

# “The Incredible shrinking equity premium: investors' greatest cognitive error”

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## The incredible shrinking equity premium: investors' greatest cognitive error

### Abstract

Investors' tendency to embrace explanations that confirm their current views (cognitive consonance) and reject those that challenge their beliefs (cognitive dissonance), and the manner in which this tendency influences expectations regarding financial markets and the global economy, has created longstanding problems that threatens future prosperity. Despite dramatic decreases in equity values in 2008-09, US stocks remain overvalued compared to the current level and likely future growth of corporate profits. From 1947-2007, stock returns outpaced earnings growth to the point that the equity premium has been persistently negative for almost 30 years. Investors' overestimation of the long-term returns that equities are capable of providing is symptomatic of an overly optimistic narrative regarding free-market capitalism that has dominated corporate and public policy for decades, particularly in the US.

**Keywords:** cognitive dissonance, cognitive consonance, equity risk premium.

**JEL Classification:** G01, G11.

### Introduction

The global economy and financial markets are currently plagued by many severe problems. One of most longstanding and pernicious problems in the US is one of the least discussed, or even recognized, however. For example, the problem to which I refer underlies many Americans' longstanding obsession with continuously reducing tax rates, which is one of the primary reasons the US national debt has been allowed to spiral out of control and the state of California now teeters on the brink of bankruptcy. This same problem fueled the US stock market's period of overvaluation in the 1990s, culminating in the infamous technology bubble. It lent a significant tailwind to the loose lending standards and housing bubble that propped up what is now recognized as a false bull market in stocks from 2003-07, and the problem still prevails today, preventing many from clearly evaluating conditions in the economy and financial markets — particularly how we arrived at our current state of affairs. Behavioral psychologists bestow two technical terms on this problem — cognitive dissonance and cognitive consonance. This article will illustrate how these concepts are two sides of the same coin, or in this case, two manifestations of the same problem, and how their effect on human consciousness represents a major barrier that prevents the US, and the rest of the world, from decisively addressing an important issue facing the global economy: our expectations regarding the future returns equities can deliver.

People are probably more familiar with the term cognitive dissonance — the tendency to ignore, or underweight, information that contradicts our current opinions or set of beliefs. Cognitive consonance is the "flip side" of dissonance — we also have a tendency to overweight information that reinforces our opinions and beliefs. Dissonance and consonance are also

closely related to the idea of "framing", the way we choose to evaluate situations and thus, structure our approach to problem solving. The citizens of modern economies venture forth into the world as consumers and investors, in most cases completely unaware that their consciousness is hobbled by these (and other) limitations, which means they are unable to live up to John Stuart Mill's standard of *homo economicus* ("economic man", the hyper-rational decision-maker described by most microeconomic models). Unlike Socrates, however, most of us don't even have an adequate appreciation for the vast extent of what we *don't* know, or more specifically, how opinions and beliefs of which we are often quite certain can turn out to be, after the introduction of a fresh perspective, surprisingly unsupportable<sup>1</sup>.

The purpose of this article is to help readers develop greater awareness of these common cognitive errors by first reflecting on some of the more outrageous dissonance/consonance examples from recent US economic and financial history, which readers will find either enlightening or provocative, depending on their existing perceptual frames. Next I will present evidence that we have been collectively indulging in a major cognitive error regarding the relative valuation of equities — a mistake that has persisted for decades. The straightforward simplicity of this example will support my assertion that our tendency to embrace convenient explanations (consonance) and reject difficult ones (dissonance), and the manner in which this tendency influences the way we frame the ongoing debate regarding financial markets and the global economy (the "narrative" we create), is a longstanding problem that threatens future prosperity in the US and the rest of the developed world. This article's main conclusion is that,

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<sup>1</sup> Plato attributes the following to Socrates in his *Apology*: "I am better off than he, for he knows nothing, and thinks that he knows; I neither know nor think that I know. In this, then, I seem to have slightly the advantage of him."

despite the steep declines in the values of US and global equities that occurred in 2008-2009, stocks remain overvalued compared to the current level and likely future growth of corporate profits. Investors' long-term expectations of the returns that capital markets are capable of providing are symptomatic of an over-optimistic narrative regarding free-market capitalism that has dominated corporate and public policy, particularly in the US, for decades. It is my assertion that we will not be able to take meaningful steps towards emerging from our global dilemma until we fully appreciate the deep hole into which free-market capitalism has dug itself, and the extent to which the tendency to embrace unrealistically optimistic expectations has contributed to the current grim state of affairs.

### 1. Dissonance, consonance and framing: an example

I gave a public talk on the economy recently, and my last slide was borrowed from Liz Ann Sonders at Charles Schwab Market Research (reproduced below). The slide (Figure 1) is entitled "The Market's Emotional Roller Coaster," and it depicts the twelve stages of emotion that investors experience in a full bull-to-bear market cycle. Someone asked where I thought we were in the emotional cycle. When I answered "We never completed the capitulation phase back in March, so we've been stuck at that point for months," the audience let out a collective groan. They wanted me to say that we were almost through with the despair phase so they could avoid experiencing further pain, and instead sooth their psyches with hope for another bull market in stocks in late 2009 or early 2010 — a bull that would revive their depleted stock portfolios and allow them to resume their borrow-and-spend consumerism<sup>1</sup>. In my opinion, however, financial markets are nowhere close to that point yet (and I'm in good company — more on this below). The market lows of March 2009 represented a brief moment of realism, as equity valuations accurately discounted the torrent of bad economic news from just about every indicator — real estate values, consumer spending, employment, corporate profits, etc. But markets couldn't "bear" Dow 6,400 or S&P 666 (a coincidentally prophetic number for a market low), so investors collectively indulged in cognitive dissonance by simply refusing to believe that equity values could fall so far. Investors instead embraced a more comforting perspective via cognitive consonance and re-framed experts' opinions into a narrative about economic "green shoots". The faux debate that ensued fueled a market rally from March-July 2009.

