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IV. Investment Risk Categories

Chapter 7. Fundamental (Operating) Risks & Uncertainties

*“Confronted with a like challenge to distill the secret of sound investment into three words, we venture the motto,
MARGIN OF SAFETY¹ – Benjamin Graham*

Key Points

- Asset classes– unique operating risk profiles
- Business models – constructs to evaluate asset operations
- General & specific factors – asset qualitative risk insights
- Asset class–operating risk & return checklist

With reference to the Dean of Security Analysts, Benjamin Graham, the three chapters in the Investment Risk Categories section, strive to lay the foundation for investing with a margin of safety. Fundamental risks, in actively managing a business or passively investing in equity or loan assets (bonds, etc.), are asset operating risks. They relate to assets producing expected economic returns within a tolerable range. The risk/return relationship is linked by an asset risk premium; generally higher risk premiums require higher expected returns. The analysis reviews asset business models and expected operating returns. Michael Porter’s competitive forces model provides an approach to consider business models and strategies. A critical annual financial statement (10-K report) item is discussed to identify where operating risks can be noticed. Public companies submit financial statements including a Management Discussion & Analysis to the Securities & Exchange Commission (SEC), which discuss the business strategies and potential hazards. Other asset class fundamental information gathering approaches are discussed to assess assets. Major factors that influence asset values, such as property rights and macroeconomics, are initially considered. Then specific factors, such as regulations and competition that more precisely effect valuations, are reviewed. Finally, key fundamental asset valuation terms are provided to show what asset owners should focus on.

Operating Risks – Is the asset doing what it is expected to do?

Each investment asset has a profile for what it is expected to do. Generally an asset should provide a return or income. Otherwise, why should an investor make the effort to own it?

The return on a near risk-free asset may be simply the “return of capital” without deterioration in value. For example, during a crisis or panic an asset, such as a U. S. Treasury bill (loan obligation) that is backed by the full resources of the United States government, may be purchased for a very low holding period return (low interest rate). The U.S. Treasury debt security is a safe harbor during the storm; hence, the concept of a flight to safety or a reduced return for a safety premium. The focus is on return and conversion of a liquid asset on demand into United States currency.

In normal periods, the operating risk of the asset determines the expected “return on capital”. The Federal Reserve Board (FRB) sets the overnight interest rate for U.S. banks (depository institutions) to borrow (discount rate) money from it or the approximate overnight interest rate that U. S. banks borrow (federal funds rate) from each other. That establishes the short term base cost of money. The long term U.S. economy has grown nearly 3% annually. The cost of liquidity reflects economic growth (demand). The real cost of money increases as growth demands more money. The underlying inflation rate is added to establish the nominal cost of money. In a very stable period such as the early and mid 1990’s, when U. S. inflation was about 3% and the U.S. economy grew between 0% and 3%, the federal funds rate ranged between 3% and 6%. Treasury bills or money market fund interest rates for essentially risk free short term loans were about the same. Adjusted for inflation and after taxes the return was about 0%. Nothing was ventured and nothing was gained by owning nearly risk-free assets. An alternative of keeping the currency under a pillow would have lost the depreciated purchasing power of the inflated U.S. dollar over time.

Chapter 5 discussed the difference between asset active control risk and passive non-controlling risk. The active owner of a residential apartment building experiences operating risk, similar to any other controlling business owner. The business must provide a positive cash flow or a positive operating return before asset depreciation. Otherwise, operating cash losses occur and new capital or financing is necessary to avoid bankruptcy or a forced sale. That is the nature of operating asset risks. If poor business conditions are temporary and the added capital or financing bridged the non profitable period, then the controlling interest decisions addressed the

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risk of a forced asset sale. The passive non-controlling shareholder does not have the opportunity to address operating risks. If the passive shareholder concludes that the asset is fairly or overvalued and the asset manager is making poor decisions, then he or she may consider selling the asset.

The long term business owner's annual real returns or after-tax inflation-adjusted net profits must be more than 5% or in a normal 3½% inflation U.S. federal/state tax environment they must be nominally over 12%. The real return reflects the businessman's approximate 5% equity risk premium. Many small business real returns do not overcome the equity risk premium hurdle and are vulnerable to normal business cycles of good and bad conditions. The stronger businesses in the industry usually consolidate or acquire the weaker businesses during recessed or depressed economic conditions. The unprofitable business owner may simply accept the best alternative; a buyout (equity payment) and continued employment as a managing director; instead of a bankruptcy, no equity, and no employment. That is model individual economic freedom or capitalism; free to win and free to lose.

It is useful to try to think like a business owner prior to taking passive non-controlling investor risks. Ideally, investments should be held for long periods (greater than 10 years). Growing annual earnings should reflect fundamental or operating risks. Earnings are either retained for projects, whose expected returns exceed the cost of capital, or distributed to shareholders as cash or stock dividends. The market value of publicly traded businesses should generally reflect the book value or accounting value over time (adjusted for inflation).

Operating Risk Premiums reflect the asset class

Equity (owner) risk premiums are generally higher than lender risk premiums, as discussed in Chapter 5. There are features of asset categories that add to operating risks. Lending risks to the U.S. government through Treasury securities or deposited in bank accounts or certificates of deposit guaranteed by the U.S. Federal Deposit Insurance Corp. (FDIC) are very low. The FDIC was created to June, 1933 to specifically guarantee deposits up to a limit (\$250,000 through Dec. 31, 2009) in response to bank failures and depositor losses during the 1930's depression. If the U.S. government defaulted on

the bills, notes, bonds, guaranteed deposits, or CD's, all related debt holders would be affected by extraordinary federal policy errors. That is unlikely.

Corporate debt risks generally relate to credit rating service (Standard & Poors, Moody, Fitch, Duff & Phelps) evaluations from the highest (AAA to BBB S&P) investment grade ratings to the lowest junk bond ratings (BB to D S&P). An investment grade bond usually has less than a 0.2% risk of default within the next year. "A" rated bonds of intermediate term maturity (7 years) may have a 2% risk premium or 2% higher expected annual return and higher volatility than a similar maturity Treasury note. Corporate debt covenants include special features, such as call dates to be aware of. They give the issuer the right to buy the bond back at slightly higher than face value prior to maturity. Corporations often call back bonds, when the comparable market interest rate falls below the stated bond interest rate and their net expense is less by issuing new bonds at the lower interest rate. The investor generally loses the opportunity of the higher interest rate to maturity, because comparable bond interest rates are also typically lower. If investment grade corporate bonds are held to maturity, lost purchasing power risk due to an unexpected inflation surge such as in the 1970's is usually a more significant factor than default risk. Knowledgeable investors often select intermediate term (5 yr to 7 yr.) maturity bonds to limit fundamental unexpected inflation rate risks. If inflation does occur, they may purchase new bonds after intermediate term bond mature at typically higher yields.

Less than investment grade (junk) bonds normally carry risk premiums at least 4% over comparable maturity Treasury bonds. Their default rates within the year following a new rating vary widely from about 1% to 25% due to the related specific corporate fundamentals and market responses to weak (recession) economic conditions. Based on market conditions, junk bond risk premiums during recessions effectively reach the 8% to 12% range. During weak economic conditions junk bond risk premiums generally exceed blue chip equity risk premiums.

Real estate risk premiums relate more to local conditions than national conditions, unless a national financing illiquidity condition occurs, such as the 1930's and 2008/2009. Real estate is

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often considered a hybrid or alternative asset class between lending and business equity ownership. Since real estate properties are often financed with more debt than other corporation businesses, the threat of general illiquidity can send the real estate risk premiums sharply higher. Normally tax laws have a key impact on cash flows and risk premiums. Residential property depreciation periods of 15 years in the early 1980's had a higher cash flow and lower risk premium profile than periods of 27.5 years in the 2000 decade. Real estate that is owned without financing normally has a risk premium of about 4% to 6% assuming good maintenance and balanced local rental unit supply/demand conditions. Active owners generally have lower risk premiums than non-controlling shareholders.

Shareholder equity risk premiums reflect the quality of the business cash flows, net profit margins, and dividends. From a macroeconomic view, long term equity risk premiums mirror the growth of a country's economy and productivity in a free market society. If the economy grows at a 3% rate and productivity grows at a similar rate, equity risk premiums may normally average 6%. That is reflected in expected real annual returns of about 6% above risk free government bonds. Regrettably, ideal productivity and growth conditions are disturbed and reduced by poor government expansion, regulation, and tax policies that create disincentives to normal private productive efforts. During those periods, equity risk premiums and returns fall to those of normal corporate bonds. In turn corporate bonds risk premiums may increase if stagflation (low economic growth and above normal 3½% inflation) occurs. Finally, equity risk premiums and returns may fall during a depression period (1930's economic contraction and deflation) below corporate bonds. Everyone is hurt by poor policies that distort returns and risk premiums.

Small companies and international companies generally demonstrate higher equity risk premiums and higher returns to offset higher risks. Small companies are subject to single product and added financing risks. International companies face currency and country risks. Therefore, the risk premium may be as much as 8% during ideal conditions and reduced by the same government policy mistakes noted for large U.S. corporations. The higher equity risk premiums and expected returns also mean more volatility; that is, more periods of big losses, as well as large returns.

The broad category of commodity alternate assets generally responds to market supply and demand forces more than equity operating valuations (that are impacted by innovations, patents, and new processes.) When new processes are developed to better mine for a commodity or grow agricultural or livestock, they are usually quickly implemented throughout global industries. The risk premiums are thus adjusted in a zero sum set of transactions in the market place between those representing supply and demand. Since there are few global barriers to entry and limited capacities to simply store buffers, most commodities experience much larger price swings than other asset classes. Yet, notice that each commodity has its own set of influences.

Gold is an historic commodity that is relatively rare and easy to store. Many sound currencies over the millenniums have been tied to it. Gold is utilized in jewelry and industrial applications. However, when supply and demand are about in balance it does not offer a productive value such as a corporation or residential apartment house. Its risk premium is normally low when economies are growing at a sustainable level. It is the safe value asset. When governments affect poor policies, such as currency inflation (devaluation) or big economic discontinuities, demand and the price of gold rise sharply. A potential dramatic rise (decline after panics ease) in gold prices results in variable risk premiums.

Oil generally experiences a high commodity risk premium for a different reason. It is the most efficient global source of energy with limited inventory supply capacity to meet increased demand. The big swings in crude oil prices (more than 100% rises or more than 50% declines in less than a year) have been caused by supply disruptions (or boycotts) and unexpected sharp drops in demand (recession). Since the amount of oil traded is so large, there are limited cases of market manipulation by traders to cause extreme price swings. Fundamental dislocations are usually caused by supplier (OPEC) political boycotts and large users, who expect unsustainable economic surges and double order to satisfy demand that eventually collapses. Generally oil, industrial, agricultural, and other commodities are traded and held for intermediate term (possibly a year) expected price appreciations. Over the long secular periods of economic growth, commodity returns have not matched their risk premium because supply

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normally grows to meet demand. They are owned by investors because they hold their inflation-adjusted value and their fundamental factors are generally not correlated with corporate equities.

Currencies are special case alternative assets. Fundamental values are generally based on their home country economic growth and inflation (devaluation) profile. Currencies are usually compared relative to other currencies. At times a country or region's (European Common Union) central bank devalues its currency by reducing interest rates primarily to make its exports relatively less expensive than trading partners. The risk premium is based on the country's growth and overall price stability. A steady growth low inflation currency, such as the Swiss Franc, usually has a lower risk premium than a commodity driven erratically valued currency, such as the Russian ruble. Central banks manipulate currencies. The low risk premium foreign currencies offer an acceptable return due to their home currency inflation hedge.

