The Handbook of Alternative Assets

Mark J. P. Anson

JOHN WILEY & SONS

The Handbook of Alternative Assets

The Frank J. Fabozzi Series

Fixed Income Securities, Second Edition by Frank J. Fabozzi

Focus on Value: A Corporate and Investor Guide to Wealth Creation
by James L. Grant and James A. Abate

The Handbook of Global Fixed Income Calculations by Dragomir Krgin

Managing a Corporate Bond Portfolio
by Leland E. Crabbe and Frank J. Fabozzi

Real Options and Option-Embedded Securities by William T. Moore

Capital Budgeting: Theory and Practice
by Pamela P. Peterson and Frank J. Fabozzi

The Exchange-Traded Funds Manual by Gary L. Gastineau

Professional Perspectives on Fixed Income Portfolio Management, Volume 3
edited by Frank J. Fabozzi

Investing in Emerging Fixed Income Markets
edited by Frank J. Fabozzi and Efstathia Pilarinu

The Handbook of Alternative Assets

Mark J. P. Anson

JOHN WILEY & SONS

I would like to dedicate this book to my wife, Mary Hayes,
for her incredible support and indulgence;
to my children Madeleine and Marcus
for playing quietly while Daddy was working on his book;
and to my editor, Frank Fabozzi, for keeping me on track and on point.

Published by John Wiley & Sons, Inc.
Published simultaneously in Canada.

ISBN: 0-471-21826-X

Printed in the United States of America.

10 9 8 7 6 5 4 3 2 1

About the Author

Mark Anson is the Chief Investment Officer for the California Public Employees' Retirement System (CalPERS). CalPERS has over $151 billion in assets under management. Mark earned his law degree from the Northwestern University School of Law in Chicago where he was the Production Editor of the Law Review, and his Ph.D. and Masters in Finance from the Columbia University Graduate School of Business in New York where he graduated *Beta Gamma Sigma*. Mark is a member of the New York and Illinois State Bar Associations. He has also earned the Chartered Financial Analyst, Certified Public Accountant, Certified Management Accountant, and Certified Internal Auditor degrees. In addition, Mark has received the Series 3, 4, 7, 8, 24, and 63 NASD securities industry licenses. Mark is an author of two other books on the financial markets and has published over 40 articles on the topics of hedge funds, private equity, risk management, derivatives, and portfolio management.

Preface

Over the past several years, I have conducted quite a bit of independent research with respect to the alternative asset classes discussed in this book. Yet, I had never stopped to consider alternative assets within a comprehensive framework. This book provides that framework.

Early on, I make that statement that alternative assets are really alternative investment strategies within an existing class rather than a new asset class. This is an important point to remember because alternative assets are used more often to expand the investment opportunities within an existing asset class rather than as a hedge of that asset class.

This book has two broad objectives. The first is to introduce the reader to the various types of alternative assets that exist in the financial markets. In this respect, parts of this book are more descriptive in nature.

In the descriptive chapters, I attempt to do away with technical financial jargon, and instead, provide examples of alternative assets that are easy to understand. When I run up against technical terms used in describing alternative assets, I provide simple examples to lay a foundation of intuition behind the jargon. My goal is to educate and to inform, not to dazzle the reader with my grasp of technical financial nomenclature.

Second, this book provides chapters with original research with respect to alternative assets. In this respect, certain chapters are more quantitative as is necessary to develop empirical results. Again, I try to stay away from financial jargon as much as possible and provide the intuition behind my empirical conclusions. Yet, I believe that these chapters can serve as reference material for mathematical conclusions regarding alternative assets.

Overall, my goal is to provide information that has practical value to an investor. Therefore, this book focuses less on the theoretical development of alternative assets and more on the practical concepts needed to invest successfully. I have used many of the concepts discussed in this book when investing in alternative assets.

Finally, this book provides my ideas, research, experience, and opinions with respect to the alternative asset industry. Undoubtedly, some readers may disagree with my thoughts, ideas, and opinions, but this is good. It means that I have stimulated the thought process of those readers to critically evaluate alternative assets as well as my own conclusions. The greater the critical eye brought to the alternative asset investment universe, the greater the probability of success in that universe.

In sum, I hope that this book stimulates the reader with respect to alternative assets. If so, I will have considered this book to be a worthwhile effort.

As a final note, this book reflects my individual opinions and insights, and not those of my employer, the California Public Employees' Retirement System.

Mark Anson
December 17, 2001

Table of Contents

Chapter 1

What is an Alternative Asset Class?

Part of the difficulty of working with alternative asset classes is defining them. Are they a separate asset class or a subset of an existing asset class? Do they hedge the investment opportunity set or expand it? Are they listed on an exchange or do they trade in the over-the-counter market?

In most cases, alternative assets are a subset of an existing asset class. This may run contrary to the popular view that alternative assets are separate asset classes.[1] However, we take the view that what many consider separate "classes" are really just different investment strategies within an existing asset class.

Additionally, in most cases, they expand the investment opportunity set, rather than hedge it. Last, alternative assets are generally purchased in the private markets, outside of any exchange. While hedge funds, private equity, and credit derivatives meet these criteria, we will see that commodity futures prove to be the exception to these general rules.