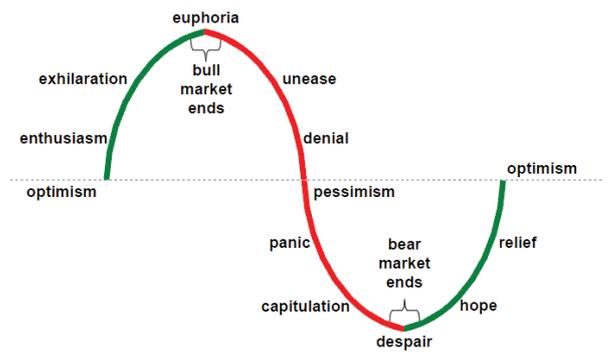


Fig. 1. The Market's Emotional Roller Coaster, courtesy of Charles Schwab Research

Later in this article, I will present specific evidence that supports my contention that US equity valuations are not completely discounting the severity of global economic weakness, and that the last time investors in the US accurately valued equities relative to market fundamentals was the late 1970s-early 1980s. First, however, I will review some examples of how cognitive dissonance and consonance can steer public opinion far from the path of basic common sense.

### 2. How dissonance and consonance fuel dogmatic fantasies

*The most striking difference between ancient and modern sophists is that the ancients were satisfied with a passing victory of argument at the expense of truth, whereas the moderns want a more lasting victory at the expense of reality.*

Hannah Arendt

To set the stage for the argument that equity valuations reflected economic reality more accurately in previous bear markets, I am going to first pose the question "What's changed since the 1970s?" I propose that the answer to this question is "us", or, more precisely, the media we consume and the way many of us use it to construct narratives (mental frameworks) that can, over time, evolve into dogmatic fantasies. We use our media subscriptions, the internet and television to indulge in cognitive dissonance and consonance to the point where many have talked themselves into viewpoints that they firmly believe to be true, but, when examined from a considerably different perspective (an alternative frame), can be shown to have little correspondence with practical reality. One key thing to notice about each of these viewpoints is how they violate basic common sense, despite their widespread acceptance as totemic wisdom by large numbers of people.

**2.1. Tax cuts pay for themselves.** One of my favorite examples of a misguided, dogmatic viewpoint has its roots in former US President Ronald Reagan's pledge that his administration's tax cuts from the early 1980s "would pay for themselves", *i.e.*, generate more in long-term tax revenue (by stimulating economic

<sup>1</sup> The widespread presumption that we are imminently on the verge of another bull market is reflected by headlines such as "Picking Winners in the Next Bull Market", *The New York Times*, July 19, 2009, p. B7.

growth) than they would cost the government in terms of the short-run effect of lower tax receipts. Notice how appealing this idea is, and how easy it is to develop an immediate sense of cognitive consonance for it, as everyone would love for it to be true. There's almost an element of alchemy in it – as a society we can consume more today *and* still be able to pay our bills tomorrow. The US has been experimenting with lower tax rates on the national and state levels for decades now – including California's famous experiment with Proposition 13, which limits increases on residential real estate taxes to one percent per year for as long as homeowners own their home.

We can now look back on the results of these experiments. First data point: as of this writing, the US owes the rest of the world \$14 trillion (almost exactly the value of US Gross Domestic Product in 2008). Of course, this debt did not accumulate overnight – it took the better part of 25 years for the US to become this indebted. Over this period, everyone could observe the results of the US's experiment with this cornerstone idea of "supply-side" economics. Even casual observation would reveal that the US became more and more indebted gradually, a little every year (until the economic stimulus of 2008-09, which increased indebtedness at an even faster pace). Yet, for the past 25 years US voters have continued electing politicians who promised that tax rates could be reduced even further. People's cognitive consonance for the idea's visceral appeal was combined with dissonance for factual data (the accumulating deficit), again and again. The severity of the US debt has reached the point where the US Federal Reserve Bank published two articles in 2006 debating whether or not the US is technically bankrupt (Kotlikoff, 2006 and Thakor, 2006).

Second data point: The state of California, which tried its own version of radical tax reduction with Proposition 13, is on the brink of bankruptcy, and remains solvent only by the grace of handouts from the US federal government. Casual observation also reveals that California did not slide into this condition overnight. The quality of public education and most other public services in California have been in decline since the enactment of Proposition 13. Yet, politicians on the state level continue to argue in favor of reducing tax rates, appealing to voters' cognitive consonance, and as a result, still wield considerable influence in government.

More specifically, here's how cognitive dissonance and consonance come into play: in the decades since Ronald Reagan and his followers began broadcasting the seductive message that a different alchemy existed, and contrary to our common sense tax cuts might actually pay for themselves, numerous politicians have reinforced this dogma in their campaign promises to

the point where approximately one hundred million Americans now accept this blatantly false idea as economic truth. Moreover, these believers<sup>1</sup> find it too painful to look at the simple, factual history of the situation – that's cognitive dissonance. Additionally, dissonance and consonance interact to allow for the construction of an alternative mental frame – in this case, one that oversimplifies the alchemy of self-financing tax cuts. While the economics of the idea might actually work in a perfectly rational world, in the real world, economic policy is enacted only after being filtered through the political process. If tax cuts were ever going to pay for themselves, they would have to be accompanied by reductions in government spending (or restrictions on the growth of government spending). Unfortunately, the same politicians who promised that they would support reductions in tax rates allowed state and federal budgets to grow much too large. Despite the current reality of the US's enormous indebtedness, many continue to insist that the way to fix the US's fiscal problems is to dramatically reduce tax rates. Behavioral psychologists recognize this peculiar aspect of human consciousness – most adults prefer the certainty associated with "feeling right" all of the time instead of having to pass through a phase of recognizing previous views as incorrect so they can ultimately arrive at perspectives that are more accurate.

