EVALUATOR STATISTICAL DATA

| | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Question 1 | 5 | 5 | 5 |
| Question 2 | 5 | 5 | 4 |
| Question 3 | 5 | 5 | 4 |
| Question 4 | 5 | 5 | 4 |
| Question 5 | 5 | 5 | 4 |
| Question 6 | 5 | 5 | 5 |
| Question 7 | 4 | 5 | 5 |
| Question 8 | 4 | 5 | 5 |
| Question 9 | 4 | 5 | 4 |
| Question 10 | 5 | 5 | 5 |
| Question 11 | 5 | 5 | 5 |
| Question 12 | 5 | 5 | 5 |
| TOTAL | 57 | 60 | 55 |
| Number of Observations (N) | 12 | 12 | 12 |

Mean = Total / Number of Observations (N)

| Mean | 4.75 | 5.00 | 4.58 |
|---|---|---|---|

Variance = $[(Observation-Mean)^2] / (N-1)$

| Variance | 2.19 | 0.00 | 2.76 |
|---|---|---|---|

Standard Deviation = Square root of Variance

| Standard-Deviation | 1.48 | 0.00 | 1.66 |
|---|---|---|---|

Standard Error of Mean = Stamdard Deviation / Square root of N

```
-----------------------------------------------------------------------------------------
```
Standard-Error
of Mean                         .43            0.00            .48
```
=========================================================
```

95% Confidence Level
t-value = 2.201
t-test limits = Mean +/- (t-value)*(Standard Error of Mean)

```
-----------------------------------------------------------------------------------------
```
Upper                          5.69            5.0             5.64
```
=========================================================
```
Lower                          3.80            5.0             3.52
```
=========================================================
```

t-test limits = 5.0 +/- (t-value)*(Standard Error of Mean)

```
-----------------------------------------------------------------------------------------
```
Upper                          5.95            5.0             6.06
```
=========================================================
```
Lower                          4.05            5.0             3.94
```
=========================================================
```

## Appendix G

## RESPONSE CHI-SQUARED DATA

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Observed Frequency

----------------------------------------------------------------

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strongly Agree | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | 3 | 3 | 3 |
| Agree | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

================================================================

Expected Probability

----------------------------------------------------------------

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strongly Agree | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

================================================================

Expected Frequency

----------------------------------------------------------------

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strongly Agree | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

================================================================

(O-E)

----------------------------------------------------------------------------------

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strongly Agree | 0 | -1 | -1 | -1 | -1 | 0 | -1 | -1 | -2 | 0 | 0 | 0 |
| Agree | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

====================================================

$(O-E)^2 / E$

----------------------------------------------------------------------------------

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strongly Agree | 0 | .3 | .3 | .3 | .3 | 0 | .3 | .3 | 1.33 | 0 | 0 | 0 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

====================================================

Chi-squared  0   .3   .3    .3    .3   0    .3    .3   1.3   0   0   0

====================================================

Critical Value        5.991

====================================================

## Appendix H

## EVALUATOR CHI-SQUARED DATA

| Observed Frequency | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| Strongly Agree | 9 | 12 | 7 |
| Agree | 3 | 0 | 5 |
| Average | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 |

| Expected Probability | | | |
|---|---|---|---|
| Strongly Agree | 1 | 1 | 1 |
| Agree | 0 | 0 | 0 |
| Average | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 |
| Strongly  Disagree | 0 | 0 | 0 |

| Expected Frequency | | | |
|---|---|---|---|
| Strongly Agree | 12 | 12 | 12 |
| Agree | 0 | 0 | 0 |
| Average | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 |

| (O-E) | | | |
|---|---|---|---|
| Strongly Agree | -3 | 0 | -5 |
| Agree | 3 | 0 | 5 |
| Average | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 |

(O-E)^2 / E

------------------------------------------------------------------------

| | | | |
|---|---|---|---|
| Strongly Agree | .8 | 0 | 2.1 |
| Agree | 0 | 0 | 0 |
| Average | 0 | 0 | 0 |
| Disagree | 0 | 0 | 0 |
| Strongly Disagree | 0 | 0 | 0 |

==================================================================

| | | | |
|---|---|---|---|
| Chi-squared | .8 | 0 | 2.1 |

==================================================================

| | |
|---|---|
| Critical Value | 19.675 |

==================================================================

## Appendix I

## EVALUATOR COMMENTS/SUGGESTIONS

### Evaluator 1 Questionnaire Comments

-------------------------------------------------------------------------------------------------

(1) No comments.
(2) No comments.
(3) No comments.
(4) No comments.
(5) No comments.
(6) "Right on!".
(7) "Could have asked a few more thought provoking questions".
(8) "Could have shifted higher % to equities".
(9)  No comments.
(10) No comments.
(11) "Very".
(12) No comments.

