

## RECONCILIATION PRINCIPLE: RETURNS AND FORECASTS MUST ADD UP

*By Ed Easterling*

July 7, 2017

Copyright 2017, Crestmont Research ([www.CrestmontResearch.com](http://www.CrestmontResearch.com))

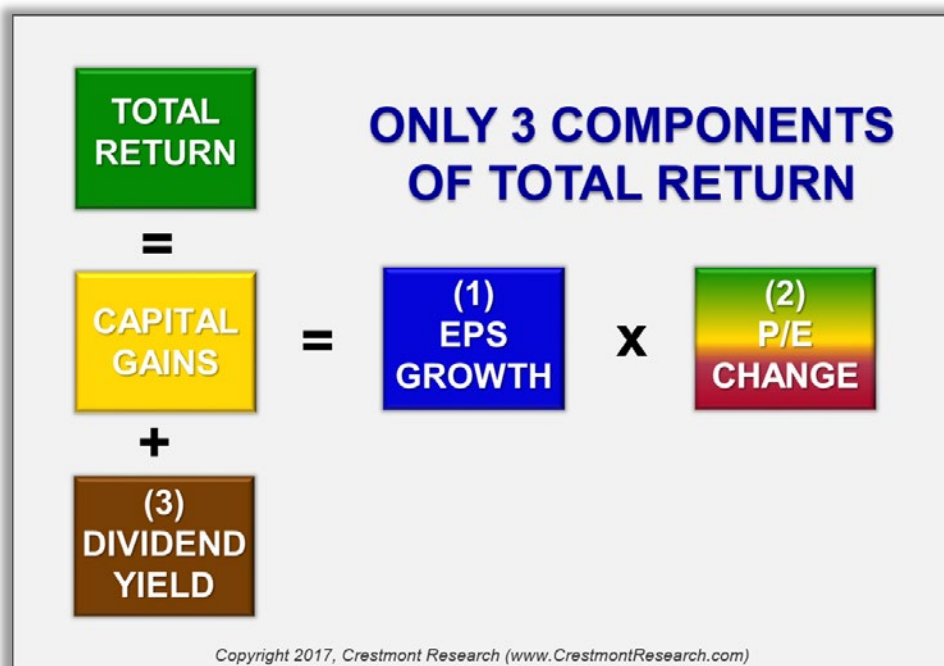
Hope springs eternal... until it confronts reality.

When it comes to stock market returns, results as well as outlooks are bounded by an axiom that Crestmont coined as the Reconciliation Principle. This principle is a tool that can be used in two ways. It can be used in forward mode to develop your own outlook for future returns. In addition, it can be used in reverse to assess the validity of forecasts for stock market returns from analysts and pundits.

### UNCONVENTIONAL WISDOM

Conventional wisdom holds that stock market returns are random. That is true over days, weeks, months, and even a few years. But contrary to conventional wisdom, stock market returns are highly predictable over periods that reflect investors' horizons—periods either side of a decade. This predictability occurs because stock market returns are driven by component parts.

Figure 1. Only Three Components of Total Return



First, total return from the stock market consists of capital gains and dividends. Second, capital gains are driven by earnings growth and price-earnings ratio (P/E) expansion or contraction.

Therefore, the Reconciliation Principle states that both past returns and future forecasts must be supported by results or assumptions for (1) earnings growth, (2) dividend yield, and (3) P/E change. Too often, analysts and pundits confidently forecast future returns based upon history or hope, without being able to defend their prognostications with reasonable assumptions for the three components.

To illustrate, the 2017 SBBI Yearbook, by Roger Ibbotson, et al., includes an update to one of the most recognized series of long-term stock market returns. From the start of the series in 1926 to the end of last year (2016), the compounded average annual nominal return was 9.99%.

Ibbotson's Yearbook goes further and supports that aggregate average with component values. Earnings growth provided 5.0%, dividend yield added 4.2%, and P/E expansion topped it off with almost 0.8%.

Frequently, 10% is used as a reasonable expectation of return for patient investors. Certainly, the logic goes, an average derived from data spanning more than 90 years should provide a reasonable outlook for investors that are patient enough to allow the long term to deliver that average return.

*“Ibbotson’s 10% is not the average from a collection of long-term returns, but rather it is the average for a specific and unique long-term period (1926–2016).”*

However, it is most important to note that Ibbotson's 10% is not the average from a collection of long-term returns, but rather it is the average for a specific and unique long-term period (1926–2016).