Alternative assets, then, are just alternative investments within an existing asset class. Specifically, most alternative assets derive their value from either the debt or equity markets. For instance, most hedge fund strategies involve the purchase and sale of either equity or debt securities. Additionally, hedge fund managers may invest in derivative instruments whose value is derived from the equity or debt markets.

In this book, we classify five types of alternative assets: hedge funds, commodity and managed futures, private equity, credit derivatives, and corporate governance. Hedge funds and private equity are the best known of the alternative asset world. Typically these investments are accomplished through the purchase of limited partner units in a private limited partnership. Commodity futures can be either passive investing tied to a commodity futures index, or active investing through a commodity pool or advisory account. Private equity is the investment strategy of investing in companies before they issue their securities publicly, or taking a public company private. Credit derivatives can be purchased through limited partnership units, as a tranche of a special purpose vehicle, or directly through the purchase of distressed debt securities. Last, corporate governance is a form of shareholder activism designed to improve the internal controls of a public company.

---

[1] See, for example, Chapter 8 in David Swensen, *Pioneering Portfolio Management* (New York: The Free Press, 2000).

We will explore each one of these alternative asset classes in detail, providing practical advice along with useful research. We begin this chapter with a review of *super* asset classes.

SUPER ASSET CLASSES

There are three *super* asset classes: capital assets, assets that are used as inputs to creating economic value, and assets that are a store of value.[2]

Capital Assets

Capital assets are defined by their claim on the future cash flows of an enterprise. They provide a source of ongoing value. As a result, capital assets may be valued based on the net present value of their expected future cash flows.

Under the classic theory formulated by Franco Modigliani and Merton Miller, a corporation cannot change its value (in the absence of tax benefits) by changing the method of its financing.[3] Modigliani and Miller demonstrated that the value of the firm is dependent upon its cash flows. How those cash flows are divided between their shareholders and bondholders is irrelevant to firm value.

Consequently, capital assets are distinguished not by their possession of physical assets, but rather, by their claim on the cash flows of an underlying enterprise. Hedge funds, private equity funds, and credit derivatives investments all fall within the super asset class of capital assets because their values are determined by the present value of expected future cash flows.

As a result, we can conclude that it is not the types of securities in which they invest that distinguishes hedge funds, private equity funds, or credit derivatives from traditional asset classes. Rather, it is the alternative investment strategies that they pursue that distinguishes them from traditional stock and bond investments.

Assets that Can be Used as Economic Inputs

Certain assets can be consumed as part of the production cycle. Consumable or transformable assets can be converted into another asset. Generally, this class of asset consists of the physical commodities: grains, metals, energy products, and livestock. These assets are used as economic inputs into the production cycle to produce other assets, such as automobiles, skyscrapers, new homes, and appliances.

These assets generally cannot be valued using a net present value analysis. For example, a pound of copper, by itself, does not yield an economic stream of revenues. However, the copper can be transformed into copper piping that is used in an office building, or as part of the circuitry of an appliance.

---

[2] See Robert Greer, "What is an Asset Class Anyway?" *The Journal of Portfolio Management* (Winter 1997).

[3] Franco Modigliani and Merton Miller, "The Cost of Capital, Corporation Finance, and the Theory of Investment," *American Economic Review* (June 1958).

While consumable assets cannot produce a stream of cash flows, we will demonstrate in Chapter 11, which deals with commodities, that this asset class has excellent diversification properties for an investment portfolio. In fact, the lack of dependence on future cash flows to generate value is one of the reasons why commodities have important diversification potential vis à vis capital assets.

Assets that are a Store of Value

Art is considered the classic asset that stores value. It is not a capital asset because there are no cash flows associated with owning a painting or a sculpture. Consequently, art cannot be valued using a discounted cash flow analysis. It is also not an asset that is used as an economic input because it is a finished product.

Art requires ownership and possession. Its value can only be realized through its sale and transfer of possession. In the meantime, the owner retains the artwork with the expectation that it will at least yield a price equal to that which the owner paid for it.

There is no rational way to gauge whether the price of art will increase or decrease because its value is derived purely from the subjective (and private) visual enjoyment that the right of ownership conveys. Therefore, to an owner, art is a store of value. It conveys neither economic benefits nor is used as an economic input, but retains the value paid for it.

Gold and precious metals are another example of a store of value asset. In some parts of the world (India, for example), gold and silver are the primary means of maintaining wealth. In these countries, residents do not have access to the same range of financial products that are available to residents of more developed nations. Consequently, they accumulate their wealth through a tangible asset as opposed to a capital asset.

However, the lines between the three super classes of assets can become blurred. For example, gold can be leased to jewelry and other metal manufacturers. Jewelry makers lease gold during periods of seasonal demand, expecting to purchase the gold on the open market and return it to the lessor before the lease term ends. The gold lease provides a stream of cash flows that can be valued using a discounted cash flow analysis. However, the lease rate of gold is usually small in relation to the market price of gold.[4]

Precious metals can also be used as a transformable/consumable asset because they have the highest level of thermal and electrical conductivity amongst the metals. Silver, for example, is used in the circuitry for most telephones and light switches. Gold is used in the circuitry for TVs, cars, airplanes, computers, and rocket ships.