Suggestions: "May want a higher emphasis on equity products for long-term growth." "Use in the field, should help you understand your clients even better."

============================================================

### Evaluator 2

-------------------------------------------------------------------------------------------------

(1) No comments.
(2) No comments.
(3) No comments.
(4) No comments.
(5) No comments.
(6) No comments.
(7) No comments.
(8) No comments.
(9) No comments.
(10) No comments.
(11) No comments.
(12) No comments.

Suggestions: "Need to emphasize the importance of life insurance, portfolio must be self-completing in unexpected events." "Overall, great tool, try to use in field."

============================================================

Evaluator 3

-------------------------------------------------------------------------------

(1) "A very important question for an investor, 'What are your investment objectives'...presented very effectively".

(2) "My children (ages 16&19) did not fit perfectly well in the choices offered".

(3) "Questions were simple and accurate".

(4) "I would not have included the face amount of my life insurance ... the day after death. The face amount might be included, but today, only the cash value".

(5) "Same as #4".

(6) "Surprisingly well".

(7) "Good questions...well presented".

(8) "Picked up 98% of what investments I have".

(9) No comments.

(10) "For the depth the survey attempted to go, the questions were very appropriate".

(11)"Simple-very easy to use" .

(12) "I found the Financial Evaluator surprisingly accurate in identifying my "suitability" for the portfolio mix offered".

Suggestions: "Great program." "Review my comments toward life insurance valuation."

===========================================================

Works Cited

Ambrose, Brent W. "Fractal Structure In The Capital Markets Revisited." Financial Analysts Journal 3. 49 (May/June 1993): 73-77.

Angrist, Stanley W. "Mutual Funds: 'Defensive' Funds Offer Haven in Market Declines." Wall Street Journal 3 July 7, 1995: C1.

Armstrong, Leonard. "Avoiding Financial Storms: How to Build Protection in Your Investment Policy." Pension Management 5. 31 (May 1995): 14-21.

Arnott, Robert D. "Quantitative Management in the Coming Decade." Financial Analysts Journal 3. 50 (May/June 1994): 6-9.

Auxier, Albert L. "Happy Birthday, Benjamin Graham." Barron's 19. 74 (9 May 1994): 50-52.

Bachman, James E. "Financial Model For Optimal Risk/Return Results." Best's Review 7. 96 (November 1995): 67-69.

Barry, Andrew. "True Believer." Barron's 11. 75 (13 March 1995): 25-30.

Bauman, W Scott. "Can Managed Portfolio Performance Be Predicated?" Journal of Portfolio Management 4. 20 (Summer 1994): 31-40.

Belsky, Gary. "How Your Broker Makes A Buck: What It Really Costs To Buy Stocks, Bonds, Mutual Funds." Money 6. 21 (6 June 1992): 142-152.

Bernstein, Peter L. "Risk as a History of Ideas." Financial Analysts Journal 1. 51 (Jan/Feb 1995): 7-11.

Biderman, Charles "Refresher Course: Liquidity, The Market's Asset." Barron's 8. 75 (20 February 1995): 50.

Blanden, Michael "Seven Day Wonder." Banker 827. 145 (January 1995): 12-14.

Brown, Carolyn M. "Getting Back To Basics." Black Enterprise 3. 23 (February1993): 55-58.

---. "How To Start An Investment Club." Black Enterprise 9. 23 (April 1993): 48-52.

Brown, Terence A. "Property Brokers: A Pilot Study of Shipper
    Perspectives." Transportation Journal 1. 31 (Fall 1991): 45-50.

Bugen, David H. "Your Best Assets: Individual Securities or Mutual
    Funds?" Financial Executive 1. 11 (February 1995): 57-58.

Burke, Gibbons. "A Sharper Sharpe Ratio." Futures: The Magazine of
    Commodities & Options 3. 23 (March 1994): 56.

Burton, Jonathan. "The Diminishing Returns of Diversifying." Business
    Week 3433. (17 July 1995): 94-95.

