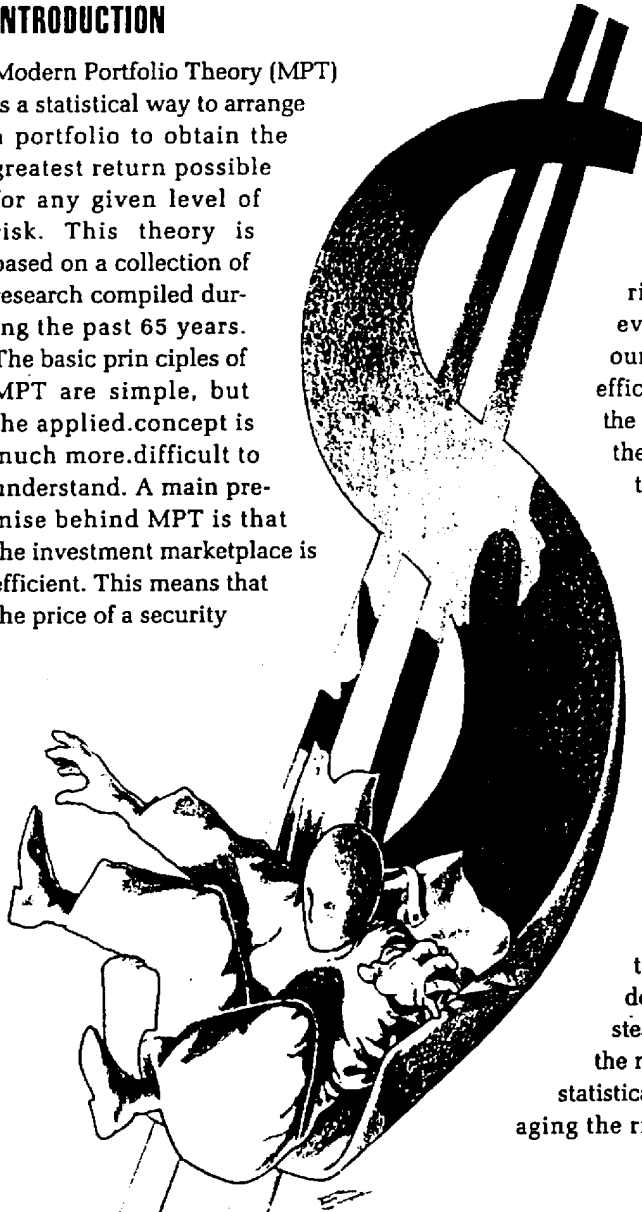# Investing in the '90s: More Gain, Less Pain!

When three economists won the Nobel Prize in 1990 for an investment theory, the shock waves were felt in all the full-service brokerage firms across the country. The Nobel Prize-winning Modern Portfolio Theory has changed the way people think about, and pay for, investment services. This article will detail the theory and illustrate how to design your portfolio using Modern Portfolio Theory.

INTRODUCTION

Modern Portfolio Theory (MPT) is a statistical way to arrange a portfolio to obtain the greatest return possible for any given level of risk. This theory is based on a collection of research compiled during the past 65 years. The basic prin ciples of MPT are simple, but the applied.concept is much more.difficult to understand. A main premise behind MPT is that the investment marketplace is efficient. This means that the price of a security represents the perceived value of that security, based on all known information. Therefore, it is not possible to beat the market's return over long periods of time. However, whether or not our markets are 100% efficient does not affect the validity of MPT. It is the most effective way to manage the risks involved with investing. If you don't subscribe to the notion that our markets are even partially efficient, then your investment philosophy is that you can actively beat the market, *taking the same level of risk*, over the long run. This doesn't happen, so instead of trying to beat the market, MPT takes a statistical approach to managing the risks of the market.

ASSET ALLOCATION

Asset allocation has become a catch phrase, but it is nothing more than a modern approach to diversification. We've all heard the adage: "Don't put all your eggs in one basket." Asset allocation says: "Don't put all your eggs in baskets of a similar type." In the past, diversification has been concerned with the eggs. Asset allocation is concerned with the baskets. These baskets are "asset classes."

True Asset Classes

An asset class is a group of investments that share certain similarities. In the broadest form, stocks, bonds, cash, and real estate would all be considered asset classes. In a more precise form, small capitalization-value stocks, large capitalization-growth stocks, short-term bonds, and European value stocks are examples.

FINANCE

History has shown that, over time, securities in the same asset class tend to have fairly similar results. Obviously, the more precise the asset class definition, the closer the individual security's return will equal the return of the asset class as a whole. We once believed that buying 10 different stocks was all that was required for diversification. It did help diversify the fluctuation of the portfolio from the risks of a single company, but not from the risks of the asset class of stocks as a whole. As will become evident later, it is the risk of the asset class with which we are most concerned.