Real Estate

We provide a brief digression to consider where real estate belongs in our classification scheme. Real estate is a distinct asset class, but is it an alternative one? For

[4] For instance, the 12-month lease rate for gold in January 2001 was 1.3375% compared to a spot price of gold of $265 per ounce.

the purposes of this book we do not consider real estate to be an alternative asset class. The reasons are several.

First, real estate was an asset class long before stocks and bonds became the investment of choice. In fact, in times past, land was the single most important asset class. Kings, queens, lords, and nobles measured their wealth by the amount of property that they owned. "Land barons" were aptly named. Ownership of land was reserved only for the most wealthy members of society.

However, over the past 200 years, our economic society changed from one based on the ownership of property to the ownership of legal entities. This transformation occurred as society moved from the agricultural age to the industrial age. Production of goods and services became the new source of wealth and power.

Stocks and bonds were born to support the financing needs of new enterprises that manufactured material goods and services. In fact, stocks and bonds became the "alternatives" to real estate instead of vice versa. With the advent of stock and bond exchanges, and the general acceptance of owning equity or debt stakes in companies, it is sometimes forgotten that real estate was the original and primary asset class of society.

In fact, it was only 20 years ago in the United States that real estate was the major asset class of most individual investors. It was not until the long bull market started in 1983 that investors began to diversify their wealth into the "alternative" assets of stocks and bonds.

Second, given the long-term presence of real estate as an asset class, several treatises have been written concerning its valuation.[5] These treatises provide a much more extensive examination of the real estate market than can be covered within the scope of this book.

Finally, we do not consider real estate to be an alternative asset class as much as we consider it to be an additional asset class. Real estate is not an alternative asset to stocks and bonds. Instead, it is a fundamental asset class that should be included within every diversified portfolio. The alternative assets that we consider in this book are meant to diversify the stock and bond holdings within a portfolio context.

ASSET ALLOCATION

Asset allocation is generally defined as the allocation of an investor's portfolio across a number of asset classes.[6] Asset allocation by its very nature shifts the

[5] See, for example, Howard Gelbtuch, David MacKmin, and Michael Milgrim, eds., *Real Estate Valuation in Global Markets* (New York: Appraisal Institute, 1997); James Boykin and Alfred Ring, *The Valuation of Real Estate* (Englewood Cliffs, NJ: Prentice Hall, 1993); Austin Jaffe and C.F. Sirmans, *Fundamentals of Real Estate Investment*, 3d ed. (Englewood Cliffs, NJ: Prentice Hall, 1994); and Jack Cummings, *Real Estate Finance & Investment Manual* (Englewood Cliffs, NJ: Prentice Hall, 1997).

[6] See William Sharpe, "Asset Allocation: Management Style and Performance Measurement," *The Journal of Portfolio Management* (Winter 1992).

emphasis from the security level to the portfolio level. It is an investment profile that provides a framework for constructing a portfolio based on measures of risk and return. In this sense, asset allocation can trace its roots to Modern Portfolio Theory and the work of Harry Markowitz.[7]

Asset Classes and Asset Allocation

Initially, asset allocation involved four asset classes: equity, fixed income, cash, and real estate. Within each class, the assets could be further divided into subclasses. For example, stocks can be divided into large capitalized stocks, small capitalized stocks, and foreign stocks. Similarly, fixed income can be broken down into U.S. Treasury notes and bonds, investment-grade bonds, high-yield bonds, and sovereign bonds.

The expansion of newly defined "alternative assets" may cause investors to become confused about their diversification properties and how they fit into an overall diversified portfolio. Investors need to understand the background of asset allocation as a concept for improving return while reducing risk.

For example, in the 1980s the biggest private equity game was taking public companies private. Does the fact that a corporation that once had publicly traded stock but now has privately traded stock mean that it has jumped into a new asset class? We maintain that it does not. Furthermore, public offerings are the primary exit strategy for private equity; public ownership begins where private equity ends.[8]

Considered within this context, a separate asset class does not need to be created for private equity. Rather this type of investment can be considered as just another point along the equity investment universe. Rather than hedging the equity class as another separate class all together, private equity expands the equity asset class.

Similarly, credit derivatives expand the fixed income asset class, rather than hedge it. We will also demonstrate that hedge funds can be characterized by their market (equity) or their fixed income (credit) exposures. Commodities fall into a different class of assets than equity, fixed income, or cash, and will be treated separately in this book.

Last, corporate governance is a strategy for investing in public companies. It seems the least likely to be an alternative investment strategy. However, we will demonstrate that a corporate governance program bears many of the same characteristics as other alternative investment strategies.

Strategic versus Tactical Allocations

Alternative assets should be used in a tactical rather than strategic allocation. Strategic allocation of resources is applied to fundamental asset classes such as

---

[7] See Harry Markowitz, *Portfolio Selection* (New Haven, CT: Cowles Foundation, Yale University Press, 1959).

