

Measuring Risk And Managing Client Expectations

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I. Understanding Risk

Defined as the *measurable* possibility of suffering adverse consequences, risk is differentiated from uncertainty which cannot be quantified.

In 1927, Werner Heisenberg formulated the Uncertainty Principle which hypothesized that the act of measurement is, in and of itself, imprecise. He argued that an observer becomes a part of his observed reality through his act of measurement. As a quantum physicist, Heisenberg even doubted the existence of the moon which he claimed existed only because someone saw it. This, then, begs the age-old question of whether a falling tree makes a noise if nobody is in the woods to hear it. Isaac Newton, on the other hand, argued that reality exists independently of observation.



Cartoon by John Richardson
for *Physics World*, March 1998

But I digress...

Risk is indeed measurable, but is not always combatable. In hopes of insulating oneself against risk, insurance can be purchased to mitigate exposure, although the cost of indemnification may be prohibitive.

In the case of the financial world, risk can be defined as the chance that an investment's actual return will be different than anticipated and the possibility of losing some or all of the original investment exists.

There are many types of risk, but most can be categorized as either systematic or non-systematic risk.

A. Two Types of Risk

1. Often referred to as “pure risk”, systematic risk is unavoidable and is caused by fortuitous events over which control cannot be exercised. Pure risk offers only the possibility of loss due to an unforeseen event or no loss, if the calamity does not occur. In this either/or situation, the investor cannot look forward to reaping any gains.

For example, residents of Southern California are exposed daily to seismic risk. If the “big one” hits, homeowners will suffer adverse consequences due to damage or demolition of their property. On the other hand, they have nothing to gain if the quake does not occur. Residents will either lose everything or nothing.

Extrapolating to the world of finance, investors are often at the mercy of events over which they have no control but which can affect the prices of virtually all securities. Hence, systematic risk is also known as market risk, as it typically affects all securities and the entire market.

Systematic risk can never be eliminated entirely but can be managed and *minimized* through portfolio diversification.

Examples of systematic risk include:

- Market risk
- Legislative risk
- Political risk
- Global risk
- Currency risk
- Inflationary risk
- Interest rate risk

2. Non-systematic risk, on the other hand, is specific to a particular industry or enterprise and is, therefore, often known as business risk.

This type of risk is not an all-or-none proposition, but instead leads to a reduced potential gain or an increased possibility of loss. Thus, portfolio diversification can actually be used successfully to combat non-systematic risk. By not putting all of the proverbial eggs into one basket, the investor can offset losses incurred on one investment with gains achieved in another.

Examples of non-systematic risk include:

- Business risk
- Underwriting risk
- Financial or credit risk
- Loss of principal
- Liquidity

- Pre-payment or re-investment risk
- Actuarial risk

B. Specific Risks Identified

1. Market Risk

Individual security prices are affected by broad-sweeping occurrences in the market which affect all prices universally.

Despite inherently sound fundamentals, Home Depot's (HD) stock price dropped precipitously by 22.5% from \$20/share to \$15.50 on October 19th, 1987 (Crash Monday)!

2. Legislative Risk

Due to the enactment of unfavorable laws, stock prices are often negatively impacted.

With a shift in judicial and legislative focus, the federal government has successfully curtailed the business activities of the tobacco industry. Embroiled in litigation which culminated with the eventual passage of the Tobacco Settlement Agreement in 1998, Philip Morris (MO) saw its stock price deteriorate from a split-adjusted price of about \$48/share to roughly \$16/share in early 2000.



3. Political Risk

A sudden, often unanticipated shift in governmental policies may have marked detrimental affects on stock prices.

The Nigerian National Petroleum Corporation (NNPC) was formed in 1977 as a wholly-owned subsidiary of the Nigerian government and is responsible for all developmental projects, as well as regulating and supervising the oil industry. By law, the NNPC is required to be the majority shareholder in all joint ventures with such companies as Shell, Mobil, Chevron and Texaco, thereby exercising controlling influence upon all operations and exposing them to governmental capriciousness.

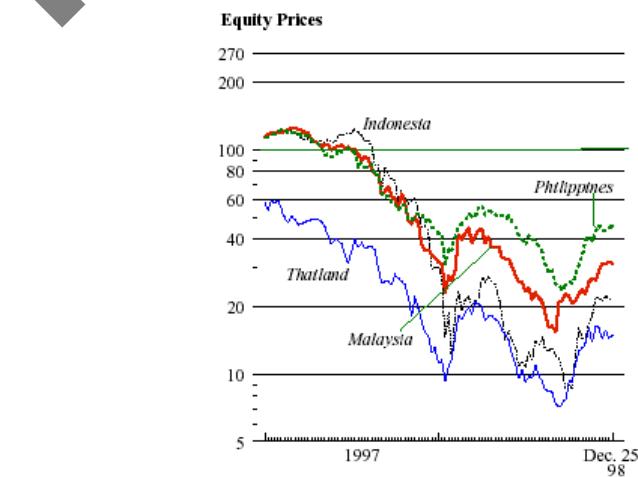
War almost always has an affect on all financial markets. Marked by a period of uncertainty prior to the start of aggressions, markets typically stagnate or even falter, but recover once hostilities begin. On March 17th, 2003 the Dow Jones Industrial Index (DJIA) rose an impressive 241 points with the start of Gulf War II.



4. Global Risk

With an increasingly interdependent global economy, U.S. stocks are often adversely affected by world events.

The Asian crisis was initially attributable to poor investments of foreign capital in marginal industries and a lack of governmental controls in Thailand, but quickly spread throughout the region. Political instability in Indonesia, a weakening economy in Japan and finally the 95% devaluation of the Korean Won led to a crisis of confidence which contagiously spread across the Pacific, leading to a 13% drop of the Dow from July to October 1997.



5. Currency Risk

As money circulating in one country is devalued relative to other mediums of exchange, dire economic consequences often ensue.

Hoping to revive its faltering economy, the Russian government implemented a drastic devaluation of its ruble on August 17th, 1998. The U.S. was heavily dependent upon Russia which had historically absorbed 6% of total U.S. poultry exports. With the ruble now worth one-third less, Russians could no longer afford to buy American poultry. This, in turn, initiated a prolonged decline of Tyson Foods (TSN) which saw its stock price slide from about \$24/share in late 1998 to only \$9/share in early 2000.



6. Inflationary Risk

As the value of the dollar declines over time, consumers are able to buy fewer goods.

The Consumer Price Index (CPI)—also known as the Cost-of-Living Index—is published monthly by the U.S. Bureau of Labor Statistics and measures price changes of a fixed basket of goods, including:

- FOOD AND BEVERAGES (breakfast cereal, milk, coffee, chicken, wine, full service meals and snacks)
- HOUSING (rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture)
- APPAREL (men's shirts and sweaters, women's dresses, jewelry)
- TRANSPORTATION (new vehicles, airline fares, gasoline, motor vehicle insurance)
- MEDICAL CARE (prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services)
- RECREATION (televisions, cable television, pets and pet products, sports equipment, admissions)
- EDUCATION AND COMMUNICATION (college tuition, postage, telephone services, computer software and accessories)

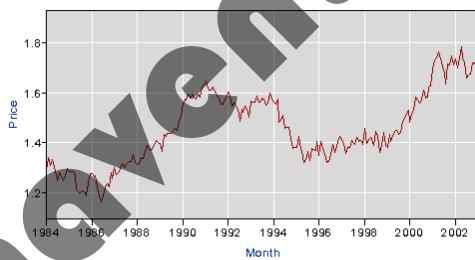
- OTHER GOODS AND SERVICES (tobacco and smoking products, haircuts and other personal services, funeral expenses)

Each month, the cost of these items is computed and then compared to the previous month's cost to determine if prices are trending upward or downward.

