



## The GHPIA Investment Method

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GHP Investment Advisors, Inc. applies an investment philosophy based on the fundamental concept in economic theory defined as “equilibrium.” The idea is that there is a tendency for markets to move towards a state of balance based on supply and demand, thereby producing prices equal to the intrinsic value of the assets they represent. Of course, if market prices were perpetually at equilibrium, then an investor would neither be overcompensated nor under-compensated for the risk taken when buying securities. However, because of the impact of human emotions, randomness and investor psychology, market prices are rarely at equilibrium; rather they spend most of the time swinging like a pendulum between overpriced and underpriced extremes. Therefore, our goal is to make reasonable estimates of equilibrium values to determine if our investments are priced appropriately for their relative levels of risk, and for the prevailing swing of the pendulum. To achieve our objective we created a comprehensive and quantitative benchmarking process that we utilize when executing our investment decisions.

Benchmark, as defined by Merriam-Webster, is a point of reference from which measurements may be made or something that serves as a standard by which others may be measured or judged. **This definition exemplifies our investment approach - we calculate benchmarks for each investment opportunity to determine if investments are overvalued, undervalued or priced at their relative equilibrium.** These proprietary benchmarks allow us to create strategies and take action based on emotionless mathematics to avoid Benjamin Graham’s observation about most investors: “Most of the time common stocks are subject to irrational and excessive price fluctuations in both directions as the consequence of the ingrained tendency of most people to speculate or gamble... to give way to hope, fear and greed.” Although our benchmarking system is not an exact science, it does enhance our ability to gauge investment opportunities and avoid the emotionally capricious pitfalls experienced by many investors.

For each major investment class: Equities, Real Estate, Fixed Income and Commodities we calculate benchmarks unique to that security type, taking into consideration the risk and return potential of that particular investment. We are also continuously engaged in the comparative analysis of the opportunity cost of investing in one major investment class versus another.

### Equity Benchmarks

As we all know, the stock market is extremely volatile and difficult to predict particularly because common stock does not have promised cash flow, a set maturity, or an easy way to observe the rate of return. Therefore, benchmarking this asset class is especially important.

Our equity analysis methodology is as follows:

- Sort stocks by asset class (Growth versus Value, Large Cap, Mid Cap, Small Cap).
- Analyze company sector valuations (i.e. Banks, Telecom, Health Care Services, Technology companies, etc.).
- Examine the financial statements for financial risk (high leverage, interest rate risk, lack of liquidity).
- Analyze the operating risk (business risks such as customer concentration, competition, cost structure, etc.).
- Evaluate the economic risks (sensitivity to the business cycle or interest rates).
- Study the risk of obsolescence (such as camera film).



We add two additional steps for the selection of international companies:

- Examine the macroeconomic environment within the country.
- Examine a country's political, legal and regulatory structure.

Using this methodology along with discounted cash flow modeling we calculate our equity benchmarks. Discounted cash flow models are based on the concept that **the price of a share of stock is equal to the present value of the future cash flows that the shareholder expects to receive.**

According to our current benchmark, we believe Large Cap Growth companies should sell for a price to earnings (P/E) ratio of approximately 27 times earnings or less. Buying a Large Cap Growth company at 27 times earnings basically means we require a rate of return (ROR) of approximately 9.5% to be compensated for our risk, based on historical growth rates for the Large Cap sector. As a comparison, Large Cap Value companies tend to grow more slowly than growth companies; therefore, we are willing to pay only 20 times earnings for a Large Cap Value company and likewise earn only a 9% ROR.

**Chart 1** is an example of our analysis of the Large Cap Growth asset class based on the average P/E ratio relative to our benchmark of 27 times earnings. In 1999, Large Cap Growth companies, primarily technology companies, were selling for an average multiple of 49 times earnings. During the same time Mid Cap Value companies were selling for approximately 14 times earnings relative to our benchmark of 19 times earnings (**Chart 2**).