[8] See Jeffery Horvitz, "Asset Classes and Asset Allocation: Problems of Classification," *The Journal of Private Portfolio Management* (Spring 2000).

equity, fixed income, cash, and real estate. These are the basic asset classes that must be held within a diversified portfolio.

Strategic asset allocation is concerned with the long-term asset mix. The strategic mix of assets is designed to accomplish a long-term goal such as funding pension benefits or matching long-term liabilities. Risk aversion is considered when deciding the strategic asset allocation, but current market conditions are not. In general, policy targets are set for strategic asset classes with allowable ranges around those targets. Allowable ranges are established to facilitate flexibility in the management of the investment portfolio.

Tactical asset allocation is short-term in nature. This strategy is used to take advantage of current market conditions that may be more favorable to one asset class over another. The goal of funding long-term liabilities has been satisfied by the target ranges established by the strategic asset allocation. The goal of tactical asset allocation is to maximize return.

Tactical allocation of resources depends on the ability to diversify within an asset class. This is where alternative assets have the greatest ability to add value. Their purpose is not to hedge the fundamental asset classes, but rather to expand them. Consequently, alternative assets should be considered as part of a broader asset class.

As already noted, private equity is simply one part of the spectrum of equity investments. Granted, a different set of skills is required to manage a private equity portfolio compared to public equity securities. However, private equity investments simply expand the equity investment universe. Consequently, private equity is an alternative investment strategy within the equity universe as opposed to a new fundamental asset class.

Another example is credit derivatives. These are investments that expand the frontier of credit risk investing. The fixed income world can be classified simply as a choice between U.S. Treasury securities that are considered to be default free, and spread products that contain an element of credit risk. Spread products include any fixed income investment that does not have a credit rating on par with the U.S. government. Consequently, spread products trade at a credit spread relative to U.S. Treasury securities that reflects their risk of default.

Credit derivatives are a way to diversify and expand the universe for investing in spread products. Traditionally, fixed income managers attempted to establish their ideal credit risk and return profile by buying and selling traditional bonds. However, the bond market can be inefficient and it may be difficult to pinpoint the exact credit profile to match the risk profile of the investor. Credit derivatives can help to plug the gaps in a fixed income portfolio, and expand the fixed income universe by accessing credit exposure in more efficient formats.

Efficient versus Inefficient Asset Classes

Another way to distinguish alternative investment strategies is based on the efficiency of the marketplace. The U.S. public stock and bond markets are generally

considered to be the most efficient marketplaces in the world. Often, these markets are referred to as "semi-strong efficient." This means that all publicly available information regarding a publicly traded corporation, both past information and present, is fully priced in that company's traded securities.

Yet, inefficiencies exist in all markets, both public and private. If there were no informational inefficiencies in the public equity market, there would be no case for active management. Nonetheless, inefficiencies that do exist in the public markets eventually dissipate. The reason is that information is easy to acquire and disseminate in the publicly traded securities markets. Top quartile active managers in the public equity market earn excess returns (over their benchmarks) of only 1% to 2% a year.

In contrast, with respect to alternative assets, information is very difficult to acquire. Most alternative assets (with the exception of commodities) are privately traded. This includes private equity, hedge funds, and credit derivatives.

Consider venture capital, one subset of the private equity market. Investments in start-up companies require intense research into the product niche the company intends to fulfill, the background of the management of the company, projections about future cash flows, exit strategies, potential competition, beta testing schedules, and so forth. This information is not readily available to the investing public. It is time-consuming and expensive to accumulate. Further, most investors do not have the time or the talent to acquire and filter through the rough data regarding a private company. One reason why alternative asset managers charge large management and incentive fees is to recoup the cost of information collection.

This leads to another distinguishing factor between alternative investments and the traditional asset classes: the investment intermediary. Continuing with our venture capital example, most investments in venture capital are made through limited partnerships, limited liability companies, or special purpose vehicles. It is estimated that 80% of all private equity investments in the United States are funneled through a financial intermediary.

Last, investments in alternative assets are less liquid than their public markets counterparts. Investments are closely held and liquidity is minimal. Further, without a publicly traded security, the value of private securities cannot be determined by market trading. The value of the private securities must be estimated by book value, appraisal, or determined by a cash flow model.

OVERVIEW OF THIS BOOK

This book is organized into five sections. Section I reviews hedge funds. Chapter 2 begins with a brief history on the birth of hedge funds and an introduction to the types of hedge fund investment strategies. Chapter 3 provides some practical guidance as to how to build a hedge fund investment program. In Chapter 4 we discuss the selection of hedge funds. Chapter 5 is devoted to conducting due diligence,

including both a qualitative and quantitative review. In Chapter 6 we introduce a classification scheme for hedge funds and analyze their return distributions. In Chapter 7, we consider some of the risks associated with hedge fund investing. In Chapter 8 we review the regulatory framework in which hedge funds operate. Last, in Chapter 9 we consider whether hedge funds should be "institutionalized."

Section II is devoted to commodity and managed futures. We begin with a brief review in Chapter 10 of the economic value inherent in commodity futures contracts. Chapter 11 describes how an individual or institution may invest in commodity futures, including an introduction to commodity futures benchmarks. Chapter 12 considers commodity futures within a portfolio framework, while Chapter 13 examines the managed futures industry.