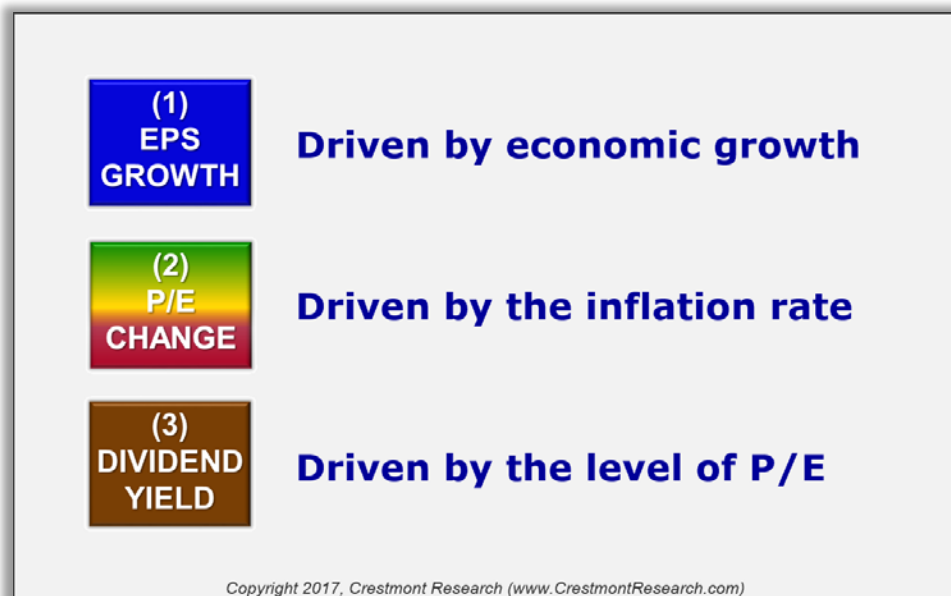
Thus the 10% return was the result of investing across 91 particular years, starting with P/E at 10.2, receiving a high dividend yield due to a low starting P/E, experiencing average inflation of 2.9%, and ending with P/E having more than doubled.

For an investor today, the starting conditions are quite different. The low rate of inflation has driven normalized P/E into the high 20s. One result of high P/E is low dividend yield. Additionally, low inflation portends lower nominal earnings growth than the historical average (since average inflation was higher).

## **PRINCIPLES, NOT RANDOMNESS**

Not only is total return from the stock market driven by the fundamental principle of three components, but also each of the three components is driven by fundamental principles. Not one of the three components is a random element. Each of them has a tangible and definitive driver. This set of relationships further reinforces that stock market returns are not random.

Figure 2. Drivers of the Components



In brief, earnings per share (EPS) growth is driven by economic growth. P/E expansion and contraction are driven by the inflation rate. Dividend yield is driven by the starting level of the P/E ratio. We'll explore each of the components individually.

First, let's look at earnings growth. Figure 3 displays the long-term relationship between economic growth and earnings growth. The blue line is economic growth, as measured by GDP. The green line is earnings per share for the S&P 500 Index.

The two series have a very consistent relationship over time, *because* they are fundamentally related. GDP is essentially the net sales of all companies in the economy. As noted by the illustration in the lower left of the graph, earnings emanate from sales. The oscillation of EPS above and below the GDP line simply reflects numerous business cycles playing out over time.