Figure 1 shows the long term spectrum of asset fundamental risk premiums. Be aware that market dynamics to be discussed in Chapter 8 alter fundamental asset risk premiums. Real operating cash flows reflect holding risk premiums, but market transactions may reflect dynamic intermediate term (3 to 5 year) risk premiums. During past depressions, stock risk premiums fell below bond risk premiums.

Figure 1. Asset Fundamental Risk Premiums

Asset	U.S. Treasury Bonds	Corporate Debt	Real Estate	Other Alt Assets	U.S. Large Stocks	Small & Intl Stocks
Risk Premium	1%	2%	4%	4%	6%	8%

Business models describe how an asset should operate.

Business models explain the framework for creating economic and other forms of value. They represent basic factors, including purpose, offerings, infrastructure, finances, and operational processes and policies related to an asset. The model depicts a methodology for a sustainable operation; that is, generating revenues above the cost of doing business. The general purpose is to provide a value to specific users. In a free market the value must be differentiated from alternative or competing offerings. Users or customers are targeted based on desires and needs through marketing and

product or service distribution. The infrastructure is expressed through customer benefits, capabilities, competencies, and business relationships. Finances include the cost system that accounts for functioning and all the revenue inflows. The processes and policies formally define all aspects of the business operation. A good business model addresses the above diverse factors in full detail.

Various simple and complex business models indicate operational focus. A steady sales flow model often includes repeat sales of consumable good or basic services, such as razor blade, soap, or dry cleaning. A direct sales model attempts to control the marketing message and responds to customer feedback by directly employing salesmen. A franchise model attempts to duplicate a successful local enterprise through a region or nation by offering profit sharing opportunities to franchisees. A complementary business model tries to acquire businesses that may offer related products as convenient customer packages. Network models exist among professional and semi professional services providers that formally agree to referral systems. Specific business models concentrate on performing certain basic aspects listed or others very well. Well run public companies usually have more flexible financing options in their business model for raising capital through debt and equity than private companies.

A Competitive Advantage – That's what counts
 Michael Porter² developed an overall business model to help understand operating asset competitive strengths and qualitative valuations. It is worth reviewing. Figure 2 shows the five competitive forces model.

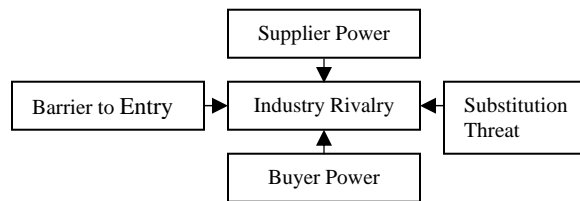


Figure 2. Michael Porter's Business Model Competitive Force factors

The overall business model works with the competitive forces of supplier power, substitution threats, buyer power, barriers to entry, and industry rivalries. Understanding how the forces impact a particular asset class or business provides a qualitative insight for an

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operational risk evaluation. A competitive advantage in any force factor generally improves cash flows and long term profitability. Supplier power involves concentration of resources to set relatively higher prices, an ability to differentiate and add value to increase potential prices, volume price break controls, and influences on consumer desires for product ingredients or components. A wide open, competitive supplier market reduces supplier business advantages. Substitution threats add buyer alternatives, which usually force price elasticity, and allow consumer price performance trade offs. A strong brand name and perceived unique value shifts the advantage to the product producer or service provider. Buyer concentration provides bargaining leverage either by being significant buyers or only a few buyers. If buyers can not be segmented, then incentives are less effective and price sensitivity likely exists. The product seller gains the competitive advantage by finding openings in buyer unity and selling to fragmented groups, who are willing to pay more for perceived values. Barriers to entry are sometimes called moats, as in wide moats around a fortress castle, and are generally viewed as the best long term profit protections and competitive advantages. A high capital expenditure or government control hurdle keeps new players out of an asset or business's operating field. Proprietary products provide limited time shields versus competitors. An absolute cost advantage assures profit advantages. Economies of scale make it hard for others to compete profitably. The fifth competitive force is industry rivalry. If the industry is fragmented and rivals offer diverse products, then establishing brand value and loyalty may be difficult. On the other hand, if the industry product demand and industry itself is growing, a company has opportunity time to devise a strategy to achieve a competitive advantage and long term profitability. A qualitative awareness of what makes a business or asset class work predictably and profitably is often more important than quantitative analysis, when evaluating an asset for purchase. If the mechanism of business or asset cash flows is not grasped, such as in derivative investment products or hedge fund prospectuses, then the risk of insufficient knowledge is too great. In those situations quantitative valuations without qualitative knowledge are not good enough.

Strategies support the business model direction.

Business and asset operating strategies also provide important qualitative information. In

generic terms, Porter defines competitive strategies as product or service cost leadership, value differentiation, and a focused specific market approach. A cost leader must have efficient processes and generally look for long term broad market dominance. Wal Mart is the prime retailer example. They must provide an acceptable threshold level of customer service and product quality. The 10% to 15% price advantages across numerous products over competitors provide customers values that are hard to ignore. The value differentiation strategy works best with truly unique products or services that give the pioneer, discretionary buyer a new enjoyable experience. Apple iPods and iPhones are examples of value differentiation. Customers also recognize service, such as Nordstrom clerks helping to meet particular shopper tastes. The value differentiation strategy works best in relatively good times, when consumers have steady disposable income for spending. A focused strategy often concentrates on both key cost leadership and value differentiation factors in a growing market. A newcomer with experienced management and a lot of energy tries to make sure that all the bases are covered, so to speak. The focus or intensity should be noticed for a potentially good profit opportunity.

Formal Reviews of Operational Risks should use factual, legal information

It is natural for businesses and other asset holder to present best case scenarios. Therefore in the spirit of *caveat emptor* it is critical to get as much legally, factual information as possible. The disclosure process is expedited through website on-line legal documents. Read them and understand what they mean. Bank CD agreements should include FDIC guarantee statements, as well as early withdrawal penalty paragraphs, and institutional ratings. A U.S. FDIC guarantee is valuable, since all legal claims have been paid off since its inception in 1933. Similarly U.S. Treasury short term bills, intermediate term notes, and long term bond securities are directly backed by the U.S. government taxing authorities and money printing presses. Government sponsored enterprises (GSEs) are basically special purpose financing organizations. The mortgage financing GSEs, Fannie Mae and Freddie Mac, are by far the largest GSEs. Their debt is not explicitly guaranteed by the U.S. government; however, when they essentially went insolvent during the summer of 2008, the U.S. government took control of them and prevented their debt default.

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Municipal and state general-obligation bonds are considered very safe. Yet, their taxing authority and contingencies differ. The previously mentioned credit rating agencies use specific terms and grade bond credit worthiness to pay future interest payment and return of principal at maturity obligations. During economic recessions and periods of particular stress for municipalities and states, added due diligence is needed to be aware of possible problems. Since the Civil War, one municipality (Orange County, CA 1994) defaulted on its bonds. In 2009 other municipality revenue sources were under stress and bankruptcy protection was sought. A state or municipality general obligation default is rare because it means that a government body failed. The most likely scenario is that government revenue receipts drop below safe levels; the credit rating agencies downgrade the specific bonds; and the bonds trade at a discount to the par principal value. The long term bond holder may have an interest payment delayed; yet, the full principal will likely be paid at maturity in order to facilitate the government entity issuing new bonds. Due to municipal bond tax exemptions, their market after-tax returns may be very attractive at particular times.

Best sources of fundamental investment security facts – Securities & Exchange Commission filings!

The U.S. SEC registers and regulates corporate and investment company securities. A clear format is set for initial registrations, subsequent financial statement reporting, and trading on secondary markets (e.g. NYSE, etc.). SEC filings are as close to truthful disclosures of facts and risks, as an investor will normally get. The filings are not guarantees. However, if facts are material and wrong or otherwise misrepresented, the filings can be used as grounds for suits in a court of law. A good way to learn about a business model and strategy is to read a company annual 10-K financial report submittal to the SEC. The Management Discussion & Analysis (MD&A) provides a qualitative presentation of business operations, strategies, and risk disclosures. Since the Sarbanes Oxley Act of 2003, off balance sheet statements must also be presented. Remember the discussions are not guarantees. For example, the money center banks, as well as GSEs and insurers, in 2006 and 2007 loaded up with extraordinary levels of derivative (toxic) assets that they did not understand, so their financial statement discussion proved to be nearly worthless (in terms of stock values by the autumn, 2008). A

good MD&A is the bridge between the qualitative description of the state of the business operations and the quantitative numbers defining profitability, liquidity, solvency, and long term stability! Warren Buffett's Berkshire Hathaway annual report MD&A sections, included in shareholder letters, are good examples of factual forward looking discussions for investors to analyze and determine if the asset is overvalued or undervalued in terms of future cash flows. Corporate conference calls are another resource to judge management competence and integrity. Usually, what is not said, through evasion or simply not answering the questions, is an important insight or red flag.

International company stocks trade on foreign market exchanges as well as on U.S. stock exchanges. The U.S. traded securities are usually American Depository Receipts (ADRs). Level II and III are the highest ADR levels and allow trading on U.S. exchanges (NYSE, etc.) They require SEC registration, regulation, and filing Form 20-F annual financial reports using U.S. General Acceptable Accounting Principles. Level III additionally allows capital to be raised through U.S. offerings. The MD&A sections provide valuable information. Be aware of foreign cultures and practices, which may significantly impact future operational earnings or bond interest payments.

Unique non-security asset owners, such as residential apartment owners, do not normally publicly publish their IRS income tax reports. Past similar property transaction prices are publicly recorded. A seller's realtor tries to make a sale and naturally focuses on favorable factors. A knowledgeable investor must understand fundamental conditions and estimate asset returns based on expected operating expenses, similar rents, expected vacancies, financing charges, and a contingency margin of safety.

Commodities, as previously discussed, quickly respond to market supply and demand. The fundamental economic factor changes are quickly reflected in prices. The investor should have a long term view of economic factors prior to buying or holding commodities or commodity groups (indices.) Spot (current) price and futures price contracts are traded on different exchanges or clearinghouses. In the mid 2000 decade, Exchange Traded Funds (ETFs) that hold futures contracts on each commodity in an index became available. That made it easier for an investor or

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speculator to efficiently hold commodities per an overall portfolio strategy.

Derivative asset investing requires understanding the underlying asset operating profitability

All investments are focused on future returns or cash flows. Generally, the objective is to earn a return on the investment capital. However, there are various derivatives to consider. Annuities and pensions are types of derivatives. Their payment resources are derived from the profitability of the issuer's underlying assets. If the issuer is losing capital due to poor investments, then it will not be able to satisfy its annuity contract obligations. Agencies, such as A. M. Best, rate annuity issuers and their specific financial products. They rate the profitability and stability of the annuity issuer to meet its obligations. A corporate issuer's stability and capacity to meet pension payment obligations can also be analyzed by reviewing financial statements. If a pension is under funded toward meeting obligations, then the company's added contributions to close the funding gap should be noted. Otherwise, the federal Pension Benefit Guaranty Corp. (PBGC) insurance entity may be required to take over a deeply underfunded pension. Bankrupt companies often require the PBGC to take over pension obligations at some reduction in benefits to the pensioners.

Options are other assets, whose values are derived from an underlying asset. For instance, an American call option contract is specified by an exercise price and expiration date (e.g. 3rd Friday of June) and provides a right to purchase a quantity (e.g. 100 shares IBM) of a security. The call option trades at a price derived from the price of the underlying security (IBM stock). Prior to expiration a \$100 call option will trade in-the-money close to \$25 (times 100 shares) if IBM is trading at \$125 per share and will likely trade out-of-the-money at less than \$10 (times 100 shares) if IBM is trading at \$75. Other market factors such as interest rates, time to expiration, and volatility more precisely affect the option price. But, for this discussion, IBM's operating performance determines its general valuation. The IBM financial reports filed with the SEC remain the most trustworthy related fundamental information. The IBM call option price is derived from the market price of the stock. The universe of derivatives expanded greatly in recent decades with cash flow swaps, credit default swaps, collateralized debt obligations, etc. The amount of effort to gain a

good understanding and information edge in most derivatives is significant and should be left for the very experienced investor.