Section III covers the spectrum of private equity. In Chapter 14 we provide an introduction to venture capital, while Chapter 15 is devoted to leveraged buyouts. In Chapter 16 we show how debt may be a component of the private equity marketplace. In Chapter 17 we review the economics associated with private equity investments, and in Chapter 18 we introduce alternative investment strategies within the private equity marketplace. Last, we consider some issues with respect to private equity benchmarks in Chapter 19.

Section IV is devoted to credit derivatives. In Chapter 20 we review the importance of credit risk, and provide examples of how credit derivatives are used in portfolio management. In Chapter 21 we review the collateralized debt obligation market. Specifically, we review the design, structure, and economics of collateralized bond obligations and collateralized loan obligations.

Finally, we devote Chapter 22 to corporate governance as an alternative investment strategy.

Throughout this book we attempt to provide descriptive material as well as empirical examples. Our goal is both to educate the reader with respect to these alternative investment strategies as well as to provide a reference book.

Section I

Hedge Funds

Chapter 2

Introduction to Hedge Funds

The term "hedge fund" is a term of art. It is not defined in the Securities Act of 1933 or the Securities Exchange Act of 1934. Additionally, "hedge fund" is not defined by the Investment Company Act of 1940, the Investment Advisers Act of 1940, the Commodity Exchange Act, or, finally, the Bank Holding Company Act. So what is this investment vehicle that every investor seems to know about but for which there is scant regulatory guidance?

As a starting point, we turn to the *American Heritage Dictionary* (third edition) which defines a hedge fund as:

> An investment company that uses high-risk techniques, such as borrowing money and selling short, in an effort to make extraordinary capital gains.

Not a bad start, but we note that hedge funds are not investment companies, for they would be regulated by the Securities and Exchange Commission under the Investment Company Act of 1940.[1] Additionally, some hedge funds, such as market neutral and market timing have conservative risk profiles and do not "swing for the fences" to earn extraordinary gains.

We define hedge funds as:

> A privately organized investment vehicle that manages a concentrated portfolio of public securities and derivative instruments on public securities, that can invest both long and short, and can apply leverage.

Within this definition there are five key elements of hedge funds that distinguish them from their more traditional counterpart, the mutual fund.

First, hedge funds are private investment vehicles that pool the resources of sophisticated investors. One of the ways that hedge funds avoid the regulatory scrutiny of the SEC or the CFTC is that they are available only for high net worth investors. Under SEC rules, hedge funds cannot have more than 100 investors in the fund. Alternatively, hedge funds may accept an unlimited number of "qualified purchasers" in the fund. These are individuals or institutions that have a net worth in excess of $5,000,000.

---

[1] In fact, hedge funds take great pains to avoid being regulated by the SEC as an investment company. The National Securities Markets Improvement Act of 1996 greatly relieved hedge funds of certain regulatory burdens by allowing an unlimited number of "qualified purchasers" in a hedge fund.

There is a penalty, however, for the privacy of hedge funds. Although they may escape the regulatory burden of U.S. agencies, they cannot raise funds from investors via a public offering. Additionally, hedge funds may not advertise broadly or engage in a general solicitation for new funds. Instead, their marketing and fundraising efforts must be targeted to a narrow niche of very wealthy individuals and institutions. As a result, the predominant investors in hedge funds are family offices, endowments, and, to a lesser extent, pension funds.

Second, hedge funds tend to have portfolios that are much more concentrated than their mutual fund brethren. Most hedge funds do not have broad securities benchmarks. The reason is that most hedge fund managers claim that their style of investing is "skill-based" and cannot be measured by a market return. Consequently, hedge fund managers are not forced to maintain security holdings relative to a benchmark; they do not need to worry about "benchmark" risk. This allows them to concentrate their portfolio only on those securities that they believe will add value to the portfolio.

Another reason for the concentrated portfolio is that hedge fund managers tend to have narrow investment strategies. These strategies tend to focus on only one sector of the economy or one segment of the market. They can tailor their portfolio to extract the most value from their smaller investment sector or segment.

Third, hedge funds tend to use derivative strategies much more predominately than mutual funds. Indeed, in some strategies, such as convertible arbitrage, the ability to sell or buy options is a key component of executing the arbitrage. The use of derivative strategies may result in non-linear cash flows that may require more sophisticated risk management techniques to control these risks.

Fourth, hedge funds may go both long and short securities. The ability to short public securities and derivative instruments is one of the key distinctions between hedge funds and traditional money managers. Hedge fund managers incorporate their ability to short securities explicitly into their investment strategies. For example, equity long/short hedge funds tend to buy and sell securities within the same industry to maximize their return but also to control their risk. This is very different from traditional money managers that are tied to a long-only securities benchmark.

Finally, hedge funds use leverage, sometimes, large amounts. Mutual funds, for example, are limited in the amount of leverage they can employ; they may borrow up to 33% of their net asset base. Hedge funds do not have this restriction. Consequently, it is not unusual to see some hedge fund strategies that employ leverage up to 10 times their net asset base.

We can see that hedge funds are different than traditional long-only investment managers. We next discuss the history of the hedge fund development.