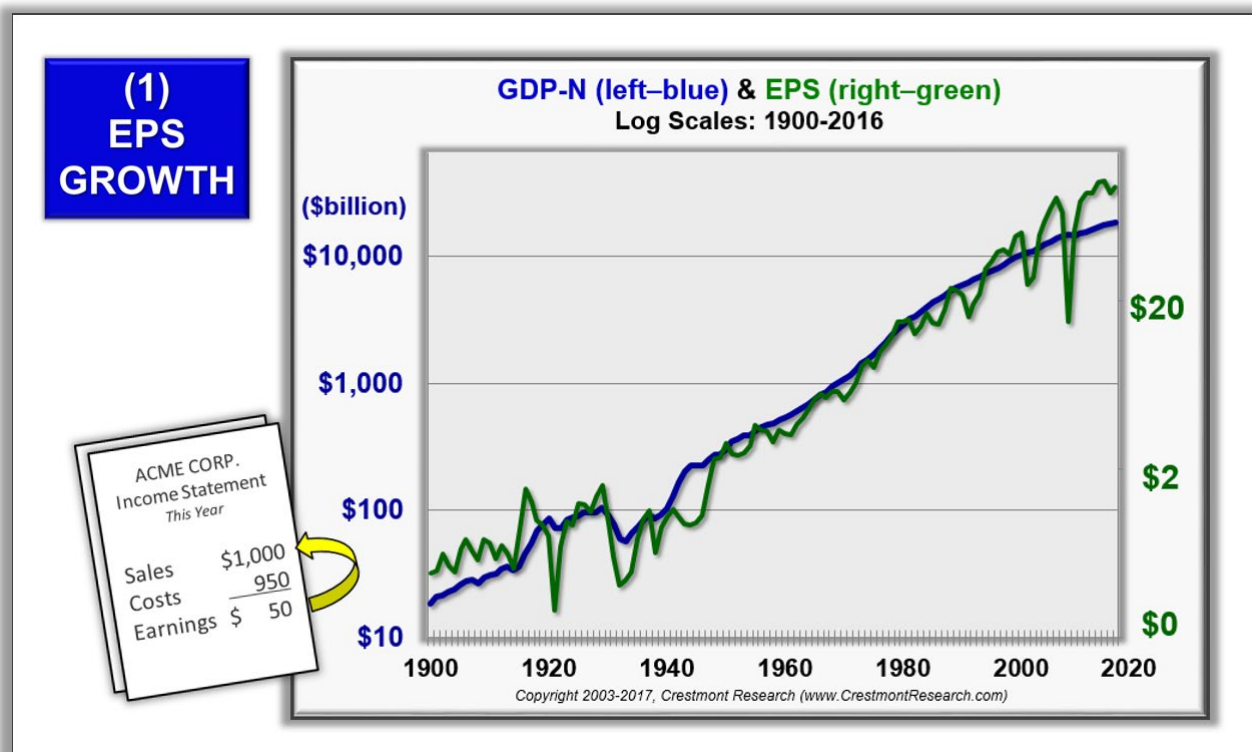
Further, earnings are reported in nominal terms. That's the reason that nominal GDP is used in Figure 3. Reporting in nominal terms means that the series includes the effects of the inflation rate. When the inflation rate rises, nominal series tend to increase faster. Likewise, when inflation declines, nominal series tend to have slower growth rates. Then in a deflationary period, nominal series often decline as the effects of deflation more than offset any real growth.

The key takeaway is that earnings growth is driven by economic growth, and over the long term, earnings don't and can't grow faster than nominal GDP. Actually, earnings growth for the larger, public companies listed in the stock market tends to be just slightly slower than economic growth. This difference occurs because economic growth includes faster-growing small companies as well as new start-ups.

Some analysts are quick to respond that the revenues and profits of larger companies, like those in the S&P 500 Index, include a relatively large international component. As a

result, those companies can have faster earnings growth than the U.S. economy does as a whole.

Figure 3. Earnings & Economic Growth



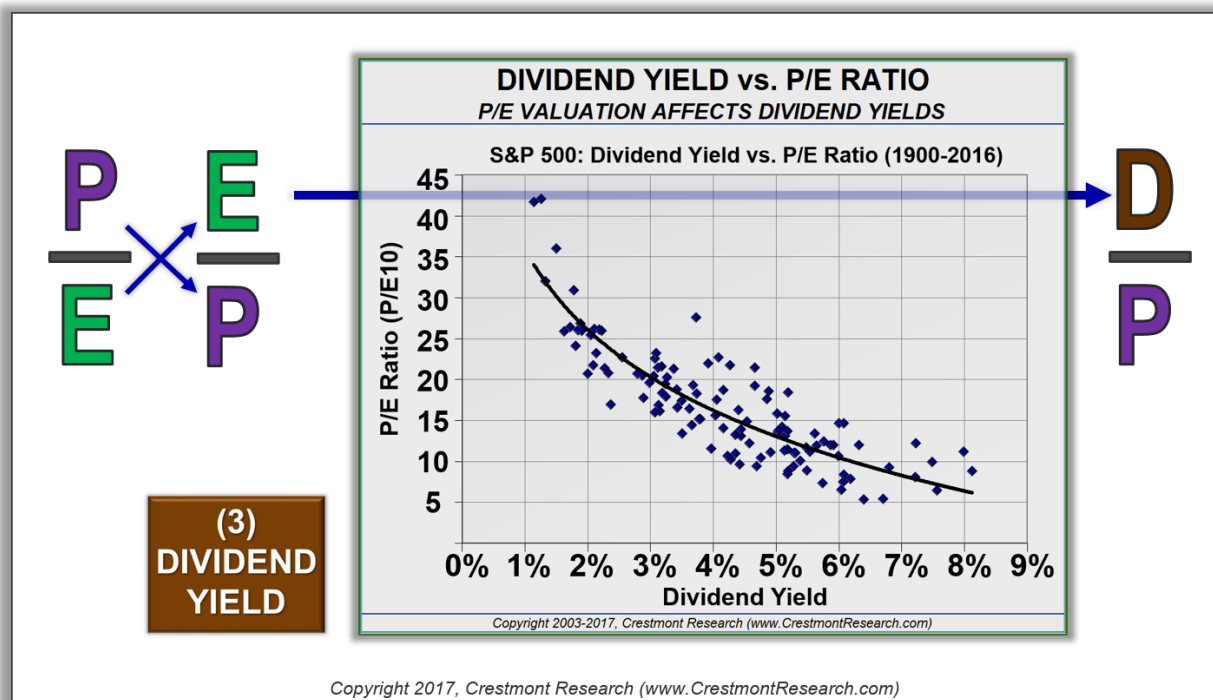
That would be true for a single company with lots of emerging-market business, but for the group as a whole, the vast majority of international business occurs in Europe and Japan—both with slower economies than the U.S. Fortunately, those companies also have some business with emerging economies, which does help to increase their earnings growth rate back toward the average U.S. rate.

