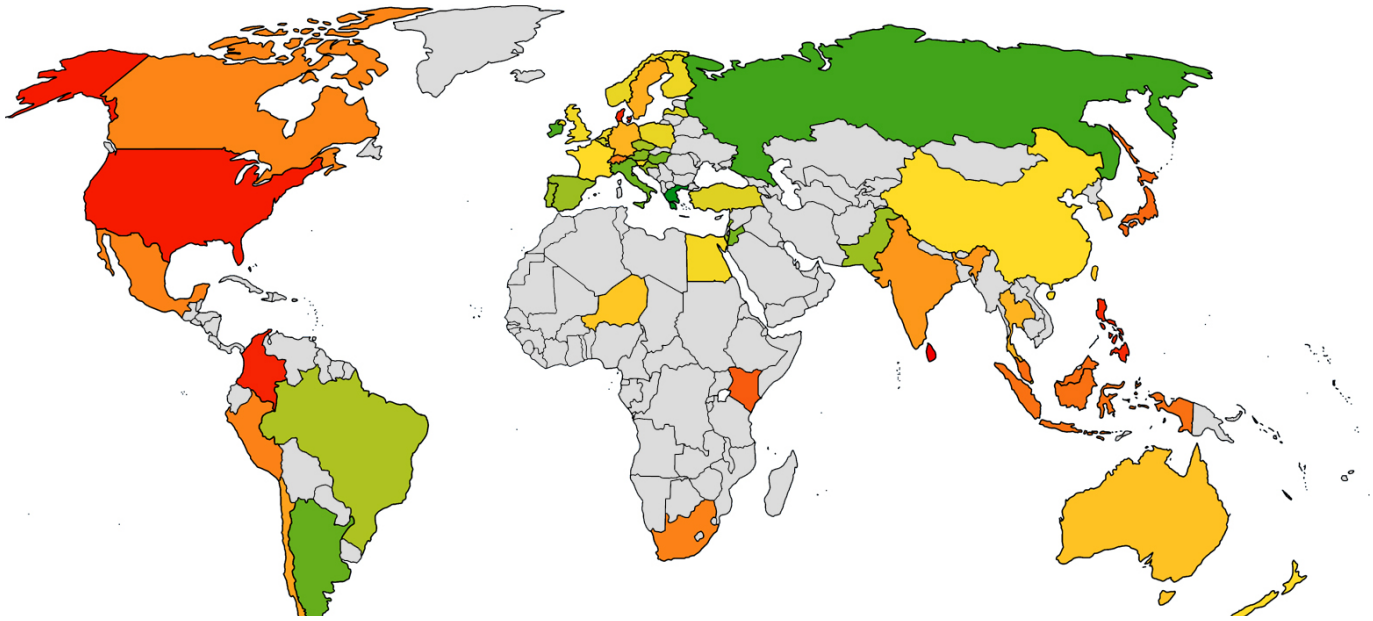
GLOBAL VALUE

How to Spot Bubbles, Avoid Market Crashes, and Earn Big Returns in the Stock Market



DEDICATION

To Dad

My investing mentor

Death is nothing at all. I have only slipped away into the next room. I am I, and you are you. Whatever we were to each other, that we are still. Call me by my old familiar name, speak to me in that easy way you always used. Put no difference into your tone; wear no forced air of solemnity or sorrow. Laugh, as we always laughed at the little jokes we enjoyed together. Play, smile, think of me, pray for me. Let my name be ever the household word that it always was. Let it be spoken without effect, without the ghost of a shadow on it. Life means all that it ever meant. It is the same as it ever was; there is absolute unbroken continuity. What is this death but a negligible accident? Why should I be out of mind because I am out of sight? I am but waiting for you, for an interval, somewhere very near just around the corner… All is well.

-Written by Henry Scott Holland (1847 – 1918) Canon of St Paul's Cathedral

DATA, CAPE RATIO UPDATES, ACKNOWLEDGEMENTS

Nearly all of the data used in this book are from Global Financial Data. Many of the concepts were originally developed and refined by Benjamin Graham, David Dodd, Robert Shiller, and many others too numerous to list.

We update the global CAPE ratio values on our website, The Idea Farm, each quarter:

www.theideafarm.com

The book's homepage can be found at www.globalvaluebook.com.

INTRODUCTION – WHAT IS A BUBBLE ANYWAY?

What exactly is a bubble?

The Merriam-Webster dictionary definition of a bubble is "a state of booming economic activity that often ends in a sudden collapse." Some people define a bubble as an extreme upward deviation from a long-term price trend, while others declare a bubble when price decouples from an asset's fundamental value. In many cases, fundamental value is relative -–how much worth a Van Gogh painting or a 1963 Corvette has to you may be very different from its worth to someone else. For example, Steve Cohen finds $10,000,000 worth of value in the sculpture *The Physical Impossibility of Death in the Mind of Someone Living,* while another may simply see in the sculpture a dead and rotting shark.

Of course, financial assets are a little different than muscle cars and art in that they generate a stream of cash flows through dividends or interest payments that act as an anchor to an estimate of fundamental value. Emotions, such as greed and fear can determine asset price movements in the short term, often causing prices to decouple from their fundamental values. It is a sure sign that a bubble exist in an asset class when a particular irrationality sets in and begins to govern our investing decisions. Think of the rush on tulips and futures in the 1600s that skyrocketed their prices to the value of a house, or when everyone wildly poured their money into Internet stocks in 1999, or frantically flipped real estate in 2006. In many cases, debt and leverage are employed to magnify the effects of the speculation.

Yale economist and recent Nobel Prize award-winner Robert Shiller conveyed to NPR that a bubble is "like a mental illness" and has the following characteristics:

- A time of rapidly increasing prices.
- People tell each other stories that purport to justify the reasons for the bubble.
- People tell each other stories about how much money they're making.

- People feel envy and regret that they didn't participate.
- The news media are involved.

There is a lot of talk these days about bubbles, and while the US Treasury bubble talk has subsided a bit, it may be replaced with the social media bubble, the farmland bubble, or perhaps the Bitcoin bubble. More than likely, there is a bubble in talk of bubbles! People tend to vividly remember recent painful events like losing a lot of money, and given the two large equity bear markets within the past 15 years in the US, investors may be overly sensitive to the recent past. But, as Cliff Asness, Founder of AQR Capital Management, clarifies in a recent Financial Analysts Journal article "My Top 10 Peeves," the term "bubble" has been diluted in the popular vernacular. A "bubble" should technically refer to a specific pattern of investment behavior, but instead has come to refer, more generally, to any perception of overvaluation. Asness writes:

> "To have content, the term bubble should indicate a price that no reasonable future outcome can justify. I believe that tech stocks in early 2000 fit this description. I don't think there were assumptions – short of them owning the GDP of the Earth – that justified their valuations. However, in the wake of 1999-2000 and 2007-2008 and with the prevalence of the use of the word 'bubble' to describe these two instances, we have dumbed the word down and now use it too much. An asset or a security is often declared to be in a bubble when it is more accurate to describe it as 'expensive' or possessing a 'lower than normal expected return.' The descriptions 'lower than normal expected return' and 'bubble' are not the same thing."

On the other extreme, there are those who believe that market bubbles don't exist at all. Or, if they do exist, proponents believe that you cannot reliably identify bubbles ahead of time in order to avoid their destruction to your portfolio. Followers of the Efficient Market Hypothesis (EMH), such as Eugene Fama, the American economist and fellow Nobel laureate, follow this philosophy. Here, Fama offers his opinion from a 2010 interview with *The New Yorker*:

> "I don't even know what a bubble means. These words have become popular. I don't think they have any meaning…It's easy to say prices went down, it must have been a bubble, after the fact. I think most bubbles are twenty-twenty hindsight. Now after the fact you always find people who said before the fact that prices are too high. People are always saying that prices are too high. When they turn out to be right, we anoint them. When they turn out to be wrong, we ignore them. They are typically right and wrong about half the time…They [bubbles] have to be predictable phenomena."

So where does this leave us? Can we or can't we predict when a bubble is occurring? Below we search for clues in one of the most famous bubbles of all time before trying to find an objective way to identify bubbles, avoid their popping, and invest in their aftermath.

BUBBLES EVERYWHERE

A fellow student of bubbles, Jeremy Grantham at Grantham, Mayo, Van Otterloo and Co. (GMO) has collected data on over 330 bubbles in his historical studies. He points out in a recent research piece, "Time to Wake Up: Days of Abundant Resources and Falling Prices are Over Forever," that one of the key difficulties is distinguishing when a bubble is indeed occurring, and when there actually is a paradigm shift. In other words, when is this time *really* different?

Three of the most famous bubbles in history are the South Sea Company bubble of 1711–1720, the Mississippi Company bubble of 1719–1720, and the Dutch tulip mania of the early seventeenth century, all of which saw drawdowns from peak to trough of 80-99% (Dreman, *Contrarian Investment Strategies*). We are not going to review these bubbles at length as many have done a wonderful job already, and we have included a reading list at the end of this piece for further exploration. While tulip mania and the Mississippi Company are both fascinating narratives, this introduction focuses on the South Sea Bubble of 1711-1720 since the term "bubble" was actually coined during this period.

The South Sea Company was a British company founded by the high-ranking government official Lord Treasurer Robert Harley. England had amassed a large national debt during the War of Spanish Succession, and the company was founded to help fund the government debt in a roundabout way, since the Bank of England had the only banking charter at the time. The South Sea Company issued new shares of stock to existing bondholders of the government debt. In exchange for assuming the debt, the government granted the company a monopoly on trade with South America while continuing interest payments on the debt in the amount of 6% per year.

In theory, this was a win-win scenario for all parties. The company received cash flows to fund operations (government bond payments), the government reduced their interest payments, and the holders of the government debt received shares in a company founded with a built-in monopoly and staffed by high ranking government officials. The South Sea

Company continued to acquire more debt over the next few years with lower and lower interest payments.

WHAT COULD POSSIBLY GO WRONG?

The investors in South Sea Company stock were convinced that the troves of wealth coming out of the South American gold mines would be traded for Europe's fine textiles and other refined goods, all at an obscene profit. Unfortunately, profits from the shipping monopoly, which also included rights to deliver slaves to South America, never materialized, as only one ship was allowed transport per year. This reality did not stop a speculative frenzy from ensuing, as many secondary offerings of South Sea stock were initiated with politicians receiving shares and options, thus incentivizing them to further inflate the stock price further.

As speculative trading in South Sea Company stock increased, other joint stock companies were launched on the London exchange. Charles MacKay reviews some of the speculative companies being founded during this period in his book *Extraordinary Popular Delusions and the Madness of Crowds,* including one company that was founded with the purpose of "carrying on an undertaking of great advantage, but nobody to know what it is." In effect, none of the investors knew what this company's business model was. The founder collected £2,000 for the share offering the next day and promptly skipped town never to be heard from again. (If this scenario seems implausible, recall the rabid popularity of so-called special purpose acquisition corporations (SPACs) from 2005-2007 - essentially blank check companies that raised a hoard of capital based on a vague and imprecise business plan. Or perhaps consider many Internet and "app" companies today with high valuations, but no revenue model to speak of to back up such valuations.)

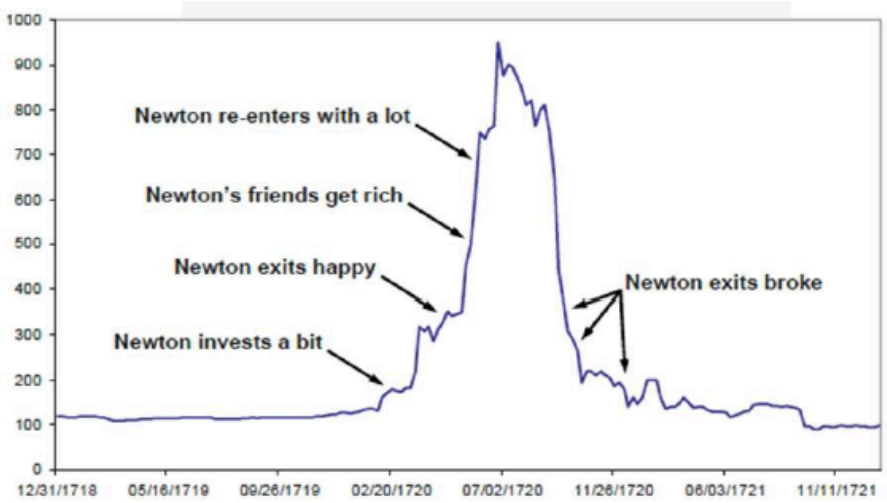
Another company planned to build floating offshore mansions for London's elite, and yet another had a formula to harness energy by reclaiming sunshine from vegetables. These newly floated stock issuances were called "bubbles" at the time. Eventually, the South Sea Company convinced members of parliament (many of whom had already lined their pockets with South Sea Company shares) to pass the Bubble Act on June 9, 1720, which prohibited the existence of any joint-stock company not authorized by a royal charter. South Sea Company had been granted a royal charter, and the Bubble Act, which passed

before the peak of the run up of South Sea Company stock, helped foment the bubble by making South Sea Company shares all the more valuable.

Trading in South Sea Company shares was one of the earliest "pump and dump" schemes in history. South Sea Company's management lacked any relevant shipping and trading experience but were shrewd stock promoters that took office space in the finest area of London's financial district and decorated their offices with opulent furniture and art. The public could not get enough of the shares given the ostensible wealth that had already been created for South Sea's management group. In the end, when the insiders knew that the company's earnings would be abysmal, management began quietly selling at the height of the market. South Sea Company shares began to plummet, and to make matters worse, company officials allowed shareholders to borrow money to buy shares (effectively granting them margin). As share prices fell, investors were forced to sell even more shares.

As seen in Figure 1, the stock price began the year 1719 at around £100, then raced to a peak of nearly £1,000 before crashing all the way back down to £100. A number of high-ranking officials were impeached or imprisoned and their estates were confiscated for their corruption. Those officials included the Chancellor of the Exchequer, the Postmaster General, and the heads of Ministry. Investors from all walks of life traded shares in the South Sea Company, from high-ranking officials, to everyday craftsmen, to one very prominent scientist.

FIGURE 1 – SOUTH SEA STOCK, 1718 - 1721



Source: Marc Faber, Gloom Boom and Doom, and "Riding the South Sea Bubble," Temin and Voth.

"I can calculate the movement of the stars, but not the madness of men."

The aforementioned quotation is attributed to Sir Isaac Newton, an unfortunate speculator in South Sea Company during the period. Marc Faber has compiled a chart of Newton's trading ability in the prior figure, and it illustrates a few key points that have withstood the test of time: a) investment bubbles have been around for centuries, and b) it is nearly impossible to stand aside while everyone else (your neighbor included) is getting rich. Ironically enough, the company continued to operate until the 19th century, far outlasting all of the original shareholders.

So, the real question is: Can you, as an investor, do anything to avoid Newton's fate?

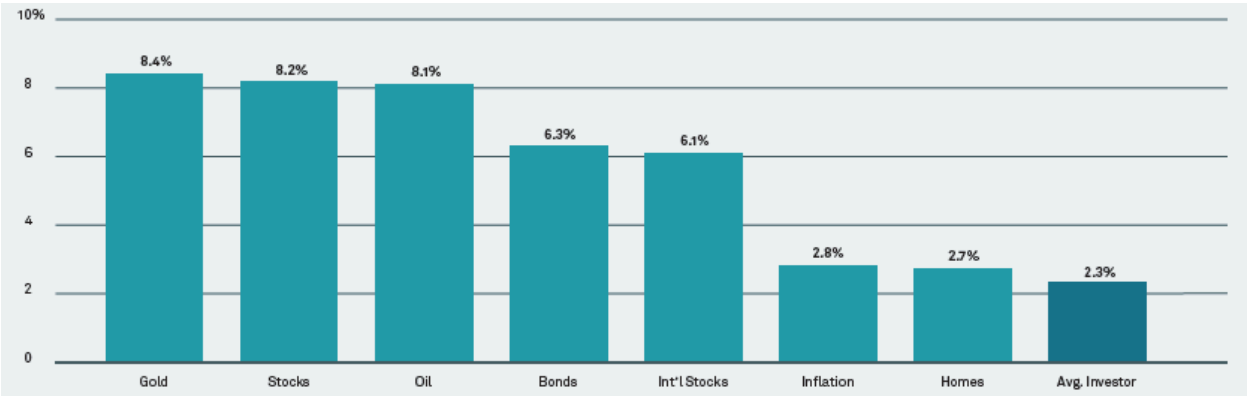
YOU ARE A BAD INVESTOR - THE FUTILITY OF FORECASTING

Investors spend an inordinate amount of time and effort forecasting stock market direction, often with very little success. The conventional efficient market theory is that markets are not predictable and cannot be forecasted. Most research demonstrates this to be true on aggregate. The reality turns out to be that investors are bad at investing.

Because most of us tend to believe that we are exceptions to the rule, that we are somehow exempt from whatever general principle dictates the behavior of the masses, we often don't realize that those behavioral laws include us, too. For example, you probably think you are good at picking stocks (and investing in general). We hate to be the bearer of bad news, but you are not. In fact, you are terrible at investing. Now, there may be a few of you who outperform, and part of that is due to luck, but we are speaking to the collective "you."

The statistics back up this assertation. DALBAR releases a yearly study called "The Quantitative Analysis of Investor Behavior" (QAIB) that compiles flow data of dollars into mutual funds. It has found that the average investor underperforms the market by a significant amount.

FIGURE 2 – INVESTOR RETURNS, 1993-2012



Source: Blackrock, DALBAR.

So why do most people think they are good investors? It is likely the same reason that most people think they are better drivers, and certainly better looking than average. It is a built-in behavioral bias floating around in our genetics passed down from our ancestors many years ago. (Readers of our books excluded, of course!)

Don't be too downtrodden; stock picking is hard - really, really hard. The basic odds are stacked against you. Longboard Asset Management completed a study called "The Capitalism Distribution" that examined stock returns from the top 3000 stocks from 1983-2007. They found the following:

- 39% of stocks were unprofitable investments.
- 19% of stocks lost at least 75% of their value.
- 64% of stocks underperformed the index.
- 25% of stocks were responsible for all of the market's gains.

Simply picking a stock out of a hat means you have a 64% chance of underperforming a basic index fund and roughly a 40% chance of losing money.

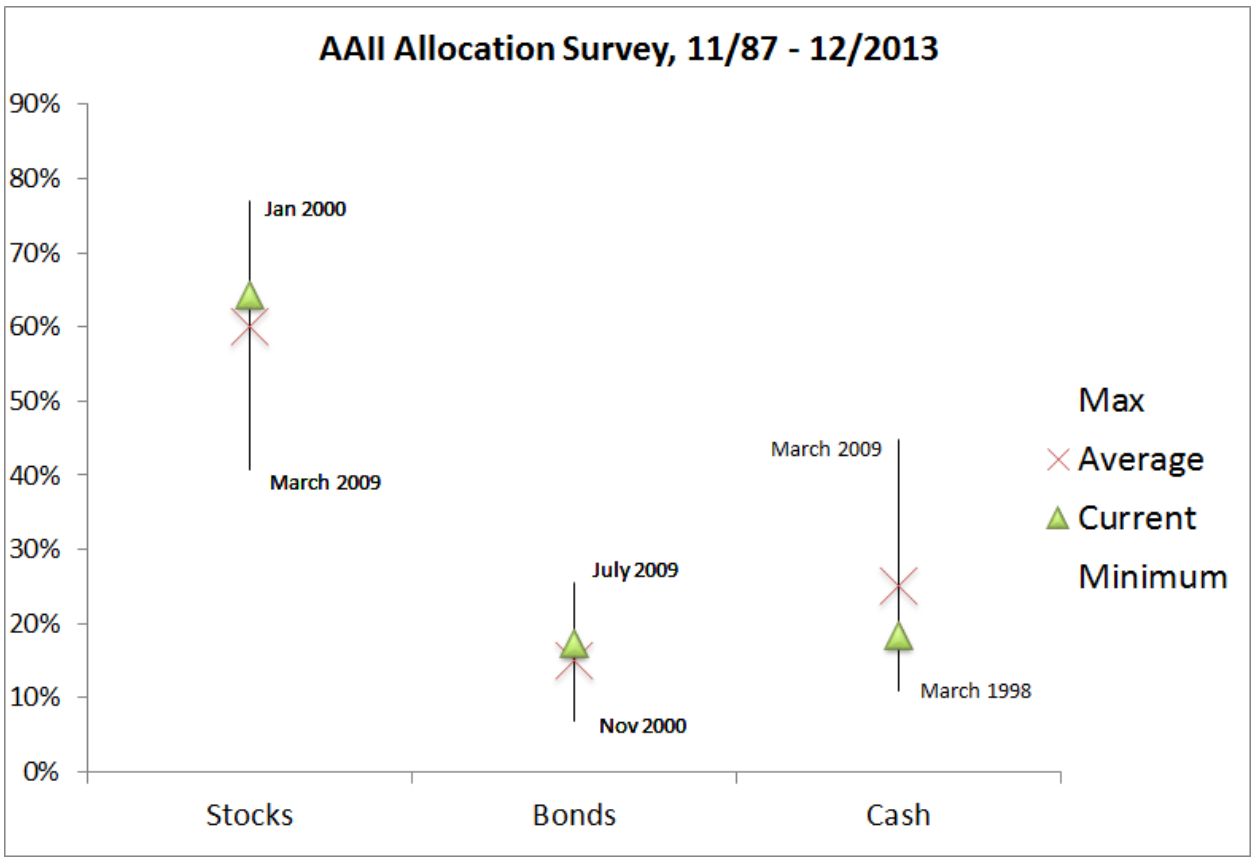
Not only is it hard to pick stocks, you are also up against the most talented investors in the world. There is a famous saying in poker, "If you sit down at the table and don't know who the fish is – you're the fish." Most people who sit down at a poker table with a professional player will quickly lose all of their money. While luck can have an influence in the short term, eventually the outcome is near certain. Most individual investors do not know that they are fish in the game known as Wall Street.