A BRIEF HISTORY OF HEDGE FUNDS

The first hedge fund was established in 1949, the Jones Hedge Fund. Alfred Winslow Jones established a fund that invested in U.S. stocks, both long and short.

The intent was to limit market risk while focusing on stock selection. Consequently, this fund was not tied to a securities benchmark and may be properly classified as an equity long/short fund.

Jones operated in relative obscurity until an article was published in *Fortune* magazine that spotlighted the Jones Hedge Fund.[2] The interest in Jones' product was large, and within two years a survey conducted by the SEC established that the number of hedge funds had grown from one to 140.

Unfortunately, many hedge funds were liquidated during the bear market of the early 1970s, and the industry did not regain any interest until the end of the 1980s. The appeal of hedge funds increased tremendously in the 1990s. By 1998, the President's Working Group on Financial Markets estimated that there were up to 3,500 hedge funds with $300 billion in capital and up to $1 trillion in total assets.[3] Compare this size to mutual funds, where the amount of total assets was $5 trillion in 1998.

Therefore, the hedge fund industry is about 20% of the size of the mutual fund industry. Still the interest in hedge funds is growing. And despite the start of the Jones Hedge Fund five decades ago, the industry is still relatively new. Another estimate of the hedge fund industry is that it has grown from $50 billion in capital in 1990 to $362 billion in 1999. However, the hedge fund market is highly fragmented, with less than 20 funds managing $3 billion or more.[4] The fragmented nature of the hedge fund industry is indicative of its nascent beginning.

Long Term Capital Management

The hedge fund market hit another speedbump in 1998 when Long Term Capital Management (LTCM) of Greenwich, Connecticut had to be rescued by a consortium of banks and brokerage firms. At the time LTCM was considered to be one of the largest and best of the hedge fund managers.

LTCM was founded in 1994 by several executives from Salomon Brothers Inc. as well as well-known academics in the field of finance. The reputation of the founding principals of LTCM were such that the fund enjoyed instant prestige within the hedge fund community.

LTCM implemented a variety of strategies best known as "relative value" trades. It earned returns, net of fees of approximately 40% in 1995 and 1996, and about 20% in 1997.[5] At the end of 1997, LTCM returned $2.7 billion to its investors, but did not noticeably reduce its investment positions. In 1998, its capital base was $4.8 billion.

---

[2] See Carol Loomis, "The Jones Nobody Keeps Up With," *Fortune*, April 1966, pp. 237–247.

[3] See The President's Working Group on Financial Markets, "Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management," April 1999.

[4] See Chip Cummins, "Hedge Funds Not Worried About Pending U.S. Regulations," *Dow Jones International News* (March 28, 2000); and *The New York Times*, "Hedge Fund Industry Creates a Dinosaur: The Macro Manager," May 6, 2000, Section B.

[5] The President's Working Group on Financial Markets, p. 16.

On August 31, 1998, LTCM's balance sheet showed $125 billion in assets with a capital base of $4.8 billion. This was a greater than 25 to 1 leverage ratio. In addition, the fund had over 60,000 trades on its books. The gross notional amount of the fund's futures contracts totaled $500 billion, the notional amount of its swap positions totaled $750 billion, and its options and other over-the-counter derivative positions totaled $150 billion.[6] The leverage ratio implied by these derivative positions was a whopping 291.67 to 1.

Unfortunately, all parties come to an end, and LTCM's positions began to unravel as a result of the Russian bond crisis. In August 1998, the Russian government defaulted on the payment of its outstanding bonds. This caused a worldwide liquidity crisis with credit spreads expanding rapidly around the globe. The Federal Reserve Bank stepped in and acted quickly with three rate reductions within six months, but this was not enough to salvage LTCM.

With spreads widening, instead of contracting as LTCM's pricing models had predicted, LTCM quickly accumulated paper losses. The lost value of their paper positions led to margin calls from several of LTCM's prime brokers. LTCM was forced to liquidate some of its positions in illiquid markets that were temporarily out of balance. This caused more losses, which led to more margin calls, and LTCM's financial positions began to spiral downward.

The situation for LTCM was bleak, and large financial institutions feared that if LTCM were forced to liquidate the majority of its portfolio there would be a negative impact in the financial markets. Finally, on September 23, at the neutral site of the Federal Reserve Bank of New York, 14 banks and brokerage firms met and agreed to provide a capital infusion of $3.6 billion to LTCM. In return the consortium of banks and brokerage firms received 90% ownership of LTCM.

While the cause of LTCM's demise was clear, the real question is how did LTCM achieve such a huge amount of credit such that it could leverage its cash positions at a 25 to 1 ratio, and its derivative positions at almost a 300 to 1 ratio? It was simple: LTCM did not reveal its full trading positions to any of its counterparties. Each counterparty was kept in the dark about the size of LTCM's total credit exposure with all other counterparties. As a result, LTCM was able to amass a huge amount of credit and nearly send a shock wave of epic proportions through the financial markets.

In the next section we review the relative value strategy of LTCM as well as other primary hedge fund strategies.