**2.2. Government has to stop meddling in American business.** Here's another example of how dissonance and consonance support the construction of factually questionable mental frameworks. Conservative media, particularly *The Wall Street Journal*, have been fanning the flames of populism recently by insisting that recent efforts to bail out insolvent banks and provide support for the troubled US auto industry represent unwelcome intrusions into American business – despite the fact that banks agree *ex ante* to subject themselves to regulation (and thus intervention when necessary), and General Motors and Chrysler initiated government involvement by specifically requesting emergency financial assistance. Consider how easily these facts can serve as the cornerstone of a radically different framework regarding government and business, such as the following: in the US and other nations, *governments get involved in business because business asks them to*. That framework is so contradictory to conventional wisdom that it might require re-reading, but it's another undeniable truth. Businesses in the US spend billions of dollars every year pleading with politicians and other government officials to intervene on their behalf. These activities go by the politely sanitized term of "lobbying", which are essentially semi-formal requests that politicians take up the case of a

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<sup>1</sup> It is worth noting that the original root of the word "belief" is "a fervent hope".

particular business or industry when interpreting existing legislation or regulatory guidelines, or enacting new legislation.

Moreover, many of the worst performing business sectors that wreak the most havoc on the lives of US citizens spend the *most* on their lobbying efforts. For example, the banking and finance sector spent approximately \$4 billion (officially) in the past decade lobbying politicians (OpenSecrets.org, 2009). Banking and finance – the industry that's primarily responsible for the economic crisis of 2008-09. The industry that, at least in the US, has been involved in one crisis or another every 10 or 20 years since the 1800s. This is the same industry whose persistent problems motivated politicians to invent a Federal Reserve banking system in the first place. Which sector comes in a close second? The US health care industry, with lobbying expenditures of approximately \$3.5 billion over the past 10 years – a data point that provides a transition for the next dissonance/consonance example . . .

**2.3. The US cannot afford a nationalized health care option.** Per-capita expenditures on health care in the US are almost twice as much as those in Canada and France. US pharmaceutical companies charge Americans more for prescriptions than the citizens of all other countries. The US health care industry is currently involved in a massive lobbying and propaganda campaign (the construction of a frame, or narrative) to convince Americans that it would be too expensive for everyone to have health insurance and access to health care. Consider the logic supporting the claim that nationalized health care is too expensive. If this is indeed the case, how have so many other nations already solved this allegedly unsolvable problem? In particular, notice how the verbiage "too expensive" allows for the re-framing of what other countries perceive to be a basic human rights issue (access to affordable health care) as an issue of economics, which conveys a subtle but powerful influence on the American psyche. Since the seminal work of Coase (1960), the US legal system has increasingly made decisions based on the pure economics of situations rather than on moral or ethical considerations. As long as the health care lobby is able to argue the issue from an economic framework, they will probably win. However, when the issue is shifted to a framework of basic human rights, their position is quickly revealed for what it is – the belief (a fervent hope) that their industry should be allowed to perpetuate a system that costs more and delivers less than health care delivery systems in most other developed nations.

In an attempt to disrupt the framing of health care as an economic issue a bit further, I'll put forth a simple proposal for fixing the US health care system – invest a fraction of those billions in lobbying fees to hire health care consultants from Canada and France. Hiring consultants with successful track records of solving problems is a popular custom in US business. After following the advice of consultants that have solved these problems in other nations, the US would not only have more affordable health care with better outcomes (Americans are inarguably unhealthy!), but housekeepers, landscapers, restaurant waitpersons and the person who cooked our dinner the last time we dined out in the US could afford to take their children to the doctor. Third data point: approximately 1 million Americans declare bankruptcy each year because of medical bills – and many of them have health insurance.

**2.4. How the media frames the financial markets narrative.** What fuels dissonance and consonance and the framing of our perceptions regarding financial markets and the economy? The carefully scripted narrative that's broadcast every day on Fox Business and CNBC. If you watch the programming carefully you will notice that, under the guise of "objectivity", every negative opinion is immediately "balanced" (neutralized) by a guest suggesting that he sees "green shoots" emerging, and the next great bull market is right around the corner. The logic goes something like this: equity valuations will rebound because they've always rebounded. We have forgotten the useful cliché, "consider the source". As is the case with all for-profit media, the programming on these business channels first and foremost serves their advertiser base – the financial services industry. The industry that wants to gather assets, at minimum, and preferably entice viewers into trading as much as possible, while it continues spending a significant fraction of its considerable profits to buy the political influence that ensures that they're free to do it again and again, regardless of the havoc they wreak on our economy and way of life. Thus programs with names like "Fast Money" and the emergence of a new breed of media star: financial actors like Jim Cramer.