**Table 1** highlights the performance of the Large Cap Growth and Mid Cap Value companies. While Large Cap Growth companies significantly declined from 2000–2002, Mid Cap Value companies actually rose in value because they were not selling for inflated prices in 1999. Our benchmarking method allowed us to avoid emotional investing in the “hot” stocks of that time such as Yahoo, America Online, Cisco, etc. because our arithmetic signaled their prices were well beyond their intrinsic values. These charts illustrate that while the Large Cap sector of the market fell 48.1% from 2000-2002, the Mid Cap Value sector increased 23.1% during the same period.

## Real Estate Benchmarks

Similar to equity investments, real estate securities can be difficult to value. Like stocks, they do not have a set maturity or a promised cash flow, although cash flow may be consistent for a period in time. However, unlike stocks, they often have finite lives.

As investors, we generally purchase real estate by investing in Real Estate Investment Trusts (REITs). REITs are pooled capital used to purchase and manage real estate and are traded on major exchanges like stocks. REITs do not necessarily increase or decrease in value along with the broader equity market. However, they provide an investor with yield in the form of dividends. There are many different types of REIT classifications such as Diversified, Office, Multi-Family, Retail, Industrial, Hospitality, Health Care, Mortgage and Hybrid REITs.

Since REITs are required to pay annual dividends to their shareholders, our benchmark is derived from their historical average dividend yield within the respective REIT classification defined above. **Chart 3** is a comparison of our benchmark for a Diversified REIT (dividend yield of 6.7%) relative to current average dividend yields. This chart highlights that yields on real estate were attractive in the late 1990's through around 2003, according to our methodology.

As an example of comparing risk across asset classes, by applying our benchmarking system in 1999, we were able to determine that REIT investors were being overcompensated for their risk while Large Cap Growth owners were taking excessive risk (**Chart 2**). During this time, investors were earning an above average dividend yield on REITs of 8.7% while at the same time Large Cap Growth companies were selling for a price to earnings ratio of 49 (**Chart 1**). While many Large Cap stocks were providing stellar returns for shareholders, our benchmarking placed risk control ahead of full participation in gains, which guided us to increase our exposure to REITs, and their comparatively modest returns, just as the pendulum began to swing back to equilibrium for some high flying stocks.



## Fixed Income Benchmarks

Unlike stocks and real estate, bonds are typically issued by corporations or governmental entities with known interest payments (coupons) and a fixed principal value to be returned at a set maturity date. One of the largest risks associated with bonds is interest rate risk – the possibility that the principal value of a bond will decline as future market interest rates rise. Therefore, the longer the maturity of the bond, the more risk is at stake for the investor. There is likewise the risk of default – the event in which bond issuers are unable to make their required debt service payments as scheduled. These two risks explain why our benchmark for bonds (interest rate or yield) is lower for a 2-Year U.S. Treasury bond versus a 2-Year AA rated U.S. Corporate bond or the 30-Year U.S. Treasury bond.

To calculate our Fixed Income benchmarks, we analyzed historical data for bonds, inflation, and the Fed Funds Rate (see Q1–2012 Newsletter regarding Fed Funds Rate). As with any benchmark, our goal is to determine what a reasonable price or yield is for an investment when the market is at equilibrium. Our benchmark for the Consumer Price Index (inflation) is 2.5% and 3% for the Fed Funds Rate. With these assumptions, our benchmark for the 10-Year Treasury is 4.5%. Therefore, when the 10-Year U.S. Treasury is yielding 1.65%, it indicates that several areas of the bond market may be severely out of equilibrium, and we believe an investor is not being adequately compensated for the aforementioned risks.

## Commodity Benchmarks

A commodity is defined as a product for which there is demand but is supplied without qualitative differentiation across the market. Commodities are hard assets including wheat, cattle, gold and oil, each with their own benchmark derived from their Marginal Cost of Production (MCP). Essentially, MCP is the change in total cost that comes from producing one additional unit and it allows the commodity producer to determine when economies of scale are achieved.

Using oil as an example (see Q2–2008 Newsletter), on July 3, 2008 the price of crude oil hit its peak at \$145.29 per barrel (West Texas Intermediate Spot). Leading up to that time, oil was steadily increasing in price while the stock market was steadily declining in value. Our MCP benchmark for oil is \$70-\$80 a barrel. Therefore, in early 2008, despite increases in the price of oil, we did not invest in oil-related securities because our benchmark suggested a possible detachment from intrinsic value and thus a speculative risk. Subsequently, oil prices collapsed to \$40 in late 2008, well below our MCP benchmark, and thus became an attractive investment.