HEDGE FUND STRATEGIES

In Chapter 1 we indicated that hedge funds invest in the same equity and fixed income securities as traditional long-only managers. Therefore, it is not the alternative "assets" in which hedge funds invest that differentiates them from long-only managers, but rather, it is the alternative investment strategies that they pursue.

---

[6] *Id*. at p. 17.

In this section we review several alternative strategies that hedge funds apply. In general, some hedge funds have considerable exposure to the financial markets. This would be the *long/short*, *global macro hedge fund or short selling players*. Other hedge funds take little market exposure, but use leverage to magnify the size of their bets. These are the *arbitrage hedge funds*. Last there are hedge fund strategies that take little credit or market risk. These are the *market neutral* and *market timing strategies*.

Equity Long/Short

Equity long/short managers build their portfolios by combining a core group of long stock positions with short sales of stock or stock index options/futures. Their net market exposure of long positions minus short positions tends to have a positive bias. That is, equity long/short managers tend to be long market exposure. The length of their exposure depends on current market conditions. For instance, during the great stock market surge of 1996–1999, these managers tended to be mostly long their equity exposure. However, as the stock market turned into a bear market in 2000, these managers decreased their market exposure as they sold more stock short or sold stock index options and futures.

For example, consider a hedge fund manager in 2000 who had a 100% long exposure to tobacco industry stocks and had a 20% short exposure to semiconductor stocks. The beta of the S&P Tobacco index is 0.5, and for the Semi-Conductor index it is 1.5. The weighted average beta of the portfolio is:

$$[1.0 \times 0.5] + [-0.20 \times 1.5] = 0.20$$

Beta is a well-known measure of market exposure (or systematic risk). A portfolio with a beta of 1.0 is considered to have the same stock market exposure or risk as a broad-based stock index such as the S&P 500.

According to the Capital Asset Pricing Model, the hedge fund manager has a conservative portfolio. The expected return of this portfolio according the model is:[7]

$$6\% + 0.20 \times (-9.5\% - 6\%) = 2.9\%$$

However, in 2000, the total return on the S&P Tobacco Index was 98% while for the Semi-conductor Index it was –31%. This "conservative" hedge fund portfolio would have earned the following return in 2000:

$$[1.0 \times 98\%] + [-0.20 \times -31\%] = 104.20\%$$

This is a much higher return than that predicted by the Capital Asset Pricing Model.

---

[7] The Capital Asset Pricing Model is expressed as:

E(Return on Portfolio) = Risk-free rate + Beta × (Return on the Market – Risk-free rate)

In 2000, the return on the market, represented by the S&P 500 was –9.5%, while the risk-free rate was about 6%.

This example serves to highlight two points. First, the ability to go both long and short in the market is a powerful tool for earning excess returns. The ability to fully implement a strategy not only about stocks and sectors that are expected to increase in value but also stocks and sectors that are expected to decrease in value allows the hedge fund manager to maximize the value of his market insights.

Second, the long/short nature of the portfolio can be misleading with respect to the risk exposure. This manager is 80% net long. Additionally, the beta of the combined portfolio is only 0.20. From this an investor might conclude that the hedge fund manager is pursuing a low risk strategy. However, this is not true. What the hedge fund manager has done is to make two explicit bets: that tobacco stocks will appreciate in value and that semi-conductor stocks will decline in value.

The Capital Asset Pricing Model assumes that investors hold a well-diversified portfolio. That is not the case with this hedge fund manager. Most hedge fund managers build concentrated rather than highly diversified portfolios. Consequently, traditional models (such as the Capital Asset Pricing Model) and associated risk measures (such as beta) may not apply to hedge fund managers.

Equity long/short hedge funds essentially come in two flavors: fundamental or quantitative. *Fundamental long/short hedge funds* conduct traditional economic analysis on a company's business prospects compared to its competitors and the current economic environment. These managers will visit with corporate management, talk with Wall Street analysts, contact customers and competitors, and essentially conduct bottom-up analysis. The difference between these hedge funds and long-only managers is that they will short the stocks that they consider to be poor performers and buy those stocks that are expected to outperform the market. In addition, they may leverage their long and short positions.

Fundamental long/short equity hedge funds tend to invest in one economic sector or market segment. For instance, they may specialize in buying and selling internet companies (sector focus) or buying and selling small market capitalization companies (segment focus).

In contrast, *quantitative equity long/short hedge fund managers* tend not to be sector or segment specialists. In fact, it is quite the reverse. Quantitative hedge fund managers like to cast as broad a net as possible in their analysis.

These managers use mathematical analysis to review past company performance in light of several quantitative factors. For instance, these managers may build regression models to determine the impact of market price to book value (price/book ratio) on companies across the universe of stocks as well as different market segments or economic sectors. Or, they may analyze changes in dividend yields on stock price performance.

Typically, these managers build multifactor models, both linear and quadratic, and then test these models on historical stock price performance. Backtesting involves applying the quantitative model on prior stock price performance to see if there is any predictive power in determining whether the stock of a particular company will rise or fall. If the model proves successful using historical data, the hedge fund manager will then conduct an "out of sample" test of the model.

This involves testing the model on a subset of historical data that was not included in the model building phase.