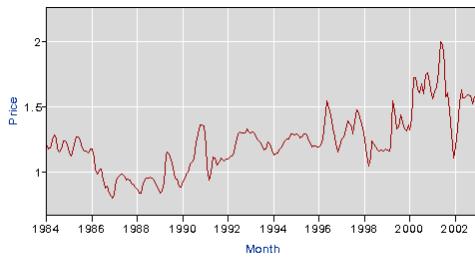
For example, the price of a loaf of white bread has risen steadily from \$0.54 in 1984 to \$1.04 in 2003—a 93% increase.



A pound of hamburger has gone from \$1.29 in 1984 to \$1.86 in 2003—a 44% increase.



And a gallon of unleaded regular gas in Los Angeles has followed a roller coaster ascent from \$1.22 in 1984 to \$2.13 in 2003—a 75% increase.



7. Interest Rate Risk

Changing interest rates will adversely affect the value of portfolio assets.

Since interest rates throughout the economy are necessarily interdependent, each rate is affected if Federal Reserve (FRB) Chairman Alan Greenspan proclaims a $\frac{1}{4}$ -point increase in the Discount Rate. Corresponding increases will be evidenced in the Fed Funds Rate, the Prime Rate, bank and mortgage rates, even credit card rates.

An investor holding a 30-year corporate bond with a once-attractive rate of 5% might now wish to replace his investment with a higher-yielding alternative. However, to sell his bond, he would have to attract buyers by lowering his price. Thus, there is an inverse relationship between bond prices and yields.



Once a bond is issued, the coupon (nominal yield) remains fixed for the duration and is thus, unresponsive to any interest rate changes that may otherwise occur in the economy. Since the yield cannot change, the bond price must fluctuate to make the bond more attractive and marketable.

LT prices fluctuate more than ST prices

The following table illustrates the effect of changing interest rates on bonds with maturities of 1, 10 and 30 years:

Rate Change	Price of 1-year Bond	Price of 10-year Bond	Price of 30-year Bond
If interest rates fall by 1%	\$1009.63 + 0.963%	\$1077.90 + 7.790%	\$1154.54 + 15.454%
If interest rates rise by 1%	\$990.50 - 0.950%	\$928.90 - 7.110%	\$875.30 - 12.470%

On the other hand, if a bond or Certificate of Deposit (CD) had a short-term maturity, the interest rate could be adjusted to reflect prevailing rates throughout the economy each time the instrument matured and the obligation was renewed. In that manner, the value of short-term securities is less adversely affected by interest rate movements.

ST rates fluctuate more than LT rates

Prevailing technical wisdom holds that stock and bond prices will fall following three increases in the Discount Rate by the FRB. Known as the Three-Steps-and-a-Stumble Rule, the phenomenon is the result of increased costs of borrowing for companies and the increased attractiveness of money market funds and CDs over stocks and bonds as a result of the higher interest rates.

The FRB raised the Discount Rate 0.50% on May 17th, 1994; another 0.50% on August 16th; and 0.75% on November 15th. The effect was a noticeable decline in the bond prices and the stagnation of the stock market indices.



8. Business Risk

Specific to a particular enterprise, this is the risk resulting from a variety of factors which could include:

- Poor management
- Labor unrest
- Competition
- Product obsolescence
- Litigation

For example, Styles on Video (SOV)—now defunct—banked entirely on its one product. Once an innovative idea, technology soon surpassed that which the company offered and anyone with access to a computer could visualize and select differing hairstyles without relying upon SOV's outmoded video camera installations in specialized salons. The stock price rose meteorically to more than \$18/share after it came to market in April 1993 at a split-adjusted price of \$4/share and quickly began its slide to unrecoverable depths by December 1994—it now "trades" at 1/100th of a cent!

9. Underwriting Risk

Investment bankers and syndicators assume the risk that a new issue of securities may not be bought by the public and/or that the market price will drop during the offering period.

Wired Ventures, Inc.—the publisher of the high-tech magazine *Wired*—turned to the prestigious underwriting firm of Goldman Sachs during the Initial Public Offering (IPO) heyday of 1996 in hopes of raising capital. The investment bankers twice availed themselves of the market-out clause, proclaiming "adverse market conditions" despite the fact that a record number of IPOs

(768!) successfully raised \$38.8 billion during the same period. In fact, the failure of the IPO had less to do with market conditions than with overvaluation of the stock (with a Price-to-Sales ratio of 18 compared to an industry average of 3 for publishing companies) and the selection of an underwriter who was not internet-savvy. In the end, the company was forced to seek out private financing before folding up shop.

10. Financial Risk

Also known as Credit Risk, it exposes an investor to the possibility of loss due to corporate bankruptcy and default.

Shares of American Airlines (AMR) rallied in April 2003 as the company dodged the bankruptcy bullet. Although union wage concessions may prove to be only a temporary staying measure, the stock price rallied from \$1.58/share to \$4.65 on the news.

11. Loss of Principal

Although a security could decline in value and even become worthless under certain circumstances, this risk is eliminated when choosing an investment that is backed by the Federal Deposit Insurance Corporation (FDIC) or another insurance company. Established in 1933, the FDIC guarantees deposits at member banks and thrift institutions against default up to \$100,000 per account.

Investors purchasing annuity contracts will receive the assurance that the investment cannot decline below the initial premium outlay.

12. Liquidity Risk

Defined as the ability to convert a security into cash quickly and without substantial price detriment, liquidity provides the investor with peace of mind in a financial crisis.

Money market funds, as well as checking and savings accounts allow for instant conversion to cash and in fact frequently provide the investor with immediate access via check-writing or ATM privileges. Many other short-term instruments are considered to be liquid, as the time-frame for conversion to cash is almost instantaneous and without penalty—these would include Series EE bonds and T-Bills. On the other hand, banks assess early withdrawal penalties on CDs.

13. Pre-payment or Re-investment Risk

One and the same, these risks do not allow an investor to capture equally favorable returns on new investments when forced to replace previously-held securities which have been redeemed prior to maturity.

Municipalities typically issue long-term debt obligations to fund their infrastructure. Forced to borrow at the prevailing interest

rates, the issuers must offer coupons which are competitive with other securities. During the Carter years, interest rates on high-grade municipal bonds (munis) soared to over 11%!

Afraid to be committed to these exorbitant rates, many issuers offered callable bonds which could be redeemed early at the discretion of the issuer. Although they often had to pay a premium to the investor, the issuers readily called their bonds once interest rates declined and it became favorable to float new bonds at lower rates.

Investors, however, soon suffered the consequences. At the mercy of issuers and unable to control the timing of the cash flow, investors would receive redemption proceeds and then be forced to seek out new investments which could never match the returns to which they had become accustomed.

14. Actuarial Risk

Insurance underwriters assume the risk of an unpredictable event in exchange for receipt of a premium.

Although death is of course predictable, the timing of its occurrence is not. In the case of life insurance, the company is gambling that the insured will live beyond his predicted life expectancy, thereby giving the insurer ample time to invest the policy premiums before making an eventual payout to the beneficiary. Occasionally they lose the bet when someone dies prematurely due to disease or accident.