Asset ownership structures also impact operational valuations

Limited partnership structures reduce both the limited partner's operational liabilities and the control over decisions, which impact operational values. The limited partner can only lose as much as is invested. Alternatively, a limited, non-controlling partner can not make a unilateral decision that may dramatically improve the future asset value. The structure of ownership, whether it is a corporation, partnership, or simple private owner type, should be grasped in order to know how it impacts the asset operational management. Greater control and flexibility in asset management gives the shareholder, partner, or sole proprietor more opportunities to influence an asset's value.

Major Asset Fundamental Factors to consider

Property rights are the most important asset fundamental factor.

The United States of America has grown since the Declaration of Independence and ratification of the U.S. Constitution to be the most prosperous nation ever because of its sound basis on property rights! The 5th and 14th amendments specifically address any person not being deprived of property without due process, or property taken without just compensation, nor denial of legal equal due process property rights. What do you own? What does the government own or grant? How is title conferred? Where is it recorded? A clear, comprehensive description of property title is necessary to know what asset is owned. Your home, a mortgage loan, a share of stock, a bond, an annuity of cash flows, a derivative call option, a patent, a service contract, etc. are all assets, which have property rights. A conditional or shared right (i.e. river water flowing through your land) may restrict how much can be used or set a threshold of pollution added. Different state conditional property rights are established both by enacted laws and judicial precedence. Understanding the title on assets and related legal usage and transaction restrictions is critical. That is why a competent attorney is valuable to review asset operational scenarios before purchasing a bad investment with highly restricted usage limitations. When an asset is owned and operating, it remains wise to periodically review

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property rights, in order to negotiate a favorable usage or decide to sell the asset prior to potential unfavorable property right restrictions or legal terminations.

Be aware of the judicial system.

The federal, state, or municipality legal and judicial system are equally critical extensions of property rights. Property rights must be enforced or they are worthless. Police officers, who do not protect the properties of merchants during a riot, are not upholding their duties and may allow the property to be damaged and lose value. Broadly speaking nations, who do not have adequate defenses, show weak property rights, when invaders damage or otherwise reduce property values of their citizen owners. The judicial system owes plaintiffs and defendants speedy, competent proceedings and should recognize the time value of property usage. Condoning delays or otherwise leaving issues unresolved demonstrates a poor judicial system that weakens property rights and asset values.

Government macroeconomic policy sets the rules of commerce and asset valuations.

The macroeconomic system administered by government policy is an asset value consideration. Do you want to own investment assets in North Korea or the U.S.A? Steady long term economic growth supports asset valuations. Yet, economic supply/demand imbalances or bubbles naturally develop due to economic limitations, government policy errors, or non transparent poorly regulated markets. Good government reflects the Latin root of the word, govern; that is to steer a smooth operation for the good of the individual, as well as the whole. A strong national defense to protect economic interests; the rule of law to protect constitutional rights; and a stable currency to facilitate economic exchanges are primary functions of a good limited government.

A government generally collects information that should be provided to markets openly, so that economic resources can be allocated by free individuals efficiently. The ideal government performs those functions to quickly correct supply/demand imbalances, whether they develop in the consumer staples, energy, utility, or health care sector of the economy. Government policy decisions to promote social engineering often cause and amplify imbalances that impact ownership rights, whether they are company equity shares, real estate valuations,

commodity, or alternative asset holdings. The imbalances should be understood, as well as policy scenarios used to address them. Trade policies impact equity valuations more than debt valuations. Protectionist policies reduce impacted sector economic activity, invite retaliation, and generally reduce impacted sector asset values. Price controls similarly amplify supply/demand imbalances and result in volatility. Ultimately, the controls must be lifted to allow supply into the market and reach economic market prices.

Asset financing impacts asset values: Watch FRB and Treasury Dept. actions!

Together, monetary and fiscal policy, impact the 3rd factor, a stable currency. Monetary policy generally impacts short term interest rates, as the FRB tried to achieve its dual objectives of a stable currency and promotion of economic growth at near full employment. The objectives often conflict. The quantitative targets of a stable currency, economic growth and full employment are not strict. Stable currency may mean 1% to 2% annual growth in the personal consumption expenditures index or core CPI index inflation or something else. U.S. economic growth usually means long term real growth of 3%. The meaning of full employment has changed more than once between 1970 and 2010. It usually means somewhere between 4% and 6% unemployment per Bureau of Labor Statistics measurements. Nevertheless, unstable currencies exist and are spotted by interest and foreign exchange rates. Debt asset classes are most impacted by inflation or deflation because bond payouts are fixed and the cash flows either become more or less valuable based on deflation or inflation. Own bonds during deflationary times (which are rare) and do not own long term bonds during inflationary times.

Commodity prices, especially gold and silver which act as a substitute for fiat government money, respond quickly to currency inflation changes. Gold and silver are generally unproductive assets, which are simply historic convenient stores of value when governments devalue their currencies through inflation. If a government is running massive operating deficits, it is politically easier to inflate the currency, instead of slow the economy and increase unemployment through high short term interest rates that reduce inflation. Gold and silver rise in nominal currency prices during inflationary times. (An ounce of gold rose in

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price from under \$60 to over \$600 during the inflationary decade of the 1970's.) Other commodities that are consumed for food or industrial production are impacted by currency inflation in a complex manner. The commodity supply and demand ultimately set its price. However, currency inflation often reflects a government trying to lessen the price increase impact of important commodities such as certain agricultural goods or oil. It is based on the poor reasoning by monetary authorities that a little inflation (vague judgment) is acceptable if economic growth and less unemployment is supported by low interest rates. Based on predictable political decisions, low interest rates and rising inflation after a few years of above average economic growth should be viewed cautiously. General commodity demand will likely rise and a diverse basket of commodities is usually a good hedge against an intermediate term scenario of acceptable economic growth and above average inflation.

The real estate asset class also responds to inflation, especially longer term inflation as in the prior mentioned decade of the 1970's. Real estate is generally a heavily financed asset. Local regulations and tax issues, which will be discussed as special factors, are complicating matters. However, real estate especially in areas where the supply of land is limited is a good inflation hedge. Corporate equity assets are generally the most flexible asset in terms of operating management responses to inflation. Yet, that does not necessarily mean that earnings can be adjusted higher with inflation. Economic sectors must be considered to determine where earnings can keep up with inflation. In sectors with pricing power, such as consumer staples, earnings will likely keep up with inflation, even though shopper are angry at the checkout stands. However, in highly regulated sectors, such as utilities, fuel prices might rise while regulators are slow to allow rate increases. In that scenario, utility sector earnings may not keep up with inflation. Generally speaking, corporate equities respond and hold their valuations better during inflationary times than bonds. Derivatives are similarly impacted by underlying asset valuation responses to inflation.

Foreign exchange rate changes with respect to home country inflation are relative and complex. The issue involves the real cost of money for a country and its currency. The cost of money reflects real economic growth and trade balances.

If two countries have the same real cost of money, then the higher inflation currency will normally pay higher interest rate returns, attract relative demand from the lower return country, and appreciate in relative value. But, if the real cost of money is relatively less, then the cheap money will be in less demand and the related currency will depreciate in relative value. The relationship between inflation and the economic growth determines the real cost of money. There is a subjective threshold, where increased inflation causes unacceptable uncertainty, reduced economic growth, and a reduced real cost of money. The terms "strong dollar policy" and "weak dollar policy" are often of little meaning. A liquid currency can be less weak or a relative safe haven in a global economic recession and appreciate in value. However, it may still be absolutely weak in representing poor rates of productivity or economic growth. A more normal period of global economic growth can easily change the relative currency relationships in favor of the country with the higher productivity. In summary, the FRB has limited impact on currency valuation. The U.S. Treasury, FRB, and combinations of other central banks and government fiscal spenders determine relative currency relationships. The best probabilities of successful speculation occur when betting that a period of extraordinary imbalances will correct. The key is to notice unsustainable economic relationships. Profitable currency speculation is very difficult and not for anyone without a proven methodology and deep pockets to withstand losses. Foreign asset purchases should be based on operational valuations. Over investment periods (more than 10 years) the relationship between home and foreign currencies will probably change 3 or 4 times. Buying a foreign asset based on currency relationships is usually a poor speculation and not suggested.

Political influence – watch the subtle art of “you scratch my back and I’ll scratch yours”

Relatively large governments are comfortable with relatively large corporate, non-profit, union, and other constituencies. The populist concept of “looking out for the little guy” does not work in practice. Large constituencies employ large lobbying groups to influence favorable legislation that the normal politician is happy to provide in return for reelection and continued power. That is obvious. What does that have to do with investment asset returns? Very much! Related regulations and taxes that impact

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targeted individuals and economic sectors will be discussed specifically. Government highly controlled (regulated) asset classes are also heavily represented by lobbyists. The key controlling congressional committee chairman, as well as lobbying groups, should be monitored. At the end of a long legislative process, asset use flexibility is often reduced. It is wise to hedge exposure to asset classes that are under review by populist politicians. Their goals are not your stable asset returns.

Specific Asset Fundamental Valuation Issues

Regulations often result in decreased asset supplies
Is there such a concept as good regulation? Yes. Good regulation generally supports transparent, open, necessary recorded transactions with the participants paying a nominal fee to sustain the regulating entity. Good regulations are catalysts for increased efficient transactions. The outcome should be increased availability of goods or services. A stock or bond exchange or a clearinghouse of security transactions is an example of good regulations if the relevant facts are recorded and open. Relatively high liquidity of traded assets should bring down offer and ask spreads and facilitate transactions. If the SEC is functioning properly, its monitoring policy will find and put the bad actors out of business. There are examples of other good government regulators, as measured specifically by the amount of increased good actions (or reduced bad actions – e.g. drunk driving damages) that results over long periods of time due to intelligent regulations. The patent office is generally a good regulator. Some regulators have been both good and bad regulators over periods of time based on social agendas and the issues that they are trying to address. Investors should be aware of specific regulations that impact assets that they hold. Health care and real estate tend to be favorite areas for regulations. The tendency is for governments to add regulations, which initially cause uncertainty while people figure out both the intended and unintended consequences. The legislative process itself causes uncertainty and sometimes nothing occurs, which simply results in volatile asset prices. The 1993 Clinton Administration Universal Healthcare initiative initially resulted in health care industry stock declines, while Congress debated it. Then when the initiative became so complex that it simply fell apart without any action, investors sensed more predictable profits and the affected stocks

recovered. Be aware that highly regulated economic sectors, such as utilities, energy firms, and banks, generally have lower net profit margins and their growth is highly dependent on the regulators.

Competition helps the consumer most

The competitive advantage paragraphs based on Michael Porter's business model are helpful in analyzing specific asset operational returns. The primary competition is among rivals in an industry or economic sector. More competitors generally mean choices of relative low priced or relatively higher valued goods and services. The consumer benefits from the choices. In a mature industry, a few large competitors such as Coke and Pepsi offer relatively low price sodas, while a host of smaller competitors offer specialty drinks for those, who are willing to pay for perceived values. Generally less competition gives businesses or an asset class the opportunity for higher revenues and returns. Patents and copyrights are the most predictable way to limit competition and grow a specific business or asset sales stream for a specified period of time.