ILLUSTRATION: BRIAN HEADY

US stocks tend to move somewhat in tandem, as does the US bond market. Asset allocation promotes diversification among asset classes, not just individual securities. Ideally, the various asset classes would have as little in common as possible.

The best asset classes for one's portfolio are those with the highest historical total returns. The problem is that, normally, the higher the historical return, the greater the volatility or risk. (Volatility in this article is measured by standard deviation around the historical mean rate of return of an asset.) Whereas most people are under the impression that volatility is bad, the volatility of an asset is the reason that the asset might provide a higher return (the concept of "nothing ventured, nothing gained"). The reward for accepting the short-term risk of volatility is the possibility of a greater return realized over the long term.

In a perfect world, there would be two asset classes, and each would have long-term high total returns but opposite correlations so as to balance each other at any given point. (Correlation coefficient is the measurement of how one asset reacts in relation to another. The higher the correlation, the closer two assets come toward mirroring each other.) Figure 1 is an example of two assets with opposite correlations. (This is often referred to as "dissimilar price movements.") When the price of asset A is going down, the price of asset B is going up. The combined effect is a portfolio with a "risk-free" total return. But we do not live in a perfect world, *so the goal is to find the best performing asset classes that have the lowest correlation possible.* Put another way, we should look for two asset classes that have dissimilar price movements. The lower the correlation of the asset classes, the greater the minimizing of the effect the volatility of an individual asset class has on the portfolio as a whole. As an example, foreign stocks, bonds, and cash equivalents tend to have low correlations with US stocks, bonds, and cash equivalents. (Foreign securities
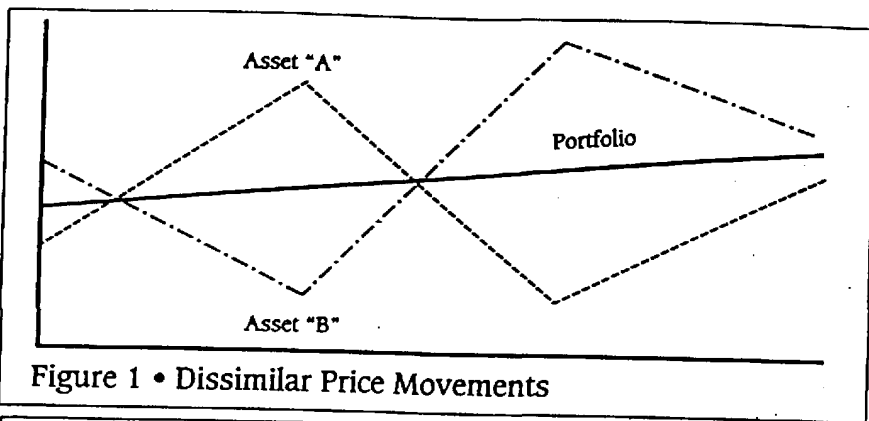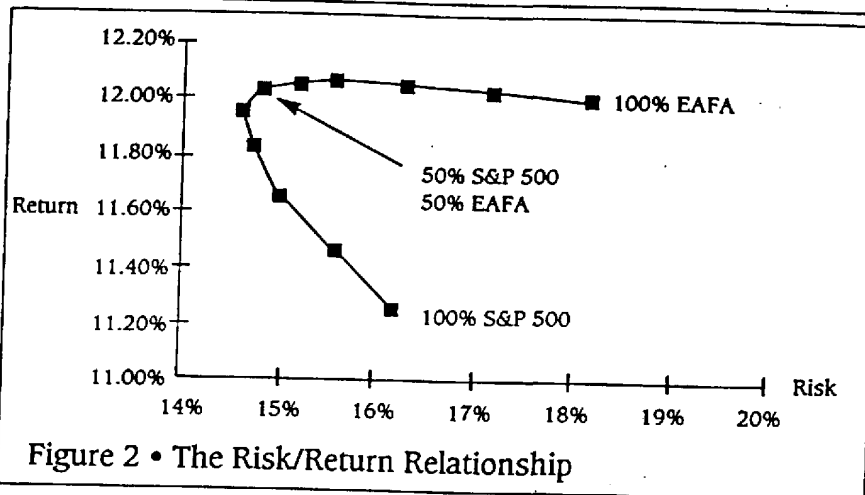

Figure 1 • Dissimilar Price Movements

Figure 2 • The Risk/Return Relationship

involve additional risks, including foreign currency changes, political risks, foreign taxes, and different methods of accounting and financial reporting.)