An insurance company could in theory have profited handsomely, had they been willing to insure my grandparents who both died just short of 100. However, by the time my grandparents even considered purchasing policies, they were already of uninsurable age. Insurance policies are typically unavailable to seniors over the age of 80, as actuarial tables predict an imminent demise which would not allow the insurer adequate time to make policy premiums grow profitably.

II. Tools Used to Measure Risk

Investors have many tools at their disposal by which to quantify risk—some of the more common ones are described below:

1. Standard Deviation

“Suppose you measure the length of a book with a meter stick. It turns out to be 23.6 cm, or 23 centimeters and 6 millimeters. But since the meter stick measures only to a maximum precision of 1 mm, another measurement of the book might yield 23.7cm or 23.5 cm.

In fact, if you perform the measurement many times, you will get a ‘bell curve’ of measurements centered on an average value, say 23.6 cm.

The spread of the bell curve, or the ‘standard deviation’, will be about 1 mm on each side of the average. This means that the ‘uncertainty’ or the precision of the measurement is plus or minus 1 mm.” -David C. Cassidy, Hofstra University, and the Center for History of Physics of the American Institute of Physics.

Defined as the statistical measure of the degree to which a single value in a probability distribution might vary from the norm, investors can use standard deviation to project the possible range and probability of future occurrences.

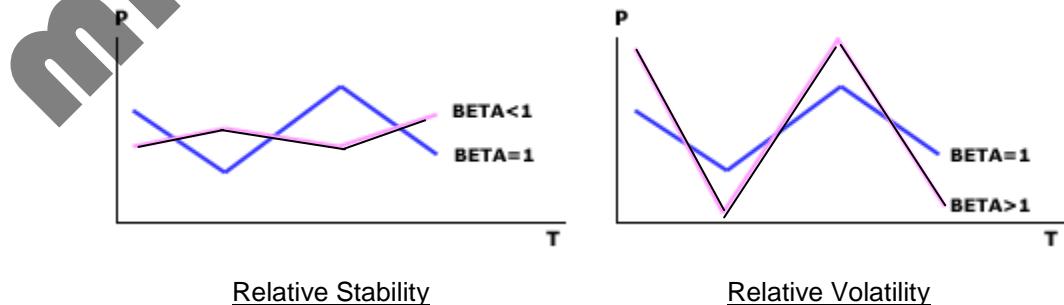
Of course, the caveat standard within the financial industry is religiously reiterated like a mantra, “Past performance is merely an indicator but not a guarantee of future performance.” Nevertheless, standard deviation is commonly used to identify risk. The theory holds that the greater the degree of dispersion, the greater the associated risk.

Investors may avail themselves of either:

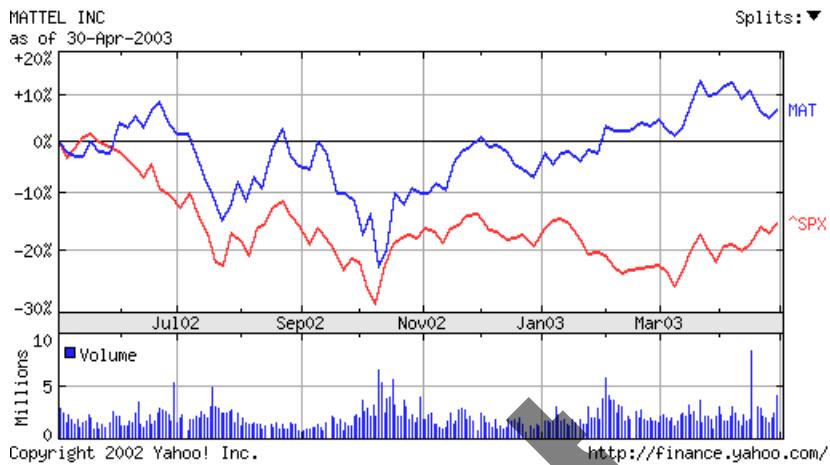
- Alpha (α) which measures business risk or
- Beta (β) which measures market risk and the volatility of a single stock against the market as a whole

Alpha measures the anticipated return on investment due to factors inherent to a specific company, such as the growth rate of corporate earnings. For example, an α of 1.30 indicates that the stock is expected to rise 30% in the coming year irrespective of market conditions.

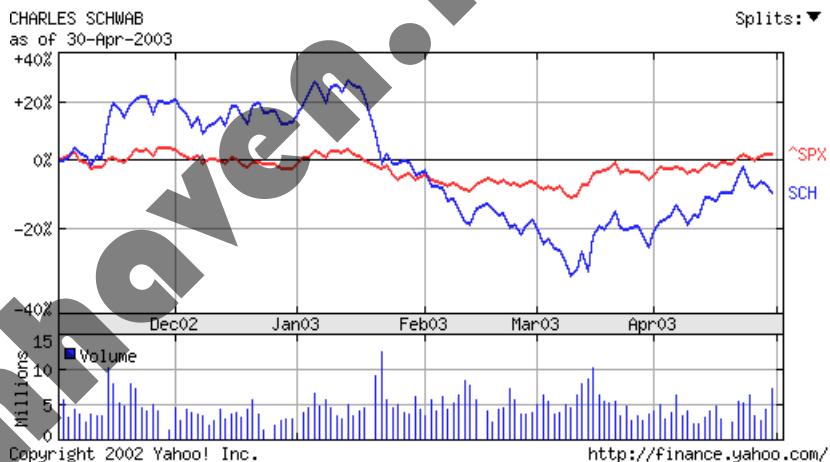
Beta, on the other hand, measures a particular stock’s volatility in relation to its environment. By definition, the Standard & Poor’s 500 Stock Index (S&P 500) is assigned a beta of one and is considered the standard by which all other securities are measured. Thus, when a stock is compared to the index, a β greater than 1.0 indicates moderate or high price volatility, while a β less than 1.0 indicates relative price stability.



Mattel (MAT), for instance, has a β of 0.12. Notice that although its price movement tended to parallel the index, it incurred a smaller percentage price change.



Schwab (SCH), however, with its β of 1.90 is clearly more volatile than the market—note the higher highs and lower lows.



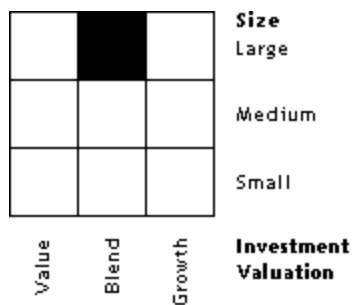
Typically high-beta stocks perform best in strong bull markets but worst in bear markets.

2. Morningstar Style Box

Morningstar, an independent ratings company, has designed a standardized system by which to compare equity mutual funds. The company has divided its box into nine segments in an attempt to categorize funds based on investment objective, as well as capitalization of the underlying portfolio of stocks. The categories are:

- Small Value
- Small Blend
- Small Growth

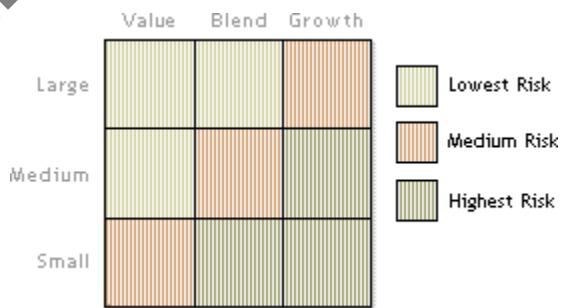
- Medium Value
- Medium Blend
- Medium Growth
- Large Value
- Large Growth
- Large Blend



Morningstar measures a fund's market capitalization (large, medium, and small) by studying the size of the companies that the fund is investing in. The top 5% of the 5,000 largest stocks are classified as large cap, the next 15% are considered medium cap and the remaining 80% are considered small cap. Market capitalization is equal to the number of shares outstanding multiplied by the current price of the stock.