Taxes are a certain expense for a profitable operating asset

Taxes alter the expected asset operating returns. The federal government and most states take corporate taxes directly and later take related income taxes from individuals, who receive part of those operating returns as dividends. Any company project return must be analyzed after taxes, which may include capital depreciation allowances or investment tax credits. Favored industries, such as residential housing, include individual mortgage financing interest tax deductions. An assortment of other tax credits also effect after tax operating returns of specific asset classes. The specific taxes act as hurdles that operating asset returns must overcome annually. For assets that have volatile return profiles, high taxes during high return periods reduce retained returns and increase the chances of insolvency or bankruptcy during losing periods. Highly regulated corporate equities usually have the most complex direct and indirect taxes, as well as tax credits. Since both the magnitude of the taxes and human effort to pay them impact total expenses and returns, it is best to try to understand their full impact on the bottom line.

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Special considerations – the contingency risks that can wipe out asset values

Various asset classes are prey for attorneys, who can smell big fees for winning class action law suits. They analyze the biases of judges and have a good feel for the general emotions of jurors. The annual corporate report disclosures include risk statements and disclosures of potential and actual litigation. Try to understand the litigation disclosures, as well as a company's plans to deal with various scenario outcomes. If the verdict on a harmful drug or other product could drain potential profits for many years, it may be wise stay away from the asset. Underfunded pension plan should be cautiously considered due to potential future abnormal catch up contribution expenses. Contingency risks also relate to governance practices, such as succession planning for retiring key executives or responsible resource policies. The special consideration risks for specific assets are often low probability, high impact factors that are worth review.

Some asset classes use agents as part of ongoing operations and create special situations. Agent interests may conflict with the ability to earn acceptable operating returns on product or service sales. Agents, who serve both parties in sales activities, should be thoroughly screened and their policies must be discussed. The situation is normally problematic because of limited disclosures and should be avoided. Trust takes time to develop and normally requires working through misunderstandings, perceived lost revenues, and clarifying future dealings with an agent, who is working only in one party's interests. Agents may be efficient resources for certain asset classes. However, their terms and conditions of service are critical.

Summary - Asset Class Operating Value Considerations

All asset class historical data is a time series of past actual (certain) events. Future cash flows and transaction receipts of value (usually cash) at sale are uncertain and bear a degree of risk. Thus, past performance does not guarantee future returns. Yet, past operating asset class data offers insightful periods of favorable asset class conditions. A quick summary of asset class operational issues follows.

U.S. Treasury Bonds – Clear enforceable property rights, govt. fiscal policy (currency instability) may impact bond values prior to

maturity, limited political effects, limited regulatory or contingency issues, limited competing debt issue impacts, and federal tax change issues may impact higher income earners more than others. They are low operational risk assets.

Corporate Bonds – Enforceable property rights, covenants may include options or special factors that change maturity date, govt. bond rates and corporate credit ratings impact bond values prior to maturity, default risk on non-investment grade bonds, political effects primarily due to predatory law suits of vulnerable corporations, regulatory impacts possible on environmentally exposed firms, new debt offerings may weaken capital structure and increase principal volatility, and federal tax changes may impact higher income earners or those earning a possible capital gain on bonds sold prior to maturity. Investment grade corporate bonds are low to moderate operational risk assets.

Real Estate – Enforceable property rights vary between states, judicial systems impact tenant, lender, and govt. eminent domain rights, which conflict with owner rights, potential govt. policy change impacts, potential political group impacts on revenues, special regulatory land use limitations, federal and state tax policy may impact depreciation schedules, income tax rates, and capital gain at sale rates. Real estate is a complex business asset with moderate to high operational risks based on financing, cash flows, and political factors.

U.S. Large Corporate Stocks – Enforceable property rights vary between states, judicial system impacts, special govt. regulatory impacts in certain sectors, various federal and state tax details, credit, and allowance issues. U.S. large corporate stocks represent ownership in different business models that are affected by competition, customer preferences, and government policy. Read SEC filings thoughtfully. Simple business models with good profit margins and limited government intervention, such as some consumer staple or business service corporations, may present more predictable returns in a moderate to high operational risk asset class.

U.S. Small and International Corporate Stocks – Baseline issues are same as U.S. Corporate Stocks. Additional U.S. small company issues include single product, financing, and competition issues. Additional international

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company issues include foreign country policies, taxes, and culture, as well as currency, issues. Business model analysis should focus on stated issues in this high operational risk asset class.

Other Alternative Asset Classes – Commodities and currencies are traditional alternative assets. Property rights issues may be more complex due to international asset locations and transportation (clearinghouse agreements important), regulatory impacts on hazardous commodities, government policies may restrict ownership flexibility, federal, foreign, and state tax treatment differ from other asset classes. Business model analysis is primarily based on commodities and currencies supplier and owner demand. The macroeconomic factor impacts on these assets differ from general equity assets. Alternative assets are generally high operational risk assets, although their unique and sometimes special characteristics may give them added value.

Derivative assets are a subset of alternative assets. Their operational risk is derived from the underlying assets. Pensions or annuities derive their operational risk from the underlying equities and bonds owned in their portfolios. Funds, options, and futures securities similarly derive risk from the underlying assets. Yet, each of these derivative assets has unique risks that should be understood. The unique added operational risks may be based on how the security functions, management objectives and strategies, financial leverage, and liquidity.

Recently offered derivative assets, such as private equity partnerships and hedge funds, which deal in esoteric derivative assets, add risks and expenses. Significant investment knowledge is needed to understand and make an informed decision regarding these assets. They are high operational risk assets. Some very competent partnerships and hedge funds have provided good long term returns. Yet, the good ones are available primarily to large endowments, foundations, and the wealthiest families.

Final Summary

A Checklist of Asset Operational Risk Factors & Meaningful Calculated Ratios

Loans - U.S. Treasury Securities, Municipal Debt, Corporate Debt

Maturity (years to maturity) Date, Principal Par Value, Coupon Interest Rate, Current Price, Tax Rates; Calculate Current Yield, Yield to

Maturity, After Tax Yield, Risk Spreads– U.S. Treasuries vs. Other Debt.

Determine: Liquidity Risk – Times interest earned (Coverage); Solvency Risk – Total Debt / Total Assets

Real Estate – The Hybrid – Equity usually with a financing and local market factor

Net Operating Income (NOI), Mortgage Loan, Annual Debt Service Charge (DSC), Before Tax Cash Flow, Earnings Before Interest & Taxes (EBIT) Comparable Property Market Price (MP); Calculate Capitalization Rate (NOI/MP) (Return), Liquidity Risk - DSC Ratio (DSC/EBIT) (Coverage); Cash Flow on Cash (EBT/MP) (Return without debt financing)

Equity -

Total Asset Value (TA), Current Assets (CA), Accounts Receivable (AR), Inventory (Iv), Current Liabilities (CL), Debt, Equity Book Value (BV), Sales (S), Earnings (E), Dividends (D), Market Price (MP)

Determine: Liquidity Risk: Current Ratio (CA/CL), Similar Liquidity Risk & Solvency ratios to loans; Asset Use Efficiency: AR Turnover (AR/S), Inv Turnover (Cost of Goods Sold/Avg. Iv), Sales Turnover (S/TA); Profitability: Net Profit Margin (E/S), Return on Equity (E/BV); Calculate Earnings Yield (E/MP) (Earnings Return), Dividend Yield (D/MP) (Dividend Cash Return). To be useful, calculated ratios must be referenced to a benchmark or peers, seasonality must be adjusted, and inflation considered.

Alternative Assets – Commodities, Currencies, and Derivatives

Commodities and Currencies are affected by unique macroeconomic factors that directly impact supply and demand at the actual market transaction price. Liquidity Risk - Leverage Ratio (Asset Purchase Value/ Margin Paid). Market factors are covered in Chapter 8. Derivative asset factors and ratios are based on (directly derived from) the above asset operational factors.

References

¹ Graham, Benjamin *The Intelligent Investor* 4th Edition, 1973

² Porter, Michael *Competitive Strategies: Techniques for Analyzing Industries and Competition* 1980

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Chapter 8. Market Transaction Risks

The market is always right
- Jesse Livermore¹

Key Points

- Economic Basics – Supply and demand risks
- Historical asset price data provides factual insights
- Market emotions increase transaction risks
- Agents – Supporting transaction actors are not free
- Benchmarks are needed for score keeping

Market risks are most critical at the time of an asset transaction; i.e. buying or selling an asset. Jesse Livermore was a famous stock market trader, who supposedly made speculative fortunes during the crashes of 1907 and 1929, and lost most of the fortunes at other times in his life. Nevertheless, his quote is meant to promote self discipline, humility, an awareness of trends, and the need for a systematic approach to investing. Markets are made of buyers and sellers, who are trying to gain a competitive edge as they create demand for and supply of assets. The primary concepts of supply, demand, liquidity, leverage, and variable market risk premiums for different asset classes are initially analyzed. Historical market data; prices, returns, volatility, correlations, and circumstances; is then reviewed for possible insights. Market transactions reflect noise and emotions, which add risks to investment decision making. The cost of making transactions, including agents in the process, impact returns. Finally, benchmarks or absolute return goals are discussed in order to keep a rational perspective of market risks.

Getting Down to Economic Basics – Supply & Demand

Each asset class faces market supply and demand transaction characteristics. Generally, as supply increases, prices paid decrease and as demand increases, prices paid increase in a market with normal responses or elasticity. Alternatively stated, sellers are willing to supply larger quantities of goods and services at higher prices. Finally, buyers generally demand larger quantities at lower prices, as shown in Figure 1. Economics 101.

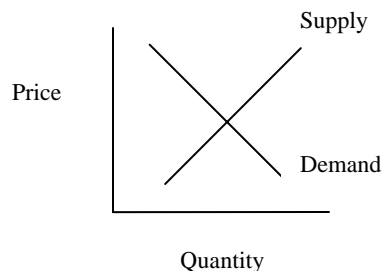


Figure 1. Normal Asset Supply and Demand Features

Markets become abnormal, if the price demanded stays the same (horizontal and inelastic) regardless of a change in quantity supplied. Supply may also be inelastic (e.g. vertical) if there is an extreme surplus quantity that may be sold in the short term at virtually any price. Abnormalities or changes in elasticity create market risks, as well as opportunities for those, who have a strategy to exploit a profit from the situation. In the market place for various assets, the inelasticity is sometimes due to buyer restrictions that relate to a price rule. For instance, a stock mutual fund or pension may be restricted from purchasing a stock for a portfolio if it drops below \$10 or \$1. Similarly, a bond fund may not be allowed to purchase (less demand) a bond, if its rating drops below investment grade. However, funds may also be forced to sell (more supply) liquid assets at metaphoric fire sale prices to raise cash to pay margin calls on overleveraged portfolios.

Asset classes have normal buyers and sellers, who generally respond rationally to the underlying asset fundamental cash flow outlooks. Relatively greater certainties result in confidence (complacency) and calm markets that show less daily noise or volatility. Long periods of calmness are paradoxically periods that are ultimately built on growing economic imbalances. Hyman Minsky's *Financial Instability Hypothesis*² provided a learned explanation of natural economic instabilities, in spite of the best government policy intentions. Since economic factors affecting assets are unstable, it follows that market supply and demand is also unstable. The market instabilities are more frequent with larger impacts if the politicians enact self serving policies that amplify both the potential unsustainable free lunch, as well as the inevitable cure of the hang over. For most people a home is their largest asset. It is also a heavily financed asset. Any

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government initiated or condoned actions that cause the supply and demand of residential housing to get far out of balance results in housing bubbles and inevitable crashes. Various bubble and crashes are discussed further.

When can I have my money?