And it's not simply that most people are bad at investing. It's that we are often are own worst enemies when it comes to the market. Why is this? One of the biggest reasons has to do with our emotions. Investors get upset when they are losing money and are euphoric

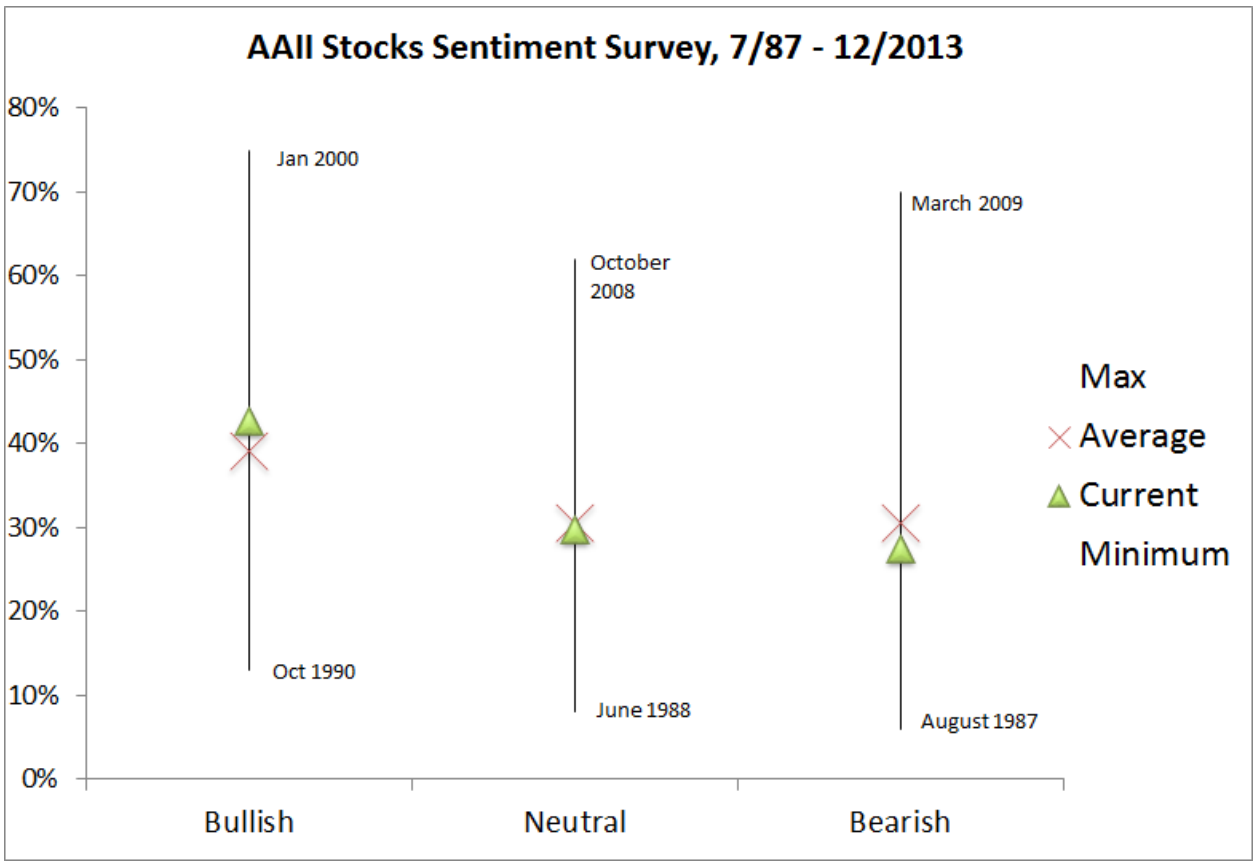
when they are making money. This causes the repetitive behavior of selling at the bottom ("I can't take it anymore") and buying at the tops ("look how much this went up, look how much money I'm making! I'm brilliant!"). The challenge with emotions is that they are not easily measured, and often surveys and other barometers of sentiment are available only for a few main markets. Others, like the Magazine Indicator, are anecdotal at best. Below is a good demonstration, however, of how bad people are at controlling their emotions.

The American Association of Individual Investors (AAII) has been tracking a survey of investors since 1987. Below on the chart you can see how investors have been positioned in three main markets: stocks, bonds, and cash. You can see where the peaks and valleys of sentiment occurred, which happened to be at or near market peaks. One of the worst times to buy US stocks was January 2000. When did investors allocate most of their assets to stocks? January 2000. Investors should have been buying stocks hand over fist in March 2009, which is the absolute *lowest* allocation they had since 1987. Investors were most bearish at the exact bottom of the market.

FIGURE 3 – AAII SURVEYS, 1987 – 2013


AAII Allocation Survey, 11/87 - 12/2013
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan 2000
March 2009
July 2009
Nov 2000
March 2009
March 1998
Stocks
Bonds
Cash
Max
Average
Current
Minimum

Source: AAII.



Source: AAII.

The point is, in bubbles and crashes, extremes in valuation are also accompanied by extremes in sentiment. Investors were most bullish when stocks were most overvalued at their peak and most bearish at market bottoms. If emotions often steer us in the wrong direction, it makes sense to ask: Is there a way to remove our emotions from the equation? In the next chapter we take a look at an objective measure to pick -when it is a good time to invest, and when it is a good time to step aside.

UTILIZING A VALUE ANCHOR

Can having an objective approach to investing allow investors to remove their emotions from the process? Implementing an investment plan lets you break this emotional link and take advantage of the weakness of other investors. Buy-and-hold investing is one successful way to approach the evils of emotional investing. But buy-and-hold investing still exposes investors to bubbles – they just have to sit through them, which can be really hard to do. (According to Research Affiliates, there was a 68-year period in the US where stocks underperformed bonds. That's a long time to wait.)

Value has no place in the efficient market ivory tower, but does it seem reasonable for an investor, or perhaps a retiree, to have allocated the same amount of a portfolio to US stocks in December 1999 versus in 1982 or 2009?

Perhaps it's best to think of valuation as a strategic guide, rather than as a short-term timing tool. It is most useful on a time scale of years and decades rather than weeks and months (or even days). While we can formulate a hypothesis for where the S&P 500 'should' be trading, the animal spirits contained in the marketplace invariably cause prices to deviate quite substantially from 'reasonable' levels. The famous John Maynard Keynes phrase, "markets can stay irrational longer than you can stay solvent," is appropriate here.

There are numerous models to consider when valuing stock markets. We are not going to summarize all of the stock valuation models in existence, but rather focus on just one. Often, in individual stocks, as well as in stock markets, many of the value metrics end up producing broadly similar statistics and fair value estimates. We direct the readers to the Appendix for some discussion of these alternative models, as well as to our blog, Meb Faber Research, and book website www.globalvaluebook.com where we list links to other papers and resources mentioned in this book.

A SIMPLE MODEL – THE CYCLICALLY ADJUSTED PRICE-TO-EARNINGS (CAPE) RATIO

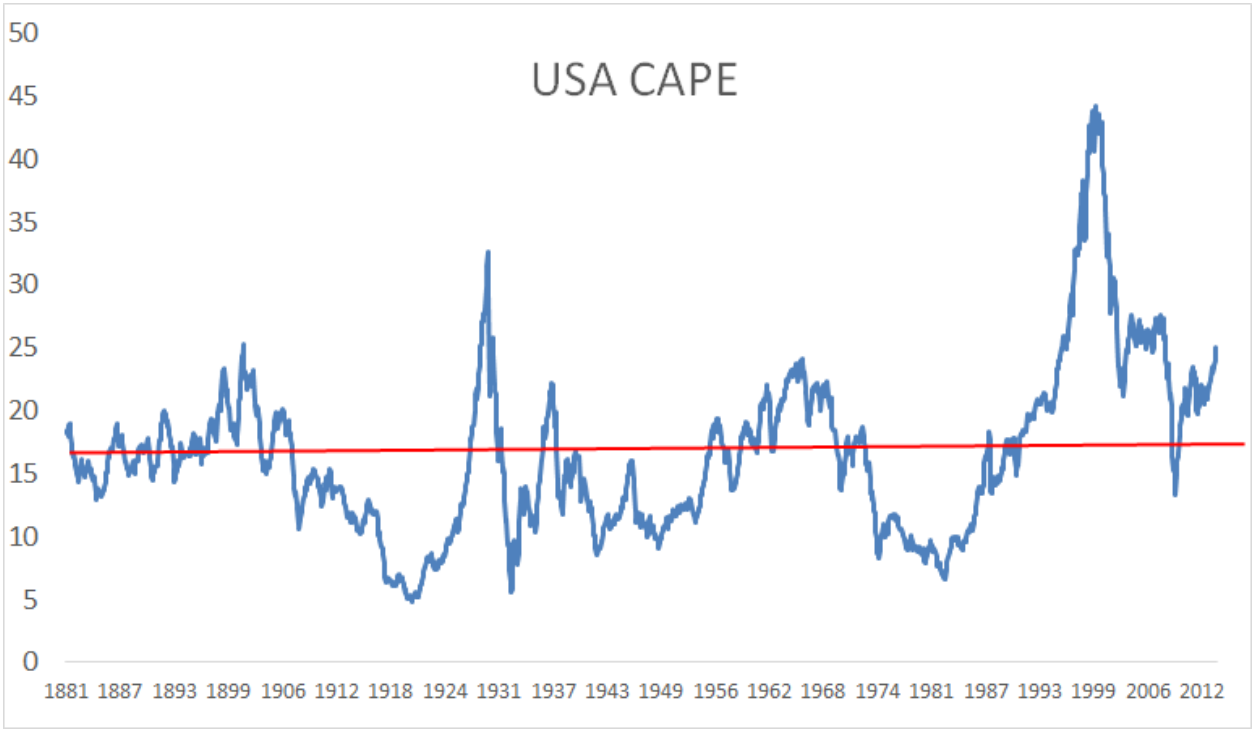
Benjamin Graham and David Dodd are widely seen as the fathers of valuation and security analysis. In their 1934 book *Security Analysis,* they were early pioneers in comparing stock prices with earnings smoothed across multiple years (their preference was five to ten years). Using backward-looking earnings allows the investor to smooth out the business and economic cycle, as well as price fluctuations. This long-term perspective dampens the effects of expansions as well as recessions.

Robert Shiller, the author and Yale professor (and recent Nobel Laureate), popularized Graham and Dodd's methods with his version of this cyclically adjusted price-to-earnings (CAPE) ratio. His 1998 paper, "Valuation Ratios and the Long-Run Stock Market Outlook," was shortly followed by his book *Irrational Exuberance,* that included a warning on overvaluation of stocks prior to the 2000 stock market bear market.

Shiller maintains a website with an Excel download that includes historical data with formulas illustrating how to construct his 10-year CAPE ratio. For a step-by-step guide Wes Gray at Turnkey Analyst has a good post that walks through the steps necessary to construct the metric.

Figure 4 below is a chart of the CAPE ratio going back to 1881. The long-term series spends about half of the time with values ranging between 10 and 20, with an average value of 16.5. The all-time low reading was 4.8, reached at the end of 1920, and the high value of 44.2 was reached at, you guessed it, the end of 1999.

FIGURE 4 - US 10-YEAR CAPE RATIO, 1880 -2013



Source: Shiller.

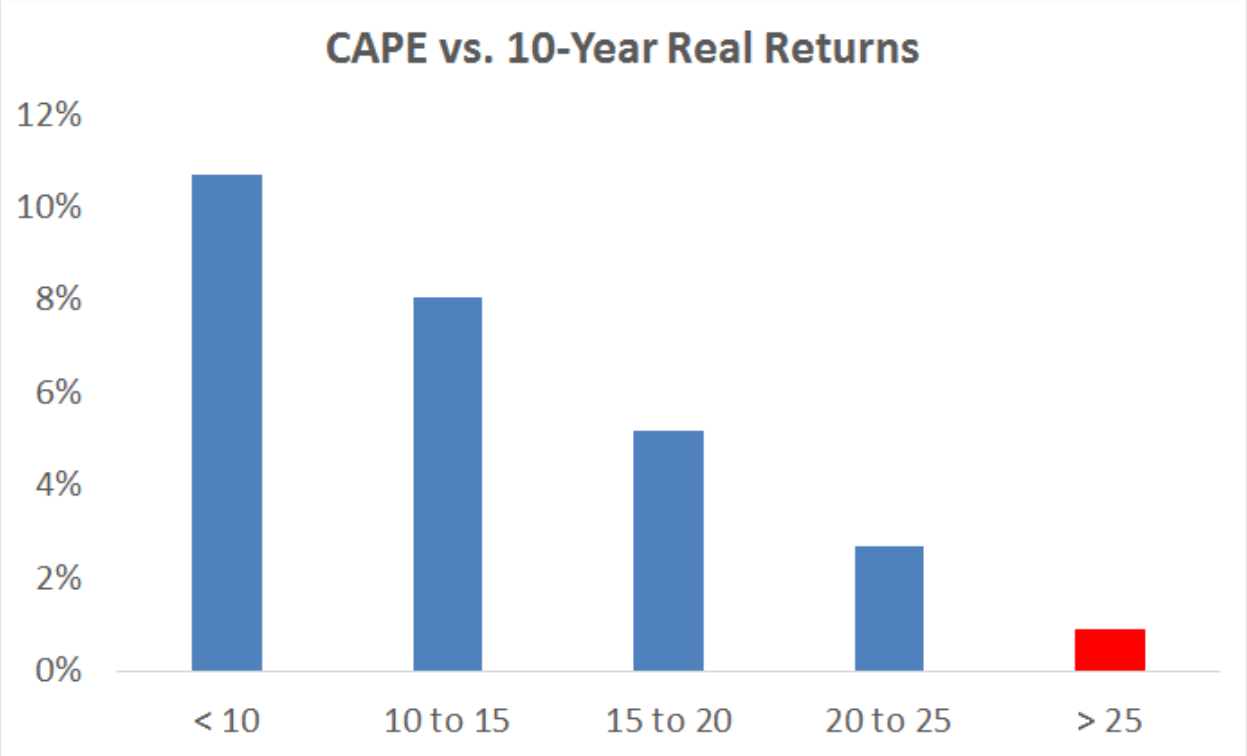
Asset allocators that believe in efficient markets allocate the same percentage of assets to equities when valuations are high as they do when valuations are low. But does that seem even remotely reasonable looking at the above chart?

BUY LOW, SELL HIGH

In Figures 5 and 6, we examine a figure of all of the CAPE ratio readings from 1881 – 2011. We present the real ten-year forward returns (real returns are returns an investor experiences after inflation). The red bar in Figure 5 is where we find ourselves as of the end of 2013 - at a value of approximately 25.

What we find is no surprise: It very much matters what price one pays for an investment! Indeed, it is an almost perfect stair step - future returns are lower when valuations are high, and future returns are higher when valuations are low.

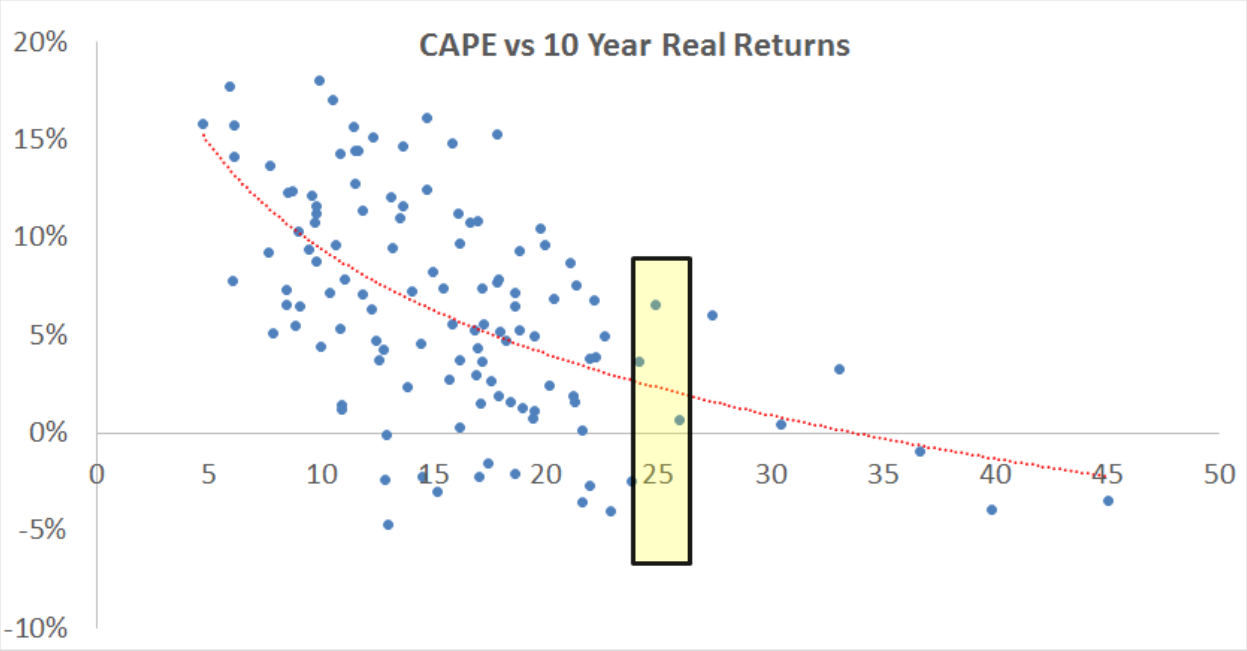
FIGURE 5 - US STOCKS REAL RETURNS VS. 10-YEAR CAPE RATIO, 1881 – 2011



Source: Shiller. Total return series is provided by Global Financial Data and results pre-1971 are constructed by GFD. Data from 1901-1971 uses the Standard and Poor's Composite Price Index and dividend yields supplied by the Cowles Commission and from S&P. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

We include a scatterplot to show that while the trend of value and future returns is clear, it only explains a portion of future stock returns.

FIGURE 6 - US STOCKS REAL COMPOUND RETURNS VS. 10-YEAR CAPE RATIO, 1881 – 2011



Source: Shiller, GFD. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

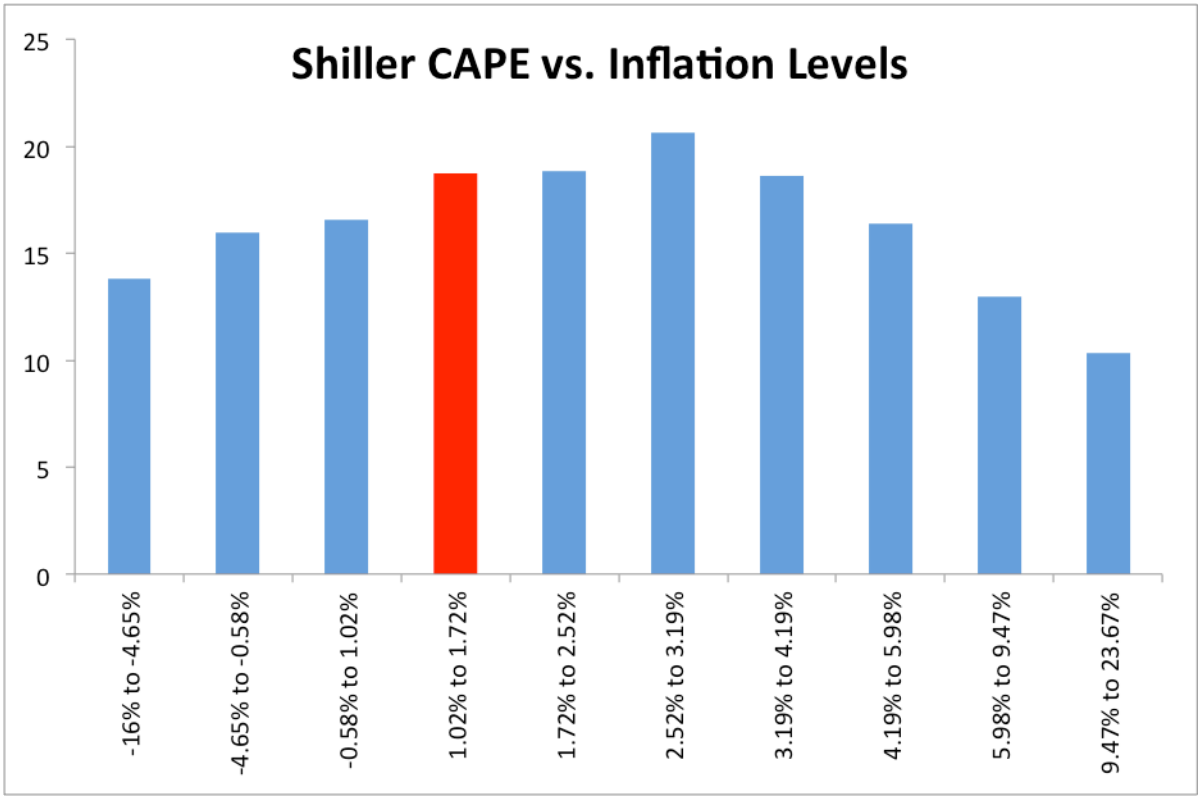
VALUTION AND INFLATION

Besides general sentiment, what might cause this large variation in what multiples investors are willing to pay for stocks? After all, at a current value of around 1848 as of this writing, the S&P could trade at either 370 or 3320 based on historical low and high multiples of 5 and 45, respectively. It is difficult for most investors to comprehend the possibility of stocks declining or rising that much, but both of these multiples have occurred in the past. Can you remember back to how depressed you may have been in 2008 or 2002? Or perhaps how elated you were in 1999?