Using the relative P/E (price to earnings) and relative P/B ratios (price/book) of the companies a fund invests in, Morningstar next analyzes the data to determine if the fund should be classified as value, growth, or blend (meaning a mixture of the two). If the underlying portfolio of stocks is considered to be relatively "cheap", the fund is classified as "value".

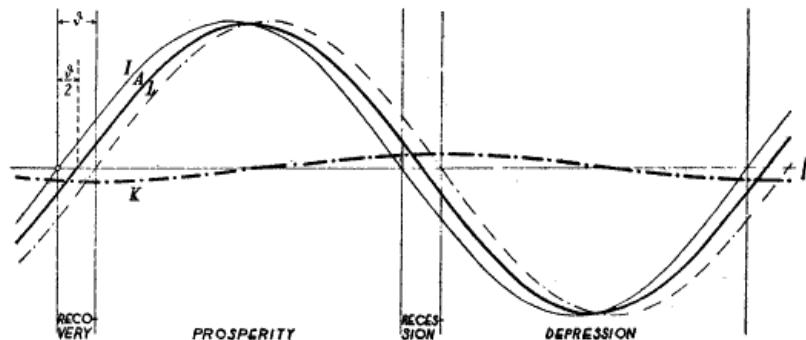
The style box can be used to assess a particular fund's performance relative to similarly categorized funds. But the box can also be used to identify risk patterns. Funds toward the upper left-hand corner tend to have the mildest risk scores while funds at the bottom right are the riskiest.



3. Economic Cycle

Economists subscribe to various schools of thought, including Keynesian, Monetarist, Supply-side and Laissez-faire economics.

Regardless, however, of their perspective, all economists agree that the economy is cyclical. Periods of prosperity are followed by periods of recession which are inevitably followed again by renewed periods of prosperity.



Comforted by the repetitive nature and regularity of the cycle, economists are concerned by the duration and severity of each phase.



In an attempt to chart the cycle, economists have designed a variety of statistical measures, including the leading, lagging and coincident indicators published monthly by the Conference Board:

- **Leading:** Production Workweek, Building Permits, Unemployment Insurance Claims, Manufacturer's Orders, Vendor Performance, Plant Contracts, Unfilled Orders, Inventory Changes, Consumer Expectations, Money Supply (M2) and Stock Prices
- **Lagging:** Labor Costs, Business Spending, Outstanding Bank Loans, Inventory Book Value, Unemployment Rate and Prime Rate
- **Coincident:** Non-farm Payroll Workers, Industrial Production, Manufacturing, Trade Sales and Personal Income

A tongue-in-cheek version was created by the PNC Financial Services Group in an effort to prove that statistics are only as good as the data measured. Known as the Christmas Price Index, it is published annually:

PITTSBURGH,
Dec. 3, 2002 –
The swans took a
swan dive in
PNC's calculation
of the cost of the
items offered in
The 12 Days of
Christmas, which
skewed the index
this year to -7.6%.
The price of the
seven feathered
friends dropped
from \$500 to \$300
a piece, due to an
over-abundant

supply. However, ex-swans, the "core" index rose 1.7 percent, consistent with the U.S. Government's core Consumer Price Index (CPI) of 2.2 percent.

The research experts at PNC Advisors have been tracking these prices each year for 18 years, from the partridge in a pear tree to the 12 drummers drumming. Last year, the total cost of the gifts was \$12,249, not counting the swans. This year, those same goods and services cost \$12,458.

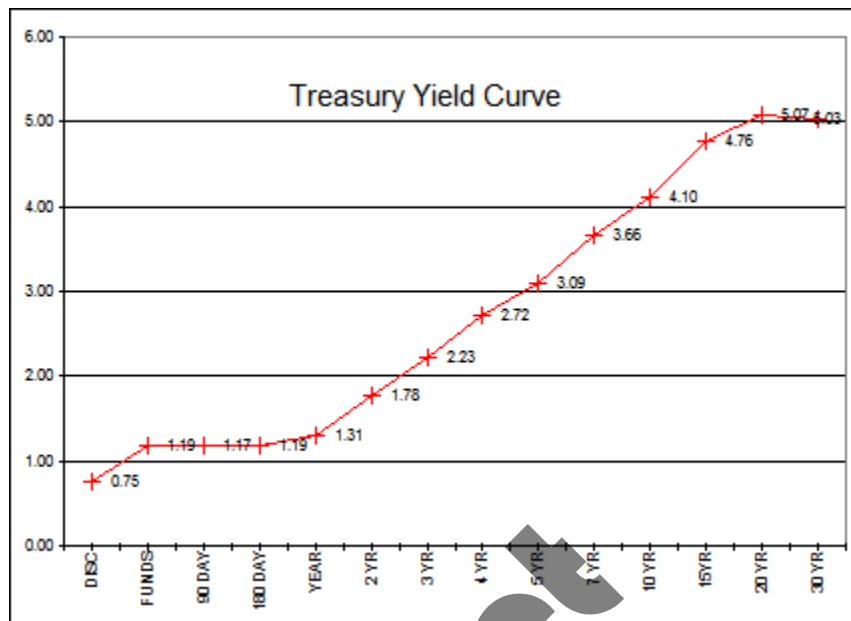
Swans were not the only gift that was in abundant supply this year. There were pear trees-a-plenty at a local Philadelphia nursery, which was holding a 30-percent-off sale. The five gold rings showed an up-tick, from \$375 to \$382. The service components of the song, i.e., maids, ladies, lords, pipers and drummers, have either remained flat, or increased slightly this year. The Philadelphia-based Pennsylvania Ballet – the source for lords and ladies – reports that it has enjoyed a strong season this past year since people seem to be staying closer to home in the post-9/11 era.

Knowing that industry groups can be classified based on their correlation to the economic cycle, the following categories have been identified:

- Cyclical industries (not seasonal)—company success is closely linked to the rise and fall of the general economy (i.e. automobiles, consumer goods, defense)
- Defensive—company is resistant to general stock market declines (i.e. utilities, foods)
- Growth—company is said to have above-average increases in revenues and earnings regardless of economy's status (i.e. small computers in 1970's and internet in 1990's)
- Counter-cyclical—company reacts in opposite manner to economy's welfare (i.e. tobacco, alcohol)

4. Yield Curve

Used by economists to capture the overall movement of interest rates by plotting currently published yields for various maturities of U.S. Treasury bills and bonds on a graph.



Steep, positive-sloping yield curve. This shape is typical at the beginning of an economic expansion, just after the end of a recession because the demand for capital is re-established by growing economic activity. Long-term investors fear being locked into low rates, while short-term investors can trade out of their T-bills and enjoy the flexibility to buy higher-yielding securities.

A positive curve is most common since yields tend to increase with time for two reasons:

- Risk of repayment
- Loss of opportunity

A lender is reasonably assured that he will be able to collect from his borrower if the loan has a short duration—after all, it is likely that the contact information of the borrower will be valid for a day, a month, maybe even a year. Thereafter, the likelihood of finding a delinquent borrower decreases with passing time as the miscreant may move and not provide a forwarding address.