In my conversations with individual and professional investors, I am continually amazed at how eager they are to discount the opinions of long-term thinkers with successful track records whenever their views deviate from a narrative that is unequivocally supportive of the typical American's "gung-ho" advocacy of free-market capitalism. These people do exist, of course, and their opinions are not hard to identify, even among the crush of information to which we are exposed in the internet age. I'm referring to people such as Warren Buffet (who warned us that "derivatives are weapons of financial destruction" many years ago), Jeremy Grantham, Bill Gross and Mohamed El-Erian, all of whom are on

the record regarding "green shoots" – they never existed<sup>1</sup>. Bryan Marsal – whose firm is overseeing the unwinding of Lehman Brothers, which is about as close to the smart money as anyone gets – told CNBC on July 6, 2009 that he doesn't see business and consumer spending coming back – ever. In the past weeks and months, every one of these individuals has tried to guide our view of the future of capitalism to more realistic expectations. The rampant consumerism and the leverage that propped up the economy for the past decade was not sustainable – it's "game over" for this way of life. The consensus of these smart money experts is that when consumer spending and corporate profits begin growing again, they will most likely grow more slowly over the long term compared with their growth rates from recent decades. This is an important point that I will refer to again in the following section.

### 3. Dissonance, consonance and the relative valuation of US equities

In this section I address what is probably this article's most controversial assertion: that markets engaged in cognitive consonance over the superiority of US equities as an investment class, and cognitive dissonance regarding protracted periods of inflated relative valuation ratios, to the point that US equities became systematically overvalued in a 50-year trend from 1947-2007.

Before presenting evidence in support of this view, it is necessary to provide some brief background regarding

best practices in relative valuation metrics. Financial analysts typically express the relative valuation of stocks as a "multiple," using ratios such as price/earnings, price/sales, price/cash flow, etc. Graham and Dodd (1934) originally noted that, in the short run, corporate earnings were subject to excessive volatility, and recommended the use of a 10 year moving average of earnings in the denominator of price/earnings (P/E) ratios, especially when analyzing the relative valuation of the overall stock market<sup>2</sup>. A large body of scholarship has subsequently supported Graham and Dodd's claim regarding the superiority of the long-term P/E ratio, particularly for forecasting future stock returns. These studies include Campbell and Shiller (1998), Shiller (2000) and Weigand and Irons (2007). The key result of these studies is that a reliably positive relation exists between the current level of the market earnings yield (E10/P ratio) and future long-term stock returns (over 10-20 year horizons). When the current level of the market earnings yield is higher (P/E10 ratios are lower), future stock returns are higher, and vice versa. This has led to the convenient interpretation of the E10/P ratio as a proxy for the market's long-term real expected return<sup>3</sup>. Moreover, note that when the E10/P ratio is increasing, market P/E10 ratios are compressing (the rate of earnings growth exceeds the total return to stocks), and when the E10/P is decreasing, P/E10 ratios are expanding (stock returns exceed the rate of earnings growth).

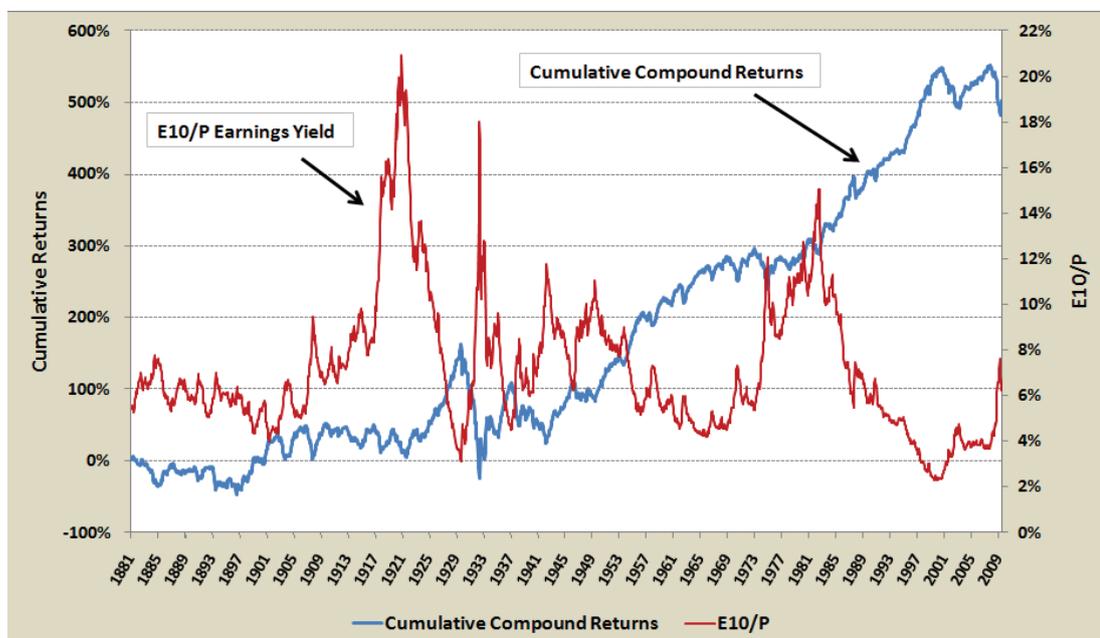


Fig. 2. The market earnings yield (E10/P ratio) and cumulative compound stock returns, 1881-2009

<sup>1</sup> Video interviews and/or specific writings of these individuals from June-July 2009 are cited in the references.

<sup>2</sup> I will refer to the long-term P/E ratio as the P/E10, and its reciprocal, the market "earnings yield", or ratio of the 10-year average of aggregate earnings to the value of the S&P 500 index, as the E10/P.

<sup>3</sup> The E10/P is a proxy for real expected returns because, as the ratio of two nominal variables (earnings and stock prices), the effect of inflation in the numerator and denominator cancels out.