The reasoning is simple. An event that causes our stock market to react negatively may cause a positive reaction in another country. Figure 2 shows the risk/return relationship of portfolios composed of different allocations among domestic stocks, represented by the Standard & Poor 500, and international stocks, represented by the EAFE index (an index of stocks from Europe, Australia, and the Far East.) The chart illustrates that for the 20-year period ended December 31, 1993, investors achieved a higher rate of return with less volatility by owning foreign stocks in addition to US stocks. (*Note:* Past performance is no guarantee of future results. Foreign investing involves additional risks. Data represent monthly annualized returns.) Because of the low

correlations between domestic and international stocks, combining the two asset classes decreases the risk of the individual asset class. Figure 2 shows that the most efficient allocation on a risk/return basis would have been 50% US stocks and 50% international stocks.

Stock Asset Classes
There are four main sub-asset classes of stocks that should be used in a portfolio. (The reasoning behind the following asset classes is fairly technical, and a full explanation of why these are the asset classes to use is beyond the scope of this article.)

Capitalization of a company is measured by the total number of stocks of the company multiplied by the price of the stock. *Small capitalization* (small-cap) stocks belong to an asset class that merits consideration. Although, historically, small-cap stocks are more volatile (risky in the short term) than *large capital-*

ization (large-cap) stocks, they have historically greater returns than large-cap stocks. Both large- and small-cap stocks have relatively low correlations with each other, and both should be in a portfolio, with the risk level determining the allocation between the two.

Another sub-asset class of stocks is value/growth. Value/growth is a measure of a company's stock price in relation to its book value. A *value stock* is one in which the price of the stock is low in relation to its company's book value relative to other companies in the market. The opposite of a value stock is a *growth stock*, which has a high price relative to its book value. Historically, value stocks have performed better over the long term than growth stocks. They are generally riskier in the short term because there is a real or perceived problem with the company, which is why it is priced low and considered to be a value stock.

The capitalization and value/growth aspects of a stock define the four asset classes to consider when developing the equity portion of a portfolio: (1) large cap-value, (2) small cap-value, (3) large cap-growth, and (4) small cap-growth. These four sub-asset classes have the lowest correlations with one another in the larger equity asset class.

Bond Asset Classes

The bond asset classes are much easier to define. The maturity of a bond is the most important factor. Although in some periods of the business cycle bonds of different maturities have low correlations, generally this is not the case. With bonds, it's simple: The shorter the maturity, the less the volatility. Break the bond asset class into smaller asset classes using maturity, and the classes become: (1) short-term bonds, (2) intermediate-term bonds, and (3) long-term bonds. I have simplified this because credit ratings are also a factor affecting return and volatility of a bond.

The point to remember about bonds is that they are being added to a portfolio to decrease risk. They are the stable part

of the portfolio. Keeping this in mind, use only high-quality bonds (government, or AA or AAA rated by Moody's or Standard & Poor's) with maturities between 2 and 6 years. If you want to increase the potential return in your portfolio, do not increase the risk of your bonds, decrease the percentage of bonds in the portfolio.

Other Asset Classes

Some other asset classes that should be considered are: precious metals, real estate, venture capital, and equipment leasing. The options are almost limitless, so the key is to not get too many asset classes. Use regions of the world as larger asset classes (eg, Europe, South America, the US, Australia, and the Far East). Each region contains all four of the stock sub-asset classes in addition to all other asset classes. *The key is to find the highest potential returns with the lowest correlations.*

DETERMINANTS OF PERFORMANCE

The most important determinant of a portfolio's performance is the asset class selection. Security selection (the picking of individual stocks and bonds) accounts for only 4% of a portfolio's performance. Market timing (when to buy into and sell out of a security) accounts for 2%. Asset class selection (which asset classes and the percent of money allocated to each) accounts for 94%, making this the most important factor in building a portfolio.[1]

Owning an Asset Class

To be properly diversified within an asset class, you need to own a minimum of 20 securities that fall within the parameters of the asset class. In addition, those 20 securities need to be representative of the entire asset class. The most efficient and cost-effective way to do this is through a mutual fund. All mutual funds have their objectives and investment philosophies defined. There are many mutual funds available that have investment philosophies

that equal the asset classes identified. Many mutual funds give you access to experienced money managers for a low cost. There are few other financial vehicles that can give the small investor (under $1,000,000) better service. When picking a mutual fund, the first decision should be to use *only true no-loads*. (A true no-load mutual fund is one that does not charge a commission to buy or sell the fund and does not pay any fees to outside salespeople.)

If you need help in determining which mutual funds to buy and the proper asset allocation, you should seek an advisor who works for a management fee, not for a commission. Fee-based money managers are required to have different licenses than a commissioned individual (eg, they must be registered investment advisors with the Securities and Exchange Commission), and they are required to provide additional services not required of commission brokers. However, the most important reason to use a fee-based money manager is to eliminate potential conflict of interest. You want to pay an individual to manage your money, not to sell you a product.