Furthermore, the lender who forfeits the use of the money he gives to the borrower is confident that he, personally, will not need it in the next day or two. He's reasonably confident that he will not need it next month or even next year. But he becomes less sure of his own needs with increasing time, as he may want to take a vacation, initiate a home improvement project or undergo surgery. Regardless of his own needs, once the money has been lent, he will not have use of it again until after the loan has matured.

Yield curves have very practical applications in the worlds of finance and investment. An investor—given the positive slope at this time—would be well advised to seek out short-term bonds, if he hopes to preserve capital. From the previous discussion, it is obvious that long-term bonds

would lose significant principal value once the FRB initiates rate increases.

Of course, some investors are less concerned with loss of principal and are instead anxious to generate an income stream which can supplement Social Security and pension benefits during their retirement years. These individuals have prioritized their goals, as well as their fears, and have chosen to invest in interest rate-sensitive securities regardless of the current environment. These investors must then avail themselves of the following strategies, if seeking protection against rising rates:

- Buying low-grade bonds (also known as “junk” bonds), as they are traditionally more resistant to interest rate changes
- Laddering a portfolio with a combination of short-, mid- and long-term issues, providing the investor with short-term liquidity which can then be used to reinvest at ever-increasing rates, while at the same time providing a relatively steady source of income from the longer term assets
- Holding the bonds until maturity, at which time the investor will recoup the full value of his investment dollars

Similarly, a consumer might best be served by refinancing his mortgage now or purchasing a vehicle on credit while the rates are still low. Prospective home buyers, however, face a dilemma. Once mortgage trend upward, the feverish buying frenzy of recent years will probably level off which, in turn, would affect property values. Real estate prices will certainly languish and possibly even decline. Thus, the future homeowner must weigh the decision to buy now and lock in historically low rates or wait for property values to fall back from their inflated prices.

III. Risk Management

The first step in managing risk is identification and analysis. Once that has been accomplished, the investor must determine the likelihood or frequency of its occurrence with the help of his planning professional. Some risks are common; others are quite unlikely. Although it is not impossible, it is improbable that a piece of debris from a disintegrating space shuttle will fall into your backyard—unless, of course, you live in Nacogdoches, TX!

Potential causes, often referred to as perils, must be pinpointed as some may be insurable while others are not. Typically, most acts of God are covered, such as fire and flood damage. However, in California earthquake damage is not covered by the standard homeowner’s policy.

Next, the individual must decide how he will manage the assessed risk and choose from a several courses of action, including:

- Risk avoidance
- Risk reduction
- Loss reduction

- Risk maintenance
- Risk transference

A. Risk Avoidance

Not always possible, risk avoidance eliminates all possible exposure but also precludes any possibility of gain. The proverb “Nothing ventured, nothing gained” holds true.

Unwilling to risk possible drowning, an individual may consciously decide never to venture aboard a cruise ship. Unfortunately, however, that person will never experience the maritime beauty of the Caribbean.

In the investment world, risk avoidance translates into inactivity. For example, an investor particularly concerned with potential loss of principal due to rising interest rates, might simply choose not to purchase bonds at all. While he now avoids exposure to this risk altogether, he also forfeits the interest income he could otherwise have earned.

Risk avoidance, of course, is only possible when the individual is free to make a choice. Some situations do not offer that luxury.

B. Risk Reduction

Mitigation of risk exposure is almost always possible and is usually cost effective. Often this strategy involves making lifestyle choices such as participation in a driver education program, maintenance of a healthy diet and periodic home inspections to detect infestations before termites have chewed through the timbers.

Investors may elect to do preventative maintenance by periodically reviewing their portfolios and making necessary allocation adjustments when fundamental or technical indicators dictate. Shifting from bonds to stock as the market is poised to recover, might offer the investor significant growth opportunities while reducing his exposure to interest-rate sensitive securities.

C. Loss Reduction

Some losses are simply unavoidable. However, it may be possible to diminish their severity and lessen the frequency with which they occur.

For example, canyon fires in Southern California are oftentimes unavoidable, a consequence of drought and arson or lightning strikes. If a homeowner has the misfortune of residing in the particular canyon under siege, his house will likely stand in harm's way. Yet, if the homeowner had the foresight to install smoke detectors, an automatic sprinkler system and replace his wood roof shingles with concrete tiles, he might suffer fewer losses to person and property.

An investor may choose to take pro-active steps to reduce risk by identifying the maximum exposure he is willing to assume on a particular stock and then placing a stop-loss order. Say that the investor has

purchased 100 shares of XYZ at \$60/share and has decided that he would like to lose no more than 10% on his investment. He could place an open order with his broker asking that the stock be kept as long as it trends upward, but that it be sold if the price drops to \$54 or less. This order will then be automatically executed if it becomes necessary.

Much like the homeowner, the investor has taken measures to reduce his loss if damage occurs. The drawback is that the investor may forfeit potential future gains, should the stock recover after only a momentary response to unfavorable news.

D. Risk Maintenance

Unable to eliminate or reduce certain risks, individuals may simply decide to assume them. Although frequently done out of ignorance, risk assumption should instead be conscious and calculated.

Worried that a terrorist attack or a mere accident may kill all of their executives, most corporations enforce a policy that does not allow high-level managers to travel together enroute to company meetings and corporate functions. Although it would be unfortunate to lose even just one individual, this policy at least ensures that a surviving executive could assume the duties of his deceased peer.

Similarly, an individual may choose to purchase only a major medical policy. Unable or unwilling to afford better healthcare coverage, the individual assumes the risk for day-to-day treatments and minor procedures, but is then covered for larger incidents which require hospitalization.

Investors seeking to employ this strategy must, of course, be able to absorb the losses to which they are potentially exposed and must set aside funds for a rainy day. For example, most sound financial plans call for the maintenance of an emergency reserve of cash or cash equivalents equal to three to six times the investor's typical monthly expenditures. In this manner, if the individual is laid off or becomes disabled, the cash in the bank will serve to tide him over until a new job is found or his disability insurance policy kicks in.

Unfortunately, if the investor has misjudged the severity of the potential setback or the frequency with which the misfortunes may occur, his risk exposure may become unmanageable.

E. Risk Transference

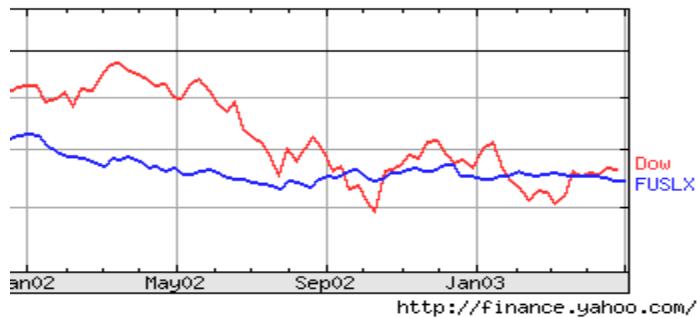
The most common way to mitigate risk is to transfer its assumption to a third party. This naturally will entail significant costs, as the person assuming the responsibility will want to be compensated for his exposure. The following methods may be used to accomplish transference:

- Contractual Agreements—depending on the parties involved, they can choose to agree to hold each other harmless for particular events. Buyers of used cars, for example, agree to

- purchase the vehicle in “as is” condition, recognizing that the car may not be in prime shape but agreeing to assume the consequences rather than holding the seller liable for subsequent maintenance issues.
- Subcontracting—hiring others to perform some of the required work. I, for example, sub out all payroll jobs to an associate who is more familiar with employment tax issues. In this way, I avoid exposure due to my lack of expertise.
 - Incorporation—this and other business entities can insulate the business owner, as well as shareholders from some of the risks to which they are exposed. However, courts have been known to pierce the corporate veil under certain circumstances and hold the officers and directors liable for individual misdeeds. Interestingly, it can be argued that by incorporating and issuing stock, companies successfully transfer risk to their shareholders.
 - Surety bonding—whereby a company promises the obligee that it will step in should the obligor renege on the contractual task.
 - Insurance—Similar to bonding, insurance transfers risk to a third party by pooling the funds of many insureds and spreading the risk amongst a large category of individuals exposed to similar perils.
 - Hedging—accomplished by speculating on two possible outcomes. For instance, a Vegas gambler may play both red and black on the roulette table, assured that one outcome will occur.