Finally, when comparing forecasts to historical data, keep in mind that the historical growth rate for real GDP in the U.S. is 3.3%. Current long-term forecasts are for 2.0% to 2.5% real growth for the U.S. (due to demographic changes and other forces).

For this article, we'll optimistically assume that real GDP growth returns to its long-term average. That assumption serves two purposes. First, the outlook for stock market returns is sobering enough; a bit of optimism can serve as a spoon full of sugar. Second, it avoids the need to discuss the effect of slower growth on P/E. Slower growth has significant implications: More can be found in the article entitled "[Game Changer](#)" on the Crestmont Research website. (Click the link or input the term *game changer* in the search box on the website.)

The next component of total return is dividend yield. Figure 4 displays the very strong relationship between dividend yield and the P/E ratio.

Figure 4. Dividend Yield vs. P/E



The vertical axis presents a range of values for the P/E ratio. The horizontal axis shows values for dividend yield. Each point on the graph represents the combination of values for each year since 1900.

For years with high P/E, dividend yield tended to be lower. For years with low P/E, dividend yield tended to be higher. This occurs for mathematical reasons.

P/E can be inverted to create the formula for earnings yield. P/E becomes E/P.

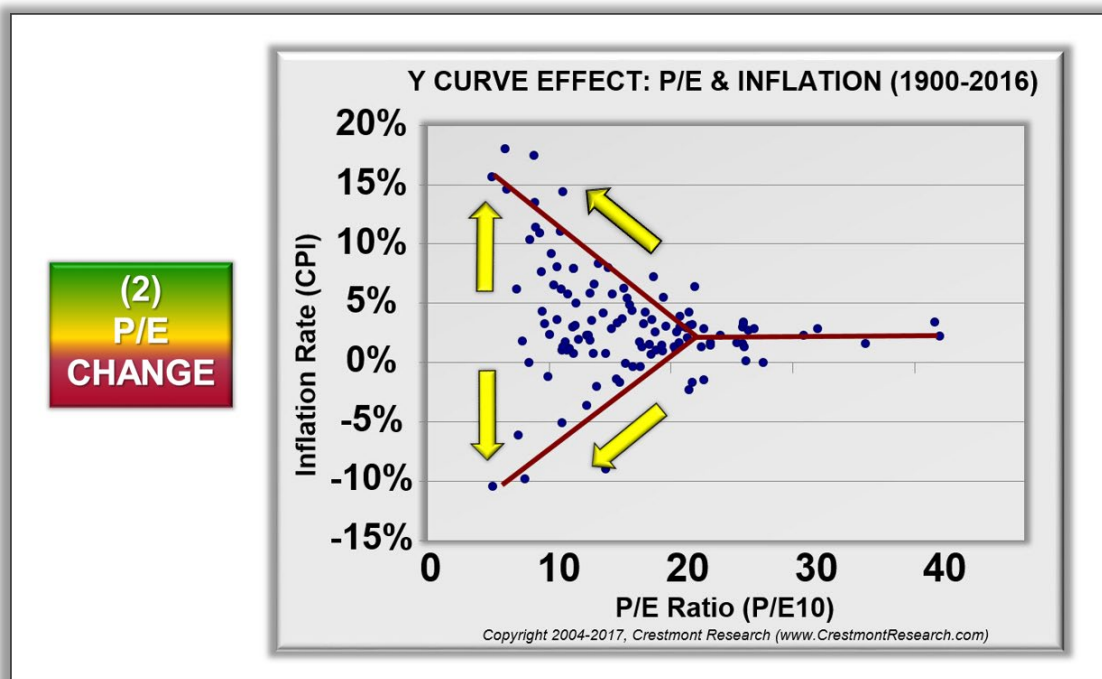
Dividend yield is D (dividend) divided by P. Both expressions have P in their denominator, and since dividends are paid from earnings, their relatively tight relationship simply reflects variations in the dividend payout ratio over time.