Most individuals want to be able to sell an asset at the last quoted sale price (assuming that it is higher than what they paid) and they want the cash instantaneously. Generally, only a low risk asset in a guaranteed or high volume market will meet those common desires. The issue is liquidity. A guaranteed asset price, such as on a certificate of deposit or U.S. Treasury security at maturity, is based on the effectively infinite liquidity of the government to print fiat money. A responsible government will also promote the stable purchasing power of the medium of exchange. All others, who guarantee asset values, must show a track record and current capacity to generate income and liquidity to pay commitments on time. Market place liquidity of an asset is based on a standard definition of its rights and the volume of buyers and sellers.

A blue chip corporate stock that has a large quantity (100,000,000 shares) of shares outstanding and trades an average 2% (2,000,000) of those shares daily is liquid. That means you have a good opportunity to buy or sell shares at any time that its market is open for business. The related issue for liquidity (a transaction price close to a recent sale price) is the spread between what a buyer is willing to pay (open offers) and what a seller is willing to accept (open asks.) The volume of trading and open orders in an normal market usually determines how tight the spread is between offers and asks. A blue chip stock trading at \$50 per share in the middle of a trading session may have a spread of \$0.10 per share on 100 share (round) lot. High liquidity means that a person should be able to get a sale price within 1% of the last traded transaction prior to commissions (which should also be less than 1%). High liquidity does not mean that the asset will be trading within 5% of its transaction price on the next business day. The day to day or week to week price changes are covered in the volatility discussion.

A partnership that invests in private equity assets is likely to be illiquid. The prospectus and signed agreement specifies redemption restrictions. They may include 45 day notices

for share redemption prior to the end of a calendar quarter under normal conditions and further restrictions under abnormal conditions. There is no current market for partnership shares other than the general partner or dealer, who sets the rules to protect his business cash level. In fact, if his source of financing is short term, he may also be dealing with solvency issues.

Market liquidity relates to asset uniqueness. Real estate assets have different detailed descriptions and attributes than other properties in a nearby city or on the next block. The asset is not standardized, physical surroundings differ, attributes as schools and local services vary considerably, and property rights may be at variance. Hence the adage: *location, location, location*. The title search process is not automated, so that a minimum of weeks are required to make a transaction without financing issues. Multiple buyer inspections with required repairs entail more time. The additional arrangement of financing usually requires more time. Real estate transactions in an ideal good market volume condition of many buyers and sellers without backlogs for necessary brokerage and escrow services require at least 30 days. The asset is illiquid. Under poor real estate sales conditions with a few aborted transactions along the way, a real estate asset sale may take more than a year until the seller finalizes an acceptable offer and makes the sale.

Transaction liquidity varies with the asset type, the market mechanism, the number of open offers and asking quotes, and government regulations meant to slow down the process. Standardized assets, such as stocks, bonds, funds, options, and futures contracts, that trade on a clearinghouse exchange with various guarantees to reduce counterparty risk, have an opportunity to be liquid. In addition, if there are a large number of potential buyers and sellers, then transactions can be made within minutes (while markets are open) and likely with a small spread between the offer and asking price. Ironically, the borrowing of security shares and selling them, covered short sales, add to liquidity. I prefer a requirement for a type of uptike rule, which requires the short sale to be made after a previous purchase at a higher (uptike) price. In any case, short sales add to the number of transactions and true liquid pricing. They support the process of quickly moving prices to their current economic values. Be aware that the short seller must buy the shares

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back to make a profit on the transaction and is exposed to the asset moving to a much higher price (a short squeeze) prior to buying the asset back. Although it may seem counterintuitive, short selling on fully transparent markets increases clearinghouse market liquidity. In any case, government regulations, including short sale uptick rules as well as numerous documents related to real estate property sales, control the liquidity of markets. You can have your money back (sell your asset) quickly, if you choose to own highly liquid assets.

The number of participants and market dynamics determine asset transaction risk premiums

The supply and demand of asset orders and general market liquidity are necessary factors in determining asset transaction risk premiums. Yet the integrity of the market or counterparty (other party) in a transaction also effect risks. When redeeming a CD, the FDIC bank guarantee makes the transaction risk premium virtually nothing. Similarly selling a Treasury security is a very low risk transaction. The security purchase or sale on a clearinghouse exchange market depends on that market to settle the transaction in the settlement time. It must either deliver the recorded security or the money proceeds to your account. If the market does not honor the commitment, the risk premium rises sharply. After the Sept. 11, 2001 terrorist attack on the United States, the New York Stock Exchange and other NYC markets required 6 days to repair and test their infrastructure. Until those markets reopened on Sept. 17, the transaction risk premium for related assets had increased dramatically. The S&P 500 stock index, in fact fell 5% on Sept. 17, but most importantly the open market established and honored asset prices, reduced the unknown transaction risk premium during the repair period, and showed the terrorists that the United States recovered and was open for business again. Confidence in a market can be very fragile. Any scandal related to illiquidity, where a market does not honor both sides of a transaction, or trade irregularities cause potential buyers and sellers to wait for the dust to settle. Uncertainty reduces the flow of commerce and increases transaction risk premiums.

Non standard asset transaction, such as real estate sales or fund transactions with a partnership, encounter specific transaction risk premiums due to lack of information, as well as various levels of perceived incompetence or lack

of full disclosure. When the effective clearinghouse, such as an escrow trust company, for a property transaction provides incorrect information and the parties involved waste resources, the risk premium increases. The lack of confidence in the supportive market players increases the risk premium, until buyers and sellers find more reliable ways to make the transaction.

Historical asset prices indicate variable transaction risk premiums

Asset price movements reflect expected future cash flows, the resources (demand) of investors, relationships of asset class returns, and specific current conditions. A long time series of asset prices provides factual information about real decisions and outcomes, instead of opinions. Relating asset price history to expected cash flows or reversions to normal price relationships offers insights about transaction risk premiums.

A way to estimate market risk premiums is to find the historic relationship between annual operating returns and the price paid for the asset. A bond's investment return may be measured as yield to maturity (or planned sale date), a real estate property return may be characterized as a capitalization yield (ratio), and a stock's return may be referred to as the earnings yield (reciprocal of Price/Earnings). A nominal Treasury security yield is a risk free reference point that reflects the assumed inflation built into all expected asset returns, since the investor is focused on real inflation adjusted returns. The yield variations over the past 100 years of recorded data have been very large. In addition to the inflation adjustment, the time period of asset returns is a key factor to put the risk premium into perspective. Longer asset life times (equities have a potential infinite life) generally have larger and more variable risk premiums.

A debt security has a maturity date or life time. Historical data shows that Treasury bill annual returns generally reflected consumer inflation over the past 100 years, although the FRB manipulated Treasury bill rates below inflation rates after World War II and in a few other special situations. No market risk premiums were shown for short term U.S. government debt. Intermediate term (5 yr. maturity) Treasury note annual returns reflected inflation surprises in the past and were negative on a few occasions in the 1950's, 1969, 1994, and 1999. After markets adjusted to inflation surprises or

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the government supply of new notes, annual returns improved and risk premiums declined to normal (1% above inflation) levels. The long term (10 yr) U.S. Treasury bond risk premium reflects both inflation surprises and a larger number of future cash flows. The risk premiums and annual returns vary more than intermediate term U.S. Treasury notes. After inflation surprise and new U.S. Treasury bond supply adjustments, risk premiums decline to normal (1% to 2% above inflation) levels. Generally, U.S. Treasury debt yields and annual returns increase with maturity dates (positive yield curve), which define the term structure of risk free debt.

Corporate investment grade bond annual returns have tracked U. S. Treasury bonds very closely over the 85 years of data. Generally their annual returns have been between 1% and 2% above T bonds. When the FRB manipulates long term interest rates lower by directly purchasing T bonds through a process called quantitative easing, corporate bond rates may be more than 2% above T bond rates. That determines the unusual risk/return relationship, where corporate risk premiums are actually lower than T bond risk premiums, while corporate bond returns remain above T bond returns.

U. S. blue chip (S&P 500) stock prices and annual returns over the past 100 years have been very volatile. Small company and international stocks vary more than large company stock prices and returns. Yet, all equities remain risky assets. In 1931 the S&P 500 returned -43.6% and in 1933 returned +54%. (Remember $(1.00 - 0.436) \times 1.54 = 0.87\%$; it takes greater gains than often expected to earn back losses.) Since World War II, the S&P 500 returned extremes of -38.5% in 2008 and +37.4% in 1995. The earnings yield is a good way to estimate if annual returns are sustainable or if prices have a high risk premium. Prior to the 1929 stock market crash, the E/P yield hit a low of 3% and at the first quarter of the 2000 decade the E/P yield hit a new all-time low of 2.3%. General U.S. blue chip stock prices were trading at more than 2 times lower than average earnings yield. The priced stock risk premiums were unrealistically low and the true risk was very high. On the other hand, when investment confidence is very depressed, E/P yields are very high such as in 1932 (16.7%) and in 1982 (14.9%). Paradoxically, extraordinarily high stock risk premiums were priced and the true risk was very low.

U.S. real estate (home) prices and annual returns over the past 100 years have been less volatile than those of stocks. The price of this heavily financed asset has been manipulated by government policies to encourage home ownership. Real home prices dropped less during the 1930's than during the early years of World War II. In general, prices were depressed and demand was weak for all assets during those periods. Since WW II there have been 4 periods of extreme price increases and 3 periods of large corrections to sustainable levels. Home prices increased about 22% annually for the 2 years after WW II, about 10% annually during 1978 and 1979 in response to generally poor inflation policy control, 7% annually for the 4 years from 1986 to 1989 as questionable Savings & Loan practices occurred, and over 9% annually for the 8 years between 1999 and 2006, when poor FRB policy kept interest rates low for far too long and poor fiscal policy encouraged extreme poor behavior by many groups involved. Each of those price peaks was unsustainable from numerous perspectives; the capitalization rate (net income/price) and personal savings were far too low and the ratio of debt to income was far too high. At each price peak, risk premiums were unrealistically low and true risks were very high. The thoughtful investor is always challenged by the fact that risk premiums and asset yields may remain very low for many years, while the asset prices climb to extremely high levels. Table 1 shows historic asset class nominal high and low annual returns. Note some asset classes had additional years with nearly the same returns. The returns are not real inflation adjusted returns.

Asset Class	Year - High	Year - Low
US Treas bills	1981 14.7%	1938 0.0%
Treasury Bonds	1982 40.4%	1967 -9.2%
Corp Inv Bonds	1982 36%	1974 -9.5%
S&P 500 Stocks	1933 54.0%	1931 -43.4%
Real Estate home	2004 14%	2008 -18%

Table 1. Asset Class Annual High and Low Return on year end sale

Volatility is a standard quantitative risk measurement

Often 36 consecutive monthly asset returns are used to calculate a data set's price movement or standard deviation measure. If the data is near normally distributed, +/- 1 standard deviation (SD) includes 68% of the data points in closest proximity to the mid (mean) point. Price

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movements reflect uncertainty or a market fear factor. High volatility (SD) indicates increased market price spreads and fear (or greed).

Each asset class has an average volatility factor based on the time of price data. The monthly SD is relatively normal and predictable most of the time. According to a study article³ published in *Seeking Alpha*, volatility can be separated into normal volatility periods, high volatility during periods of increased fear based on various types of economic uncertainty, and high volatility during periods of high inflation uncertainty. The study data included the somewhat limited 1990 to 2008 period. For simplicity main asset class volatilities during only the normal months (80%) and high economic uncertainty volatility months (10%) are shown in Table 2. Volatility is a market transaction risk concept that focuses on market behavior apart from fundamental changes in the operating cash flows of the asset.