In the securities world, investors may choose to hedge their bets by going long and short at the same time. When buying a security, the investor is hoping that the market will rise so that he may later sell his investment at a profit. A short-seller, on the other hand, hopes to profit from a decline in the market by selling borrowed securities at current market prices and then covering his obligation later by purchasing the securities at lower prices.

In fact, the Franklin U.S. Long Short Fund (FUSLX) aims to do just that. Incepted in 1999, the fund is now ranked 5-star by Morningstar and has managed to remain remarkably stable despite volatility in the market as a whole.



Hedging can also be achieved by purchasing put options, giving the investor the choice to sell an underlying security at a specified price. Should the market decline, he can exercise his option and can put the stock to the contra-party, forcing him to buy stock at a price higher than the current market would dictate. The put holder will profit on the price differential.

Conversely, if the market should rise, the put holder will allow his option to expire unexercised. He will, of course, lose the premium he spent to purchase the put, but nothing else.

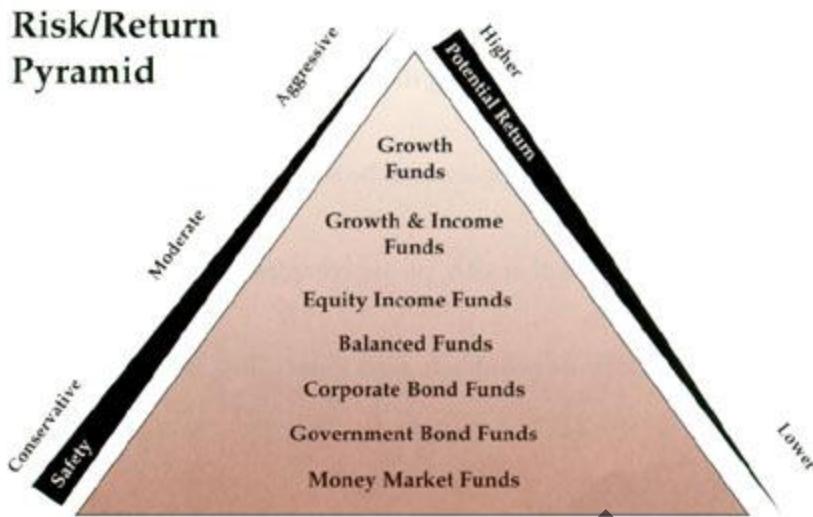
This allows the investor to insure himself against market declines. However, as with all insurance, a cost is involved. The option will cost him a premium which the investor will be out-of-pocket regardless of whether the market increases or declines. And just as with any insurance policy, he hopes that his premium will be “wasted” and that the policy goes unused. Although it is aggravating to pay premiums to auto insurance company year after year, sound judgment demands that it is better if the policy is never used. After all, if a claim is filed against the policy, it necessarily means that an accident has occurred and damages have been sustained.

IV. Risk versus Reward

There are many models used to assess risk and project future outcomes. All have their shortcomings in that they are based upon historical data. If we are ever faced with a new paradigm, a model based on past experiences may quickly prove to be invalid, as its predictive value will have been compromised.

Financial planners frequently employ the Capital Asset Pricing Model (CAPM) to illustrate the relationship between expected risk and expected return based on the theory that investors typically demand higher returns for greater risks assumed. The expected return of a security equals the rate on a risk-free security—such as the rate on a short-term T-Bill—plus a risk premium.

A simpler way to illustrate the same concept is the Risk/Reward Pyramid which clearly shows the trade-off between risk and *potential* reward.



Beginning with the bottom layer, or foundation of the pyramid, let's review the various categories of assets available to investors and the factors to consider prior to making the investment:

- A. Cash and equivalents—provide safety and liquidity
- Checking and savings accounts
 - Money market account
 - Short-term CD
 - Cash value of life insurance policy

Factors to consider:

- Maturities
- Early withdrawal penalties
- Financial strength of the institution
- FDIC or SIPC coverage

- B. Fixed-income securities—provide current income, but have low appreciation potential

- Fixed annuities
- Corporate and municipal bonds
- Government securities
- Collateralized mortgage obligations (CMOs)
- Preferred stock
- Unit Investment Trust (UITs)

Factors to consider:

- Maturities
- Ratings
- Coupons and Yield-to-Maturities
- Call provisions
- Conversion options

- C. Equities—provide growth opportunities

- Income stocks (including utilities and preferred stocks)

- Growth stocks (including blue chips, penny stocks, international companies and ADRs)
- Speculative issues (new issues)
- Variable annuities
- Index funds

Factors to consider:

- Dividend yields
- P/E ratios
- Liquidity
- Volatility
- Industry trends
- Timing
- Taxation

D. Real Estate—provides leverage and depreciation deductions, but requires ongoing management and creates liability exposure

- Raw land
- Rental property
- Commercial property
- Construction
- Mortgages
- REITs
- Limited partnerships

Factors to consider:

- Location, location, location
- Marketability
- Appreciation potential
- Cash flow
- Occupancy rates
- Debt-to-asset and debt-to-revenue ratios

E. Hard Assets—provide inflation hedge and tangible satisfaction

- Commodities (non-trading)
- Collectibles (including automobiles, artwork, coins and jewelry)

Factors to consider:

- Authenticity
- Appraisals
- Cost of purchase and commissions
- Illiquidity
- Personal satisfaction

F. Other

- Oil and Gas (including wildcatting, developmental and income producing projects)
- Equipment leasing
- Options, rights, warrants, futures and other derivatives

Factors to consider:

- Fundamental risks
- Diversification
- Management expertise

- Marketability
- Time value
- Loss potential

V. The Human Factor

Risk analysis and assumption are, of course, very personal matters. Risks deemed manageable by some, may not be acceptable to others.

My sister, for example, is a non-working spouse and mother of three (adorable!) children. Although she is not the breadwinner of her family, she does maintain the home, care for the children and make it possible for her husband to maintain a job. In the event of her demise, her husband would be forced to either curtail his work hours or engage a nanny, if only to shuttle the children from school to baseball, soccer, gymnastics and swim practice! Life insurance proceeds from my sister's policy would go a long way to help the family maintain its current lifestyle, in the event of my sister's death.

I, on the other hand, am single and have no dependents. Although I am indeed the breadwinner of my "family", I do not have any obligations which must be met, should I pass away. Thus, I have no need for life insurance.