The key takeaway is that periods starting with high P/Es have low dividend yields. Investors in the market or buying stocks today are baking-in a low dividend yield because their basis will be a relatively-high P/E. The contribution of dividend yield to total return for a given period, therefore, is necessarily low for periods that start with high valuations.

The final component of stock market total return is P/E change. If the P/E of the market rises over an investor's holding period, the effect of such multiple expansion is an addition to capital gains and total return. A declining P/E takes away from total return.

Figure 5 shows that P/E is not random. It is not simply a factor that is driven by psychology or money flows. On the vertical axis is a range for the inflation rate. On the horizontal axis is a range for P/E. Each dot represents the combination of values for each year since 1900.

Figure 5. P/E & the Inflation Rate



This graph displays what is known as the Y-Curve Effect. The stem that extends to the right comprises the late-1990s bubble years. Otherwise, the upper fork shows that P/E declines as the inflation rate rises. The lower fork shows that P/E declines as inflation turns into deflation. The highest sustainable values for P/E occur when the inflation rate is low and stable.

Therefore, today's relatively high P/E is the result of low inflation and low interest rates. Actually, with the current normalized P/E near 30, momentum in the market has P/E about 20% or so higher than the fair-value level associated with low inflation.

The level and trend of P/E is driven by the inflation rate, due to a series of financial tradeoffs. Let's take a moment to explore the underlying driver for P/E. This is the empowering part of our discussion. When we realize that long-term returns from the stock market are principle-driven (rather than random), we become empowered and better able to structure portfolios and align expectations with the market environment. Such understanding can cure an investor's affliction of "market helplessness," which is the anxious feeling that one's portfolio is subject to the arbitrary whims of the market.

## TRADE-OFFS

Would you rather have \$20 today or a guaranteed \$1 per year for the next twenty years? Of course, you'd rather have the twenty dollars up-front. With \$20 today, you can earn a return and have more than \$1 per year for twenty years.

But what about \$15 up-front instead of \$1 for 20 years?...or maybe \$10. How will you decide your point of indifference, the trade-off price?

Depending upon the environment, there is an amount up-front that delivers \$1 of principal and interest for 20 years. That amount will vary depending upon current market returns. When returns are higher, the initial amount needed is generally lower, and vice versa.

This effect is exactly what investors experience with bonds. When the inflation rate and interest rates rise, bond values fall. The point of indifference decreases as rates rise and increases as rates fall.



This happens because investors have trade-offs between financial instruments and commodity assets. Inflation drives up the prices of commodity assets in nominal terms, and investors often use commodity investments to protect against or to participate in price increases due to inflation.

As a result, investors in financial instruments will seek a return that is competitive with that from commodities. Since most financial investments can't or don't quickly adjust their cash flows, investors adjust the prices they are willing to pay. Thus, when the inflation rate rises, bond and stock values decline. Since P/E is the price of the market index divided by today's earnings, the effect of inflation-driven valuation change is a change in P/E.

That process holds true until the inflation rate goes negative into deflation. That's the lower-left fork in Figure 5. Worsening deflation leads to lower P/E.

Why does this happen? Consider the example in this graphic. Scenario A reflects slightly rising nominal cash flows. Scenario B is slight deflation. Finally, scenario C is worsening deflation.

Which set of cash flows has the highest value? Of course, A. The second most valuable is B, and C has the lowest value. Since "value" is the P in P/E, we can see that P/E declines into worsening deflation.



In summary, the inflation rate drives P/E over the long term as it moves either toward or away from a low, stable rate.

Over the short run, however, many factors move markets well away from long-term value. These factors include psychology, market momentum, current events, etc.

## QUANTIFIED & APPLIED

We started this discussion by refuting the convention wisdom that long-term stock market returns are random. We acknowledged that short-term returns are highly random, primarily because there are so many noneconomic and nonfinancial factors that affect the markets in the short run.