Gold is another commodity that we currently do not own in our portfolios due to our benchmarking process. We believe the MCP of gold is significantly lower than its current market price at \$1,597.45. While some speculators may have profited nicely on the spread between gold's MCP and its current price, we believe the risks are too high and the margin of safety too narrow to warrant investment in a commodity that appears so disconnected from equilibrium. In fact, within the past year gold prices dropped over \$300 from their peak of \$1,900 per ounce, possibly signaling a reversal of the pendulum's swing.

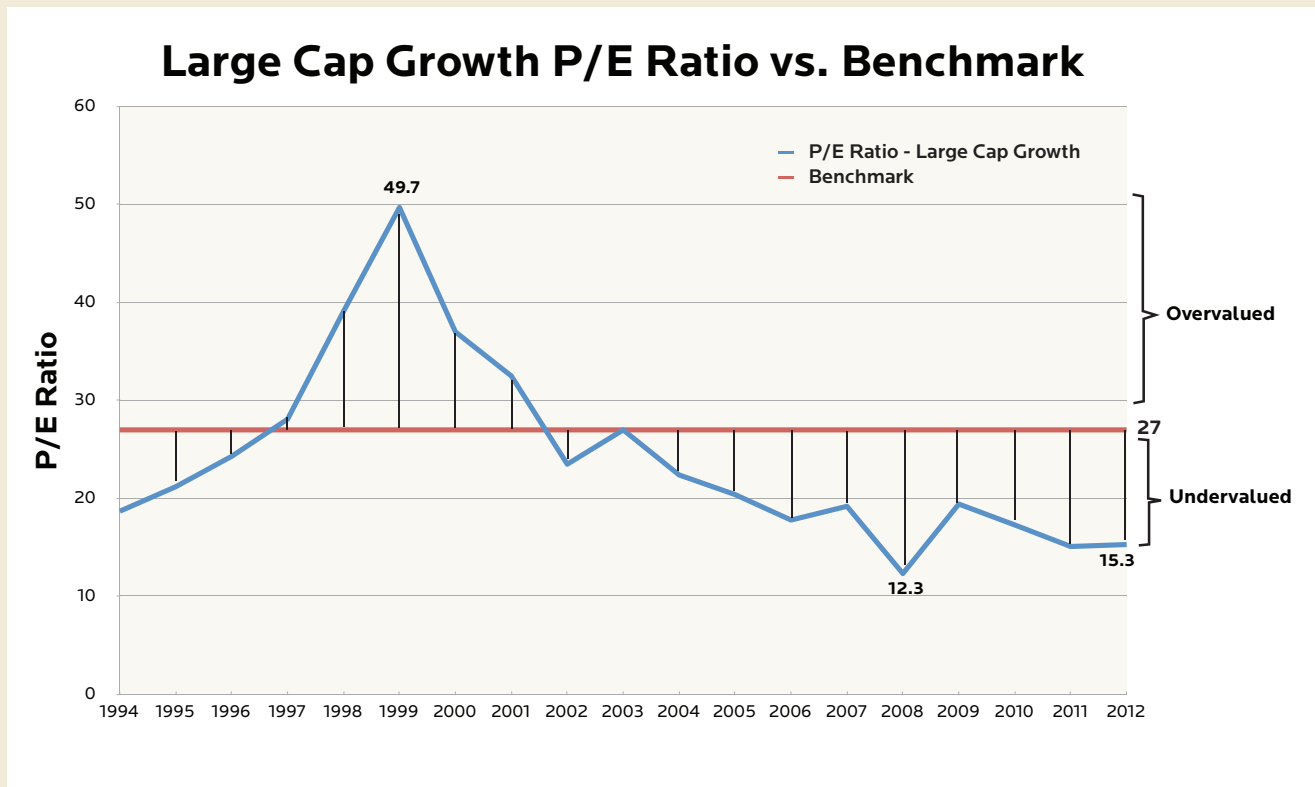
## Conclusion

Although our rigorous application of this benchmarking process has provided us with an extremely useful tool for evaluating market prices, no all-encompassing quantitative formulas exist for consistently and accurately alerting us when markets have gone to irrational extremes. Much in the same way that precise weather forecasting is sometimes defied by the chaotic nature of the atmosphere, equilibrium pricing in the investment markets is challenged by a human element that is often unpredictable and at times random. As a result, **our commitment to this benchmarking approach has occasionally forced us to take a contrarian and unpopular stance** that may appear to be incorrect depending on the time period for which we are judged. **Yet we remain devoted to this benchmarking discipline because we believe in the ultimate swing of the pendulum back to equilibrium and the inevitable cyclicity of the economy.** In keeping that steadfast conviction, rooted in mathematics and largely devoid of emotions, we believe the best risk measures coupled with opportunities for gain are achieved over the long term for our clients. Warren Buffet adequately sums up our benchmarking method with his quote: “You are neither right nor wrong because the crowd disagrees with you. You are right because your data and reasoning are right.”