Carabell, Christopher C. "Determining Which Works Best: Index vs
    Active Investment". Pension Management 4. 31 (April 1995):
    8-11.

Chirinko, Robert S. "Why does Liquidity Matter in Investment Equations?"
    Journal of Money, Credit, & Banking 2. 27 (May 1995): 527-548.

Chow, George. "Portfolio Selection Based On Return, Risk, and Relative
    Performance." Financial Analysts Journal 2. 51 (March/April 1995):
    54-60.

Clow, Robert. "Fundamentally Sound Forex." Institutional Investor 6. 29
    (June 1995): 203-204.

Cocheo, Steve. "Is Main Street A State of Mind?" ABA Banking Journal 4.
    86 (April 1994): 52-54.

Crerar, Ken A. "Seeking Advice, Selling a Strategy." Association
    Management 3. 47 (March 1995): 62-65.

Damato, Karen. "Fund Track: Hunt for Defensive Mutual Funds Isn't
    Always Safe in Bear Territory." Wall Street Journal 3 September
    29, 1995: C1.

---. "Fund Track: Newsletter Fails To See Bulls, Gets Trampled." Wall
    Street Journal 6 October 23, 1995: C1.

Dreman, David. "An Inefficient Hypothesis." Forbes 9. 151 (26 April
    1994): 402.

---. "An Inefficient Market." Forbes 7. 153 (28 March 1994): 146.

---. "Goodbye, EMH." Forbes 13. 153 (20 June 1994): 261.

Dunnan, Nancy. Dun & Bradstreet "Guide To Your Investments". New
    York: Harper Perennial, 1995.

Dwyer, Hubert. "Is the Estep T-model Consistently Useful?" Financial Analysts Journal 6. 48 (Nov/Dec 1992): 82-86.

Ederington, Louis H. "Parameter Uncertainty and the Rational Expectations Model of the Term Structure." Journal of Banking & Finance 2. 19 (May 1995): 207-323.

Elgin, Peggie R. "Strategic Pairings Uncork Blessings For Investors, Issuers." Corporate Cashflow 3. 22 (September 1992): 7-8.

Ellis, Charles D. "The Loser's Game." Financial Analysts Journal 1. 51 (February 1995): 95-100.

Ellis, Junius. "A Hot Fund Star Tells How To Gain As Much As 200% In Two Years." Money 6. 23 (June 1994): 147-150.

Engebretson, Kathryn J. "A Multi-asset Class Approach to Pension Fund Investments." Government Finance Review 1. 11 (February 1995): 11.

Etzkorn, Mark. "A Fundamentally Technical Question." Futures-Cedar 8. 24 (July 1995): 40-42.

Fama, Eugene F. "Differences in the Risks and Returns of NYSE and NASD stocks." Financial Analysts Journal 1. 49 (January/February 1993): 37-41.

---. "Random Walks in Stock Market Prices." Financial Analysts Journal 1. 51 (January/February 1995): 75-80.

---. "The Cross-Section of Expected Stock Returns." Journal of Finance 2. 47 (June 1992): 427-465.

Fenner, Elizabeth. "Your Best 401(k) Moves." Money 13. 21 (1993): 106-107.

Flood, Mark D. "Two Faces of Financial Innovation." Federal Reserve Bank of St. Louis Review 3439. 74 (September-October 1992): 3.

Foust, Dean. "Using Your PC to Pick a Mutual Fund." Business Week 3439. 1 (20 August 1995): 82.

Freeman, Andrew "The Risk Model." Economist 7910. 335 (15 April 1995): ss17-ss19.

Gardiner, Robert M. The Dean Witter Guide to Personal Investing. New York: New American Library, 1988.

Glaser, Jeffrey, S. "The Capital Asset Pricing Model: Risk Valuation, Judicial Interpretation, and Market Bias." Business Lawyer 2. 50 (February 1995): 687-716.

Gold, Howard P. "Praising the Patron Saint of Value Investing." Barron's 25. (19 June 1995): 56.

Goldman, David P. "Sell Callables, Buy Junk." Forbes 13. 155 (19 June 1995): 256.

---. "Quickie Mortgage Bonds." Forbes 6. 155 (13 March 1995): 179.

Grinold, Richard C. "Are Benchmark Portfolios Efficient?" Journal of Portfolio Management 1. 19 (Fall 1992): 34-40.