We then found that the long term is disconnected from the short term specifically because long-term returns are driven by fundamental principles. We saw that stock market returns consist of only three components and that each of the three components is itself driven by a fundamental principle rooted in economic, mathematical, or financial tradeoffs.

The components and their drivers are embodied in Crestmont's axiom coined as the Reconciliation Principle. That tool is useful not only to forecast returns but also to validate analysts' forecasts. Let's apply the Principle.

We discussed the Ibbotson series of stock market returns early in this article. That series is very helpful, because it includes data for each of the three components. Yet that series also has shortfalls when applied to estimating future returns.

The series started when P/E was low, at 10.2 according to Ibbotson. The low starting P/E boosted dividend yields in the series. Further, since P/E has more than doubled since the start of the series, that component is also contributive in ways that are not available from today's lofty P/E level.

Finally, because the inflation rate during the series averaged 2.9%, the third component, earnings growth, also benefited from a tailwind that is not present today. The Ibbotson series threaded the needle of benefits. It was helped by an elevated inflation rate during some years, yet also received the benefit of having the inflation rate decline in later years, thereby increasing P/E.

Looking forward, let's contrast two future outcomes based upon inflation rate scenarios. One assumption is that the inflation rate stays low and stable for the next decade. The second scenario assesses the effect of the inflation rate's increasing to historically average levels.

The first column in Figure 6 shows the values for each component in the 91-year series according to Ibbotson.

The second column reduces the future growth rate for earnings to reflect a low inflation rate. Rather than the historical 5% average annual growth rate, the scenario in column two assumes 4% (implicitly assuming 1.9% inflation rather instead of the historical 2.9%).

*"The level and trend of P/E is driven by the inflation rate due to a series of financial tradeoffs."*

The second column reflects current dividend yields, which are lower due to a P/E that is much higher today than in 1926. Finally, P/E is assumed to remain at current levels.



This is the most optimistic aspect of the column-two scenario. (Almost no one is calling for P/E expansion over the next decade, and many expect that P/E will shift back slightly into the mid-20s. If so, that would shave somewhat more than 1% annually from this scenario's return.)

The most prevalent financial outlook by advisors and investors includes somewhat higher inflation in the near future. The third column shows the effect of the inflation rate rising to its historical average.

Figure 6. Probable Returns

	<b><u>Ibbotson</u></b> <b><u>(1926-2016)</u></b>	<b><u>Low</u></b> <b><u>Inflation</u></b> <b><u>(2017-2027)</u></b>	<b><u>Avg</u></b> <b><u>Inflation</u></b> <b><u>(2017-2027)</u></b>
Earnings...	5.01%	4.01%	5.01%
Dividend...	4.19%	2.00%	2.00%
P/E.....	<u>0.79%</u>	<u>0.00%</u>	<u>-5.50%</u>
	<b>9.99%</b>	<b>6.01%</b>	<b>1.51%</b>

NOTES: (1) In 1926, P/E was 10.2x, (2) inflation rate averaged 2.9%, (3) historical real economic growth 3%+

*Copyright 2017, Crestmont Research (www.CrestmontResearch.com)*

Under this average-inflation scenario, nominal earnings growth could be expected to be near its average; thus we'll carry over 5% from the past. Since the scenarios in Figure 6 relate to investments in the stock market at today's relatively high valuation, the column-three scenario includes dividend yield at current levels.

Finally, as the inflation rate rises to its historical average, P/E will decline to its own average level. The effect of P/E declining by 40%–50% over a decade is a reduction in returns of near 5%–6%, thus the figure of -5.5% in column three.

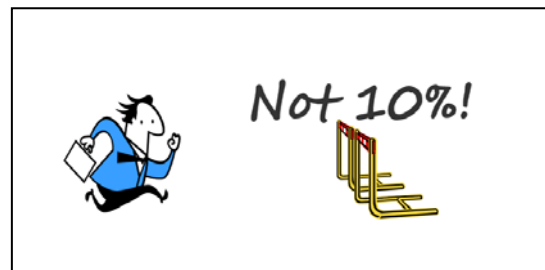
Although additional inflation does help each year's nominal earnings growth, the additional inflation also causes P/E to decline. When this trend continues over a period of a decade or so, the valuation change due to P/E decline represents well more than a decade of nominal earnings gains. Only when the investment period nears a century does the effect of inflation on annual earnings gains nearly equal the effect from P/E contraction.