One of the factors that determines the valuation multiple investors are willing to pay is the inflation rate, as seen in Figure 7. The red bar is where we find ourselves at the end of 2013 with very mild inflation of 1.5%.

When inflation is in the 1-4% "comfort zone," investors are willing to pay a valuation premium compared to when there is high inflation or outright deflation. Rob Arnott of Research Affiliates touches on this important topic in his white paper, "King of the Mountain." Two other books that touch on CAPE ratios and inflation levels are *Unexpected Returns* by Ed Easterling and *Bull's Eye Investing* by John Mauldin.

FIGURE 7: SHILLER CAPE RATIOS VS. INFLATION LEVELS, 1881 – 2011



Source: Shiller, Arnott. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

THE 10 BEST, AND WORST, TIMES IN HISTORY TO INVEST

To illustrate the point of valuation extremes, we examined all year-end periods with a holding period for the next ten years. What have been the ten best, and worst, years to invest since 1881? Figure 8 details these years and their corresponding ten-year compounded real returns.

FIGURE 8: 10 BEST, AND WORST, STARTING POINTS TO INVEST, 1881-2011

	10 Year Return	Starting CAPE
10 Best Starting Years	-3.30%	23.31
10 Worst Starting Years	16.10%	10.92

Source: GFD, Shiller.

Many of the best starting points seem obvious in retrospect. The late 1940s were great entries that preceded the Nifty Fifty mania, and the Roaring Twenties are on the list. The late 1980s certainly would not be left out with the Internet bull market to follow.

The same hindsight applies for the bad years as they often fell at the end of these massive bull runs. Bear markets set the stage for future bull markets and vice versa.

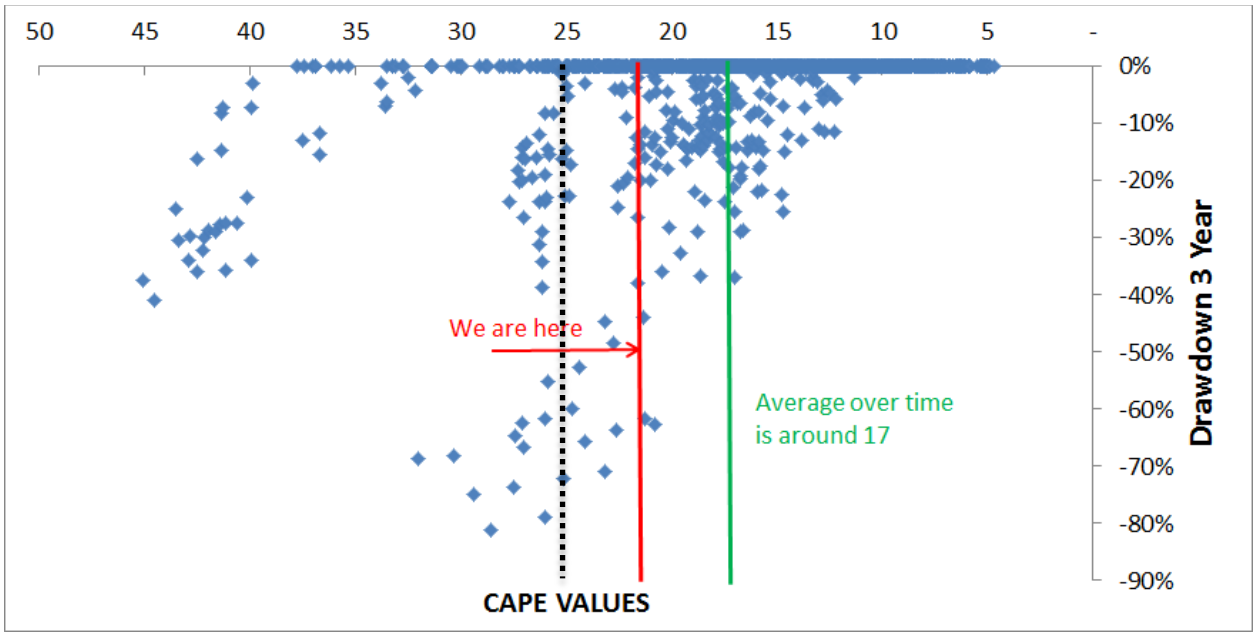
One simple take away from Figure 8 above is the valuations at the start of these 10-year periods. The average valuation for the 10 best years was 10.92. The average valuation for the ten worst years was 23.31, more than double that of the best starting points. With a value of around 25 at the end of 2013, the US stock market appears closer to a secular bear market starting point than a secular bull market one.

It seems fairly obvious that the best starting points are relatively cheap, and the worst starting points are more expensive. Another way to visualize this property is from an excellent white paper from James Montier at GMO – "The 13th Labour of Hercules: Capital Preservation in the Age of Financial Repression."

It touches on a number of topics (namely negative real rates) but most interesting was the chart of forecasted returns relative to maximum drawdown in the next three years. It should come as no surprise, but when markets are expensive you have a greater chance of a large decline in coming years. Note – We last updated this chart in 2012, and due to CAPE

multiple expansion the red line has moved even more into dangerous territory.

FIGURE 9: THREE-YEAR MAXIMUM DRAWDOWNS VS STARTING CAPE RATIO LEVEL, 1881-2011



Source: Shiller.

CRITICISMS OF THE CAPE RATIO

An investor needs to be aware of the benefits, as well as the drawbacks, of using any investment model. Too many people follow their models and opinions with religious-like zeal, much to the detriment of their portfolios. Below we examine a few of the detractions commonly heard when discussing the CAPE ratio.

The CAPE ratio measurement period is too long. Critics claim recessions and expansions have an outsized impact on the CAPE ratio long after the events have faded from memory. "Estimating Future Stock Market Returns" by Adam Butler and Mike Philbrick tackles the issue of different measurement periods from one year up to thirty (as well as other valuation models) and finds that most of the measurement periods work pretty well too – a property called "parameter stability." We take up this topic later in this book and show the ideal period historically centers around seven years (thanks, Ben Graham).

It is impossible to compare CAPE ratios across decades due to changes in accounting. Much like in our *Shareholder Yield* book, it is important to understand when there is a structural change in a market, and when this time, it's really different.

Critics complain about write-downs and how they can bias the CAPE ratio. Critics also claim adjustments to CPI, and accounting rules render comparisons across decades, or even centuries, inaccurate at best, and at worst, totally meaningless.

We will examine some ways to think about the above criticisms to see if they impact the measure, and if so, by how much. Shiller uses Generally Accepted Accounting Principles (GAAP) earnings from S&P, also known as reported earnings. However, the early 2000s witnessed the introductions of FAS 142/144 (and FAS 115 in 1993), which altered how companies amortize goodwill. This change has the potential effect of biasing earnings down and the CAPE ratio up.

Liz Ann Sonders at Schwab makes a few comments on the topic

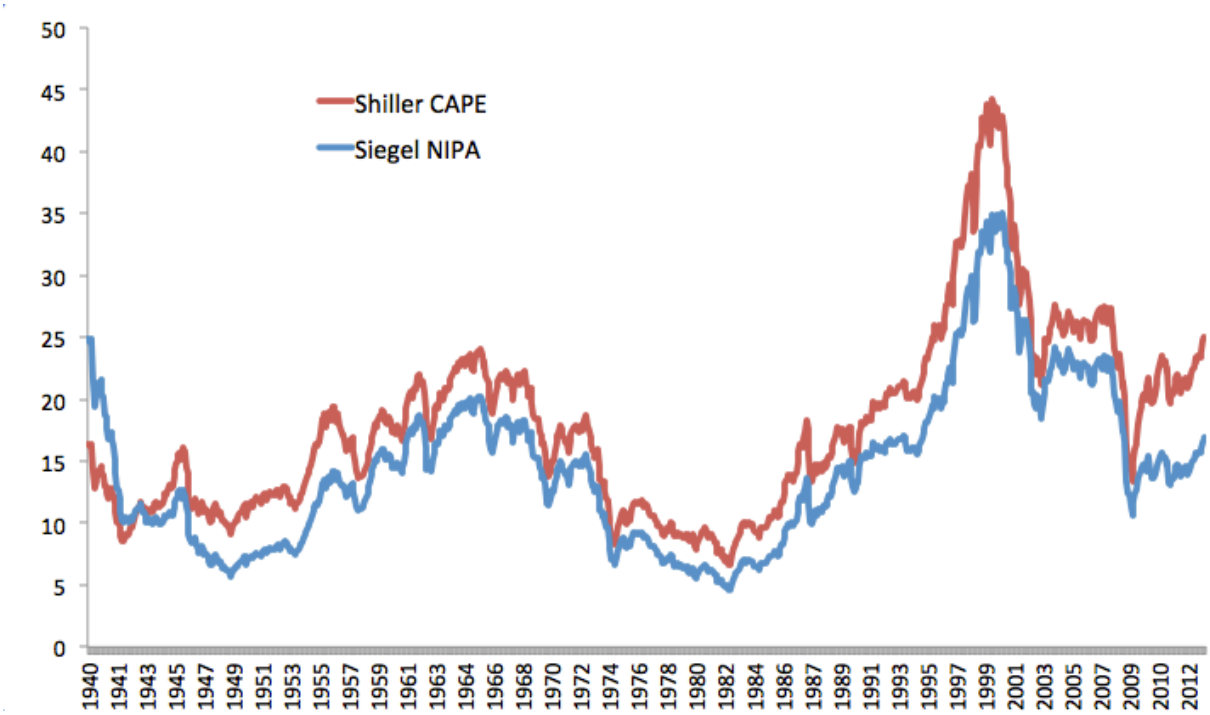
> "More recently, the move toward fair-value accounting standards resulted in security losses having a devastating effect on the reported earnings of financial institutions during the recent financial crisis. Yet that effect now appears to have been transitory. If an accounting item is deemed non-recurring, it's common practice to ignore it when determining underlying earnings (i.e., using 'operating' instead of reported earnings). But CAPE continues to reflect the effect of non-recurring items for the 10 years that follow their initial recognition in reported earnings."

Another CAPE ratio critic (but also Shiller's best friend), Jeremy Siegel, penned this note in the FT back in August 2013 in "Don't put faith in CAPE crusaders":

> "I believe the CAPE's overly pessimistic predictions are based on biased earnings data. Changes in the accounting standards in the 1990s forced companies to charge large write-offs when assets they hold fall in price, but when assets rise in price they do not boost earnings unless the asset is sold. This change in earnings patterns is evident when comparing the cyclical behavior of Standard and Poor's earnings series with the after-tax profit series published in the National Income and Product Accounts (NIPA)."

Siegel published a longer white paper titled "The Shiller CAPE Ratio: A New Look." He examines a number of potential issues with the CAPE ratio, including the write-downs and what he calls "the aggregation bias." Below we attempted to recreate Siegel's work, and found mainly that the effect is to move the entire ratio curve down. Since 1940, the median value for the Siegel NIPA CAPE ratio was 14 (vs. 17 average) and the Shiller CAPE ratio was 17(vs. 25 average). Despite the difference in absolute values, both ratios reach the same overarching conclusion generally and currently, albeit with a different magnitude. Stocks currently are not cheap.

FIGURE 10: EARNINGS COMPARISONS, 1954-2013



Source: GFD, Bloomberg, Siegel, Shiller, McCauley.

Which series is "correct"? They both are, but perhaps the blue line is more *consistent*. A better question is, does it really matter?

A similar take on the topic is from Societe Generale who put out an excellent piece titled "To Ignore CAPE is to Deny Mean Reversion." They use the MSCI earnings index that doesn't include the write-downs and they come to the same conclusions as using the S&P series – some current overvaluation.

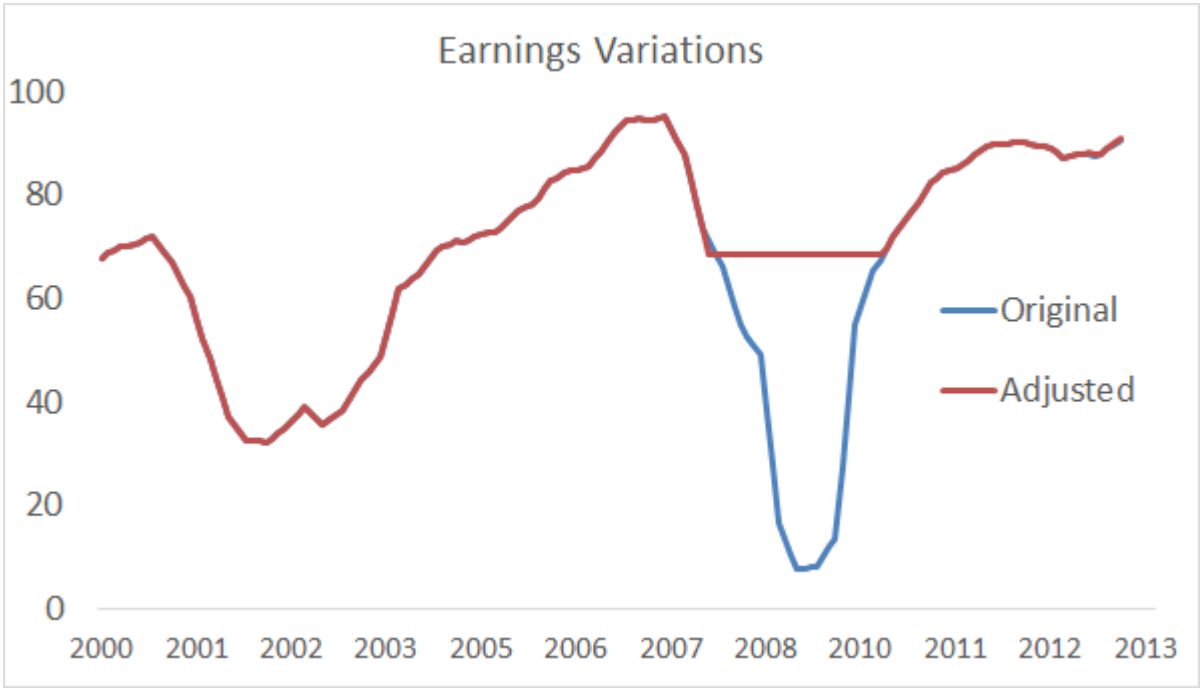
While we agree there may be some differences in the reported and operating series, later we examine the CAPE ratio in over forty foreign markets with supporting results.

Deep recessions bias the CAPE ratio too high. Bubbly expansions bias the CAPE ratio too low. Investors often find a way to justify their market position. Here is a sample: "We don't like using the CAPE ratio because it includes 2008-2009 earnings which distorts the CAPE ratio since earnings are too low." The exact same argument could be used to

ignore 2006-2007 as abnormally high. However, in either case if you make the adjustments, does it change the conclusion? This is a similar, but slightly different argument (one off recessions) than the prior one (an accounting inconsistency due to write-downs).

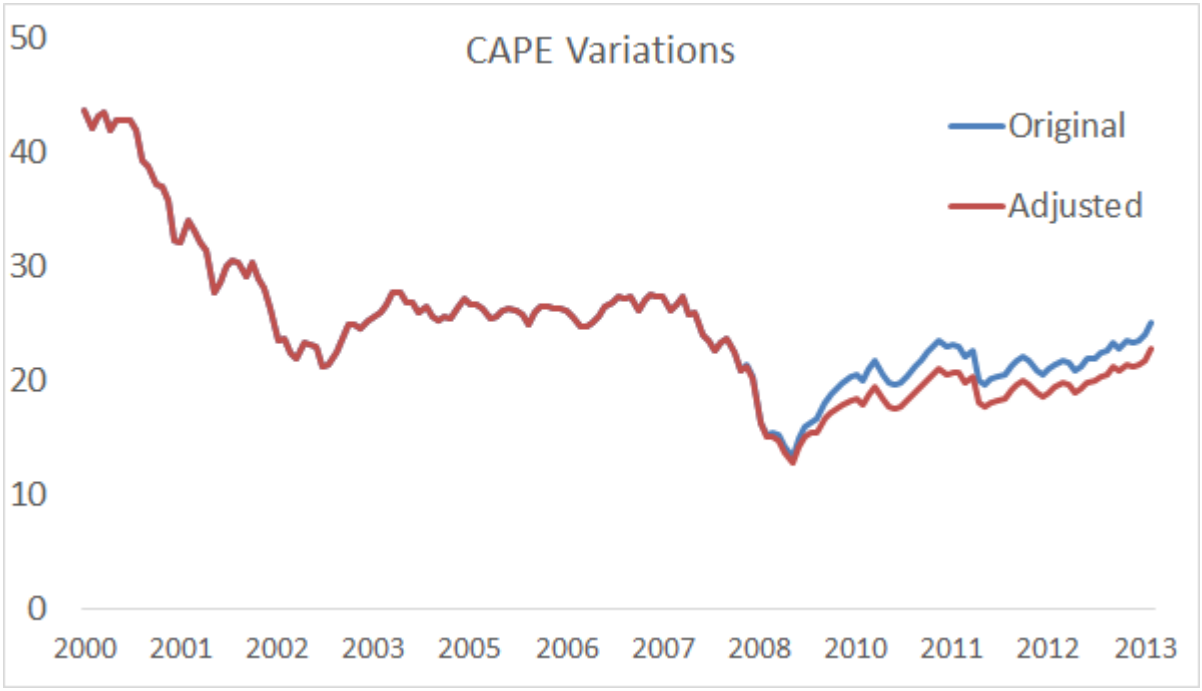
To test the impact, we adjusted the earnings series so that earnings didn't decline in 2008 and 2009 (they had already started to decline a bit in 2007). The second chart is the adjusted CAPE ratio series. If you adjust the data, it moves the CAPE ratio from approximately 25 to 23. There is basically no difference, and stocks are still expensive, but not terribly so due to the mild inflation sweet spot we are in. This is one of the big benefits of smoothing earnings over a long period – any short term oscillation will not have an outsized impact.

FIGURE 11: ORIGINAL AND ADJUSTED EARNINGS, 2000-2013



Source: Shiller, GFD.

FIGURE 12: ORIGINAL AND ADJUSTED CAPE RATIOS, 2000-2013



Source: Shiller, GFD.

As a somewhat related aside, our friend Wes Gray has written a paper titled, "On the Performance of Cyclically Adjusted Performance Measures." The paper examines the CAPE ratio within the US stock market, and finds that the CAPE ratio works well on selecting stocks too. (Updates for stock CAPE ratios can be found at the website CAPERatio.com.)