Asset Class	Normal Vol	Rank	High Vol	Rank
T Bills	0.59%	1	0.70%	1
TIP Bonds	1.10%	2	2.06%	3
Corp Bonds	1.17%	3	1.70%	2
S&P500 Stks	3.47%	4	6.19%	4
Real Estate	4.04%	5	7.24%	5

Table 2. The Changing Nature of Volatility

Notice the changing nature of volatility. Although volatility increases for all asset classes during high volatility periods, it increases more for naturally higher volatility classes such as stocks and real estate. Also, Treasury bonds can actually be slightly more volatile than corporate bonds based on the data provided. The addition of high inflation period volatility data creates different inconsistencies because longer maturity debt asset classes are impacted more by inflation than other asset classes. It is prudent to be flexible, when studying passed volatility for insights into future volatility.

Asset classes also correlate with (relate to) each other based on the level of fear

Historical market relationships between asset classes are referred to as correlations. To simplify the math, if asset classes move together (e.g. +7% annual return each asset) completely, then their correlation coefficient is +1.0. If one asset class has any return and another asset class has no (0) return, then their correlation

coefficient is 0. Finally, if the asset classes move opposite of each other (e.g. asset class A = +8%, asset class B = -6%) then their correlation coefficient is -1.0. The concept is complex, because correlations change with time and assets tend to become more correlated during a crisis or a bear market.

Table 3 shows asset class relationships during the 1970 to 2006 period of both falling and rising asset returns. Real estate data was unavailable for the entire period.

Asset Corr	T bills	T bonds	Corp bonds	S&P500 Stks
T bills	1.0			
T bonds	0.155	1.0		
Corp bonds	0.061	0.949	1.0	
S&P 500 stk	0.008	0.211	0.315	1.0

Table 3. Longer term 37 year asset class correlations

A study⁴ by William Coaker II reviewed changes in S&P 500 stock return correlations to other asset classes during the 1970 to 2004 period in detail. It found that 5 yr period correlations change significantly. For instance, cash (similar to T bills) to S&P 500 stock index correlations varied from -0.35 to +0.35. That is relatively low correlation and variations. Real estate to S&P 500 stock index correlations varied from 0.17 to 0.75 for more variable correlations. Real estate, which is often considered a diversifying asset, became significantly more correlated to stocks during uncertain times. Finally, there is the dramatic increase in correlation between U.S. and foreign stocks from 0.60 to 0.90 during uncertain declining (bear) markets.

The historic data review shows certain asset classes (U.S. Treasury bills) have lower returns and lower risks than all other asset classes. However, most asset classes show significant market volatility and correlation variability during different periods of time. Thus, portfolio asset diversification has market transaction limitations. To deal with static asset diversification issues, in the future strategies section, time diversification is introduced.

Market emotions add uncertainties and risks to asset transactions

Market buyers and sellers have many purposes and time frames. Some have economic business

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reasons, others have long or intermediate term investment reasons, and still others feel that they have insightful information that allows them to make a profit by short term speculation. All participants put their bets on steroids by adding the leverage of borrowed money. Ultimately, asset price bubbles are the result of financing increased leveraged bets in a type of musical chairs or greater fool game. The game reflects human nature which is unwittingly supported by government policies that control the money printing presses and the regulatory system. The ideal government policy does not foster social engineering, it keeps the money supply and cost of money stable, and it provides transparent, full disclosure regulation that keeps the movement (velocity) of money steady. That policy bursts the bubbles, when they are relatively small, instead of propping up “too big to fail” government controlled policies or industries. Human nature does not change. Greed and fear are opposite sides of a human vice, previously discussed in Chapter 4. Historically, government policies have made the difference between nations, where citizens are entrepreneurial and productive with limited intelligent regulation or where citizens are controlled and limited by negative, overbearing authorities.

Ironically, emotions appear to run higher, when fear is dominant and bubbles are bursting. However, it is momentum driven greed that creates the bubbles over relatively longer periods of false unsustainable prosperity. Market emotions show in noise factors, which accompany either steady moving advancing markets or brutal declining markets. These factors increase market transaction risks, as speculating buyers and sellers add asset price noise to markets in their quest to outsmart each other. High speed computer trading and various speculative hedge fund strategies accounted for more than 50% of trades as NYSE transaction volume soared in the 1990 and 2000 decades. The noise can change the price of a stock by 10% from one day to the next without any change to its operating cash flow outlook. The speculative noise appears to increase when markets are uncertain and fearful. Defensive strategies, such as purchasing puts or rights to sell at specified strike prices, increase during uncertain times to neutralize or compensate for market unrealized losses on held assets. Speculative short sales also increase during uncertain times and by their nature, increase market price noise.

The VIX is a measure of stock market fear concerning price changes. The fear of losses is predominant; yet, fear of any sharp market change is a more correct interpretation. The VIX is a calculated real time estimate of S&P 500 stocks volatility. It takes a blend of S&P 500 stock call and put options for the current and next month expiration dates in order to estimate implied volatility for the S&P 500 broad market index over the next 30 days. If the VIX = 25 (average over the 2000 decade), then the SD over the next 30 days is calculated as $25\%/12^{1/2}$ months = 7%. That means the S&P 500 market index is expected to remain within +/- 7% over the next 30 days within 68% probability. The VIX was at very low risk levels during 2005 to 2007, as global markets were incorrectly fearless in a world awash in available cheap money. Then the panic of a near financial meltdown in Oct. and Nov. 2008 took the VIX to unprecedented levels of 80, where participants were expecting the market 68% probability to expand out to a 23% range over the next 30 days. The VIX is a convenient indicator of investor uncertainty. When it trades above 30, expect high emotions to result in increased market transaction risks and abnormal price changes.

Is the trend always your friend?

There are many stock market adages such as “the trend is your friend” or “don’t fight the tape”. Since most markets normally rise in price over long term periods of steady moderate inflation, the simple suggestion that trend following is a good strategy makes sense. Stocks and commodities generally trend higher during periods of economic growth and moderate inflation. Even bonds provide reasonable return trends when interest and inflation rates are moderate and steady. On the other hand, downward price trends are warnings that something is not right and held assets will likely lose market value. A change in market trends points to problems with the trend following mantra.

Trend related rules are needed to confirm if a meaningful trend change has occurred. The rules essentially define filters that accept some level price movement noise. In addition to market price information, other economic asset operational factors should be considered to adjust the noise filters. The economic factors often alert when a long running trend becomes more risky. This is the astute investor’s way of being aware of Minsky’s *Financial Instability*

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Hypothesis. Trend following is momentum investing that can easily be blinded by greed. Filters can be adjusted based on operational factors such as earnings yield or fundamental asset overvaluation. The filter can also be set up based on general market characteristics, as a way to take some profits by selling partial asset positions. For instance, in choppy markets that tend to rise 15% for about 6 months and fall back 15% in the next 6 months, shorter trends suggest tighter filters set 10% below the asset purchase price to limit potential losses and 20% above current asset prices to take partial profits. Trend following rules should relate to specific market and asset operational characteristics. For most people, early stage trends are hard to spot with regularity. Other fundamental asset valuations are often better reasons for buying an asset. However, the breakdown of a trend is usually a good reason to sell a part of the asset as a defensive response. Various techniques for trend following with noise filter, such as moving average crossings and point and figure chartings, will be discussed in latter strategy chapters. The trend is your friend, until it changes (and is no longer your friend).

Relative strength (RS) is another asset market price technical attribute. The concept is to observe the relationship with asset classes or specific assets within an asset class and strive to own the strongest price performing assets in the relatively highest performing asset classes. The RS technique is generally an intermediate term (2 to 5 year asset holding period) speculative approach. The filters for RS confirmation are often wider than absolute price trends. Successful RS based asset ownership requires long trend periods and areas of the economy that are advancing above other areas. The inverse attribute of relative weakness is often used in defensive strategies, such as selling or hedging against declining asset prices.

Is the cost of market transactions too high?

The cost of buy and sell transaction agents and their value should be considered prior to selecting investment assets. Agents that support higher asset value transactions should be knowledgeable in all aspects of the transaction, even though they may not be professionally qualified to give certain advice. For example, a real estate transaction includes seller commissions between 4% and 6% of the transaction value of a unique property. Can the selling agent negotiate a price closer to your

asking price than a buyer's offer price? A thorough knowledge of the property location, preferred maintenance services, asset relative value, related tax ramifications of ownership, and near term profitability should be expected of a buyer's agent or his/her supporting firm. A hedge fund or actively managed mutual fund may charge up to 2% of the asset under management initial value and a % of the annual profits. Higher priced agents add market risk to transactions because they add certain costs to the process. Those costs act as hurdles prior to earning profits. Consider the alternatives. Does their strategy demonstrate unique knowledge that indicates acceptable future performance is likely? Does an index fund of similar assets that cost \$50 for any size purchase have a better probability of earning long term profits? Agent costs should be lower in liquid markets such as blue chip stock markets. Liquid assets offer the flexibility of being sold or hedged against possible losses quickly. For illiquid assets with higher agent costs, select the agents carefully after thorough research in order to be confident that they provide the expected transaction value. Plan to hold and manage or monitor illiquid assets, such as real estate or other asset partnerships, for 15 years in order to develop them into their highest potential after tax value.

Market references are useful to measure market transaction risks

Asset prices, volatilities, and correlations were analyzed to indicate general market risk characteristics. The risks are variable. Most market words of wisdom are tendencies that apply to most market situations, but are not certainties. They don't apply to all situations. Benchmarks of market tendencies or the entire asset class performance over a meaningful period may be helpful references to keep score of held investment assets. A Vanguard S&P 500 Index may be a useful benchmark for U.S. large capitalization stocks. That does not necessarily imply a buy and hold strategy through all market conditions. In fact, during sideways choppy market periods, any active U.S. blue chip stock mutual fund manager should be required to exceed the benchmark by a specified amount to overcome a heightened risk hurdle.

Relative Benchmarks

The benchmark should only be used during the period that the asset is held or adjusted for actual portfolio holdings. During periods when resources are moved to less risky assets, such as

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money market funds, the benchmark should be adjusted. For example, if a portfolio holds 50% stocks and 50% money market funds during a year when the S&P 500 stock index returns 6% and the average money market funds returns 3%, then an applicable index return is 4½%. If an active mutual fund manager has a superior strategy and exceeds the benchmark stock index fund by 2% annually for 5 years, research may determine that he provides an acceptable return for the added risk. Benchmark comparisons indicate if the selected asset is providing a market return appropriate for its market risk. An investment portfolio that includes 5 different asset classes will naturally be more complex than a portfolio with 2 asset classes. However, the availability of exchange traded funds for almost every conceivable index of market asset indices provides an opportunity to construct true market indices, including related fund transaction and holding period expenses.

Absolute Need Benchmark

Market transaction risks can also be measured with respect to absolute return goals. In that case, a cash flow or annual spending budget may define the benchmark. A retired couple may be 70 years old and their real annual return needs may boil down to \$80,000. Their assets are an 8 unit apartment building and \$1,000,000 retirement investment account. They have no mortgage financing and plan to earn \$40,000 cash flow from the apartments and \$40,000 from a short term (3 yr. duration) bond fund. Their apartment building provides 5% cash on asset value return and their less risky bond fund provides a 4% cash return. There are other wealth planning issues and inflation purchasing power issues. Yet, from a market risk perspective, the absolute return approach is a valid way to analyze investments and determine if they can achieve absolute spending needs, while taking essentially no market transaction risks.

Summary

- Supply, Demand, Liquidity, and Leverage, are asset transaction risk factors
- Historical asset prices, returns, volatility, and correlations = facts for insights
- Market emotions and trends are complex and variable
- Transaction supporting players should provide value for certain costs
- Benchmark or measurable absolute return goals are equally useful

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Chapter 9. Data Risk or Information Content?
*What Do You Believe That Is Actually False?*¹
-Ken Fisher

Key Points

- Questions should lead to relevant investment data
- Separate facts from opinions
- Strive to think and act independently

Many sources of investment related data are available. Yet, is the data accurate? Are opinions concerning data confusing? Is confirming data coincident and irrelevant? Is data research flawed? Has independent judgment converted data into profitable information? These are some of the questions to be asked in analyzing data risk and seeking investment information.