## IMPLICATIONS

Just as farmers know to plant watermelon and tomatoes in June and grow winter wheat and onions in cooler seasons, advisors and investors should adjust their investment approach based upon the market environment. During low- and rising-valuation secular bull markets, investors can successfully deploy passive, market-driven strategies. Yet in periods like today's that feature high and potentially falling valuations (i.e., secular bear markets), investors need more active, diversified, and skill-based strategies.

In chapter 10 of *Unexpected Returns*, I developed a boatman's analogy to describe this investment philosophy: "Sailing vs. Rowing." During a generally rising secular bull market, investors can open the sail and use the tailwinds of the market to propel portfolio gains. Yet when conditions change into a choppy, volatile, secular bear market, investors need to lower the sail and pull out the oars to row the portfolio forward. Rowing involves a more active and diversified approach to portfolio management, and it requires a broader range of investments.

Here's a key point. Often, investors use the mythical 10% stock market return as a threshold for non-stock investments. They rely on mistaken conventional wisdom to assume that a long-term investor will receive 10% from a portfolio of stocks. Therefore, they reject many other alternatives that often have expected returns of 5% to 7%, or so (e.g., REITs, master limited partnerships, convertible preferred stocks, option strategies, commodities, annuities, active skill strategies, etc.). They mistakenly believe that these alternatives will detract from long-term success.