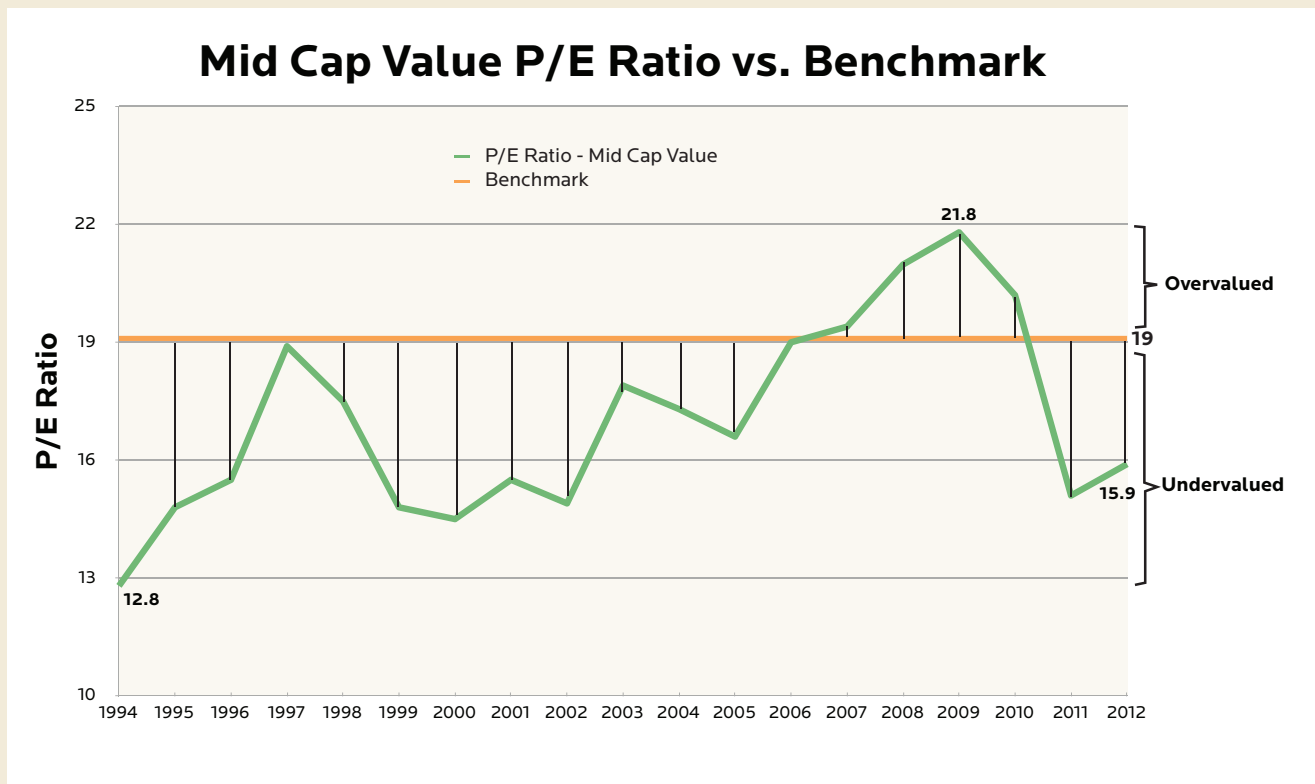
# Chart 1

Source: Bloomberg



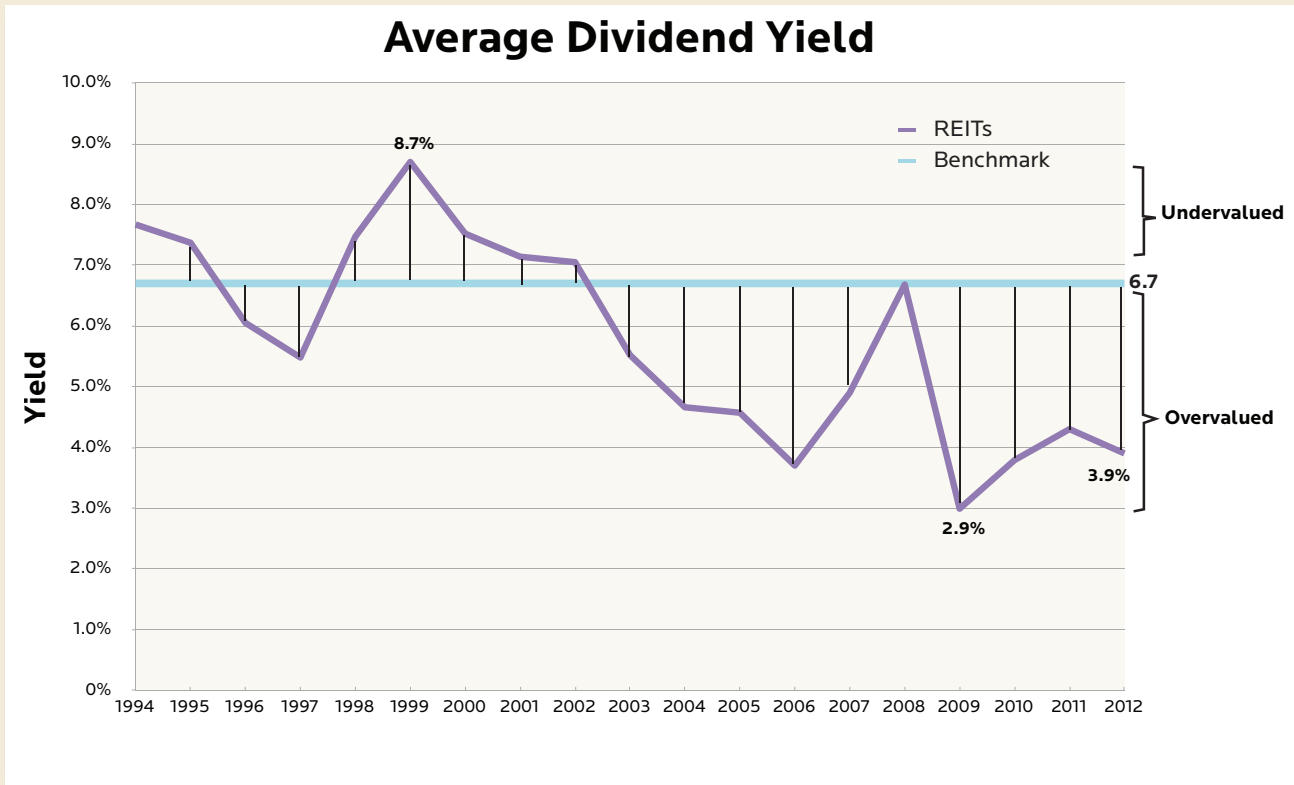
# Chart 2

Source: Bloomberg



# Chart 3

Source: NAREIT



# Table 1

Source: Bloomberg

**Asset Class Returns**

Year	S&P 500 Growth	S&P 400 Mid Cap Value
2000	-22.10%	27.80%
2001	-12.70%	7.10%
2002	-23.60%	-10.10%
2003	25.70%	40.20%