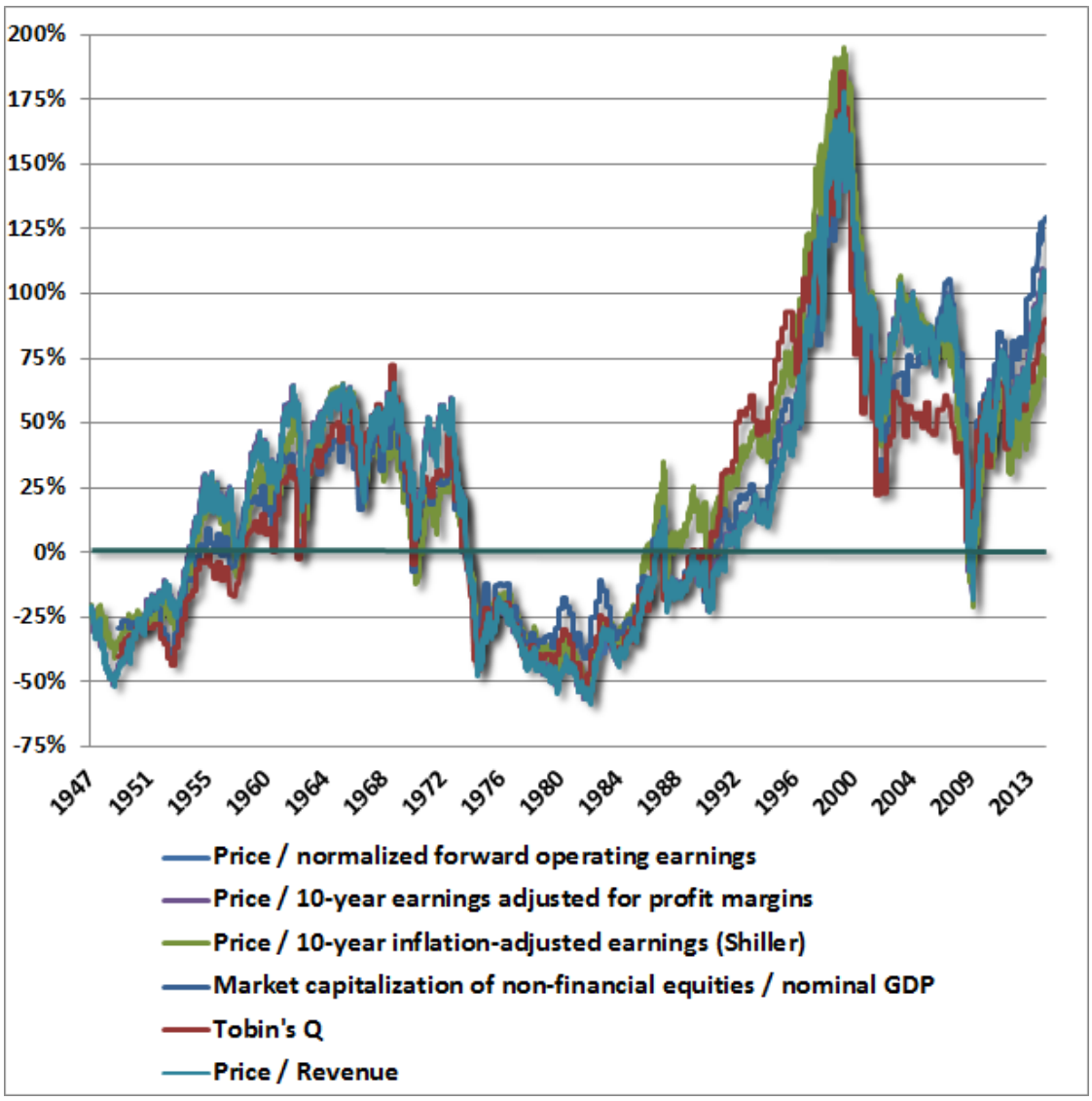
The CAPE ratio is not a short-term timing measure for one market. Like most valuation measures, it is a blunt tool, and should not be used to determine where to invest for the next few months. It makes much more sense to align the indicator with the measurement period, and in this case we are looking at 10 years. However, nearly every value measure we track aligns to say the same thing – US stocks are currently expensive. We will briefly examine a few alternative valuation metrics before turning our attention to global markets.

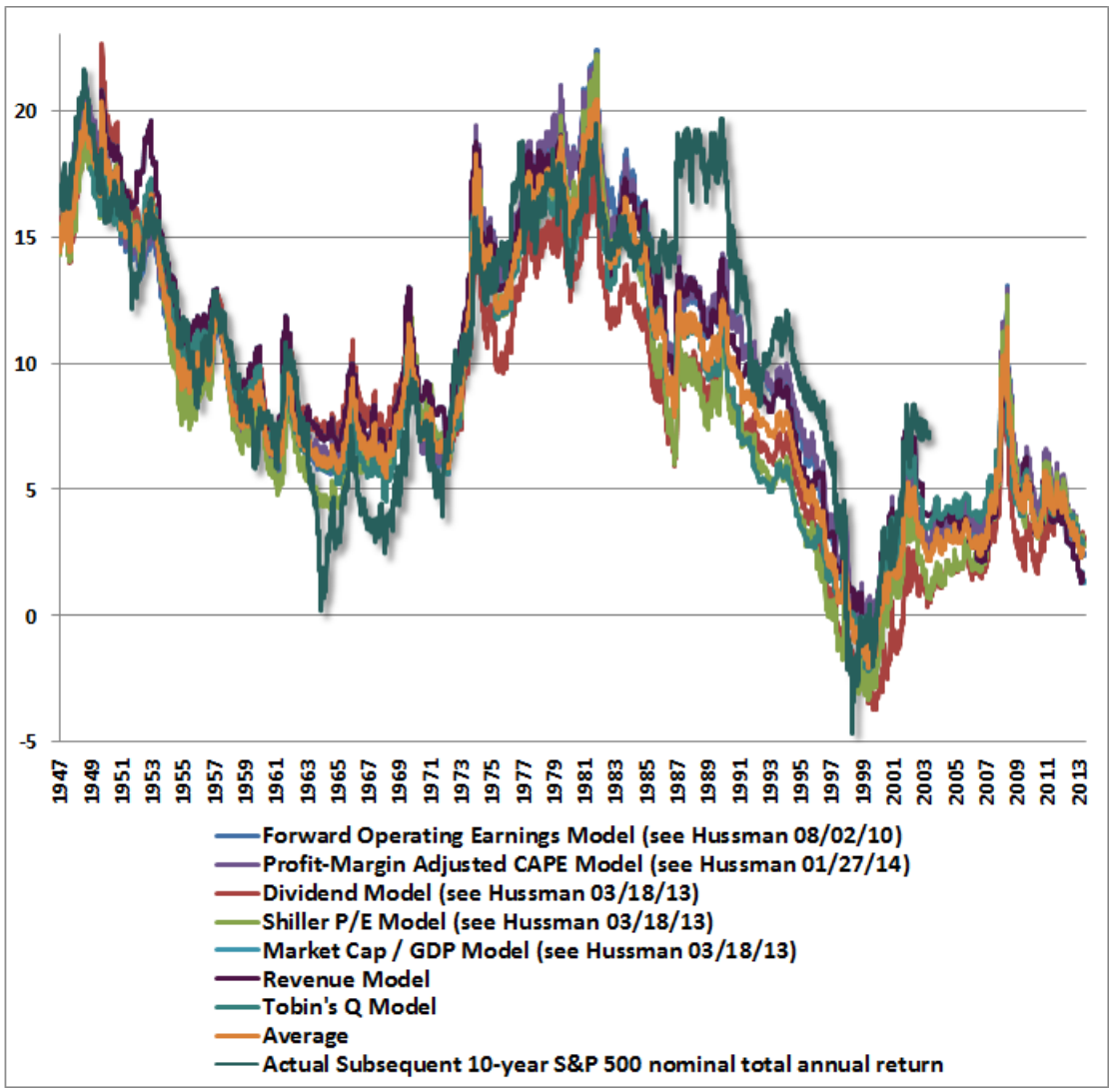
OTHER VALUE METRICS

Residents of Los Angeles often wake up in the morning to a big grey haze out over the coast that locals affectionately refer to as the "marine layer." Usually it "burns off," sometimes by 10 am, sometimes 2pm, sometimes not at all.

What does the Los Angeles "marine layer" have to do with stock market valuations? Like the haze over the coast that we're always waiting to "burn off," high valuations take time to normalize. Dr. Hussman suggests as much in his weekly commentary and in his chart below. He shows that it doesn't really matter which market valuation metric you prefer, most signal a bit of overvaluation to the market. While not every overvaluation is as catastrophically high as the late 1990s, it does mean that until this valuation "burns off," which can take a month or two after a crash, years, or even decades, we can often expect somewhat muted returns of perhaps 2-4% nominal, or 0-2% real per year. Below are his charts that examine some basic valuation metrics (note how they move in unison).

FIGURE 13: VALUATION METRICS, SUBSEQUENT RETURNS, 1947 – 2013


200%
175%
150%
125%
100%
75%
50%
25%
0%
-25%
-50%
-75%
1947
1951
1955
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2009
2013
Price / normalized forward operating earnings
Price / 10-year earnings adjusted for profit margins
Price / 10-year inflation-adjusted earnings (Shiller)
Market capitalization of non-financial equities / nominal GDP
Tobin's Q
Price / Revenue

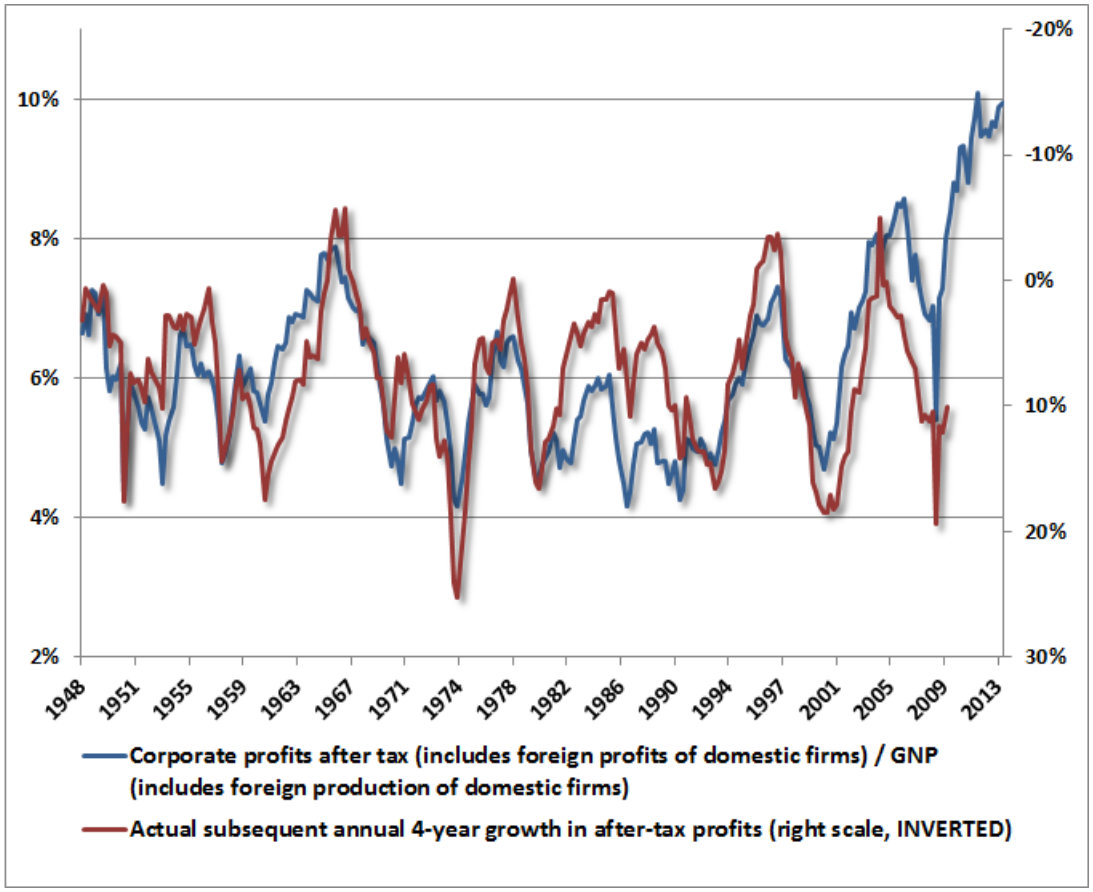


Source: Hussman Funds.

What About Profit Margins?

One of the biggest variables in the earnings of companies is their profit margins, and if they are, or are not, sustainable. Note how profit margins tend to oscillate in the below chart from the same Hussman piece. It seems reasonable to believe that profit margins have the potential to mean revert, and to be cautious in estimating future returns with a more conservative profit margin value than to expect that margins will stay elevated or even increase.

FIGURE 14: PROFIT MARGINS, 1947-2013



Source: Hussman Funds.

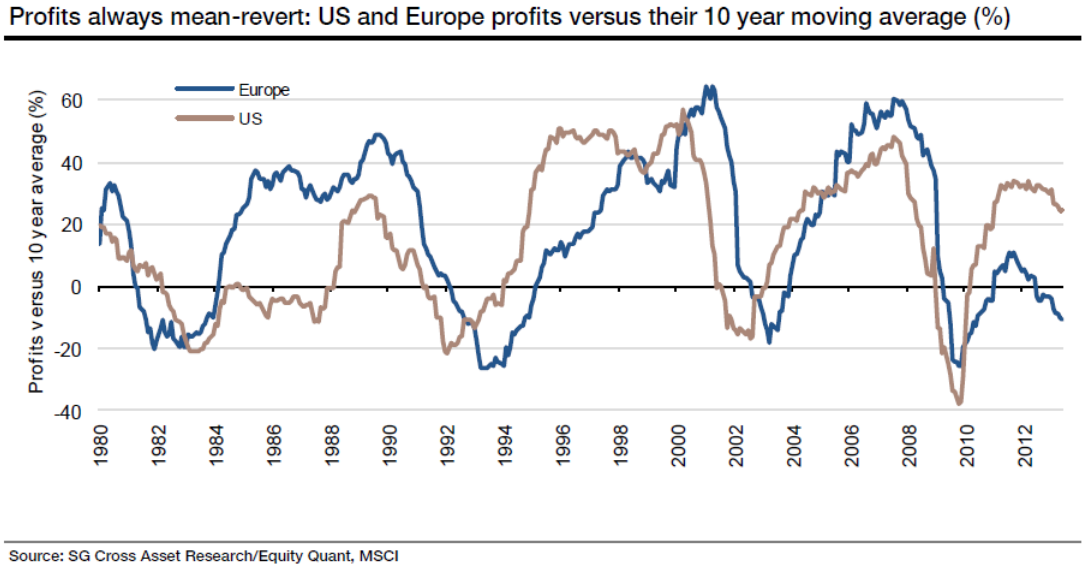
Andrew Lapthorne at Societe Generale weighs in on the topic in a recent research piece:

> "At the peak of the cycle, when profits are far above average and the economy is doing well, it is hard to imagine earnings collapsing back below the average, as it is to imagine a depressed region recovering. Mean-reversion in earnings, though sometimes delayed, is as undeniable as the economic cycle itself. Cyclically adjusted (or trend) PE calculations will always give a conservative valuation estimate. But that is exactly the point of valuation – to offer a degree of safety (a margin of error) and to smooth the dangers of the economic cycle. That peak profits typically accompany peak valuations only reinforces the point.

One can always discuss the idiosyncrasies of any particular valuation metric, although we reach similar conclusions to Robert Shiller's CAPE ratio analysis – but using a more modern time frame and a different (and more generous) earnings series. Our conclusions are that the US equity market is currently expensive. We can also reach a similar conclusion using alternative valuation metrics such as dividend yield, trend PE, and Tobin's Q.

Most significantly, the downside risk of investing when earnings and valuations are far above historical averages should not be underestimated. From our work, peak earnings go hand-in-hand with peak valuations. When earnings revert back to mean (and below), the valuation will also collapse. That many continue to argue against this, and so soon after the collapse of 2008/09, is something we find quite remarkable. "

FIGURE 15: US AND EUROPEAN PROFIT MARGINS, 1980-2013



Indeed, James Montier at GMO finds himself on the other end of the discussion as Siegel –

he proposes that due to unsustainably high margins, the CAPE value is actually *understated*. You can read more in his recent piece "A CAPE Crusader."

The CAPE ratio and other valuation methods are interesting on a stand-alone basis – but in this global age, why focus on only one country? As the U.S. CAPE ratio has approached expensive and, therefore, dangerous territory, investors should shift their focus to the global stock market. The CAPE for the U.S. stock market has received a remarkable amount of attention in the past two years, but the U.S. represents less than half the value of the global stock market. It is important to expand the opportunity set to include all of the countries in the world to determine whether it is possible to separate the currently cheap from the expensive.

While the U.S. CAPE ratio signals caution, similar CAPE ratios for country stock markets around the world signal opportunity. Using the CAPE ratio to identify the most attractive countries and regions around the world can lead to impressive results. Let's explore how a global, CAPE based value strategy outperforms a single country approach.

DOES THE CAPE RATIO WORK GLOBALLY?

There is very little in the literature regarding global CAPE ratios for international equity markets. One such resource is Russell Napier, who authored *Anatomy of the Bear: Lessons From Wall Street's Four Great Bottoms* and who discusses global CAPEs in a video here. We also found two recently published papers by Joachim Klement– "Does the Shiller-PE Work in Emerging Markets?" and "Value Matters: Predictability of Stock Index Returns" by Angelini, Bormetti, Marmi, and Nardini.

We examined 44 countries with data from Global Financial Data and Morningstar, including as much data as we could find. We realize there is some bias in this study (German PE data to 1685 or French to 1724 doesn't really exist), but we did the best with what we have. We utilized dollar based returns (and found local real returns to be nearly identical in a separate study). We do not include 11 frontier markets in the study due to their size, although we present their data for reference later in this book.

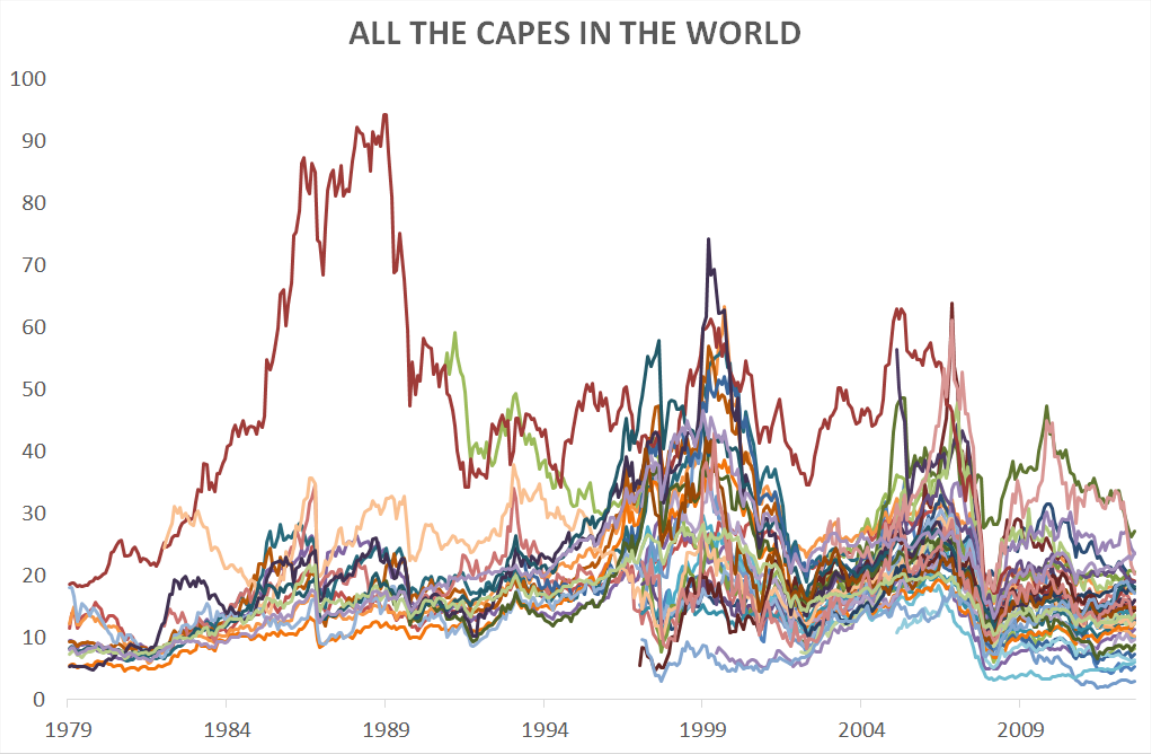
While only two countries had century-long data (US and UK), most have data that goes back to the 1970s and 1980s. We only included data from the common period of 1969 forward in the below table.