If a hedge fund manager identifies a successful quantitative strategy, it will apply its model mechanically. Buy and sell orders will be generated by the model and submitted to the order desk. In practice, the hedge fund manager will put limits on its model such as the maximum short exposure allowed or the maximum amount of capital that may be committed to any one stock position. In addition, quantitative hedge fund managers usually build in some qualitative oversight to ensure that the model is operating consistently.

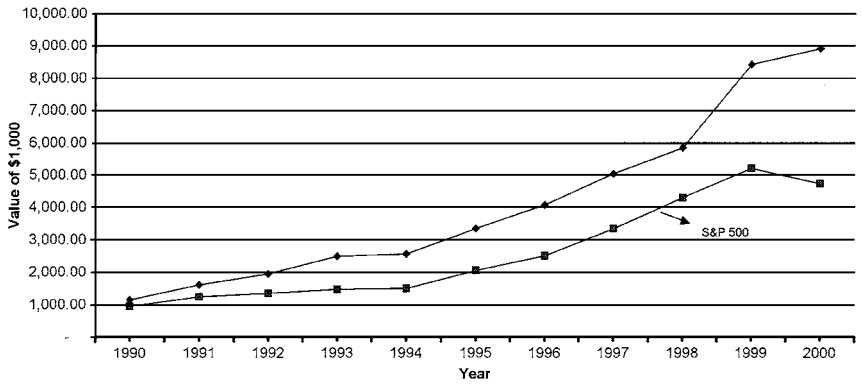
In Exhibit 1, a graph of a hypothetical investment of $1,000 in an Equity Long/Short fund of funds compared to the S&P 500 is provided. In this chapter, we use data from Hedge Fund Research, Inc. (HFRI), a database of about 1,100 hedge funds.[8] The time period is 1990 through 2000. As can be seen, the returns to this strategy were quite favorable compared to the stock market.

Global Macro

As their name implies, global macro hedge funds take a macroeconomic approach on a global basis in their investment strategy. These are top-down managers who invest opportunistically across financial markets, currencies, national borders, and commodities. They take large positions depending upon the hedge fund manager's forecast of changes in interest rates, currency movements, monetary policies, and macroeconomic indicators.

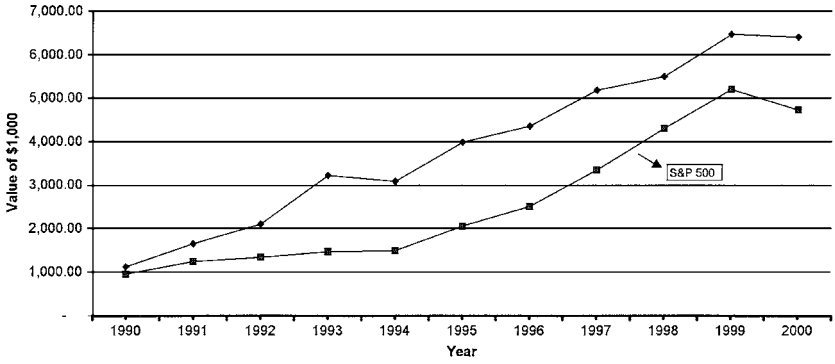
Global macro managers have the broadest investment universe. They are not limited by market segment or industry sector, nor by geographic region, financial market, or currency. Additionally, global macro may invest in commodities. In fact, a fund of global macro hedge funds offers the greatest diversification of investment strategies.

Exhibit 1: HFRI Equity Long/Short Index



[8] More information on the HFRI database may be found at www.hfr.com.

Exhibit 2: HFRI Global Macro Index



Global macro funds tend to have large amounts of investor capital. This is necessary to execute their macroeconomic strategies. In addition, they may apply leverage to increase the size of their macro bets. As a result, global macro hedge funds tend to receive the greatest attention and publicity in the financial markets.

The best known of these hedge funds was the Quantum Hedge Fund managed by George Soros. It is well documented that this fund made significant gains in 1992 by betting that the British pound would devalue (which it did). This fund was also accused of contributing to the "Asian Contagion" in the fall of 1997 when the government of Thailand devalued its currency, the baht, triggering a domino effect in currency movements throughout southeast Asia.

In recent times, however, global macro funds have fallen on hard times.[9] One reason is that many global macro funds were hurt by the Russian bond default in August 1998 and the bursting of the technology bubble in March 2000. These two events caused large losses for the global macro funds.

A second reason, as indicated above, is that global macro hedge funds had the broadest investment mandate of any hedge fund strategy. The ability to invest widely across currencies, financial markets, geographic borders, and commodities is a two-edged sword. On the one hand, it allows global macro funds the widest universe in which to implement their strategies. On the other hand, it lacks focus. As more institutional investors have moved into the hedge fund marketplace, they have demanded greater investment focus as opposed to free investment reign.

Exhibit 2 provides a comparison of global macro hedge funds to the S&P 500 over the period 1990–2000. During this time period global macro hedge funds earned favorable returns.

Short Selling

Short selling hedge funds have the opposite exposure of traditional long-only managers. In that sense, their return distribution should be the mirror image of

[9] See The *New York Times* (May 6, 2000).