**3.1. Equity expected returns 1881-2009.** Figure 2 depicts the continuously compounded (log-differenced) cumulative return to the S&P 500 (dividends included) from 1881-2009 and the market earnings yield (E10/P ratio) as described above (data obtained from Shiller, 2009). Considering the time series behavior of the market earnings yield will make it clear how the ratio serves as a proxy for equity expected returns. First, notice how the E10/P ratio increased substantially with the uncertainty associated with World War I (around 1916), as investors demanded significantly higher expected returns for the perceived risk of war. These high ex-

pected returns set the stage for much of the bull market of the 1920s. Other substantial increases in the market expected return also coincided with periods of higher perceived risk, such as the Great Depression (1930s), World War II (early 1940s), and the oil embargo/stagflation era of the 1970s. Further notice, however, how above-trend stock price appreciation can deplete the market's expected return, as was the case in the 1920s. The E10/P ratio quickly fell below its long-term mean of 7.78% (pre-1947, as shown in Table 1) as the 1920s bull market was driven by expansion of P/E ratios to a considerable extent, rather than growth in earnings only.

Table 1. US market statistics, 1881-2009

Mean long-term interest rates, nominal and real stock returns (including dividends), nominal and real earnings growth, P/E1 and P/E10 ratios (market price to earnings based on 1-year or 10-year trailing earnings), E1/P and E10/P ratios (market earnings yield based on 1-year and 10-year trailing earnings), and the E10/P – Y spread, from US financial markets 1881-2009 and by subperiods.

Period	Long-term interest rate	Nominal stock returns	Real stock returns	Nominal earnings growth	Real earnings growth
1881-2009	4.70%	10.44%	7.87%	6.13%	3.37%
1881-1946	3.48%	9.24%	8.08%	2.17%	1.60%
1947-2009	5.99%	11.71%	7.66%	8.07%	3.90%
1947-1982	5.49%	11.16%	6.59%	6.64%	2.61%
1983-2009	6.68%	12.46%	9.11%	10.00%	5.66%
Period	P/E1	P/E10	E1/P	E10/P	E10/P – Y
1881-2009	15.27	16.34	7.44%	7.16%	2.46%
1881-1946	14.27	14.58	7.60%	7.78%	4.31%
1947-2009	16.33	18.19	7.27%	6.50%	0.51%
1947-1982	13.08	14.91	8.62%	7.47%	1.98%
1983-2009	20.84	22.65	5.41%	5.19%	-1.49%

Figure 3 depicts stock returns, the E10/P ratio and a cumulative index of corporate earnings from 1947-2009. A comparison with Figure 2 reveals additional insights regarding the factors that lead to increases and decreases in the market expected return. First, the graph illustrates how the time-series behavior of the E10/P ratio reflects whether stock prices are growing faster than earnings or vice versa. The E10/P rises when earnings grow faster than stock prices (future expected returns are rising as P/E ratios compress), and falls when stock prices grow faster than earnings (future expected returns are falling as P/E ratios expand).

Second, Table 1 shows that the market earnings yield was stable around a long-term mean of approximately 7.5% until the most recent period, 1983-2009. The relative valuation of equities in the 1980s and 1990s is dramatically different compared to the

100-year period spanning 1881-1982. The mean market P/E10 ratio from 1881-1946 was 14.58, and this ratio's mean remained stable at 14.91 through the first half of the second subperiod (1947-1982). Subsequent to 1982, however, the mean P/E10 ratio increased sharply to 22.65, and the mean 1-year trailing P/E1 increased to 20.84. Of course, higher P/E ratios compress the market's future expected return — the long-term market earnings yield averaged only 5.19% from 1983-2009. This is confirmed by Figure 3, which shows that stock prices have grown faster than earnings since the late 1980s. The stock price declines associated with the bear market of 2000-02 and the current bear market of 2008-09 have been insufficient to bring stock returns back to the long-term trend in earnings. This is evidenced by the market's current earnings yield of 6.2%, over 1% lower than its long-term mean prior to 1983.