FIGURE 16 - GLOBAL COUNTRIES INCLUDED IN STUDY AND 10-YEAR CAPE RATIO , FEBRUARY 2014

Country	Start Date	Latest Date	Latest	Min	Max	Median	Index
Greece	12/31/1987	2/28/2014	4.34	1.95	39.88	14.02	Developed
Argentina	12/31/1987	2/28/2014	6.32	4.26	34.98	17.24	Frontier
Russia	1/31/1996	2/28/2014	6.45	5.13	22.88	8.41	Emerging
Hungary	1/31/1995	2/28/2014	7.91	7.68	39.12	15.66	Emerging
Austria	10/31/1981	2/28/2014	8.81	6.04	59.16	24.67	Developed
Ireland	5/31/1990	2/28/2014	9.03	3.08	23.28	11.54	Developed
Italy	4/30/1984	2/28/2014	9.31	5.92	52.79	21.22	Developed
Brazil	1/31/1988	2/28/2014	9.60	9.57	29.88	16.76	Emerging
Jordan	12/31/1987	2/28/2014	9.68	7.98	58.47	13.10	Frontier
Croatia	5/31/2002	2/28/2014	9.95	8.73	11.83	10.20	Frontier
Pakistan	12/31/1992	2/28/2014	9.98	4.62	25.12	10.16	Frontier
Turkey	12/31/1987	2/28/2014	10.16	8.26	42.97	16.49	Emerging
CzechRepublic	1/31/1995	2/28/2014	10.24	9.23	51.62	21.95	Emerging
Spain	12/31/1979	2/28/2014	10.68	6.50	40.01	16.38	Developed
Lebanon	5/31/2002	2/28/2014	11.03	9.75	14.05	11.50	Frontier
Portugal	1/31/1988	2/28/2014	11.21	7.02	39.36	15.52	Developed
Estonia	12/31/2002	2/28/2014	11.23	11.23	13.57	12.09	Frontier
Singapore	12/31/1972	2/28/2014	11.34	9.40	37.76	21.28	Developed
Israel	6/30/1999	2/28/2014	11.44	9.99	21.64	13.79	Developed
China	1/31/1995	2/28/2014	12.23	11.98	62.29	22.91	Emerging
Poland	12/31/1992	2/28/2014	12.60	7.55	27.43	14.39	Emerging
Belgium	12/31/1969	2/28/2014	12.62	4.88	29.48	14.75	Developed
Norway	12/31/1969	2/28/2014	12.80	6.80	30.55	14.03	Developed
Nigeria	5/31/2002	2/28/2014	13.04	9.82	16.05	14.38	Frontier
Netherlands	12/31/1969	2/28/2014	13.40	4.61	38.51	11.92	Developed
UK	12/31/1969	2/28/2014	13.63	6.53	28.26	16.12	Developed
Slovenia	5/31/2002	2/28/2014	13.77	10.06	13.77	11.91	Frontier
France	9/30/1971	2/28/2014	14.48	6.20	57.17	19.31	Developed
NewZealand	1/31/1988	2/28/2014	14.94	9.49	20.33	13.89	Developed
SouthKorea	12/31/1987	2/28/2014	15.03	4.74	27.54	17.26	Emerging
Taiwan	1/31/1988	2/28/2014	15.23	9.17	42.33	18.76	Emerging
Thailand	12/31/1987	2/28/2014	15.31	3.00	19.08	12.57	Emerging
Australia	12/31/1969	2/28/2014	15.37	7.65	31.60	16.55	Developed
HongKong	12/31/1972	2/28/2014	15.78	8.55	34.55	17.69	Developed
Egypt	1/31/1996	2/28/2014	16.00	10.80	65.21	18.31	Emerging
Germany	12/31/1969	2/28/2014	16.57	7.83	56.89	17.67	Developed
Chile	1/31/1988	2/28/2014	16.74	9.71	32.92	20.68	Emerging
Mexico	12/31/1987	2/28/2014	17.07	11.69	35.31	19.63	Emerging
Sweden	12/31/1969	2/28/2014	17.12	4.82	74.18	19.00	Developed
Mauritius	5/31/2002	2/28/2014	17.30	11.63	17.75	15.17	Frontier
India	12/31/1992	2/28/2014	17.84	12.69	47.83	23.19	Emerging
SouthAfrica	12/31/1992	2/28/2014	18.98	10.25	24.29	16.68	Emerging
Japan	12/31/1969	2/28/2014	19.22	13.27	94.26	-0.06	Developed
Kenya	5/31/2002	2/28/2014	19.22	13.43	20.80	18.05	Frontier
Switzerland	12/31/1969	2/28/2014	19.50	7.10	57.95	18.15	Developed
Peru	1/31/1993	2/28/2014	19.81	15.98	61.26	30.64	Emerging
Canada	12/31/1969	2/28/2014	19.85	5.83	63.34	19.34	Developed
Malaysia	12/31/1987	2/28/2014	19.99	7.77	26.42	18.93	Emerging
Colombia	12/31/1992	2/28/2014	21.95	9.25	48.71	33.58	Emerging
Philippines	12/31/1987	2/28/2014	24.35	5.48	28.17	13.80	Emerging
USA	12/31/1969	2/28/2014	25.41	6.15	46.53	20.85	Developed
SriLanka	1/31/1993	2/28/2014	26.17	7.10	284.58	27.99	Frontier
Indonesia	1/31/1990	2/28/2014	28.46	5.03	34.83	18.59	Emerging
Denmark	12/31/1969	2/28/2014	29.17	4.00	58.72	22.35	Developed

Source: Global Financial Data.

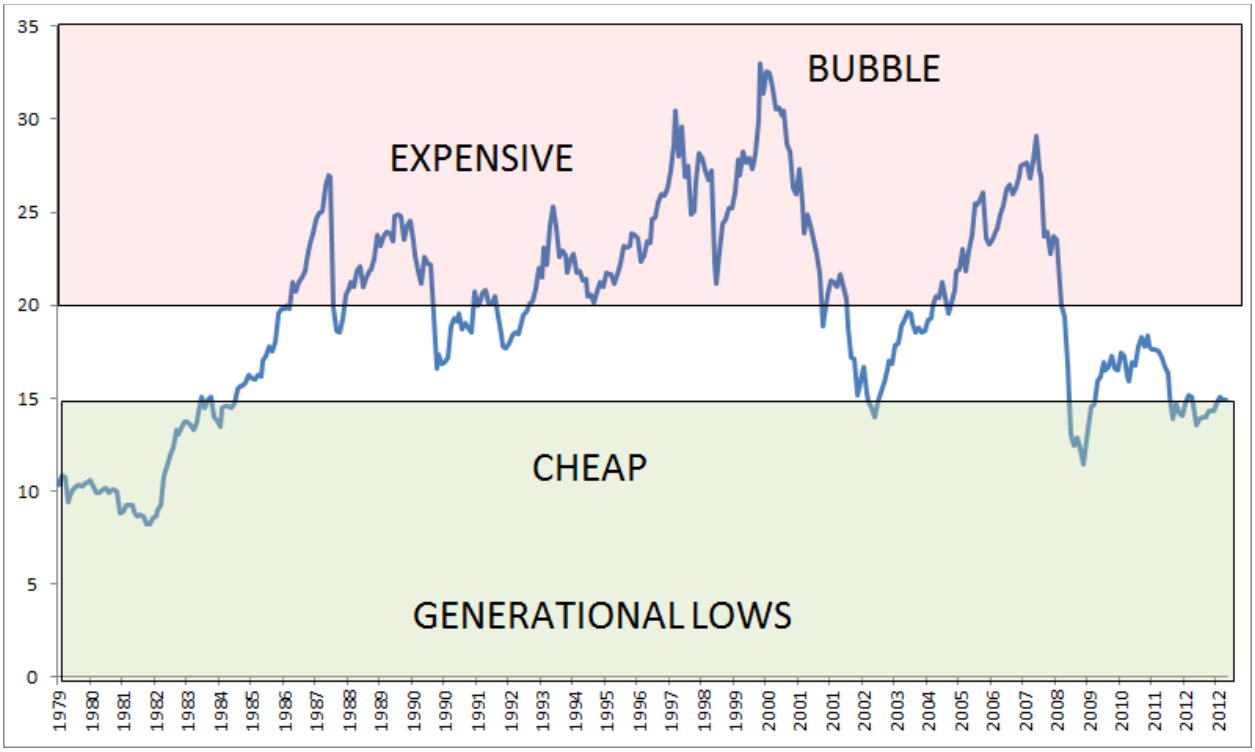
FIGURE 17 - GLOBAL COUNTRIES INCLUDED IN STUDY AND 10-YEAR CAPE RATIO



Source: Global Financial Data.

Another way to look at this chart is to look at average valuations across all countries in the database. Figure 18 below seems to do a good job in identifying secular bull and bear starting points. The only bias is that equal weighting will overweight smaller countries, so perhaps a market cap or GDP weighted benchmark would be more reflective of the global landscape. However there is no rule that says you have to invest in the global market cap index, rather, you want to invest where you will have the highest future returns.

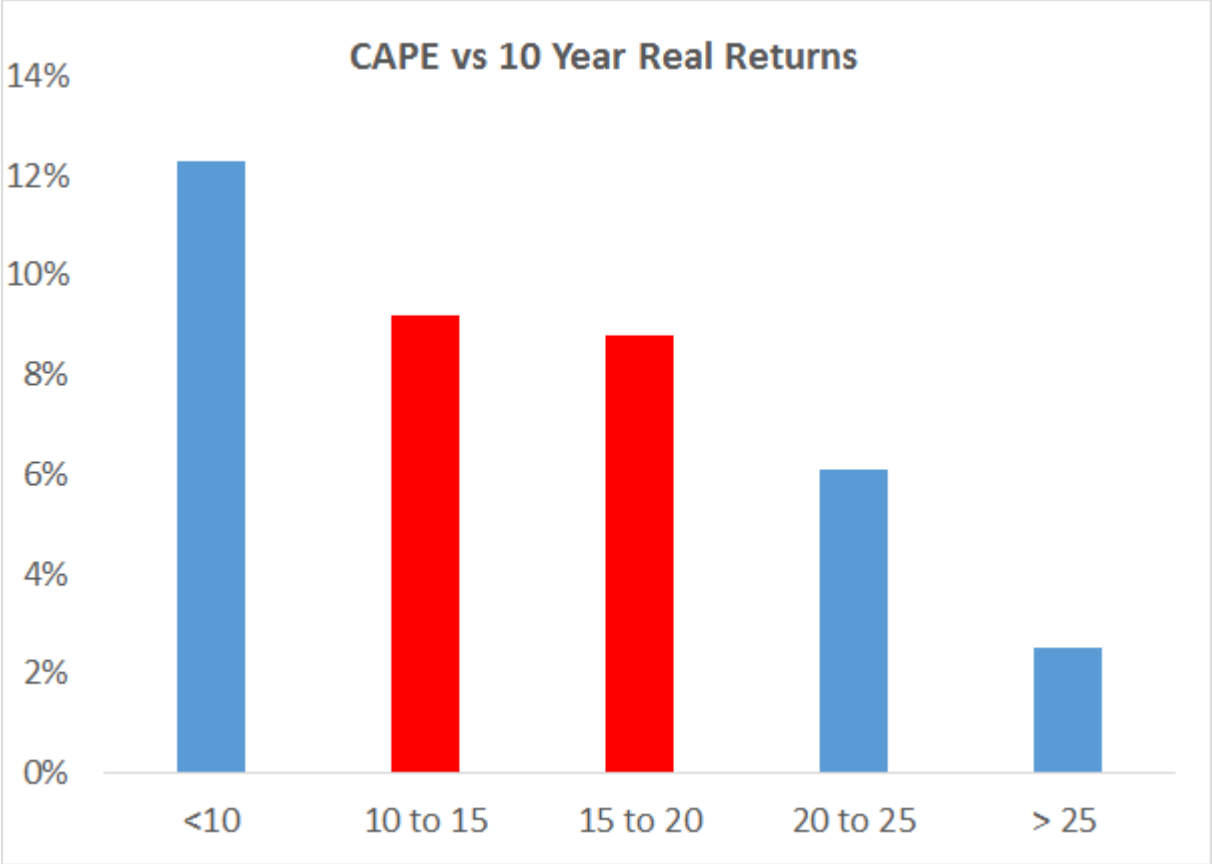
FIGURE 18 - GLOBAL COUNTRIES INCLUDED IN STUDY AND AVERAGE 10-YEAR CAPE RATIO, 1980 - 2013



Source: Global Financial Data.

We examined all the countries on a yearly basis since 1980, CAPE ratio levels, and future returns. The sample includes approximately 10 countries in 1980, 20 in 1990, 30 by 2000, and 44 by 2010. The results are in the table below and largely confirm the US data. Buy low, sell high.

FIGURE 19 - 10-YEAR CAPE RATIO LEVELS AND FUTURE AVERAGE REAL COMPOUND RETURNS, 1980 – 2013



Source: Global Financial Data, Morningstar. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

We found that most CAPE ratios averaged around 15-20, bottomed out around 7, and maxed out around 45. A few countries' stocks markets made the United States bubble in the late 1990's look pathetic in comparison, like Japan reaching a value of nearly 100 in 1989. The red values in the chart above are where global markets stood at the end of 2013. Both foreign indexes have CAPE ratios around 15, with foreign developed at 16 and foreign emerging at 15.

THE BEST OF TIMES, THE WORST OF TIMES

The question is, do the extremes in valuation signal bubbles and generational buying opportunities? I paraphrase my friend John Bollinger who often says, "All of the interesting information is in the tails!"

We examined the database for all instances where CAPE ratios were below seven at the end of the year since 1980. This is a fairly rare scenario, and only occurs about 4% of the time. We only found 28 out of over eight hundred total market years.

In most instances, the headline news coming out of these countries was very negative, and many of them were in total disarray. Recall the headlines recently for Russia, or perhaps Greece. Can you remember back to 2009 and the problems Ireland went through, or maybe Thailand in the late 1990s?

Now what would happen if you invested in these seemingly deplorable markets, the literal worst of the most stomach-churning geopolitical headlines? Below are US based nominal returns:

FIGURE 20 - CAPE RATIO LEVELS BELOW SEVEN AND FUTURE RETURNS

	1 Year	3 Year	5 Year	10 Year
CAGR	30.9%	17.6%	20.5%	14.4%

Source: Global Financial Data.

Historically, investors have been rewarded for taking the risk of buying countries with extremely low valuations.

What about the opposite scenario, when markets were trading in the top 4% of

valuations? This results in examining years where the country finished with a CAPE ratio above 45, truly nosebleed valuation territory.

So what happens if you invest during these bubbly environments? Below are the returns:

FIGURE 21 - CAPE RATIOS LEVELS ABOVE 45 AND FUTURE RETURNS

	1 Year	3 Year	5 Year	10 Year
CAGR	-8.9%	-4.1%	-0.8%	1.2%

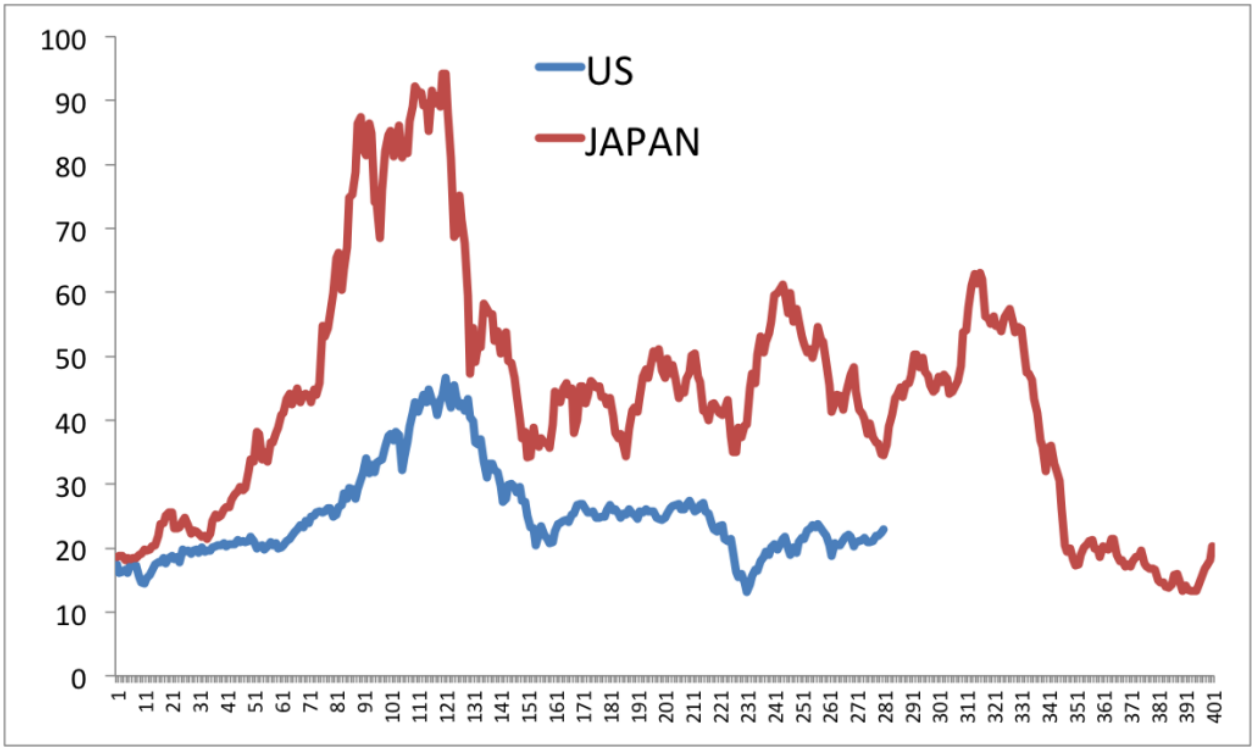
Source: Global Financial Data.

Obviously, paying 45 times earnings historically is not a very smart thing to do. There is a very large difference in performance for buying expensive markets versus very cheap ones, but the results should not be surprising. Investing in extremely expensive markets is a recipe for disaster. You may be able to recall the excitement surrounding China and India from 2006-2008 as their stock markets rose, unfortunately, along with their valuations. The same excitement does not exist today when both countries' stock markets are trading at half their valuation of only a few years ago. This change in attitude reminds me of a quote from Morgan Creek Capital Management CEO Mark Yusko, "Investing is the only business I know that when things go on sale, people run out of the store."

Let's try and put these richly valued bubbles in context with a classic recent example. In 2012 and 2013, there were lots of gyrations in Japan, and in 2013 Japan was one of the best performing stock markets in the world. For a visual of one of the greatest bubbles in history, below is a chart that lines up the US and Japanese CAPE ratios so their bubbles are synched. This goes to show just how enormous the 1989 bubble was in Japan – more than twice the biggest stock bubble in US history in 1999. People talk about demograhics, culture, and geopolitical forces as to why the Japanese markets have experienced two "lost decades." While these factors may have played a role in the poor returns to Japanese

stocks, we think a much bigger reason was that it was simply the biggest bubble we have ever seen in a stock market, ever. We believe this is also the main reason it took Japan 21 years to get back to a normal valuation while it only took the US nine years (defined as CAPE of 17).

FIGURE 22 – COMPARISON OF BUBBLES: US AND JAPAN. MONTHS PRE AND POST PEAK CAPE RATIOS

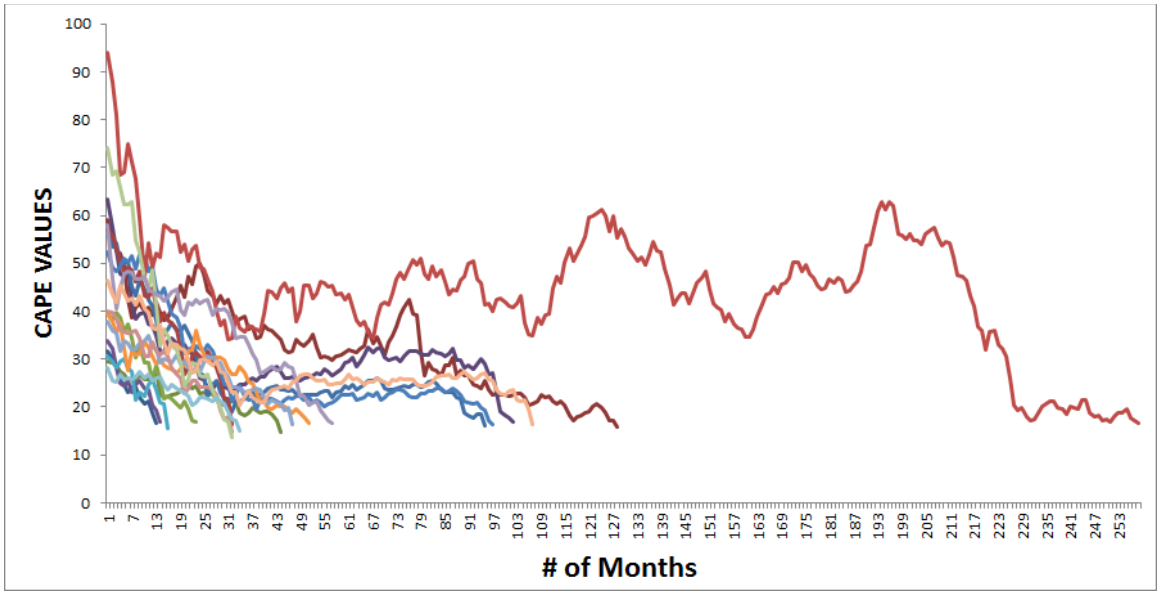


Source: Global Financial Data.