Grover, Mary Beth. "Balancing Act." Forbes 6. 155 (13 March 1995): 174.

---. "How to Own A Bond - 1995 Money Guide." Forbes 13. 335 (19 June 1995): 182-183.

Gunthorpe, Deborah. "Portfolio Composition and The Investment Horizon." Financial Analysts Journal 1. 50 (January/February 1994): 51-56.

Hagaman, T Carter. "Getting Financial Advice." Management Accounting 4. 74 (October 1993): 14.

Harrington, Patrice. "Job Search: Don't Just Hope for the Best." Computerworld 16. 26 (20 April 1992): 107.

Hendrickson, John. "Training in Context." Training 3. 27 (March 1990): 65-70.

Holbrook, Daivd D. "Brokerage Service Agreements Spell Out Responsibility." Risk Management 7. 38 (July 1991): 37-40.

Hubbard, R. Glenn. "Investment Under Uncertainty: Keeping One's Options Open." Journal of Economic Literature 4. 32 (Dec 1994): 1816.

Hulbert, Mark. "A Bear For The Bulls." Forbes 1. 153 (3 January 1994): 260.

---. "A Walk on The Short Side." Forbes 2. 153 (17 January 1994): 124.

---. "Don't Throw Away Your Choice." Forbes 8. 156 (9 October 1995): 140.

---. "Risk/Reward Ratio." Forbes 2. 154 (18 July 1994): 331.

---. "Stubborn Bears." Forbes 10. 154 (24 October 1994): 304.

---. "The Graham-Harvey Test - 1995. Money Guide." Forbes 13. 155 (19 June 1995): 160-161.

Jacobs, Michael T. Break The Wall Street Rule. Massachusetts: Addison-Wesley Publ, 1993.

Jeffrey, Nancy Ann. "Your Money Matters: Weekend Report: Delving Into the Depths of Deep Discounters." Wall Street Journal 3 February 1995: C1.

---. "Your Money Matters: Weekend Report: With Discount Brokers, Labels Aren't The Whole Story." Wall Street Journal 3 February 1995: C1.

Kandel, Shmuel. "Portfolio Inefficiency and the Cross-Section of Expected Returns." Journal of Finance 1. 50 (March 1995): 157-184.

Kettinger, William J. "Do Strategic systems Really Pay Off?" Information Systems Management 1. 12 (Winter 1995): 35-43.

King, Donald A Jr. "Why Diversification Doesn't Work." Real Estate Review 2. 24 (Summer 1994): 6-12.

Kleiman, Robert T. "Investment, Characteristics of International Real Estate Equities." Real Estate Review. Fall 1992, 33-39.

Kroll, Yoram. "Further Tests of the Separation Theorum and the Capital Asset Pricing Model." American Economic Review 3. 82 (June 1992): 664-670.

Kumar, Ram L. "An Options View of Investments in Expansion Flexible Manufacturing Systems." International Journal of Production Economics 2. 38 (15 March 1995): 281.

Larr, Peter. "Concepts of Portfolio Management Part 2: Understanding and Using The Model." Journal of Commercial Lending 12. 75 (August 1993): 26-31.

Laurice, Douglas M. "Guidelines Help Ensure Liability Protection." Pension Management 4. 31 (April 1995): 32-33.

Lei, Ki-Fen. "Solving for Optimal Futures and Options Positions Using A
    Simulation-Optimization Technique." Journal of Futures Markets 5.
    15 (August 1995): 559.

Leinweber, David J. "Quantitative and Computational Innovation in
    Investment Management" Journal of Portfolio Management 2.
    21 (Winter 1995): 8.

Levin, Gary. "Brokers' Ads Fend Off Discounters." Advertising Age 8. 64
    (22 February 1993): 40.

Lipp, Robert H. "Investment Strategy for Foundations: Managing Risk."
    Trusts & Estates 7. 134 (July 1995): 12-18.

Lubatkin, Michael. "Extending Modern Portfolio Theory Into the Domain of
    Corporate Diversification: Does it Apply?" Academy of
    Management Journal 1. 37 (February 1994): 109-136.

MacDonald, S Scott. "An Empirical Evaluation of Treasury-bill Futures
    Market Efficiency: Evidence From Forecast Efficiency Tests."
    Journal of Futures Markets 2. 13 (April 1993): 199-211.