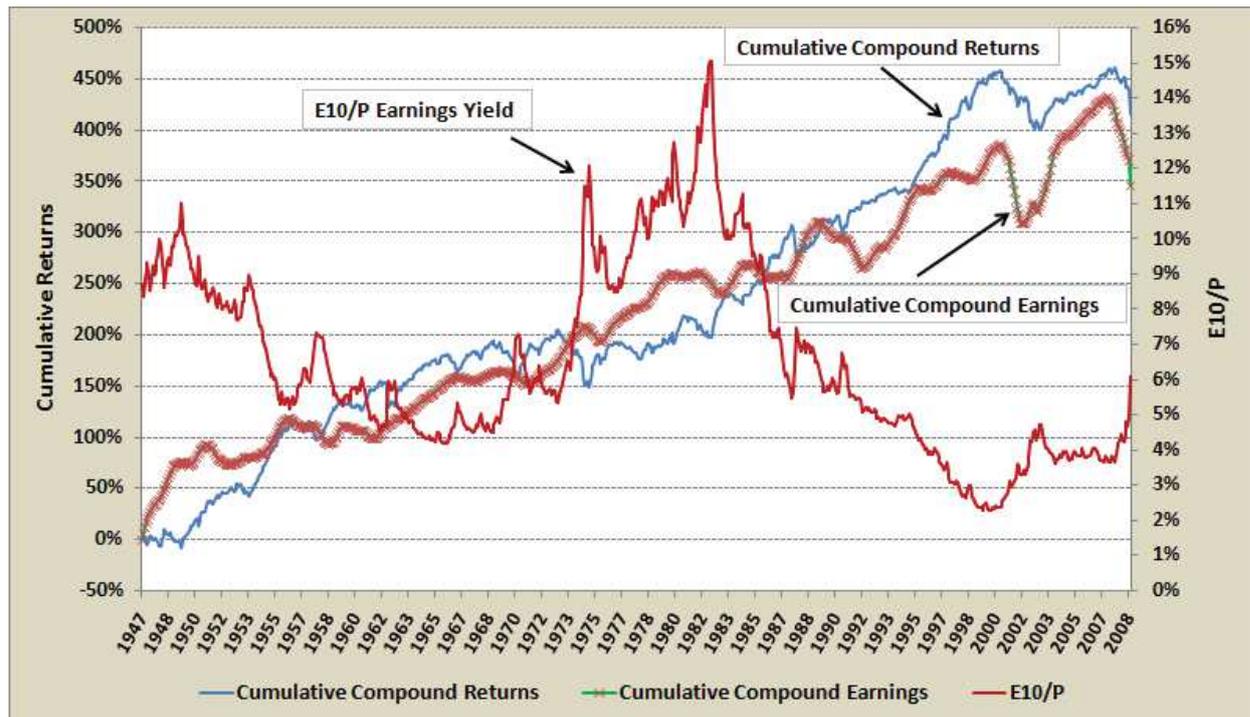


Fig. 3. The market earnings yield (E10/P ratio), cumulative compound stock returns and cumulative compound earnings, 1947-2009

The last point to be made from a comparison of Figures 2 and 3 is the magnitude of the total return to stocks pre- and post-1947, and the extent to which these total returns were proportional to earnings growth. In the 65 years from 1881-1946, the cumulative return to stocks was approximately 100% (although it was as high as 150% in 1929). In the 62 years since 1947, stocks earned an additional 400% – about 4 times the return earned in the previous 65-year period. Of course, if earnings growth was also 4 times higher in the second subperiod, this faster rate of stock price appreciation is warranted. Referring to Table 1, we see that nominal earnings did grow almost 4 times faster post-WWII (2.2% per year vs. 8.1% per year). A considerable amount of this growth is due to higher inflation, however — real earnings growth averaged 1.6% pre-1947, and 3.9% post-1947. Almost half of the phenomenal growth in earnings from 1983-2009 was due to inflation (10.0% nominal vs. 5.7% real). Although *nominal* earnings grew almost 4 times faster post-1947, *real* earnings grew only about 2.5 times faster. Therefore, much of the higher stock returns that were earned post-1947 were due to expansion of P/E multiples, as evidenced by the lower average market yield of 5.19% and higher P/E ratios post-1983<sup>1</sup>.

The way post-WWII bull markets deplete stocks' future expected returns (as P/E multiples expand) is made clear in Figure 3. From 1947-1969 and 1983-2000, the long-term decline in the E10/P ratio, as stock prices grow faster than earnings, is clearly depicted in the graph. This illustrates a collective cognitive dissonance regarding above-average P/E ratios during the great bull markets of the 1920s, 1947-1969 and 1983-1999, and the lesser bull-market-that-wasn't of 2003-07. Although investors were keenly aware of these puzzlingly high P/E ratios at the time, they were conveniently rationalized away (via cognitive consonance with the 4 most dangerous words in investing: "This time it's different"). Thus we have the "Nifty-Fifty" of the 1960s (growth stocks with P/E1 ratios averaging over 50) and the technology/internet bubble of the 1990s.

Shiller's database also makes it easy to assess how equity markets discounted bad news during previous severe recessions and depressions. In the depths of the Great Depression (June 1932), the long-term market earnings yield (E10/P ratio) peaked at 17.97%, with a P/E10 ratio of 5.57 and a P/E1 ratio of 9.35. Towards the end of the 1981-1982 recessions (July 1982), the E10/P yield peaked at 15.06%, with a P/E10 of 6.64 and a P/E1 of 7.83. These low P/E ratios and high expected returns represent the "despair" phase of investors' emotional cycles, as depicted in Figure 1. How low did these ratios fall during 2009's "Great Recession", now widely touted as the worst economic decline since the Great De-

<sup>1</sup> Again, notice how, as real variables, the market earnings yield and market P/E ratio correct for the effect of inflation on prices and earnings.

pression? In early 2009 the market E10/P peaked at 7.16% — equal to its *long-term average* since 1881. The P/E10 in 2009 briefly dipped below 14, and currently stands at 16.08, also equal to its long-term average since 1881. The severely depressed earnings of July 2009 make it difficult to interpret the current market P/E1 ratio, which at the time of this writing is hovering around a value of 50.

The failure of the market P/E10 and P/E1 to compress anywhere close to their values from previous recessions and depressions suggests that a profound disconnection exists between current economic events and equity valuations in the US. With the long-term market earnings yield and market P/E ratio equal to their long-term averages, US equities are, at most, discounting average economic conditions. Investors' refusal to recognize that the global

economy is in the midst of the worst recession in 80 years represents yet another lapse into mass cognitive dissonance regarding inconvenient and disturbing facts.

In addition to the pessimistic views of the financial experts cited previously, the US Federal Reserve Bank's June newsletter, entitled "Jobless Recovery Redux?", was specifically written to condition expectations closer to what Mohamed El-Erian of Pimco has termed "A New Normal" — a period of slow growth, low spending, high savings and high unemployment. The stock market is systematically ignoring the severity of current economic conditions in a way that's new when compared with previous severe downturns. In an era that prizes "extremes", we may have entered a period of extreme cognitive dissonance.