In general, just how long does it take to recover from a bubble in a stock market? Crestmont Research inspired us with this line of research, and we examine the biggest bubble in 17 developed countries in the three charts below.

Figure 23 is the peak CAPE ratio value versus the length in time before the CAPE ratio went below 17. Basically, the chart shows how long it takes for a market to get back to "fair value."

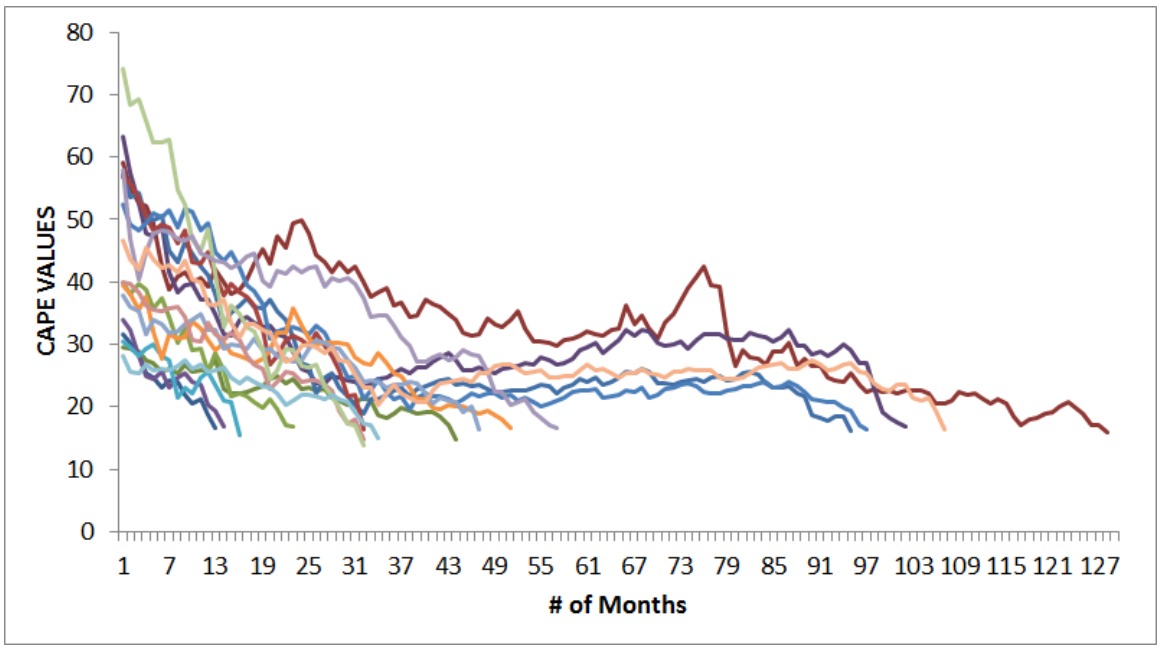
FIGURE 23 – BUBBLE CAPE RATIOS vs. LENGTH IN TIME TO RETURN TO NORMAL



Source: Global Financial Data.

Figure 24 below is the same chart without Japan. The median bubble CAPE ratio was 45, and the median time to recover was 3.5 years. Note that the 2000 bubble in the US "recovered" already in the 2008-2009 bear market (hit a low of 13 in March 2009). By this metric, the secular bear is over, but US stocks are still expensive.

FIGURE 24 – BUBBLE CAPE RATIOS vs. LENGTH IN TIME TO RETURN TO NORMAL



Source: Global Financial Data.

The next question is, can we turn these findings into a portfolio management or trading system?

A GLOBAL STOCK TRADING SYSTEM

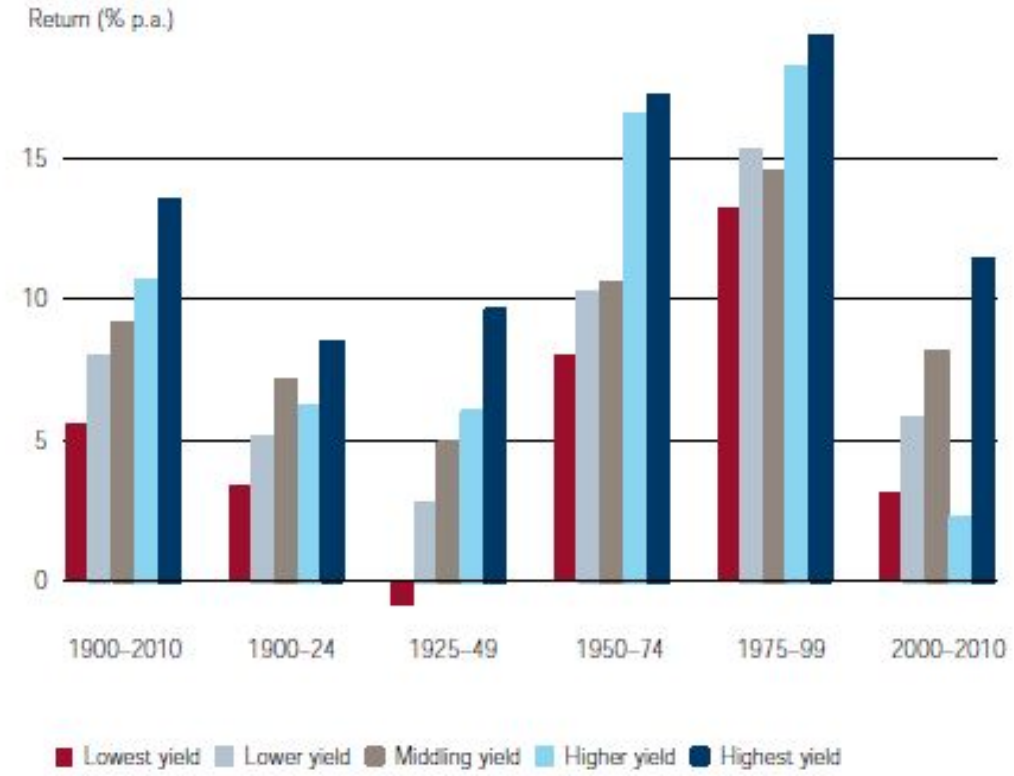
There is evidence that sorting countries on other measures of value works well, as many fundamental valuation metrics will provide similar estimate of future returns. Dimson, Marsh, and Staunton wrote one of the best investing books of all time - *Triumph of the Optimists*. They update the findings yearly in a partnership with Credit Suisse, and their "2011 Global Investment Returns Yearbook" report found a large spread of approximately 8% per annum across 19 countries from 1900-2010 when sorting on dividend yield alone. (You can download the historical "Global Investment Returns Yearbooks" here. These are highly recommended reads.)

FIGURE 25 - RETURNS FROM SELECTING MARKETS ON DIVIDEND YIELD, 1900-2010

Figure 10

Returns from selecting markets by yield

Sources: Elroy Dimson, Paul Marsh and Mike Staunton



Source: Triumph of the Optimists, Global Investment Returns Yearbook.

We then set out to test CAPE ratios in a similar manner. Starting in 1980, we sort all countries by CAPE ratios, and invest in the most undervalued (25% and 33%), rebalanced yearly. We also show the effects of investing in the most overvalued. These returns are dollar based.

Investing in the cheapest countries produces significant outperformance compared to buy and hold market cap and equal weighted indexes –as well as significant underperformance for the overvalued countries. The spread between expensive and cheap is approximately similar to the previously mentioned dividend studies.

However, investing in the cheapest countries on a relative basis does not protect the investor when all countries are expensive in a global equity bubble like 1999. We repeated the same study, but applied a filter by only investing long if the country was below a CAPE ratio level of 18 - if a country does not qualify for the valuation filter then that part of the portfolio sits in cash.

FIGURE 26 - PORTFOLIOS SORTED ON CAPE RATIO LEVELS, 1980 – 2013

	MSCI EAFE	Buy & Hold All Countries	Top 33% CAPE	Top 33% CAPE with Filter	Top 33% CAPE Expensive
Return	9.6%	13.1%	15.9%	16.8%	10.2%
Volatility	17.6%	18.1%	20.9%	18.4%	18.8%
Max Drawdown	56.4%	60.6%	64.8%	35.5%	55.8%
Tbill Return	4.9%	4.9%	4.9%	4.9%	4.9%
Sharpe	0.27	0.46	0.53	0.65	0.29

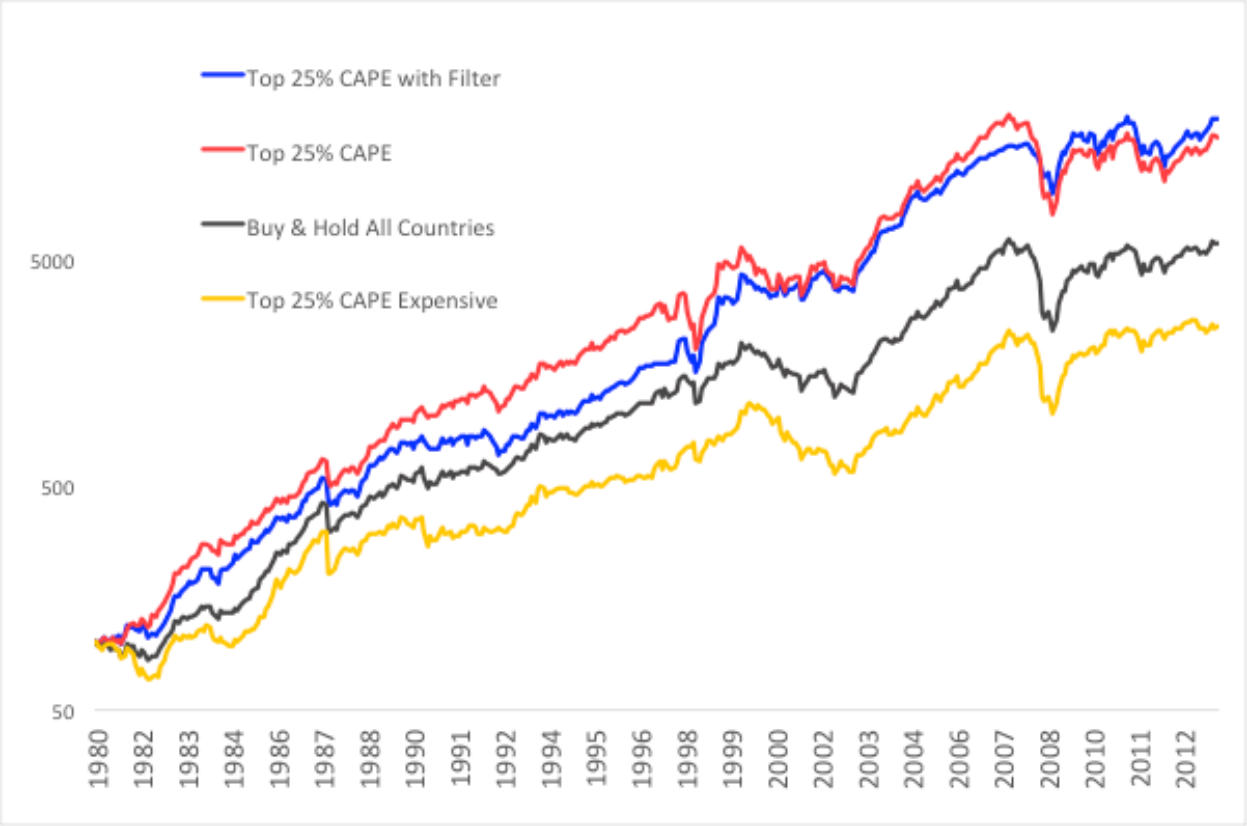
	MSCI EAFE	Buy & Hold All Countries	Top 25% CAPE	Top 25% CAPE with Filter	Top 25% CAPE Expensive
Return	9.6%	13.1%	16.9%	17.6%	10.2%
Volatility	17.6%	18.1%	21.4%	19.0%	19.4%
Max Drawdown	56.4%	60.6%	63.8%	39.6%	56.5%
Tbill Return	4.9%	4.9%	4.9%	4.9%	4.9%
Sharpe	0.27	0.46	0.56	0.67	0.28

Source: Global Financial Data, Morningstar. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

Adding the absolute CAPE ratio filter results in lower volatility and lower drawdowns. This is to be expected as the portfolio could be sitting in 20%, 50%, or even 100% cash. In this case, the returns are higher as well. As many investors look at these figures and salivate over the prospect of big returns, recall Figure 16, and note that most of the cheapest countries currently fall in the troubled Eurozone. How many investors have the stomach to invest in these countries with potential for the markets to get even cheaper? How many professional investors would be willing to accept the career risk associated with being potentially wrong in buying these markets? Imagine calling up your spouse or your client and suggesting a portfolio of Greece, Argentina, Ireland, Russia, and Italy. You will probably get slapped or fired. (Note: this book is going to press directly after all of the geopolitical headlines are negative on Russia and their market had a large down day of around -10%. Now think about how difficult it is to go and buy those stocks.)

Figure 27 depicts the equity curves from taking the cheapest 25% of countries (also with the same max valuation filter) - and the equal weight benchmark.

FIGURE 27- PORTFOLIOS SORTED ON CAPE RATIO LEVELS, REAL RETURNS 1980 - 2013



Source: GFD.

	Buy & Hold All Countries	Top 25% CAPE	Top 25% CAPE with Filter
1981	-3.4%	19.4%	14.0%
1982	3.6%	26.1%	8.1%
1983	35.8%	61.4%	55.5%
1984	-1.6%	12.0%	5.8%
1985	54.5%	42.2%	58.0%
1986	42.7%	18.3%	37.6%
1987	8.2%	12.7%	6.2%
1988	31.2%	31.8%	31.1%
1989	29.5%	43.4%	37.8%
1990	-7.5%	4.2%	-2.0%
1991	18.9%	22.6%	22.0%
1992	-4.7%	-9.5%	0.4%
1993	37.4%	39.7%	41.0%
1994	2.7%	11.1%	-0.9%
1995	19.1%	23.0%	21.2%
1996	18.5%	26.0%	22.2%
1997	11.5%	0.5%	9.3%
1998	15.7%	21.0%	21.1%
1999	43.6%	69.8%	64.7%
2000	-19.4%	-34.5%	-21.1%
2001	-10.2%	16.8%	-2.9%
2002	-11.2%	-4.7%	-8.9%
2003	55.0%	74.2%	66.4%
2004	31.9%	44.5%	38.0%
2005	21.9%	19.5%	29.6%
2006	34.8%	40.2%	30.5%
2007	28.8%	20.5%	24.5%
2008	-50.2%	-53.0%	-35.6%
2009	58.5%	57.0%	46.6%
2010	14.5%	0.4%	12.6%
2011	-16.4%	-20.4%	-17.6%
2012	22.0%	18.7%	15.5%
2013	8.9%	18.6%	17.8%

Source: Global Financial Data, Morningstar. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

Another method of reducing volatility and drawdowns is to use a trendfollowing indicator as a method for entering and exiting markets. We have covered moving average systems extensively in our book *The Ivy Portfolio,* as well as the white paper "A Quantitative Approach to Tactical Asset Allocation."

As mentioned earlier, valuation is a blunt tool, and we often speak of how various valuation indicators line up with a similar conclusion. We ran the analysis with CAPD ratio (substituting dividends for earnings) and found similar results, albeit slightly inferior to CAPE.

Another way to examine value is by simply looking at how much a market has already declined, referred to as maximum drawdown (and is measured from peak-to-trough on a monthly basis). After all, the most volatile part of the P/E equation is the P.

The average nominal drawdown for CAPE ratio values at the end of 2013:

CAPE ratio values less than 10: -41%

CAPE ratio values 10 to 15: -31%

CAPE ratio values >15: -14%

Typically, over time, value is rewarded – buying low CAPE ratio countries is often simply buying countries that have declined the most already.

DOES TIME FRAME MATTER?

One criticism we touched on earlier was time period – many feel like 10 years is too long. We examine various CAPE ratio measurement periods of 1-10 years. Note that most analysts use 1-year PE ratios, and also note which metric is the worst (1 year). It seems the best range is near where Ben Graham preferred, 5-10 years.

Also note that smoothing value indicators often has the added benefit of reducing turnover.

FIGURE 28- PORTFOLIOS SORTED ON CAPE RATIO LEVELS, REAL RETURNS 1980 - 2013

	10 Year	7 Year	5 Year	3 Year	1 Year
Return	16.9%	17.7%	16.5%	15.0%	15.3%
Volatility	21.4%	19.6%	20.2%	21.1%	21.1%
Max Drawdown	63.8%	42.9%	58.6%	63.2%	66.3%
Tbill Return	4.9%	4.9%	4.9%	4.9%	4.9%
Sharpe	0.56	0.65	0.57	0.48	0.50

Source: Global Financial Data.

SOME RECENT EVIDENCE

Had you sat around the dining table toasting your loved ones at the end of 1999 and were faced with investing in only three countries over 10 years, what would you have done? Imagine that you were presented a challenge as you sat reviewing your investments, planning a 10-year cruise (no internet, no email, and no phones): you could only invest in three countries over this time period.

Had you invested in the three most expensive, with an average CAPE ratio of 57, you would have lost 40% after inflation.

Had you invested in the three cheapest, with an average CAPE ratio of 14, you would have gained 24% after inflation.

Remember, this was bubble territory. Not many countries were cheap, and total returns were not that exciting for any equities. (We published the original version of this book in 2012 in *The Journal of Indexing*, and since then we have been publishing CAPE ratio updates for countries quarterly on The Idea Farm.)

How did the CAPE ratio work in 2013?

The chart below shows the returns to country ETFs from the 10 cheapest and the 10 most expensive markets. Notice why we were so unpopular giving a speech in Bogota in January 2013 when we said that they have one of the most expensive markets in the world. Also notice the big outlier in the expensive country bucket (the US). Due to all of the expensive countries declining and the US appreciating, we are now *the* most expensive in the world (we're ignoring the frontier market Sri Lanka).

Also note the explosive returns in the cheap countries. (Portugal only recently had an ETF launch so we left it blank.)

FIGURE 29- 2013 CAPE RATIO VALUES AND MARKET RETURNS, DOLLAR BASED

Country	CAPE on Dec 31, 2012	ETF	2013 RETURNS	CAPE on Dec 31, 2013
Greece	2.6	GREK	24.91%	3.8
Ireland	5.0	EIRL	45.58%	7.3
Argentina	5.2	ARGT	15.04%	7.4
Russia	7.2	ERUS	-0.88%	7.0
Italy	7.4	EWI	19.07%	8.6
Austria	8.4	EWO	11.48%	9.0
Spain	8.5	EWP	31.91%	10.3
Portugal	9.5	PGAL	NA	10.2
Belgium	10.3	EWK	24.60%	12.3
Israel	11.1	EIS	18.30%	10.3
Canada	18.3	EWC	5.31%	19.1
SouthAfrica	18.5	EZA	-7.47%	19.7
India	19.3	INDY	-3.99%	17.9
Malaysia	20.1	EWM	7.84%	20.7
USA	21.1	VTI	33.45%	25.4
Chile	21.2	ECH	-23.90%	16.9
Mexico	21.2	EWW	-1.58%	19.4
Indonesia	24.7	EIDO	-23.14%	20.1
Colombia	33.5	GXG	-15.01%	23.9
Peru	33.7	EPU	-25.42%	19.7

Despite the strong returns of the low value basket, it is very important to buy a basket of countries rather than just one or two. Similar in nature to a stock portfolio, an investor needs some diversification to avoid catching a "falling knife" in any one country. Realize that at one point Greece, Ireland, Argentina, and Russia traded at CAPE ratios above 10. The main reason they are trading where they are now is due to large price declines. There is a famous investing joke: "How did that investment decline by 90%? It went down by 80%, then got cut in half." Realize that investing in single countries can be risky, and we suggest investing in a basket of perhaps the 10 cheapest countries (which is about the top 25% of the developed and emerging universe).

So - think about it right now. If you could only invest in a basket of countries, would you prefer the basket trading at an average CAPE ratio of 8.6 or 20.3? Those figures are the average values of the 10 cheapest and most expensive countries from Figure 29 above.