Mack, Gracian "Finding The Right Recipe For The Perfect Portfolio."
    Black Enterprise 6. 25 (January 1995): 66-70.

Marcial, Gene G. "This Bare-Bones Broker Looks Pretty Juicy." Business
    Week 3319. 1 (17 May 1993): 88.

McGough, Robert. "Finding Thrills in Boring Index Funds." Wall Street
    Journal 3 June 27, 1995: C1.

Michels, Antony J. "Five Great Ways to Pick Shares." Fortune 11. 131
    (12 June 1995): 133-134.

---. "How to Protect Your Portfolio When the Economy Cools." Fortune 4.
    131 (6 March 1995): 115-116.

Middleton, Timothy. "Demystifying The Role of the Stock Broker." Black
    Enterprise 3. 24 (October 1993): 95-99.

---. "How to Pick A Stock Before It Gets Hot." Black Enterprise 3. 23
    (October 1992): 140-147.

Moad, Jeff. "Reengineering: Report from The Trenches." Datamation 6.
    40 (15 March 1995): 36-40.

Montgomery, Michael B. "Capital Complementarily, Tine-To-Build, and The Persistence of Investment Starts" <u>Journal of Macroeconomics</u> 2. 17 (Spring 1995): 187.

Muller, Frederick L. "Equity Securities Analysis in the U.S." <u>Financial Analysts Journal</u> 1. 50 (Jan-Feb 1994): 6-9.

Nichols, Nancy A. "Efficient? Chaotic? What's the New Finance?" <u>Harvard Business Review</u> 2. 71 (March/April 1993): 50-60.

Palmer, Jay. "Back in Style." <u>Barron's</u> 13. 74 (27 March 1995): 34-38.

Pare, Terence P. "How to Find a Financial Planner." <u>Fortune</u> 10. 129 (16 May 1994): 103-106.

Peavy, John W III. "Risk Management Through Diversification." <u>Trusts & Estates</u> 9. 133 (September 1994): 42-46.

Perritt, Gerald W. <u>Diversity, The Investor's Guide to Asset Allocation Strategies</u>. Chicago: Longman Financial Services Publishing, 992.

Philip, Christine. "Tactical Advisers Bearish." <u>Pensions & Investments</u> 22. 22 (31 October 1994): 3, 44.

Piturro, Marlene C. "Can Banks Build A Brokerage Bonanza?" <u>Bankers Monthly</u> 3. 108 (March 1991): 33-34.

Plattner, Robert H. "Understanding The Single-Family Market." <u>Real Estate Review</u> 2. 20 (Summer 1990): 94-96.

Powell, James B. <u>Super Investment Trends, Cashing in on the Dynamic 90's.</u> Homewood, IL: Business One Irwin, 1992.

Ramaswami, Sridhar N. "An Exploratory Study of Portfolio Objectives and Asset Holdings." <u>Journal of Economic Behavior & Organization</u> 3. 19 (December 1992): 285-306.

Ratajczak, Donald. "Past Investment Performance is No Measure of Future Returns." <u>Journal of the American Society of CLU & ChFC</u> 3. 49 (May 1995): 18-21.

Ridley, Matt. "A Dose of Empirical Evidence." <u>Economist</u> 7832. 329 (9 October 1993): SS8-SS9.

Rohrer, Julie. "Dreyfus Applies Consumer Research to Education." <u>Institutional Investor</u> 2. 29 (February 1995): 131-132.

Rom, Brian M. "New Breed of Tools Available to Assess Risk." <u>Pensions & Investments</u> 23. 23 (13 November 1995): 46-47.

Sasakura, Kazuyuki. "On the Dynamic Behavior of Schinasi's Business Cycle Model" <u>Journal of Macroeconomics</u> 3. 16 (Summer 1994): 423.

Saunders, Edward M Jr. "Testing the Efficient Market Hypothesis Without Assumptions." <u>Journal of Portfolio Management</u> 4. 20 (Summer 1994): 28-30.

Scholl, Jaye. "Leaders of the Pack." <u>Barron's</u> 8. 74 (21 February 1994): 18-22.

Schuck, Edward J. "Why Diversification Does Work." <u>Real Estate Review</u> 1. 25 (Spring 1995): 12-16.

Schwartzman, Sharon. "Daiwa Taps Nobel Know-How." <u>Wall Street & Technology</u> 11. 9 (July 1992): 23-26.