MODERN PORTFOLIO THEORY

Modern Portfolio Theory was developed in 1952 at the University of Chicago in Illinois by Harry Markowitz. Major institutions have been investing using this theory since the 1970s. Markowitz and two other economists won the Nobel Prize in economics in 1990 for this investment methodology. As you examine this process, you can readily see the common sense of this approach.

The basic concepts have already been discussed in this article. The main principle is that by using asset classes with low correlations, it is possible to create a portfolio with an optimal return for any given level of risk. The concept employs the theory that the risk of a portfolio, as measured by volatility, does not depend on the risk of each individual investment, but on how all

investments in the portfolio behave together. It is therefore possible to add an asset class that on its own is more volatile than the portfolio as a whole, if the correlation to the rest of the portfolio is low. When that asset class is added to the portfolio, the overall volatility of the portfolio will actually decrease by diversifying the portfolio—and increase the potential return.

Optimal Portfolio

By combining all the concepts discussed, it becomes possible to create an "optimal portfolio." MPT holds that for any given group of asset classes, there is an optimal allocation among the asset classes that will yield the highest return for any given level of risk. The range of optimal portfolios is called the "efficient frontier," and it is derived by a complex mathematical process of evaluating each asset's correlation with every other asset's correlation to determine the optimal allocation of all the asset classes. Once the efficient frontier has been determined for the asset classes being evaluated, then the decision of which optimal portfolio to choose becomes a question of your risk tolerance. This is called strategic asset money management.

Designing a Portfolio

Strategic asset money management is more than a logical process of designing an optimal portfolio; it involves some difficult decisions and discipline. This is a long-term approach to reaching your financial independence.

Whether you are investing on your own or using an advisor, the first step of any investment plan is to establish an *investment policy statement*, that is, what you want and the level of risk you will tolerate to obtain it. This process defines your financial goals and objectives, analyzes your current portfolio, and recommends strategies to reach these goals. *You need to decide where you want to go and how fast you want to risk getting there before you pick a mode of transportation.* An investment policy statement is crucial to estab-

lishing an optimal portfolio for you. It can be the key to your road map to financial independence.

Next, you need to determine what asset classes you want to use and how much money to allocate to each asset class. This is simply a matter of your risk tolerance. Keep in mind there is no magic formula; the more risk you are willing to take, the higher your potential return. Keep it simple: eight to 15 asset classes should be plenty. The key is to use asset classes that have low correlations with high long-term gains history. International assets should be a part of every portfolio except for the most conservative investors.

Be sure your chosen portfolio is on the efficient frontier, which ensures that you are optimizing your risk/reward relationship. Referring back to Figure 2, a 10% US stock and 90% international stock portfolio is not efficient. Adding more US stocks would decrease the risk and increase the return. This is what is meant by an efficient portfolio.

When determining your time horizon (how long you are investing the money), think in terms of when you will no longer need the money, not when you will start to need the money (eg. when retirement ends, not when it begins). This relates back to your investment policy statement. Most 45-year-olds who plan to retire at age 65 believe their time horizon is 20 years. In reality, it is closer to 40 years, based on actuarial tables. Volatility decreases over time; therefore, a 40-year time horizon allows for a greater short-term risk level than a 20-year time horizon.

Read the mutual fund's prospectus to determine the fund's objectives. If you are going to use actively managed funds, use only the top mutual funds for an asset class. In a long-term investment approach, asset class funds are an excellent option. (Asset class funds are similar to index funds in that they define a group of securities and buy that entire group or asset class. Trading cost and management fees tend to be much lower with this type of fund. Also,

turnover is substantially less, allowing for a higher potential *after-tax* gain.)

If you want or need professional advice, use only a registered investment advisor who is working on a fee basis. Don't pay someone a commission to sell you products—pay someone a fee to help you manage your money. A registered investment advisor can help design your investment policy statement, set up an account, and make your asset allocation recommendations. In addition, he or she can recommend the appropriate mutual funds and make the transactions on your behalf. Most fee-based money managers provide other services, such as performance reporting, constant monitoring, and reallocation. Fees and services vary among advisors.

The most important aspect of investing for your future is staying with your portfolio once it is established. If market conditions make you uncomfortable, you need to rethink your investment policy statement. Strategic asset money management is a logical process of providing the greatest possible return for the level of risk you are willing to assume. Be honest with yourself. This is a sleep-easy investment plan. In its goal to provide a higher return while reducing risk, it's a timely rehabilitation for your portfolio.

Scott A Leonard is a certified financial planner (CFP) and registered as an investment advisor. Mr Leonard is well versed in the principles of the Nobel Prize-winning Modern Portfolio Theory of Asset Allocation and speaks regularly about this and other financial topics. He graduated from UCLA with a degree in economics. You may contact Scott Leonard at 1-800/366-7266.

REFERENCE

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