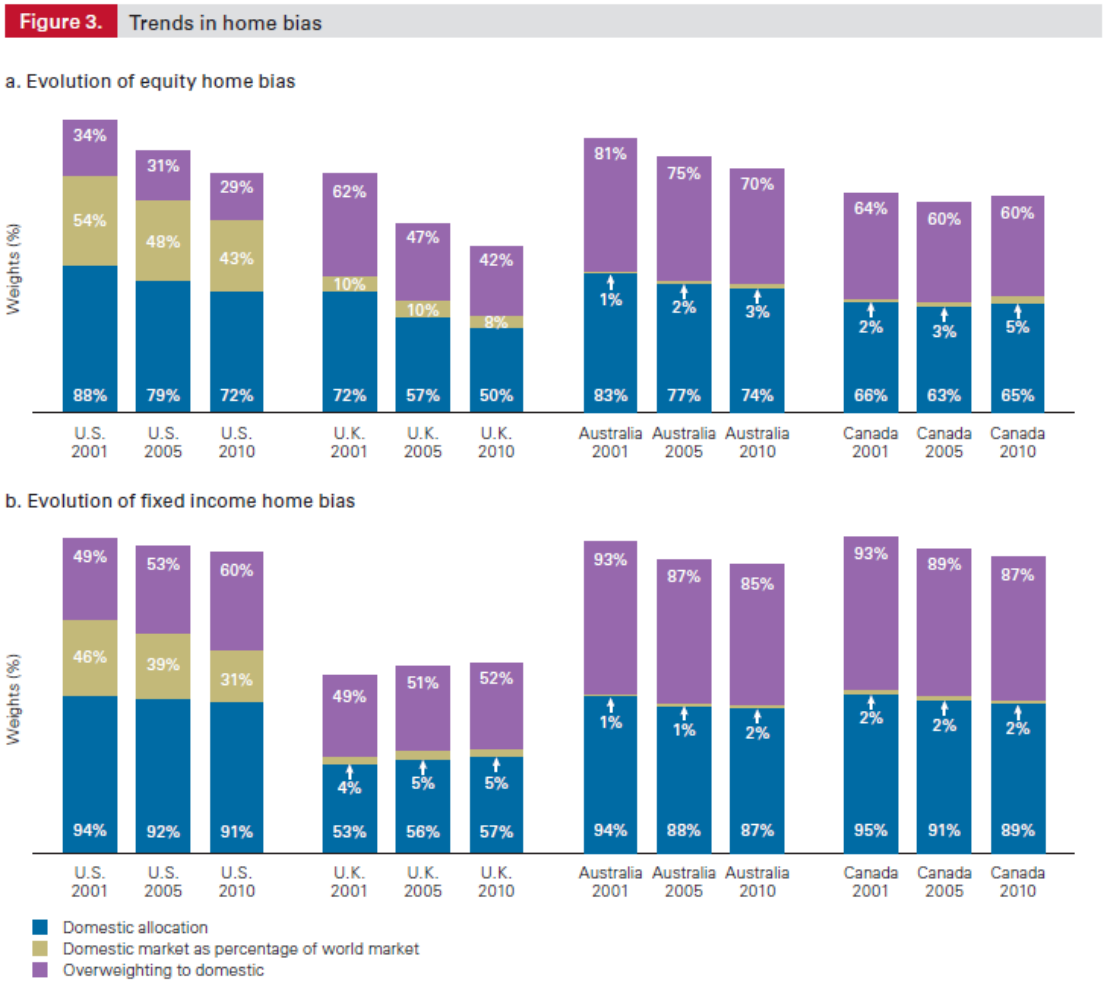
While you would have been buying Thailand, New Zealand, and Chile in the late 1990s, now you would be buying Greece, Ireland, and Russia. It is hard, especially with emotional news flow and headlines, to be name and country agnostic.

WHY THIS MATTERS TO YOU

Even if you decide not to invest in the cheapest countries in the world, it is at least worth thinking about your global stock allocation with a value mindset. And why is that?

Most investors around the world invest most of their assets in their own stock market. This is called the "home country bias," and it occurs everywhere. Below is a chart from Vanguard that details the effect in the US, the UK, Australia, and Canada.

FIGURE 30 – HOME COUNTRY BIAS

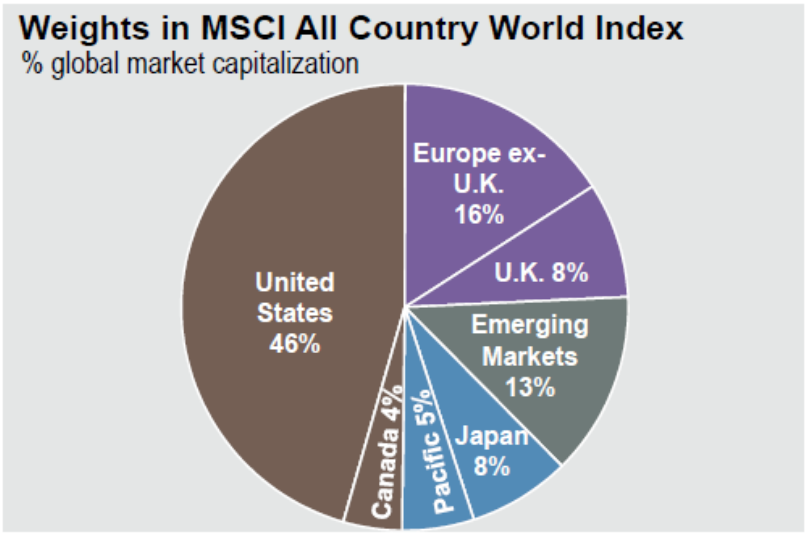


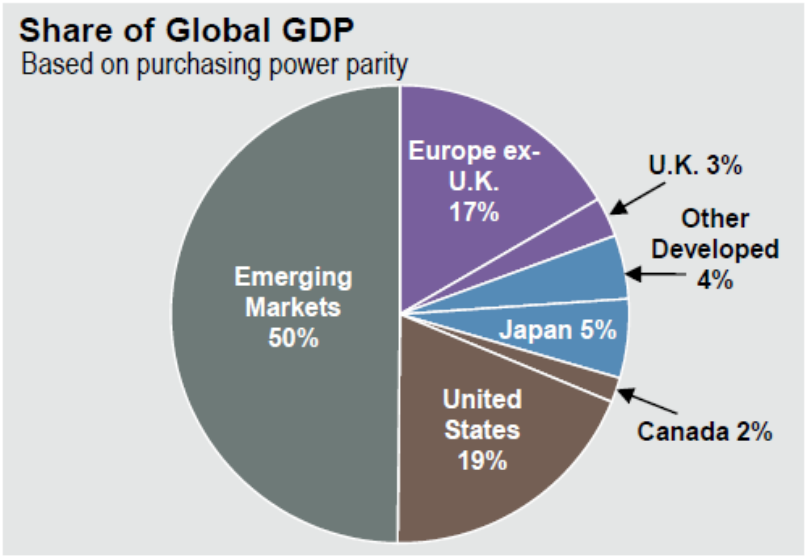
Source: Vanguard.

Below is a chart from the JPMorgan Guide to the Markets. It details the US as a percentage of market cap (46%) and GDP (19%).

For US investors, how much of your stocks are in the US domestic market? Once you account for the fact that the US is one of the more expensive markets around the globe, it might be a good time to rethink your stock allocation. A value approach works not just by investing in the cheapest markets, but also by avoiding the most expensive.

FIGURE 31- WEIGHTS IN MSCI ACWI INDEX & SHARE OF GLOBAL GDP

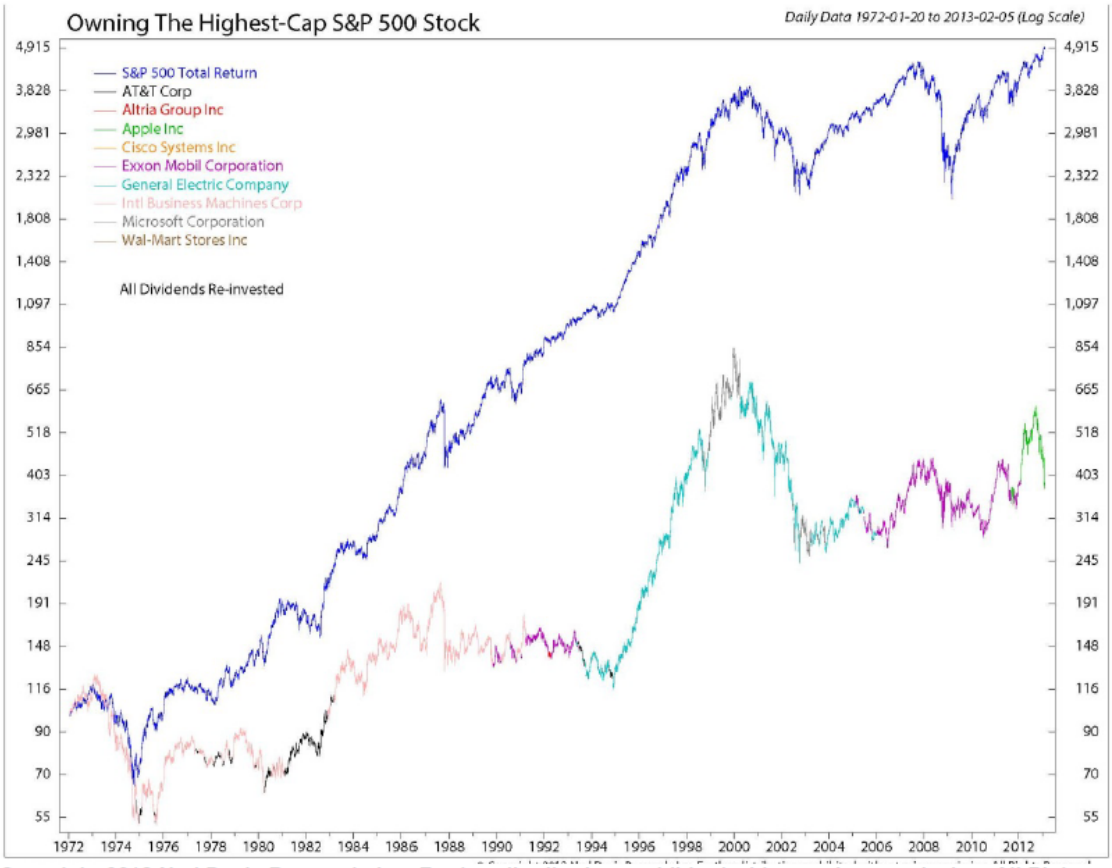

Weights in MSCI All Country World Index
% global market capitalization
Europe ex-U.K. 16%
U.K. 8%
Emerging Markets 13%
Japan 8%
Pacific 5%
Canada 4%
United States 46%


Share of Global GDP
Based on purchasing power parity
Europe ex-U.K. 17%
U.K. 3%
Other Developed 4%
Japan 5%
Canada 2%
United States 19%
Emerging Markets 50%

Source: JP Morgan.

Why is market cap weighting so problematic in the first place? Market cap weighted indexes have only one variable - size - which is largely determined by price. Below is a chart from Ned Davis that demonstrates how investing in the largest company by market cap in the US has performed historically. Is that a good idea?

FIGURE 32- OWNING THE HIGHEST CAP S&P 500 STOCK



Source: Research Affiliates, Ned Davis Research. S&P 500® index is proprietary to and is calculated, distributed and marketed by S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC), its affiliates and/or its licensors and has been licensed for use. S&P® and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC, and Dow Jones® is a

In Rob Arnott's June 2010 issue from Research Affiliates, titled "Too Big To Succeed," he examines how the largest market cap company in each sector performs relative to its peers.

(Another study was featured in the book, *Mosaic: Perspectives on Investing* by Pabrai.)

From Arnott's letter:

> "We find the leader in any sector underperforms the average stock in its own sector by 3.5% in the next year … and the next year … and the next year. As Table 1 shows, the damage doesn't really slow down for at least a decade, as the top dog in each sector lags its own sector by 3.3% per year for the next decade!
>
> From these results, one might conclude that an investor could do rather well by investing in the Russell 1000, minus its 12 sector leaders. Better still, perhaps we should exclude all of the companies that have been sector leaders any time in the past decade because the performance drag for the top dogs tends to persist for a decade or more. These stocks typically comprise about one-fourth of the Russell 1000! If these stocks suffer a 300–400 bps shortfall in most years, one could outperform the index by nearly 100 bps per annum merely by leaving the top dogs out, cancelling the corrosive influence of competitors, populists, and pundits."

Now, Arnott runs billions on indexes that are not market cap weighted, but the argument is certainly persuasive. (He also co-wrote the very good book *titled The Fundamental Index: A Better Way to Invest.)*

FIGURE 33- RELATIVE PERFORMANCE OF THE TOP DOGS

Table 1. Relative Performance for the Top Dogs[4]

		The Magnitude of Top Dog Relative Performance (1952-2009)							
		Panel A. Relative Return By Sector				Panel B. Frequency of Win by Sector			
	How Many Top Dogs?	1 Year	3 Years	5 Years	10 Years	1 Year	3 Years	5 Years	10 Years
Average, all sectors	5.8	-3.5%	-3.9%	-3.9%	-3.3%	42.2%	40.4%	37.2%	33.2%
Standard deviation		3.7%	4.1%	3.4%	2.5%	8.0%	10.5%	14.0%	15.3%
Adjusted *t*-Statistic		-3.22	-3.25	-4.03	-4.55	-4.19	-2.93	-3.00	-2.73
Sector 1 Nondurables	6	0.4%	-1.2%	-1.6%	-2.8%	43%	46%	46%	33%
Sector 2 Durables	5	-3.5%	-5.4%	-5.2%	-4.5%	45%	38%	30%	20%
Sector 3 Manufacturing	5	1.3%	0.8%	0.5%	0.1%	48%	54%	63%	55%
Sector 4 Energy	1	-1.1%	0.3%	0.5%	0.8%	52%	57%	56%	53%
Sector 5 Chemicals	3	-3.1%	-1.7%	-1.8%	-2.0%	52%	46%	46%	43%
Sector 6 Business equipment	5	-4.4%	-3.8%	-4.0%	-4.2%	47%	45%	43%	33%
Sector 7 Telecommunication	3	-7.4%	-6.6%	-5.7%	-6.1%	34%	32%	26%	12%
Sector 8 Utilities (1953-2009)	7	-3.3%	-4.3%	-4.9%	-2.7%	32%	36%	21%	27%
Sector 9 Shops	3	-0.8%	-0.5%	-2.0%	-1.8%	43%	43%	39%	47%
Sector 10 HealthCare	8	-4.9%	-5.0%	-4.3%	-2.4%	45%	34%	31%	45%
Sector 11 Finance	7	-2.3%	-4.5%	-6.7%	-6.6%	40%	36%	30%	14%
Sector 12 Other	17	-12.5%	-14.4%	-11.6%	-7.0%	26%	18%	17%	16%
Capo dei capi, Largest Big Dog	6	-6.6%	-5.4%	-6.1%	-4.9%	38%	33%	22%	23%

Note: We use SIC codes to define the 12 sectors. These definitions may vary from the GIC definitions.
Source: Research Affiliates.

Source: Research Affiliates.

Below are the nine sector SPDRs and their top holding in each:

- The Basic Industries Fund (XLB) Largest holding DuPont (DD), 10%
- The Consumer Services Select Fund (XLV) Largest holding Johnson & Johnson (JNJ), 11%
- The Consumer Staples Select Fund (XLP) Largest holding Proctor & Gamble (PG), 13%
- The Consumer Discretionary Fund (XLY) Largest holding Amazon (AMZN), 7%
- The Energy Fund (XLE) Largest holding Exxon (XOM), 16%
- The Financial Fund (XLF) Largest holding Wells Fargo (WFC), 8%
- The Industrial Fund (XLI) Largest holding General Electric (GE), 10%
- The Technology Fund (XLK) Largest holding Apple (AAPL), 13%
- The Utilities Fund (XLU) Largest holding Duke Energy (DUK), 9%

When overvalued assets grow to be bigger and bigger parts of a market - or become the market, you no longer want to invest in that market. That is the biggest failing of market cap weighted buy and hold - it ignores valuations. Below is Japan's historical CAPE ratio., which mentioned earlier, is by far the biggest bubble we have ever seen. Our Internet bubble in 1999 (CAPE ratio of 45) was half the size of Japan's. Is it reasonable to believe that it is just as good of a time to invest in Japan in 1989 as it is now?

FIGURE 34 – JAPAN CAPE RATIO OVER TIME

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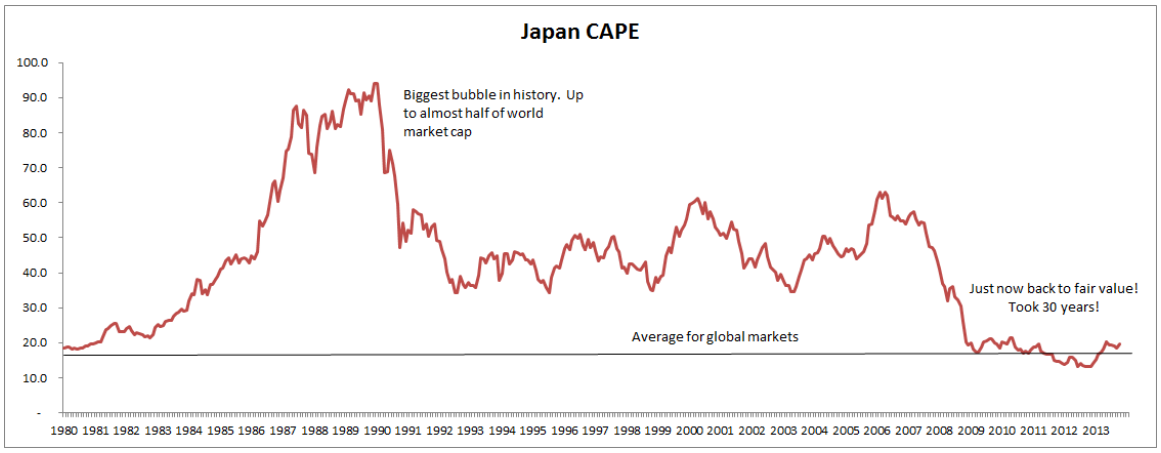


Source: Global Financial Data.

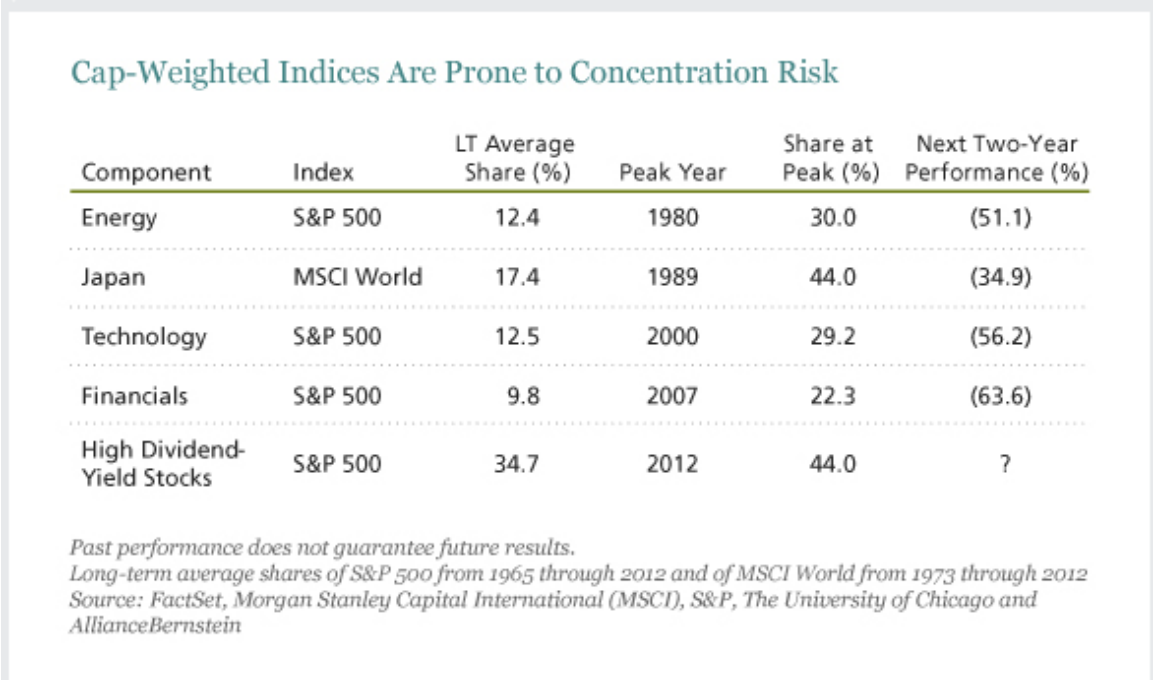
Japan rose to be nearly half of the world's market cap. And if you believed the "efficient market," you just went along and invested half of your stock allocation in Japan. Japan returned approximately -2% per year from 1990-2010. That is over 20 years of negative returns.

What is the biggest market cap country in the world now? The US, at nearly half of the global stock market capitalization. What is the most expensive country in the world? (Yep, same). Now there is a big caveat, and that is the US isn't in a bubble. But the US isn't cheap like the rest of the world. So you may still be depriving yourself of better opportunities elsewhere.

Below is a great piece from Alliance Bernstein that examines other market cap weighted indexes. Note how bad it is to invest in these bubbles.

Their table is flashing a warning about one of our least favorite assets, US high yielding dividend stocks. (This is also a good illustration of how asset flows can alter an investment strategy. Namely, dividend stocks have historically worked due to their value characteristics, but as money has flowed into the stocks chasing yield, they are trading at historic premiums to the overall market. OSAM has a good piece on the subject in a December 2013 article titled "The Myth of the Most Efficient Market.")