Schuessler, Heidi A. "May I Take Your Order?" <u>Futures-Cedar Falls</u> 6. 24 (June 1995): 32-34.

Shay, Rodger. "The Perfect Portfolio." <u>America's Community Banker</u> 4. 4 (April 1995): 42-43.

---. "The Perfect Portfolio Purchase." <u>America's Community Banker</u> 6. 4 (June 1995): 42-43.

Shefrin, Hersh. "Behavioral Capital Asset Pricing Theory." <u>Journal of Financial & Quantitative Analysis</u> 3. 29 (September 1994): 323-349.

Sivy, Michael. "The Six Rules of Investing From Legendary Ben Graham." <u>Money</u> 13. 23 (1995): 23.

Sullivan, William. "Join The Club." <u>Small Business Reports</u> 7. 17 (July 1992): 61-64.

Thompson, Jason. "Star-Gazing." <u>Euromoney</u> 304. (August 1994): 7.

Train, John. <u>The New Money Masters</u>. New York: Harper & Row, 1989.

Treynor, Jack L. "In Defense of the CAPM." <u>Financial Analysts Journal</u> 3. 49 (May/June 1993): 11-13.

Tripathy, Niranjan. "The Relationship Between OTC Bid-Ask Spreads and Dealer Size: The Impact of Order-Processing and Diversification Costs." Journal of Financial Research 2. 14 (Summer 1991): 117-127.

Turtle, Harry. "Tests of Conditional Asset Pricing with Time-Varying Moments and Risk Prices." Journal of Financial & Quantitative Analysis 1. 29 (March 1994): 15-29.

Viard, Alan D. "The Asset Pricing Effects of Fixed Holdings Costs: An Upper Bound." Journal of Financial & Quantitative Analysis 1. 30 (March 1995): 43-59.

Wagner, Wayne H. "Ten Myths and Twenty Years of Betas." Journal of Portfolio Management 1. 21 (Fall 1994): 79-82.

Walker-Daniels, Kimberly K. Series 7 Principles and Practices. New York: Dearborn Financial Publishing, 1995.

Warren, Allison. "Americans Value Honesty Over Performance." Trusts & Estates 10. 132 (October 1993): 8.

Weaver, Peter. "Doing It Yourself As A Home-based Broker: The Ins and Outs of Placing Stock Orders." Nation's Business 9. 81 (September 1993): 70.

Welling, Kathryn M. "Market Watch." Barron's 3. 73 (18 January 1993): 64.

---. "Treacherous Territory: Three Technicians Size Up The Record Market." Barron's 22. 73 (31 May 1993): 9, 12.

Welsh, Tricia. "How Brokers Stack Up." Fortune 10. 128 (Autumn 1993): 170-171.

Williams, Gordon. "And Leave the Allocating To Us." Financial World 23. 162 (23 November 1993): 64-66.

Wise, Ray. "Breaking With Tradition: Investors Take New Paths Toward Aggressive Allocation." Pension World 3. 30 (March 1994): 6-8.

Wolfe, Glenn A. "The Impact on Stock Returns and Liquidity for OTC Equity Issues Adds to the List of Marginable OTC Stocks." Financial Review 1. 27 (February 1992): 81-105.

Wyatt, Edward A. "Bacon, Eggs, Graham, Dodd: Breakfast with an Unshaken Value Player." Barron's 30. 72 (27 July 1992): 18-19.

Xenakis, John J. "Not For The Faint of Heart." CFO: The Magazine for Senior Financial Executives 4. 111 (April 1995): 22.

Zigmund, William G. Business Research Methods. Fort Worth: Dryden Press, 1994.

"American Stockbrokering: One-Step Merchant." Economist 7832. 329 (9 October 1993): 89.

"Commissions Shrink At Deep Discounters, Rise At Rival Brokers." Wall Street Journal 11 January 1995, C17.

"Discount Brokers." Fortune 11. 127 (31 May 1993): 80.

"Evaluating Risk: A Number of Research Companies Have Introduced Risk Ratings for Investment Funds." Investors Chronicle 1409. 111 (27 January 1995): 30.

"Importance of Educating Your Clients." Practical Accountant 8. 27 (August 1994): 26.

"No Mix, Premix Funds Join 401(k) Investments." Employee Benefit Plan Review 4. 48 (October 1993): 26-28.