Rational human biases usually misinterpret data.

Developing a good process or method for finding relevant, accurate data to support investment decision making requires a thoughtful, reflective journey. Human survival biases look for critical, quick, exciting facts to avoid predators and build confidence to follow personal desires. However, pre-historic human physical survival differs from modern economic survival. Successful wealth management requires sound investment decision making in a competitive world, where cumulative mistakes lead to significant losses and a reduced standard of living. Sound decision making begins with good data.

Is the data accurate?

Good data is accurate and relevant. It includes macroeconomic data, specific asset operational data, and market data. Many questions should be asked and suitably answered to find good data. What is the source? The data provider may have a bias or methodology weakness. For example, the Bureau of Labor Statistics (BLS) collects a great deal of employment data. Thousands of employers report job layoff and hiring data to the BLS. The sample size is large and the monthly employment reports are critical in forecasting U.S. and regional income, consumption, and gross national product. Yet, the report is subject to revisions after a change in the economic trend, e.g. a contraction (recession) or a post recovery expansion. It is lagging investor data. Businesses cut labor expenses, adjust, and likely improve profitability prior to rehiring employees. Small businesses are dynamic, make hiring decisions quicker than large companies, and their impact on employment and unemployment rate reports lags considerably. The BLS data is likely the

least biased, most accurate macroeconomic data available due to its large sample size and established method. When the sample size is not statistically significant, the confidence level in the estimate is limited, and it should not be used as primary investment data. The first U.S. Quarterly GDP estimate (issued about 30 days after the quarter ends) is subject to change due primarily to updated inventory and foreign trade data. Thus, it is less accurate than alternative microeconomic data based on quarterly asset reports, such as corporate financial reports. They are initially published within 30 to 45 days after the fiscal quarter and formally as 10-Q reports to the SEC thereafter.

Other industry and macroeconomic reports have limitations, when marketing or political focus leads to selective, biased data disclosures. It may be difficult to determine the author's agenda and impact. The pharmaceutical industry may promote a drug through incomplete advertising that may make it vulnerable to Food & Drug Administration sanctions and risk lost sales. Otherwise Congress may attempt to enact universal health care through industry price controls and effectively ration drugs. Supportive reports are published. Is the data accurate and complete? Do you agree with the conclusions?

Is the macroeconomic data confusing?

Macroeconomic data may be confusing. Certain segments (e.g. services, business investment) of the economy may be expanding, while other segments (e.g. manufacturing, exports) may be contracting. Some source data is more accurate than others. It is especially challenging, when forecasts of premier econometric firms vary widely and appear to add to the uncertainty. In those cases, some smart investment firms focus on data surprises or variances from the loose consensus of various macroeconomic factor reports. When the net surprises are positive the smart firms may purchase their favored investment assets and alternatively may remain defensive when the surprises are negative.

Separate the opinions from the data.

There are many risks with investment related data. Recognize that opinions concerning the data add more risk to making investment decisions. Emphatic forecaster pronouncements should be viewed skeptically. At best an insightful forecaster will be correct 55% of the time in the long run. Hopefully correct forecast impacts are greater than incorrect ones. Think

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about the weather. Extraordinarily detailed weather models support modern day forecasters. Yet, the topology and natural air flows surrounding Denver, USA are more complex than about Rome, Italy. A five day forecast may simply have a higher probability (based on specific criteria factors) of being correct for Rome than Denver. The macro economy and other factors impacting asset values are more complex than the weather. The competitive economic actions of billions of people in my view result in more uncertainty than near or intermediate term weather forecasts. The best analysts present insightful facts and scenarios. Naturally, their best scenario opinion will be emphasized. Yet, all scenario information is valuable. You may conclude that an alternative scenario is more compelling. The point is to consider different opinions, especially those that you disagree with. The opinions of investment gurus should be debated. If they cause you to change a decision, then at least you know why it made sense for you to do it.

Operating asset data should be more specific.

As previously discussed, financial statement report data submitted to the SEC should be accurate and the management discussion & analysis should be more factual than other asset data. There are no guarantees; however possible judicial actions, including Sarbanes Oxley law penalties, strongly encourage executives to give accurate and full disclosures. Large uncertainties and risks may be clearly disclosed and limited future guidance provided. That may be the best available information. The most important quantitative data is usually the cash flow data. The operating, financing, and investing cash flows should paint a reasonable picture of an asset's solvency and liquidity. The asset may be a stock, bond, or real property cash flow statement. Income statement and balance sheet data can be more complex and require more judgment to understand. Accruals, accounts receivable, accounts payable, inventories, depreciations, depletions, and goodwill at times include judgments concerning allowances for bad things such as value write downs. This is where clever financial wizards can manipulate accounting information (i.e. cook the books to use a 17th century culinary term for making things look better than they are.) In any case, the data concerning off balance sheet disclosures may be the critical data. The standard warning is: Stay away from assets that are not understandable to you.

Market clearinghouse data is valuable; yet there are risks to consider

Stock, bond, options, futures, and other asset transaction exchanges are critical for free societies and markets. Today's computers and backup computers, as well as oversight regulations, improve record keeping and allow frauds to be factually investigated. Mistakes can be made primarily in chaotic, panic markets, where transactions are not correctly recorded or the system is overloaded. However, the last problem is always solved by some new circuit breaker or other means to pull the plug on an unstable system. Market data keeping improved after the Oct. 19, 1987 stock market crash and Sept. 11, 2001 terrorist attacks. Capacity was increased and more transaction data was stored.

Market data is valuable because it represents real decisions; just the facts. Price and volume data are both critical. Price data may be noisy as speculators jockey to scalp small profits from markets. However, volume provides added data to confirm that the asset price is real and meaningful. The last trade prior to market closing may be at an extreme high or low price. That asset price based on a low volume trade may not be available the following market day. Experience is needed to notice, when even real market data is not useful for asset transaction decisions. Some investors prefer to deal only with relatively stable markets and place more value on Friday (weekend) closing prices. There is always the risk of something bad happening on a 2 day or 3 day holiday weekend, so speculators will likely cover their higher risk bets and cause prices to settle closer to fair values.

Illiquid markets should be left for the pros

Illiquid market data is a difficult challenge, even if it is accurate. When few transactions are made, the spread between offered and asked prices is high. The thinly traded asset may be held by a market maker or specialist or an over-the-counter electronic exchange may query potential buyers and sellers. A large spread, possibly 5% between offered and asked asset prices, provides information. A transaction is unlikely, unless the buyer or seller feels forced to make the trade. The transaction will likely be for a relatively small quantity transaction in an illiquid market. Also be aware that the actual transaction fee will not be the rock bottom electronic brokerage house fee. Data in illiquid markets is most important for professionals, who are knowledgeable of an asset's operational and

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potential value. The general investor should stay away from illiquid markets. Data may or may be accurate. However, even good data may not assure that a transaction will be profitable. Remember that most investors do not plan to hold an asset for its full life time. A sale transaction most likely will need to be made in a similar illiquid market. That is a market risk, regardless of the data risk.

Confirming or Coincident Data? It matters.

A good research process looks for independent data that in summary confirms that an asset is favorably or unfavorably valued. All the data may be accurate, but the question is: Is it valuable? For example, macroeconomic data may forecast that the U.S. GDP will grow 3% next year, while you are researching Microsoft's near term potential sales growth. The macroeconomic data is likely to be coincident and a minor factor, since the U.S. GDP normally grows about 3% annually. Microsoft's sales outlook likely is most affected by its software product cycle and internet/entertainment division outlook. Microsoft's sales are not necessarily dependent or independent of a normal U.S. GDP growth rate. The macroeconomic data does not corroborate or refute the Microsoft outlook.

It is good to select confirming data from completely different sources and time frames. Macroeconomic, asset operational, and market data are different sources. The most direct links are often between macroeconomic and asset operational data. Yet, buyers and sellers in the market place are looking at the same data, so the confirmation may not be valuable. The asset price may be coincidentally adjusted, as market valuations quickly adjust to asset operational changes. Market prices often move far above or below long term average valuations, while overconfidence and greed or alternatively uncertainty and fear sway the market. Noticing a favorable market valuation, along with a good understanding of the asset operational outlook, and a unique favorable macroeconomic factor is the trifecta of investment confirmations. It is very unusual to get such favorable alignments. Different time frames for confirming data define a time diversification approach. The favorable macroeconomic time frame for a stock ownership may be from 6 months prior to the end of a recession to 6 months after the end of a recession (if you can correctly estimate that time frame and if the stock's earnings meet expectations.) However, the stock analysis may

see a longer term abnormal earnings growth outlook. Confirmation in different time frames may establish a prospect of a longer hold period that exceeds normal macroeconomic cycles.

The Confirmation Process

Favorable market data is often the best confirmation of favorable (undervalued) asset operational data. The concept applies to all asset classes. Yet, equity ownership of an operational business may present the best opportunities. The asset may be shares of waste management company. The industry and business are steady and boring. New management may have presented a strategy in its SEC 10-K discussion and analysis to grow a complementary non-capital intensive waste disposal project. The story may make sense based on 3 or 4 quarters of new waste disposal project sales that have increased to 20% of the business and overall total annual earnings growth at 5% above the general economy. A discounted expected operational cash flow analysis indicates that the company share price is undervalued by 15%. Market price and volume data show a steady trend of annual price appreciation (+10%), normal liquid (500,000 daily shares trading) volume and relative strength versus a side ways unchanged overall U.S. stock market during the past year. The market data confirms steady price and volume characteristics with modest relative strength, in addition to a modestly under valued operational cash flow analysis. The stock scenario shows a reasonable confirmation set-up. In the market for debt assets, such as bonds, the confirmation of favorable macroeconomic data (lower interest rates) with independent market data (higher prices) may be less clear. Bond prices reflect interest rate, supply, and credit rating changes quickly. Mispricing and confirmation of favorable macroeconomic data does not occur often, except in illiquid assets. Confirmations of strongly favorable debt scenarios are generally less frequent.

Coincident data, that does not confirm a favorable asset outlook, easily confuses investors. The primary catalyst may be low interest rates. Housing sales and leisure travel may be relatively strong. The catalyst and broad economic activities data do not confirm that a loosely related industry, such as recreational vehicle sales, and a specific leading supplier, Winnebago Industries, are good values. Similarly, market data in an industry, such as pharmaceutical companies, where stock prices

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tend to move together, may appear favorable. The stock price of Abbott Labs may be moving up strongly with steady earnings growth, while the stock price of Merck may be moving modestly higher, even though sales and earnings are flat. Coincident movement of stock prices is a weak reason to purchase the lagging “bargain priced” company.

Data research is tricky

It is easy to be fooled by simple statistical analysis. The primary problem is that most sample sets are too small and assume normal distributions. More economic data has become available with time. In order to complete regressive trend analysis, analysts try to fill the gaps prior to existing data with implied similar data. For example, detailed housing data has become obtainable in the past 50 years. However, the detailed information was not available during the early 1920's or 1930's economic downturns. To make forecasts of home sales, construction, and prices based on either the data of the past prosperous 50 years or the data that includes partially simulated data is limited in value. Mortgage financing and household creditworthiness related data are critical in home sales related analysis.