Recognizing that individuals have differing needs, let's now examine various kinds of investors based on their attitudes toward risk:

A. Investor Types

1. Conservative

This individual is sensitive to short-term losses, but hopes to outpace the expected inflation rate by approximately 3% over a 20-year holding period.

2. Moderate

He is willing to accept more risk than the conservative investor, but is probably not willing to accept significant downside exposure. He hopes to outpace the expected inflation rate by approximately 6% over a 20-year holding period.

3. Aggressive

The aggressive investor is more concerned about maximizing long-term returns rather than minimizing possible short-term losses and hopes to outpace the expected inflation rate by approximately 11% over a 20-year holding period.

B. Identification Tools

Of course, investors frequently are unable to classify themselves as conservative, moderate or aggressive. As a result, it becomes the responsibility of the financial planning professional to help ascertain the client's risk tolerance. Typically this can be accomplished by expert

questioning and detailed explanation of the various types of risk to which the client may potentially be exposed. Knowledge goes a long way toward understanding and eventual acceptance.

Many tools are available to help with the task at hand. The test below is merely offered as an abbreviated sample:

- 1. Some investors are comfortable with a high degree of risk in the hope of achieving high returns. Others fret over every market move. Which statement below best describes my attitude toward investing?**

 - I am willing to accept lower returns if it means I'm unlikely to lose my original investment.
 - I prefer a balanced mix of investments that will probably provide a moderate return.
 - I want the highest possible return through a mix of aggressive investments.
- 2. If the market declined and the value of my investments suddenly fell by 20%, I would**

 - Sell everything, take my losses and put whatever was left into money market.
 - Wait and see if the market rebounds, but I wouldn't add anything right now.
 - Buy more of the securities I like since the prices are even more attractive now.
- 3. If I invested in a stock that rose 50% the year after I bought it, I would**

 - Buy more shares
 - Sell some shares
 - Sell all my shares
- 4. Inflation is rising fast. I would be willing to cash in my bank-guaranteed CD for a higher-yielding long-term bond.**

 - Yes
 - Maybe
 - No
- 5. The single decision that will have the greatest impact on risk and return of my investment is:**

 - Deciding how to allocate my investment dollars amongst "asset classes" (stocks, bonds, cash)
 - Deciding whether to buy individual equities or managed mutual funds
 - Deciding which specific securities to buy
- 6. If I were one of five finalists in a raffle worth \$100,000, I would hold on to my raffle ticket and take my chance rather than sell it for \$15,000.**

 - Yes
 - Maybe
 - Never

- 7. Approaching an intersection, I see the traffic signal change to yellow.**
- I would stop
 I would run the light
- 8. Crossing a parking lot from my car to the restaurant, I encounter a huge puddle and**
- Walk the long way around to avoid getting wet
 gingerly step through it by seeking out the higher and drier spots
 Step back to take a running leap over it
 Just splash through it

C. Character Traits Required

Regardless of type, all investors must share the following character traits, at least to a degree:

1. Knowledge—awareness and understanding gained through experience or study

Whether gained in practice or in theory, it is incumbent upon the investor to make educated decisions based on reliable information and data. When provided with the appropriate facts, the individual has the opportunity to gain valuable perspective, assess the attendant risks and identify various courses of action available to him.

The financial planner can aid the process by providing helpful facts, such as the following:

- a. Growth Potential: Stocks versus Bonds

\$1 invested in 1925 would now be worth, if it had been used to purchase:

T-Bills	\$17.
Long-term Corporate Bonds	\$71.
S & P 500	\$2,279.
Small-cap Stocks	\$7,860.

Ibbotson © 2001

By contrast, inflation during the same period would have risen to \$10.

- b. Goal: Beating Inflation

Which investment has the best record of beating inflation since 1926?

	1-Year Holding Period	5-Year Holding Period	10-Year Holding Period	20-Year Holding Period
T-Bills	65% of the time	60%	59%	60%
Long-term Bonds	60%	56%	58%	45%
Common Stocks	70%	79%	89%	100%

c. Making a Living: Comparing Interest to Dividend Income

If \$10,000 had been invested and reinvested in 6-month CDs between 1975 and 1997, the annual interest income would have totaled a mere \$573, whereas \$10,000 invested in the S&P 500 would have yielded \$2,280 in dividend income annually.

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2. Patience—the capacity to endure hardship or adversity without complaint

It is often mistaken for long-suffering by an investor who unwillingly and sometimes even unwittingly endures by resigning himself to circumstances he believes to be beyond his control.

The truly patient investor understands the market environment, has made a conscious choice to participate in it despite the hazards, and now will wait for a favorable outcome.

This is not always possible. Seniors, for example, may have the requisite knowledge and experience, but not the time. While a younger individual may have the luxury to slowly accumulate assets and withstand temporary financial setbacks, the mature investor is often dependent upon his portfolio to generate a *current* stream of income.

3. Tranquility—capability to remain serene and calm in the face of hardship

Often translated to mean that the investor is not prone to panic, tranquility is a state of mind that allows the individual to sleep at night rather than tossing, turning and fretting about matters over which he either has no control or which can be addressed competently the following morning.

Type A personalities may only achieve this state of nirvana with the help of a large bottle of Pepto Bismol while others come by this trait naturally. Either way, it is important to realize that investments should yield a positive result without causing undue concern and infringing upon the health and welfare of the investor. Therefore, it will be necessary to modify the investment strategy to accommodate individual levels of discomfort.

VI. Risk in the Current Environment

In this post-war era of uncertainty, marked by impending interest rate increases, stock market volatility, proposed tax code changes and pronounced latent fear resulting from the roller coaster ride of the recent past, no single investment strategy offers a panacea for the masses. In fact, investors must look determinedly for solutions and then be ready to act upon them if and when they are presented.

A few possibilities are outlined below:

A. Income-producing Investments

For those seeking current income, but unwilling to forego safety of principal threatened by rising interest-rates or credit risk, government securities may fit the bill. T-Notes and Bonds, although guaranteed by the federal government and therefore "safe" from risk of default, will still suffer loss of principal due to yield increases. T-Bills with maturities ranging from one to six months, will be only minimally affected by interest rate increases, but unfortunately do not yield much at this time (only about 1.2%).

I-Bonds may prove to be an acceptable alternative. Guaranteed by the U.S. government, they are sold at face value in denominations ranging between \$50 and \$10,000. Maximum purchase amount is limited to \$30,000 per year per person. The interest, which is state tax-free, accrues and is payable upon redemption. Although the maximum maturity is 30 years, I-Bonds can be redeemed after 6 months, but the investor will forfeit 3 months interest if redemption occurs before 5 years.

- Current rate (as of 5/2/03) is 4.66% (based on a fixed rate of 1.10% and a variable rate which is adjusted every May and November)

B. Securities Offering Income and Growth Potential

Most equities (stocks) are purchased for their growth potential. As the underlying corporation matures and develops, profits are retained and used to expand operations. Stock price increases typically accompany the company successes.

On the other hand, some companies have historically distributed their earnings in the form of steady dividend payout ratios. Yet these dividends are not guaranteed and recent economic conditions have forced many previously solid companies to reduce and even eliminate their customary dividends.