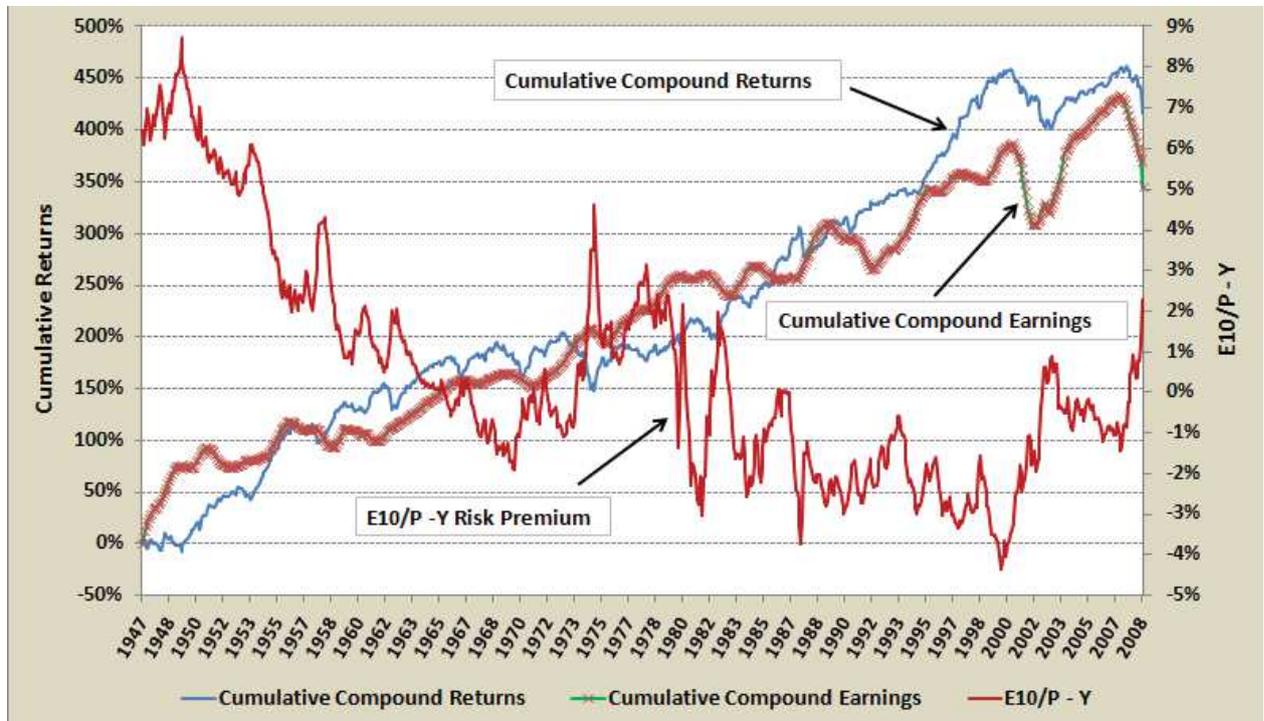


Fig. 4. The market risk premium (E10/P – Y spread), cumulative compound stock returns and cumulative compound earnings, 1947-2009

**3.2. The equity risk premium 1881-2009.** Additional evidence exists that stocks became increasingly overvalued in a 50-year trend from 1947-2007. It can be argued that depicting the market's expected return using the E10/P ratio is not the most relevant measure of stocks' relative valuation, as the returns stocks are priced to deliver compared with their most competitive asset class — bonds — is more relevant. Of course, the expected return on stocks over bonds goes by the well-known term "market risk premium". Using Shiller's data, I construct the E10/P – Y spread, shown in Figure 4 along with cumulative stock returns and earnings from 1947-2009. When interpreting the risk premium spread it's

important to bear in mind that I am subtracting the *nominal* bond yield from the *real* expected return on stocks, so the resulting time series of the E10/P – Y risk premium should be increased by expectations of inflation. According to the Shiller database, CPI inflation is hovering around zero as of July 2009, however, so little or no inflation adjustment is required for interpretation of the current statistic.

The persistent trend of depleting the market risk premium to values below zero from 1947-1969, and again from 1973-2000, is clearly depicted in the graph. Relative to long-term earnings, stocks' expected return vs. bond yields bottomed out at

-4.38% in January 2000. The bear market of 2000-02 reset the market risk premium to a brief high of +0.88% in March 2003, after which it once again turned negative until January 2008. CPI inflation was consistently below 3% during this period, so it's reasonable to conclude that the "bull" market of 2003-07 was characterized by a continuously negative risk premium – something investors could easily calculate and observe, and instead chose to ignore (collective cognitive dis-

sonance when faced with inconvenient facts). The March lows of 2009 saw the market risk premium briefly rise above +4%, although the March-July stock market rally has depleted it closer to +3% once again. This is consistent with the risk premium peak from March 1978 of 3.13% – a period of significantly higher interest rates, however, and therefore much higher equity expected returns – but well below the Great Depression peak of 14.44% in June 1932.