FIGURE 35- PROBLEMS WITH CAP WEIGHTED INDEXES



Cap-Weighted Indices Are Prone to Concentration Risk

Component	Index	LT Average Share (%)	Peak Year	Share at Peak (%)	Next Two-Year Performance (%)
Energy	S&P 500	12.4	1980	30.0	(51.1)
Japan	MSCI World	17.4	1989	44.0	(34.9)
Technology	S&P 500	12.5	2000	29.2	(56.2)
Financials	S&P 500	9.8	2007	22.3	(63.6)
High Dividend-Yield Stocks	S&P 500	34.7	2012	44.0	?

Past performance does not guarantee future results.
Long-term average shares of S&P 500 from 1965 through 2012 and of MSCI World from 1973 through 2012
Source: FactSet, Morgan Stanley Capital International (MSCI), S&P, The University of Chicago and AllianceBernstein

Source: Alliance Bernstein.

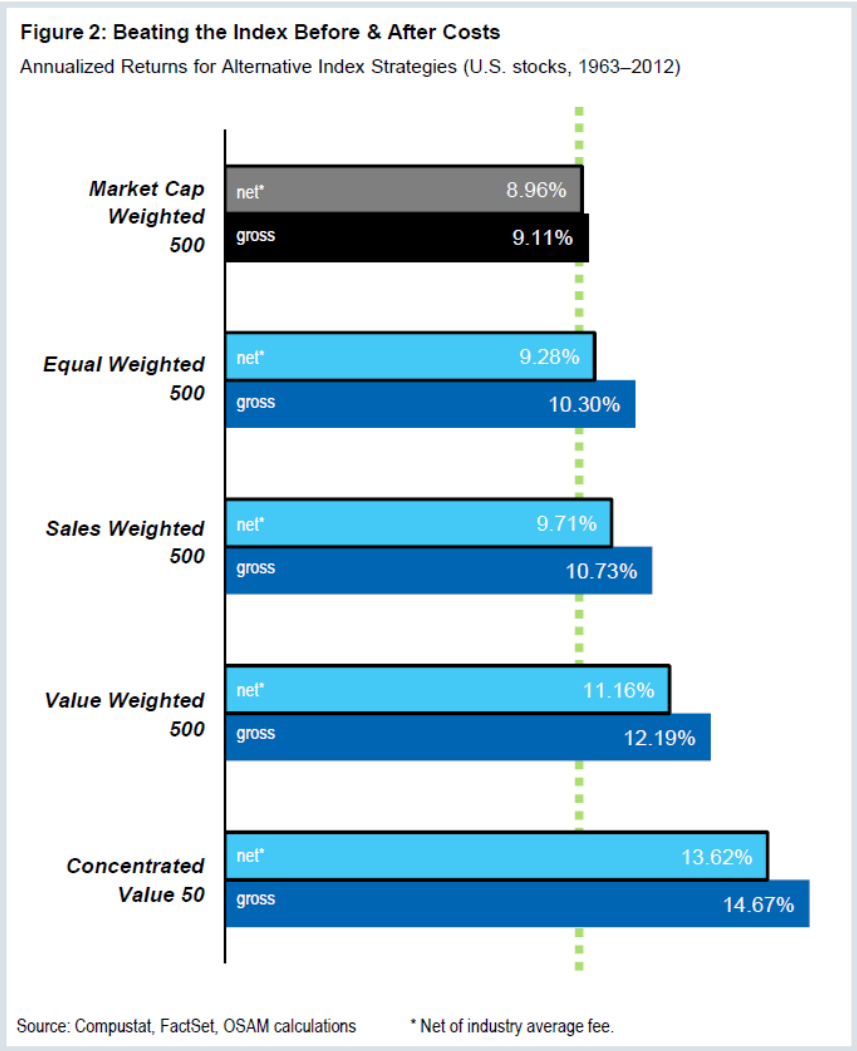
Passive and active are meaningless terms since we take the position that everything is active. There are rules for buying, selling, and rebalancing. It is ironic that the largest and most famous index, the S&P 500, is really an active fund in drag. It has momentum rules

(market cap weighting), fundamental rules (four quarters of earnings, liquidity requirements), and a subjective overlay (committee input). Does that sound passive to you?

However, most of the early indexes were built to be representative of the marketplace. So while indexing was revolutionary, market cap weighting was not necessarily the best approach for managing money. Over the past thirty years we have seen an amazing amount of research that has shown simple ways to construct mechanical portfolios, i.e., indexes that outperform these market cap indexes. Simple factors that take into account value, momentum and trend, and carry have been applied within and across asset classes to form more robust portfolios. Second generation indexes have improved upon the first generation (commodities are a great example here).

Below O'Shaughnessy Asset Management put together a piece titled, "Combining the Best of Passive and Active Investing" that is well worth your time.

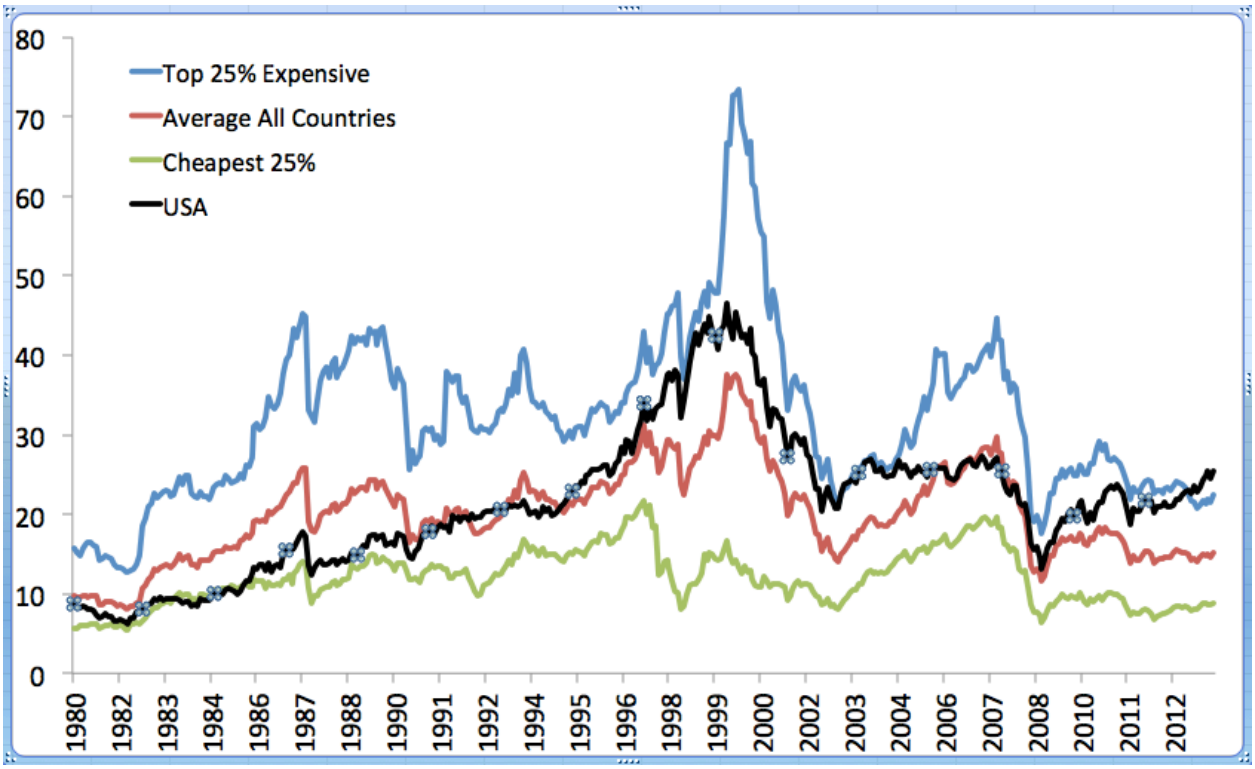
FIGURE 36 - BEATING THE INDEX BEFORE AND AFTER COSTS



Source: OSAM.

If you look at where we stand today with world valuations, the US is actually above the upper end of the range for expensive countries. This chart could be used to help guide when to allocate more to the US versus the rest of the world. The US was cheap relative to the rest of the world in the early 1980s, which also happened to be the start of the long bull market to follow. The late 1990s saw the US near the top of the range which also preceded the 2000 bear market. Will the current overvaluation signal another bear or perhaps a time to shift more assets to foreign markets? Time will tell.

FIGURE 37 – CAPE RATIOS OF EXPENSIVE, CHEAP, USA, AND ALL COUNTRIES



As a quick summary, there are a few actions investors can take to improve the future risk-adjusted returns of their equity portfolio.

1. At a minimum, allocate your portfolio globally reflecting the global market cap weightings. In the US, that means allocating 50% of your portfolio abroad.

2. To avoid market cap concentration risk, consider allocating along the weightings of global GDP. This would mean closer to 60-80% in foreign stocks.

3. Similarly, ponder a value approach to your equity allocation. Consider overweighting the cheapest countries and avoiding the most expensive ones. Currently, this would mean a low, or zero, allocation to US stocks. Note: This does not mean simply

picking one or two countries, but rather a basket of the cheapest countries – 10 is a reasonable number.

SUMMARY

"The Commanding General is well aware the forecasts are no good. However, he needs them for planning purposes."

> - Kenneth Arrow, Nobel Laureate Economist…recalling the response he and colleagues received during the Second World War when they demonstrated that the military's long-term weather forecasts were useless (Via *Future Babble*).

Virtually every day there are pundits and gurus on the airwaves, Internet, and in print making predictions. We believe the only difference between the S&P 500 at 370 and the S&P 500 at 3320 is opinion: namely, what you think those underlying stocks are worth. Now, we could certainly go on and on making well-thought-out arguments as to why either value is justified (low/high interest rates, profit margins, productivity, mean reversion, discounted cash flows, etc.), but at the end of the day, it is simple human beliefs on the value of stocks that drive their short term price levels. As the late, great Kurt Vonnegut opined in his book *Galapagos*, circa 1985:

> "The thing was, though: When James Wait got there, a worldwide financial crisis, a sudden revision of human opinions as to the value of money and stocks and bonds and mortgages and so on, bits of paper, had ruined the tourist business not only in Ecuador, but practically everywhere…Ecuador, after all, like the Galapagos Islands, was mostly lava and ash, and so could not begin to feed its nine million people. It was bankrupt, and so could no longer buy food from countries with plenty of topsoil, so the seaport of Guayaquil was idle, and the people were beginning to starve to death…Neighboring Peru and Columbia were bankrupt, too…Mexico and Chile and Brazil and Argentina were likewise bankrupt – and Indonesia and the Philippines and Pakistan and India and Thailand and and Italy and Ireland and Belgium and Turkey. Whole nations were suddenly in the same situation as the San Mateo, unable to buy with their paper money and coins, or their written promises to pay

> later, even the barest essentials. They were suddenly saying to people with nothing but paper representations of wealth, 'Wake up, you idiots! Whatever made you think paper was so valuable?'
>
> The financial crisis was simply the latest in a series of murderous twentieth century catastrophes which had originated entirely in human brains. From the violence people were doing to themselves and each other, and to all other living things, for that matter, a visitor from another planet might have assumed that the environment had gone haywire, and that people were in such a frenzy because Nature was about to kill them all.
>
> But the planet a million years ago was as moist and nourishing as it is today – and unique, in that respect, in the entire Milky Way. All that had changed was people's opinion of the place."

How does an investment manager reconcile all of the various prognostications he hears on a daily basis?

Simple – ignore them.

One should ignore the forecasts of so-called experts, as they are likely to be about as accurate as a monkey throwing darts against a wall or a coin flip. There is an enormous amount of research to back up the inability of experts to make solid predictions.

One such researcher on expert predictions is Philip Tetlock, a professor of management at the Wharton School at University of Pennsylvania He started tracking experts and their forecasts and predictions a quarter century ago, and he has compiled data on over 300 professionals and academics that have made over 80,000 forecasts.

He examined both the outcomes of their predictions as well as their processes – i.e., how they reacted to being wrong and how they dealt with contrary evidence. In general, they

offered no benefit over a random prediction, and ironically enough, the more famous the expert, the less accurate the predictions were. The experts with the least confidence made the best predictions.

The characteristics enabling one to appear on TV and become a famous pundit are not the same as the characteristics of being a successful trader or money manager. Here is a passage from Future Babble on how to be a successful pundit, as illustrated by the charismatic overpopulation doomsayer Paul Ehrlich:

> "Be articulate, enthusiastic, and authoritative. Be likable. See things through a single analytical lens and craft an explanatory story that is simple, clear, conclusive, and compelling. Do not doubt yourself. Do not acknowledge mistakes. And never, ever say, 'I don't know.'
>
> People unsure about the future want to hear from confident experts who tell a good story, and Paul Ehrlich was among the very best. The fact that his predictions were mostly wrong didn't change that in the slightest."

Now notice the difference in thinking with one of the greatest hedge fund managers ever, George Soros:

> "I think that my conceptual framework, which basically emphasizes the importance of misconceptions, makes me extremely critical of my own decisions. I know that I am bound to be wrong, and therefore more likely to correct my own mistakes."

Most of the greatest traders and money managers think in terms of all sorts of possibilities and probabilities of various scenarios. Avoiding the seduction of listening to your emotions and forecasters is a great first step, while incorporating a value mindset is another.

Warren Buffett famously said, "Price is what you pay. Value is what you get." Over periods of years and decades, it is evident that an investor's real return is heavily

dependent on the price paid for the asset. Investors can use the CAPE ratio valuation as a guidepost for both opportunities arising from negative geopolitical events, and a sanity check against bubbling stock markets. Comparing global equity markets on a relative basis allows the portfolio manager to create portfolios of cheap stocks markets, while avoiding or even shorting expensive markets.

APPENDIX

While we only examined one valuation metric in this book, below is a very short summary of other valuations models.

A publication by The Leuthold Group titled, "Stock Market Valuation: What Works and What Doesn't?" covers a number of models, including price-to-earnings (P/E) on trailing 12-month earnings per share (EPS), P/E on 5-year normalized EPS, return on equity (ROE) based normalized EPS, dividend yield, price-to-book, price-to-cash flow, and price-to-sales. In general the group finds that many of these metrics are decent at forecasting stock returns. Other models include the Q-Ratio, and market capitalization to GNP/GDP (Buffett's favorite).

While more sophisticated models can be built, John Hussman has a few good articles on this topic: "Estimating the Long Term Returns on Stocks" and "The Likely Range of Market Returns in the Coming Decade" Joachim Klement also recently published a paper, "Does the Shiller-PE Work in Emerging Markets?" that performs a similar analysis.

Another great summary is set forth in the paper "Estimating Future Stock Market Returns" by Adam Butler and Mike Philbrick, and Doug Short consistently is a great resource for charts on stock valuations. Lastly, Vanguard has a good 2012 piece titled "Forecasting Stock Returns."

As far as trading systems based on value, a good summary of the dividend literature can be found in the Tweedy Browne paper entitled, "The High Dividend Return Advantage." In the paper the firm summarizes a 1991 study by Michael Keppler titled, "The Importance of Dividend Yields in Country Selection" which found that ranking the universe of countries by dividend yield also resulted in outperformance. He found that the highest yielding countries outperformed the lowest yielding ones from 1969-1989 by more than 12

percentage points per year.

Running a similar study using a different database (Global Financial Data), we sorted countries by quartiles from 1920-2011, beginning with nine countries and expanding to eighteen by study end. We found that countries in the highest dividend paying quartile outperformed the countries in the lowest paying quartile by 11 percentage points per year. Another resource is a great post from NYU professor Damodaran on country multiples, including Kazakhstan and Gabon (which only has one company). DFA also has a great piece using the DMS data titled "Eight Decades of Risk Parity".

Jeremy Schwartz from WisdomTree sorted emerging markets into high and low dividend years. This is of course backwards looking, but instructive nonetheless. Schwartz found the following:

- The average performance of the MSCI Emerging Markets Index during years following high dividend yield values was 33.03%, more than 31 full percentage points above the return following low dividend yield years.

- The years following high trailing 12-month dividend yields had performances that averaged over 15 percentage points more than the average performance of all 24 calendar years. The years following low trailing 12-month dividend yields on average performed about 15 percentage points worse than the average performance of all 24 calendar years.

- Four of the five best yearly return periods for the MSCI Emerging Markets Index followed trailing 12-month dividend yields that ranked among the five highest of all 24 calendar year returns. Notably, at the 2008 year-end, the dividend yield on the

MSCI Emerging Markets Index was 4.75% (the highest value) and the 12-month forward return of the index was 79.02% (the highest 12-month forward return).

- On the other hand, the lowest observed year-end trailing 12-month dividend yield for the MSCI Emerging Markets Index was observed on December 31, 1999, and it was followed by the second-worst of all 24 yearly returns studied, specifically -30.61%.

We ran the same analysis in the US since 1872. To put that into perspective, that is 140 years of investing. We divide the years up into high and low dividends with the breakpoints being a 4.18% nominal yield and a 1.48% real yield. If you invested in low dividend years your average return would have been 7.5% per annum nominal, 5.1% real. If you invested in high dividend years your average return would have been 13.2% per annum nominal, 10.7% real. Results are consistent for real yields as well. The dividend yield at the end of 2013 was approximately 2% nominal, 0.5% real. Unfortunately, this places us in the lower half of historical yields.

Samuel Lee has a great article titled "The Hedgehog's Error" on Morningstar that sorts global countries based on value (Price/Book) using the French Fama database. Not surprisingly, he finds that sorting on value works well.

We utilize the database to sort the countries (twelve in 1975 and rising to twenty by 1991) based on various measures of value. Below in Figure A we demonstrate the results of sorting the countries on a yearly basis and choosing the cheapest X% of the universe (from 33% to 10%).

Below are results that are US dollar based, and nominal.

FIGURE A - 1975 - 2011

33%	Buy & Hold	Book	Earnings	Cash Flow	Dividends
Return	12.7%	13.5%	15.6%	13.2%	14.3%
Volatility	22%	24%	24%	25%	24%
Max Drawdown	47%	46%	50%	46%	49%

25%	Buy & Hold	Book	Earnings	Cash Flow	Dividends
Return	12.7%	15.4%	14.3%	14.0%	14.9%
Volatility	22%	25%	26%	25%	24%
Max Drawdown	47%	43%	61%	46%	46%

10%	Buy & Hold	Book	Earnings	Cash Flow	Dividends
Return	12.7%	18.1%	16.4%	13.5%	12.9%
Volatility	22%	29%	28%	34%	26%
Max Drawdown	47%	38%	54%	55%	48%

Source: Global Financial Data, Morningstar, Fama & French. Index returns are for illustrative purposes only. Indices are unmanaged, and an investor cannot invest directly in an index. Past performance is no guarantee of future results.

READING LIST

History of Markets

- Triumph of the Optimists: 101 Years of Global Investment Returns - Elroy Dimson, Paul Marsh, and Mike Staunton
- Stocks for the Long Run - Jeremy Siegel
- Reminiscences of a Stock Operator - Edwin LeFèvre
- Capital Ideas, Capital Ideas Evolving, and Against the Gods - Peter Bernstein
- Ibbotson Yearbook - Ibbotson Associates
- The CRB Commodity Yearbook - Commodity Research Bureau
- The Essays of Warren Buffett - Warren E. Buffett and Lawrence A. Cunningham
- Fortune's Formula - William Poundstone
- The Myth of the Rational Market - Justin Fox
- The Great Game: The Emergence of Wall Street as a World Power – John Steele Gordon
- Manias, Panics, and Crashes - Charles Kindleberger
- Extraordinary Popular Delusions and the Madness of Crowds - Charles MacKay
- Irrational Exuberance –Robert Shiller
- The Misbehavior of Markets - Benoit Mandelbrot
- Fooled by Randomness and The Black Swan: The Impact of the Highly Improbable – Nassim Taleb
- More Than You Know: Finding Financial Wisdom in Unconventional Places - Michael Mauboussin
- Famous First Bubbles – Garber
- The Panic of 1907: Lessons Learned from the Market's Perfect Storm - Mark Bruner
- The Little Book of Behavioral Investing – James Montier
- Why Stock Markets Crash: Critical Events in Complex Financial Systems - Didier Sornette

Making Mistakes

- Being Wrong: Adventures in the Margin of Error - Kathryn Schultz
- Why We Make Mistakes: How We Look Without Seeing, Forget Things in Seconds, and Are All Pretty Sure We Are Way Above Average - Joseph Hallinan
- Mistakes Were Made (But Not by Me): Why We Justify Foolish Beliefs, Bad Decisions, and Hurtful Acts - Carol Tavris and Elliot Aronson
- How We Know What Isn't So: The Fallibility of Human Reason in Everyday Life - Cornell psychologist Thomas Gilovich
- Expert Political Judgment: How Good Is It? How Can We Know? - Philip Tetlock

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