Those dependent upon the income stream may appreciate the following alternatives which provide income, as well as growth opportunities:

1. Preferred Stock

- May become particularly attractive if President Bush's plan to make dividends tax-free comes to fruition
- Although these are equities, they tend to behave somewhat like debt securities
- Inherent countercyclical nature makes these investments slightly less volatile than common stocks

2. Real Estate Investment Trusts (REITs)

- REIT Act of 1960 requires that 95% of company earnings be distributed to avoid taxation at the corporate level leading to high dividend payout ratios
- Types include equity, mortgage and hybrid

- Investor should consider geographic as well as property diversity

When investing in equities, the investor should adhere to sound strategic principles which require a focus on sustainable growth, an emphasis on true value and the need for diversification.

Annuities might also prove to be an intriguing alternative, but the investor should beware of teaser rates, surrender charges and Income-in-Respect-of-Decedent (IRD), amongst other issues.

C. Specific Picks for the Present
(not for the faint of heart)

1. American Can, Interstate Water, National Gas Company and Northern Tissue Company

Due to uncertain market conditions, you should sit tight on your American Can, hold your Water, and let go of your Gas. You may be interested to know that Northern Tissue touched a new bottom today and millions were wiped clean.

2. Futures Contracts: OSAMA.CAPTURE.SEP03 (offered at www.tradesports.com)



Currently trading at \$3.40—this implies that investors believe that there is a 34% chance that Osama will be captured by September 30th. If so, investors will receive \$10/contract.

APPENDIX

Glossary of Terms

Actuarial Risk: Exposure to a negative outcome suffered by insurance underwriters

ADR: American Depository Receipt offers investors the opportunity to buy shares in a foreign corporation on U.S. stock exchanges

Alpha: Measurement of Business Risk

Beta: Measurement of Market Risk

Business Risk: Exposure to a negative outcome as a result of factors limited specifically to the ongoing enterprise

Callable: Some bonds give the issuer the right to redeem the obligation prior to maturity

CAPM: Capital Asset Pricing Model is used to illustrate the interrelationship between risk and reward

CD: Certificate of Deposit is a bank-issued debt instrument that pays interest

CMO: Collateralized Mortgage Obligations are mortgage-backed securities which are classified into tranches according to maturities and interest payment arrangements

Common Stock: Units of ownership of a public corporation

CPI: Consumer Price Index—used to measure the effects of inflation

Crash Monday: Precipitated by an unstable U.S. economy, collapsing foreign markets and unregulated program trading, October 19th, 1987 is noted for the largest single-day market decline of the time as the Dow dropped 508.32 points and lost 22.6% of its total value

Cyclical Industry: Company welfare closely parallels economic cycle

Currency Risk: Exposure to a negative outcome due to the fluctuation of monetary units and exchange rates

Defensive Industry: Company welfare is resistant to economic downturns

Depression: A period of drastic decline in the national economy, characterized by decreasing business activity, falling prices and unemployment

Discount Rate: Rate charged by the FRB to its member banks and a leading indicator of other rates set by financial institutions

DJIA: Dow Jones Industrial Average—a widely followed index of the stock market

Economic Cycle: Periods of economic prosperity are inevitably followed by periods of recession and depression which are, in turn followed by renewed periods of prosperity and depression

Economic Indicators: Used to determine the direction of the economy

Equities: Stocks

FDIC: Federal Deposit Insurance Corporation protects customers against bank default

Fed Funds Rate: Rate charged by banks for short-term overnight loans to other banks which must meet reserve requirements

Financial Risk: Also known as Credit Risk, it is the result of corporate default

FRB: Federal Reserve Board responsible for regulation of the money supply

Global Risk: Exposure to a negative outcome due to the interplay of world economies and events

I-Bonds: Inflation-indexed bonds issued by the U.S. government in denominations ranging from \$50 to \$10,000, offering both fixed and variable interest rate components

Inflationary Risk: Exposure to a negative outcome due to ever-increasing prices which lead to an erosion of purchasing power

Interest Rate Risk: Exposure to a negative outcome due to adjustments of prevailing rates by the FRB

IPO: Initial Public Offering or new issue of a security

IRD: Income-in-Respect-of-Decedent

Junk Bonds: Often referred to as high-yield bonds, they have non-investment grade ratings below AAA, AA, A and BBB

Knowledge: Expertise gained through experience or study

Legislative Risk: Exposure to a negative outcome due to changes in the law

Liquidity Risk: Exposure to a negative outcome due to the inability to convert an asset into cash

Market-out Clause: A contract provision which allows the underwriter of an IPO to withdraw the security from public offering due to adverse market conditions

Market Risk: Also known as Systematic Risk, it affects all securities universally

Money Market: Includes all short-term instruments, such as CDs, T-Bills, Eurodollars, Banker's Acceptances and Repurchase Agreements

Money Market Account: FDIC-insured accounts offered by banks

Money Market Funds: Mutual funds which invest in money market instruments, offering complete liquidity but no FDIC coverage

Money Supply: The amount of bank deposits and currency in circulation as measured by M1, M2 and M3

Munis: Debt obligations of states, counties, cities and local authorities

Nominal Yield: The coupon, paid semi-annually, is the interest rate specified on the face of the bond and remains unchanged throughout the life of the debt obligation

Non-systematic Risk: The possibility of loss due to factors intrinsic to a specific company

P/B: Price-to-Book Ratio, calculated by dividing the price of the stock by the company's book value, is used to determine whether the company is growth- or value-oriented

P/E: Price-to-Earnings Ratio, calculated by dividing the price of the stock by the company's earnings per share, provides an indication whether the stock is under- or overpriced

Patience: The ability to weather adverse conditions without complaint

Peril: Hazard causing exposure to risk

Political Risk: Exposure to a negative outcome due to a shift in governmental policy

Preferred Stock: A class of stock issued by some companies that pays a dividend at a specified rate and receives priority over common stock in the event of bankruptcy liquidation

Pre-payment Risk: Also known as Re-investment Risk, it is of concern when a debt obligation is called and the investor is unable to find an equally attractive alternative to replace the lost stream of income

Prime Rate: Rate charged to the most credit-worthy customers of banks

Put: A type of option that gives the holder the discretionary right to sell a stock at a specified price within a given time period

Recession: A general business slump, less severe than a depression

REIT: Real Estate Investment Trusts invest in real estate-related holdings and are publicly traded like stock

Risk: Quantifiable possibility of suffering adverse consequences and attaining an undesirable outcome

S&P 500: A stock market index comprised of 500 widely-held, largely capitalized companies

SIPC: Securities Investor's Protection Corporation protects customers against brokerage firm default up to \$500,000 per account

Standard Deviation: Statistical measure used to determine the probability of a future occurrence

Stop-loss Order: An open order placed by an investor to limit his potential loss by selling the security as it reaches or drops below a previously specified price

Systematic or Pure Risk: The possibility of loss due to external and uncontrollable factors

T-Bills: Short-term securities issued at discount by the U.S. government in denominations of \$10,000 with maturities ranging from 30 to 360 days

T-Bonds: Treasury Bonds are long-term debt obligations of the U.S. government issued in \$1,000 denominations

T-Notes: Treasury Notes issued by the U.S. government, maturing in 2 to 10 years, in denominations of \$1,000

Three-Steps-and-a-Stumble Rule: Three consecutive rate increases by the FRB will lead to a decline of stock and bond markets

Tranquility: Calm acceptance of adverse conditions

UIT: The Unit Investment Trust offers investors a pro-rata share of a fixed portfolio of securities which could include either stocks or bonds, or both

Underwriting Risk: Exposure to a negative outcome due to lack of marketability or mis-pricing of a new issue

Wildcatting: Exploratory oil and gas drilling

Yield Curve: A graphical representation of the movement of interest rates