Consumption forecasts are limited due to varying circumstances over time. Comparing trends during the 1930s decade economic downturn with that of the late 2000s through early 2010s period is complex. Government policy changed dramatically from relatively small to relatively large expansion and control. The process smoothed out changes in income transfers at the cost of future productivity and growth. Estimating changes in consumption and savings in 2 very different circumstances is difficult. Household psychology and true desires of big government must be considered. The voters' future selection of political leadership is a factor.

Market data is not continuous and markets are not efficient

Market data research is especially prone to errors. Much financial theory is based on two important simplifying assumptions: market data is normally distributed and the markets are efficient. As previously discussed, normally distributed data allows relatively simple, continuous Gaussian statistics to be used. That includes the standard deviation (S.D.) function, various related statistics, and hypothesis testing. It is simple to assume that 68% of data samples

will be within +/- 1 S.D. of the mean data point and 95% will be within +/- 2 S.D. of the mean. Yet, the outlying 2½% so called negative tail impact can bankrupt the careless related strategy. The outlying tails are in fact fatter because their sources are often not known and their impacts are greater than normal distributions expect. In other words the data is discontinuous. It is not continuous. An analogy is the impact of earthquakes. After many decades of few and low impact earthquakes, the price of earthquake insurance will likely fall in price or a government will decide to be the insurer at artificially low premiums. Either scenario is problematic. A 7.5 Richter scale level epicenter earthquake in the San Francisco or Los Angeles financial district may injure or kill people and severely damage expensive buildings, as well as adjacent transportation highway arteries. The private or government insurer will likely have limited financial resources because they miscalculated the impact of a tail event. Forcing limited samples of market data into normal distributions is hazardous to good analysis. Scenario analysis, which independently postulates discontinuous causes and impacts of outlier events, is a tedious worthwhile antidote to simple continuous function market data analysis.

Financial market theory assumes that markets are efficient. Specifically, the Efficient Market Hypothesis (EMH) popularized after Eugene Fama's PhD dissertation², states that markets reflect all known information in the price of traded assets efficiently. No one can earn excess returns. Simple market returns are only possible over the holding period. For completeness a semi strong EMH implies markets respond rapidly (not instantaneously) to new material information, so that non-public participants may have limited opportunities. Finally, a weak EMH implies that although long term excess returns are not possible, market inefficiencies and short term lack of equilibrium may be exploited.

The financial behavioral scientists note in a differing view that humans are prone to the previously analyzed biases. Richard Thaler³ refers to these biases as rationality boundaries. There are human limitations in will power and self interests. That leads to market inefficiencies that can be profitably exploited by the smart strategist. The markets are very efficient. Yet, human biases and participant limitations upset market efficiencies and equilibrium, which astute

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investors convert into information and short term excess returns.

Data research can be manipulated and self serving

It is easy to fool yourself and others with data research that is not thorough or that strives to justify a personal belief. An investor, who is committed to a strategy, such as price momentum investing, may focus on data that confirms his or her way of thinking. Searching for confirmation in an established strategy can lead to jumping prematurely to conclusions. Data mining is the primary error. Sometimes data is omitted under the assumption that special conditions make it suspicious and irrelevant. Data omission is very dangerous, because the special conditions are likely to occur again unexpectedly. Other times a long data series does not exist and the full range of data is not available. Price momentum investing is a good example of a strategy that is most profitable in a speculative market, where assets are bid up in price above normal operational cash flow valuations. Under unusual favorable macro-economic conditions, such as the long secular 1980 and 1990 bull markets, the strategy was successful. If data, e.g. emerging stock market data, that was available beginning in the 1970s and 1980s is used, momentum investing appeared very profitable. Yet, a longer data series is needed. If it is not available, then the researcher should acknowledge that the strategy can not be fully tested. Otherwise, use of an available small sample set, e.g. the Dow Jones Industrials (began 1896 - 12 stocks, increased 1916 - 20 stocks, since 1928 - 30 stocks) provides limited data through more varied macroeconomic and varied individual corporate conditions. More specific asset markets and their historical data have become available in recent times. Yet, in many cases, there is not enough data to do a linear regression analysis and state that the conclusions are statistically significant. A better approach in that situation is to do scenario analysis, which searches for conditions that disprove the primary conclusion.

Expert investment services fall into the data mining trap, when inexperienced researchers are not monitored closely. The new researcher's intention to get ahead and support the firm's preferred strategies with technical and statistical analysis can lead to unsubstantiated conclusions. The thoughtful investor must recognize the difference between source data and research reports based on data. It is also useful to ask

many well thought out questions. There is a difference between good, simple questions and irrelevant dumb questions that annoy busy researchers. In any case, if the report author or broker presenting the report can not answer your question, it may be best to pass an opportunity that is not understood.

Outlier data provides useful insights

When price data points fall far outside of 2 or 3 S.D. from the means, questions should be asked. "Why did that price happen?" is a good question. Unleveraged asset value limits are worthless (0) and an extreme positive value (imagine 10 X initial value or ?) At a value of "0", effective bankruptcy or no economic value occurs. All types of assets can become worthless. A leveraged position can lose the asset value, as well as the loan, and the agreed upon interest rate (and borrowing fees). Data reviews should separate financing costs from the simple asset valuation. If the asset rises in value to Peter Lynch's proverbial ten baggers (where an asset rises to 10 times its purchase price), then it is also critical to ask how that happened. The risky company stock may have been on the verge of bankruptcy and the government used taxpayer money to bail it out. Some type of leverage was effectively present in order for the stock to trade as a bet (call option) that the favorable condition would occur. That is how outlier events occur. To participate in future outlier successes resources are needed to make many high risk bets. For most people, that is a poor strategy.

Distinguishing information from data is critical.

In addition to data and relevance risk recognition there is the important issue of creating information. Data is not information, which provides a rational opportunity to earn a return based on a corresponding risk. Information should be thought of as a calculated probability to earn an expected return, if the most likely scenario occurs. Additionally, it should include the negative scenario and defensive actions to be taken if the asset value falls out of the acceptable value range. Sell criteria for preserving capital at an acceptable loss are most critical. Yet, in many volatile markets sell criteria for taking at least some profits when target valuations are reached is also necessary to accumulate capital gains. A very good analysis of selling criteria by Donald Cassidy⁴ will be discussed in later chapter strategy discussions.

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Investors some times simplify information into a calculated ratio of expected excess (above risk-free Treasury bills) returns divided by recent intermediate term volatility (S.D.) Necessary asset information is more than a calculated information ratio, where both the calculated numerator and denominator are uncertain estimates. As previously discussed, the primary risk categories; macroeconomic, asset specific operations, and market; provide limited information concerning factors related to expected returns. The scenario analysis and sell criteria offer added information. In most cases, screens for favorable asset factors are initial data points or starting points for information gathering. Meaningful information is created from the discovered favorable factors. It becomes personally valuable, if it fits within your investment strategy.

What Do You Believe That Is False?

The first chapter of Ken Fisher's referenced book⁵ discusses the relationship between data facts that are observed and beliefs, which influence decisions. He built a very successful investment guidance business on the foundation of the principles of his famous growth stock strategist father, Philip Fisher. There are many investing adages that result in oversimplified beliefs and cause flawed decision making. Let's analyze a common belief that Fisher focuses on based on his growth stock investment strategy. His reasoning is analyzed with an emphasis on thinking carefully and thoroughly.

A common stock market adage is "High P/E markets are riskier than low P/E markets." Fisher provides data that shows the 1996 through 1999 markets went from high P/E to record extreme high P/E markets. Equity investors earned far above normal annual equity asset returns, partially in response to above average earnings returns. Cautious investors, who were not fully invested in stocks during that period, missed an opportunity to earn extraordinary returns. The 1982 through 1999 global secular bull market was the most extraordinary in recorded history. In the midst of high inflation and a deep recession, the S&P 500 large U.S. blue chip stocks had a P/E = 7 in 1982 and in the midst of low inflation and a 9 year economic expansion, the S&P 500 index showed a record P/E = 42 at the end of 1999 according to data from Crestmont Research⁶. The P/E increased from 23 to 42 in the 16 economic quarters from the 1st Qtr. 1996 through the 4th Qtr. 1999. Is

Fisher correct? It depends on your beliefs and how you define risk.

The past 3 risk category chapters defined risk in the context of asset operating risks, market transaction risks, and data usage risks. When assets, such as stocks, are valued above estimated discounted future cash flows, they are generally overvalued. A market P/E above 20 results in a reciprocal earnings yield of 5%. Based on available equity market data over the past 100 years, the earnings yield for stocks has been about 7%. To support Fisher's implication that stocks were not risky at a P/E over 20 implies that economic factors were unusually favorable. In fact, inflation was stable and the split party government between the legislative and executive branch resulted in below recent average government spending growth (primarily due to reduced defense spending after the fall of the U.S.S.R.) U.S. productivity averaged 2.6% during the 1996 to 1999 period or nearly doubled the 1.4% rate from 1971 to 1995. Total earnings, wages, and consumption were rising at record rates, as many investors felt confidently that the old rules of valuation relationships no longer applied and economic recessions would be few, small, and far between. In terms of this analysis, asset valuations were expensive and market volatility in Fisher's growth universe was very high. My respectful conclusion is that the market was in fact risky at the high P/E's of the late 1990's. Stock market investors accepted high risks and earned high returns during that period.

There is more to learn in looking at the data. There are also times, as Fisher implies, that "Low P/E markets are riskier than higher P/E markets." When government economic policy is unfavorable, then low P/E markets can be unfavorable and go lower. An example of a secular bear market is the 1968 to 1982 period, when taxes were raised, trade payment gold agreements were abolished, price and energy controls were instituted, and an uncontrolled money supply caused near runaway inflation. During that period the S&P 500 P/E fell from 21 to 7⁷. According to an article by Mark Hulbert⁸ it took more than 8 years, from late 1972 through 1981, for total stock market real returns to come back to zero, when inflation and dividends are considered. That is slightly longer than the late 1929 to late 1936 period for total stock market real returns to come back to zero (after the Stock Market crash and part of the 1930s Depression!) The asset operating risk and market transaction

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risk criteria should have warned that the low P/E period, especially during the late 1970s inflationary period, was also very risky.

Another perspective is that Fisher's reasoning is most profitable during secular bull markets and that the risk definitions presented herein result in fewer losses during secular bear markets. In fact, Fisher may be one of the few market timers that recognize the secular bear markets and suffer few losses during those periods. Independent data is not available for the performance of Fisher's firm during the 1970s.

The most important idea to take away from Fisher's referenced book and this chapter is to think independently. It is psychologically difficult to question investment facts similar to a scientist questioning why the radar is not tracking targets. The radar engineer knows his radar equations are correct, but that the target signal may be below the radar noise level, the radar processing computers may not be programmed correctly, or hardware problems may exist. With effort the primary problem will be identified and, if possible, corrected. Investing is not like radar development or other applications of science. The market is made up of buyers and seller, who are impacted by fear and greed. Their actions sometimes cause markets to appear inefficient. Investing is as much art, as science. Following stock market adages and the general crowd will usually result in below real market holding period returns.

Independent thinking means questioning the conventional wisdom like a detective. If data and thorough analysis do not corroborate what everyone else is doing, then wait for the information to line up the low risk factors that have been discussed. It is normal to sit in the same boat with the crowd and complain about hardships. That is generally not profitable. Finding a niche of facts based on your skills and interests, may translate into information that the market has not recognized. People familiar with small companies in the nascent software, biotech, and networking industries of the mid 1980s through mid 1990s were able to identify potential winners and a few Apple, Microsoft, Amgen, and Cisco very profitable companies. Use actual data to discover macroeconomic, operational asset, and market insights that appear to reduce risks. Test them. If they appear profitable, then make investment decisions based on your self-reliant thinking.

Summary

- Good data is based on skeptical questions
- Information is based on good detective work
- Independent decision making is difficult, but potentially profitable

References

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