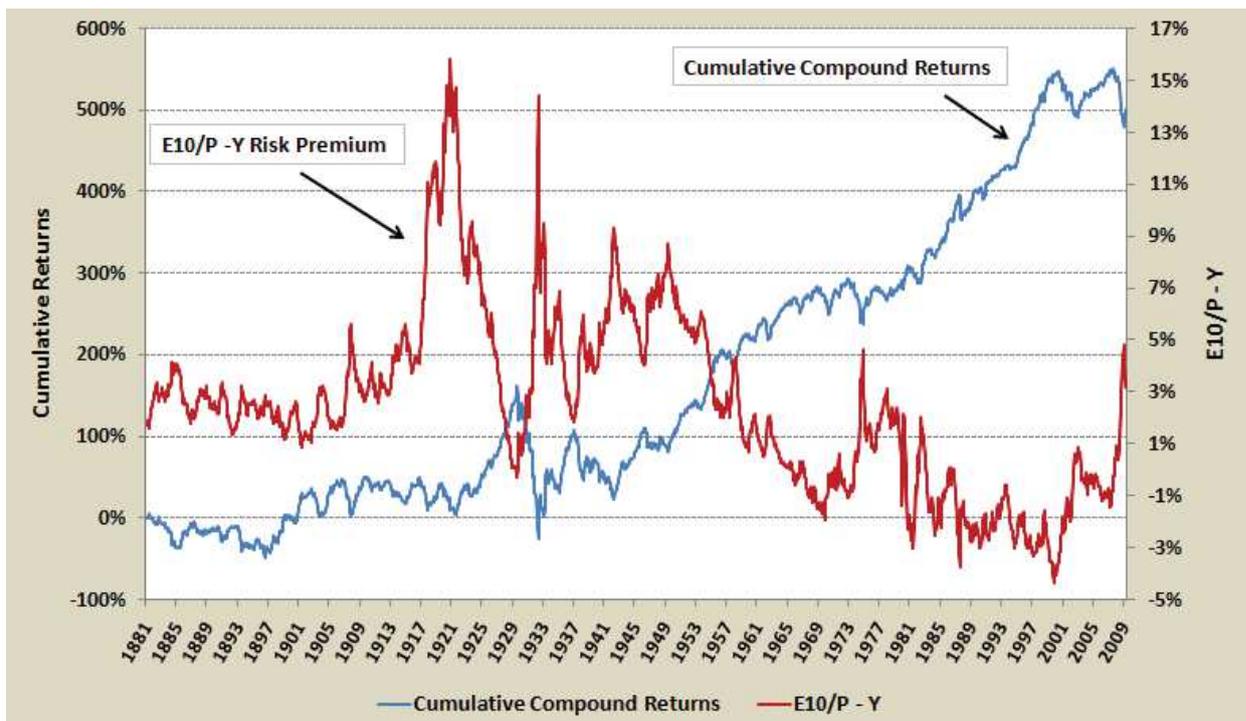


Fig. 5. The market risk premium (E10/P – Y spread) and cumulative compound stock returns, 1881-2009

Finally, in support of my assertion that the post-WWII period represents a break from the previous 65 years, Figure 5 depicts the market E10/P – Y spread and cumulative stock returns since 1881. It's clear from the graph that the mean market risk premium was higher pre-1947 (4.31% according to Table 1). Post-1947 the risk premium (unadjusted for expected inflation) has averaged 0.51%, but even that subperiod consists of two distinctly different eras. From 1947-1982 the E10/P – Y spread averaged 1.98%, a little less than half its average pre-1947, but from 1983-2009 the spread has averaged -1.49%. Equity valuations and the underlying cash flows that inform their value – corporate profits – have clearly been in a new relation since 1983, one that defies the tenets of fundamental security analysis as well as basic common sense. Without a dramatic rebound in earnings in the next couple of quarters and how likely is that? – the implication is that stock prices could fall another 40-50% before equities are priced to deliver their "normal"

long-term annual returns of about 7% (real). And even starting from much lower levels, earning 7% per year from stocks would require that GDP and corporate profits resume growing at their rates from previous decades – something few respected forecasters believe is possible.

### Conclusions

Behavioral psychology research suggests that human beings, in their roles as citizens, consumers, voters and investors, commit numerous cognitive errors on a regular basis. These errors include cognitive dissonance — the tendency to underweight information that contradicts our current opinions or set of beliefs – and cognitive consonance, the tendency to overweight information that reinforces our opinions and beliefs. Dissonance and consonance are also closely related to the idea of "framing", the way we choose to evaluate situations and structure our approach to problem solving, as our dissonance and consonance filters determine which facts are allowed to enter our

problem-solving frameworks, and in what proportion.

The first half of this article illustrates several contemporary cognitive errors, including mistaken beliefs regarding the effectiveness of lower tax rates on long-term economic growth, the unwelcome intrusions of government into business, the intractability of implementing a nationalized health care option in the US, and the role of the financial media in providing objective information to investors. These examples illustrate how many widely-held opinions and beliefs are largely unsupportable when viewed through alternative perspectives.

The second half of the paper chronicles what might be the greatest cognitive error of all — the long-term depletion of the equity premium in US financial markets. From 1947-2007, stock returns outpaced earnings growth to the point that the equity premium has been persistently negative for almost 30 years. Investors have essentially rationalized away the relation between equity values and stocks' underlying cash flows (corporate profits). This evidence challenges the notion that private investors, pension funds, endowments and other entities can rationally anticipate stocks' expected returns over any horizon. This threatens businesses' ability to engage in long-term strategic planning, and calls into question the value-added of active investment management.

We are in the midst of a period where everything we think we know about equity investing and free-market capitalism is being reconsidered. Arnott (2009) explains how our eagerness to embrace the conventional wisdom expressed in Siegel's (2008) *Stocks for the Long Run*, the tome that portrays earning double-digit returns from equity index investing as simple as following a 1-2-3 recipe, was completely misguided (another example of collective cognitive consonance with an appealing idea). Over the 12-year period during which Siegel's book rose to prominence and enjoyed four printings, markets were completing the end of a 40-year period during which bond returns were higher than stock returns — something Siegel's book was famous for asserting was impossible. This may represent the ultimate example of how humans overestimate their knowledge and rush to create fictitious mental frameworks that may be comforting in the short run, but can be destructive in the long run. This is why the market risk premium of 4.3% plus inflation from 1881-1946 makes so much more sense than the way equities have been priced post-WWII — a high equity premium represents investors' recognition that the world, in general, and financial markets, in particular, have always been highly uncertain environments.

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