## Key Financial Ratios for Domestic Asset Classes

Asset Class	Price/Earnings 2012:Q2	P/E Benchmark	Over/Under Valuation	Price/Book Value 2012:Q2	P/BV Benchmark	Over/Under Valuation
Large-Cap Growth Stocks	15.3	27.0	-43.3%	3.6	5.7	-36.8%
Large-Cap Value Stocks	12.2	20.2	-39.6%	1.5	2.5	-40.0%
Mid-Cap Growth Stocks	20.0	24.8	-19.4%	2.8	4.5	-37.8%
Mid-Cap Value Stocks	15.4	19.1	-19.4%	1.5	2.2	-31.8%
Small-Cap Growth Stocks	19.7	23.2	-15.1%	2.5	3.5	-28.6%
Small-Cap Value Stocks	21.5	18.2	18.1%	1.4	2.1	-33.3%

\*Please note that the P/E data reported above are based on "as reported" earnings information rather than "operating" earnings. "As reported" earnings include one time write-offs whereas "operating" earnings reflect the profitability of a company as a going concern. We believe P/E's based on operating earnings are a better long-term valuation indicator, but Standard and Poor's does not report this information for the style indexes used in our calculations. Amid economic recession, declining earnings impact price-related ratios and "as reported" earnings can be significantly lower than "operating" earnings (particularly in the Value segment of the market) due to large write-offs. As a result, the P/E ratios listed above are higher than they would be using "operating" earnings for the denominator. To address this issue we have included Price to Book Value (P/BV) data, which are less affected by the impact of declining earnings and large write-offs.

GHP Investment Advisors, Inc. benchmarks are based on proprietary discounted cash flow models. P/E and P/BV data provided by Bloomberg L.P. as of 7/02/12.

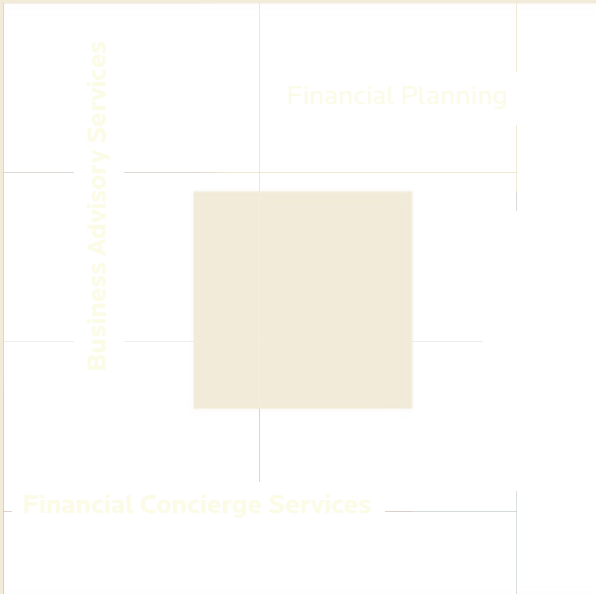
## Returns by Index

Index	2012:Q2*	YTD*
DJIA Total Return	-2.51%	5.42%
NASDAQ	-5.06%	12.66%
S&P 500	-2.75%	9.49%
S&P 500/Value	-8.75%	6.65%
S&P 500/Growth	-3.99%	9.45%
S&P MidCap 400/Value	-7.16%	6.39%
S&P MidCap 400/Growth	-5.89%	7.59%
S&P SmallCap 600/Value	-5.31%	6.47%
S&P SmallCap 600/Growth	-1.45%	8.95%

**DJIA & NASDAQ:** Bloomberg L.P. as of 06/29/12.

**S&P Returns:** Standard & Poor's Financial Services LLC. (2012). S & P Indices. In Standard & Poor's/ Americas. Retrieved July 2, 2012, from <http://www.standardandpoors.com/home/en/us>

\*Dividends Reinvested.



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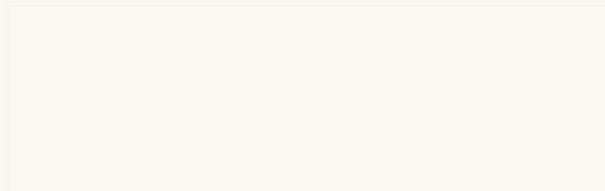
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