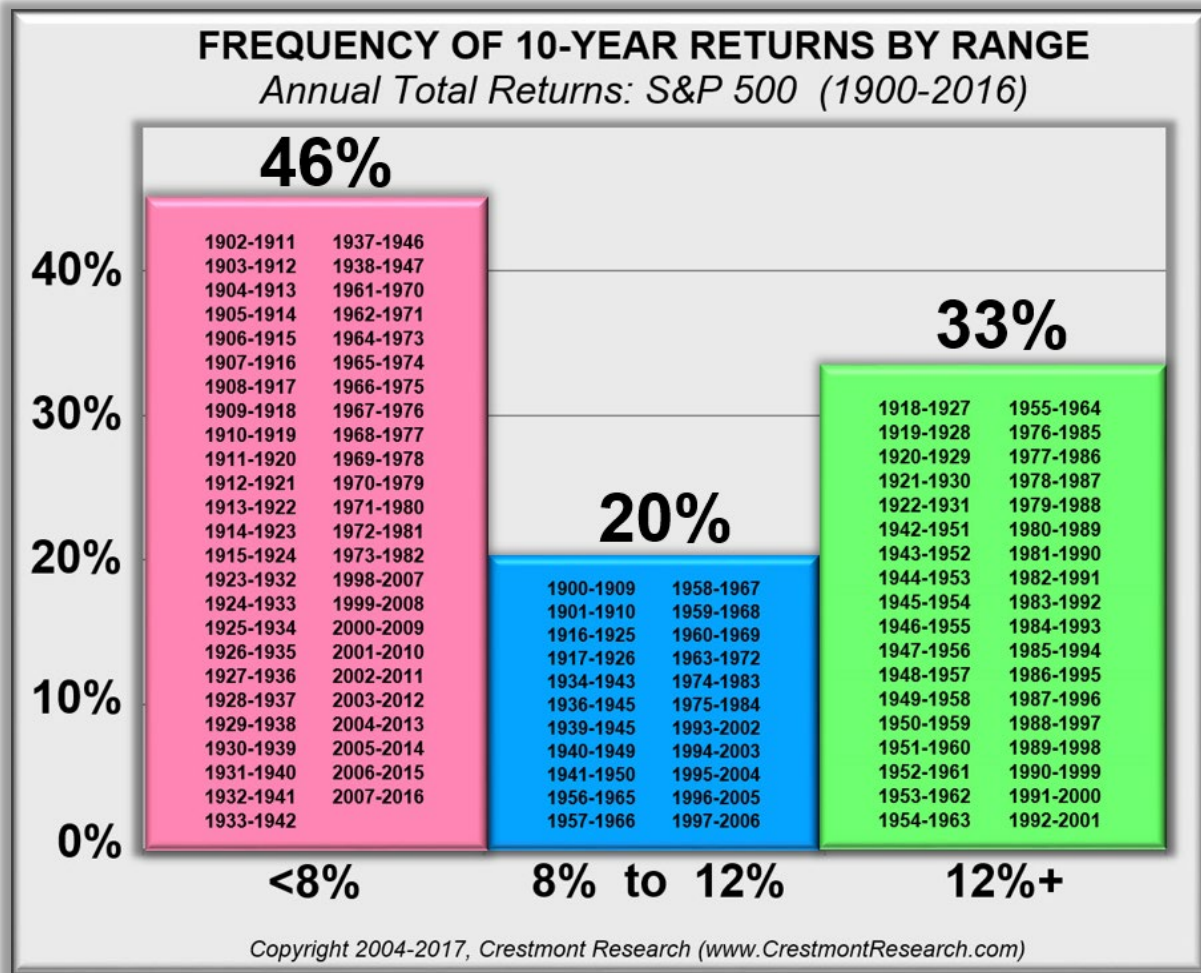


Conventional wisdom has misled investors to expect 10% to be the norm, especially when patience is amply applied. But no amount of patience will deliver 10% to current investment portfolios. For investments in the market today, or ones that were added during other high-valuation (high-P/E) periods, investors will never achieve long-term average returns near 10%. (See "[Waiting for Average.](#)")

In reality, the long-term horizon for most investors is a decade or two. Therefore, decade-long periods are most relevant. When we use the laboratory of history and graph the frequency of "average-return decades," we find few of them. Investors far more often confront "summers" and "winters" in the market than some hypothetical annual average of all seasons.

Figure 7 provides the frequency of average returns for decades since 1900 in three categories: below average, average, and above average. Decades start with every year since 1900, thus 1900–1909, 1901–1910, etc. For the average return, since so few of the decades had returns near 10%, the range has been expanded to include all decades with annualized total return between 8% and 12%.

Figure 7. Average Rarely Happens



As you can see in the graph, 80% of decades since 1900 have delivered returns outside this fairly wide range for average. And as you might expect, the periods in green generally started with below-average P/E, while the periods in pink generally started with above-average P/E.

Considering that today's P/E is in the top 5%–10% of highest P/E years, the next decade has virtually no chance of locating in the green zone. Even the blue zone seems beyond hope.

Therefore, based upon the quantitative forecast of 1%–6% annualized returns for the next decade and a reality-check review of empirical history that places the next decade well into the pink zone, investors should be prepared to align their expectations appropriately and row their portfolios.

When considering investments for the portfolio, keep in mind that 5%–7% alternatives are not only attractive compared to likely near-future stock market returns, but also that those alternatives can provide very helpful diversification and risk mitigation.

## CONCLUSION

Conventional wisdom holds that long-term returns from the stock market are random. That creates a sense of market helplessness. This affliction is reinforced by the seemingly logical, yet inaccurate, conclusion that short-term randomness couldn't possibly be followed by longer-term certainty. However, the short term is subject to temporary divergences from principles that are reliably valid in the long term. In recent decades, numerous otherwise credible professors and product providers have further engrained conventional wisdom and the acceptance of buy-and-hold as the prudent approach.

Hope springs eternal... until it confronts reality. The past 17 years have led investors to challenge conventional wisdom and to seek a deeper understanding of the stock market. Crestmont's Reconciliation Principle enables advisors and investors to peel back the cloak and see the fundamental principles that drive the market. It's empowering! The Principle enables investors to see that the current high P/E destines the stock market to an extended period of below-average returns, but it also helps them to take the actions necessary to achieve long-run investment success.

Further, the Reconciliation Principle is a powerful tool in discussions with market analysts. When you next talk with one about his or her longer-term outlook, be sure to ask for a breakdown of the component parts of projected market returns. Then, for each of the parts, keep in mind the economic, mathematical, or financial trade-offs that drive it. Although the components may experience randomness in the short run, they are ultimately driven by financial and economic principles that realign them with natural relationships.

This discussion has been about the value of understanding and assessing the environment over your investment horizon. Just as army generals survey battlefields before advancing, pilots assess the skies before takeoff, and farmers plant crops according to the season, successful investors and advisors should assess the market environment in order to develop effective investment strategies. Market weather may be hard to predict, but market climate can be credibly determined.

A confident understanding of the market and its probable outcome will enable much easier and more effective investment decisions. As Albert Einstein once remarked, "If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it."

*Ed Easterling is the author of Probable Outcomes: Secular Stock Market Insights and the award-winning Unexpected Returns: Understanding Secular Stock Market Cycles. He is currently president of Crestmont Research, an investment management and research firm. In addition, he previously served as an adjunct professor and taught the course on alternative investments and hedge funds for MBA students at SMU in Dallas, Texas. Mr. Easterling publishes provocative research and graphical analyses on the financial markets at [CrestmontResearch.com](http://CrestmontResearch.com).*