

The Bubble Has Not Popped^{1,2}

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There are currently a legion of investors, strategists, and general pundits saying the stock market is “undervalued.” While some have formal models for this (e.g., the so called “Fed Model” discussed briefly later), the most common observation is simply that stocks have dropped dramatically. Darn it, smart brave investors buy when things are lousy. We have fallen so far, it has to be time for the “bottom,” and when we hit the “bottom,” it’s straight back to NASDAQ 5000. Right? Well, not so fast. The fact that stocks could have fallen so much and *still* be so expensive, is a statement about how silly we all got in 1999-2000 and about the disingenuousness of those who didn’t sound the alarm back then. It is not a statement that stocks are cheap today. In fact, the opposite is true.

During public discourse on the markets, it is thankfully sometimes noted in passing, that stock valuations are, after their fall, still very high. However, bullish critics of this view note that among other things, there is a problem with the most common measure of market valuation, the P/E ratio, as current earnings (E) are clearly depressed. This inflates the P/E ratio and makes stocks look more expensive than they would appear if using a more reasonable forecast of steady state earnings. In fact, you can almost sense the bullish “valuations be damned” crowd breathing a sigh of relief at this turn of events, as with E less meaningful, they must feel less subject to the tyranny of rationality. After all, if there is no E, anything goes right?

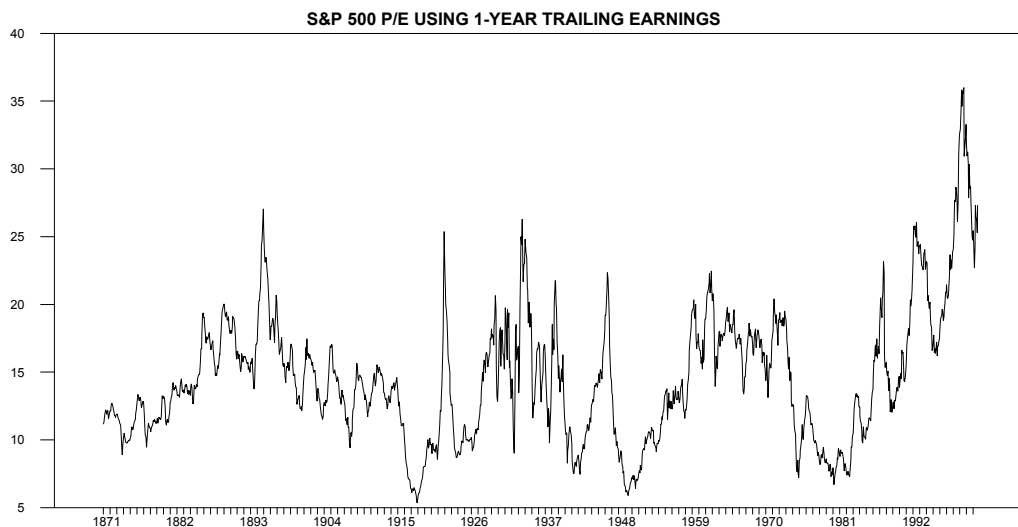
Again, not so fast. Here I will examine various methods of calculating the market’s P/E ratio and compare each to history. First, let me tell you what I don’t do. I don’t use forecasted earnings for E. Forecasted earnings are highly subjective numbers that Wall Street is famous for overdoing, and that optimism conveniently lowers P/E ratios (historic real earnings growth for the whole S&P 500 is about 1.6% per annum for the last 50, 100, and 130 years – that would mean about a 4% nominal growth forecast at today’s inflation rate, but Wall Street forecasts are almost always in the double digits, go figure). Worse, it’s not an apples-to-apples comparison as the history of P/Es most of us are familiar with is based on trailing earnings, which are generally lower. Thus, using Wall Street’s higher forecasts for E makes stocks look misleadingly cheap. Going further, I recently heard one analyst say that based on his **2003** projections of E, the market looks cheap at a 17

¹ Thanks to Dick Anderson, Ted Aronson, Brad Asness, Jonathan Beinner, Peter Bernstein, Jonathan Clements, Harold Evensky, Jack Gray, Jim Haskel, Bob Krail, John Liew, Robert Shiller, and Ben Shoval for very helpful comments and suggestions.

² This essay is loosely based on (and borrows from) the far longer paper written back in 1999-2000 called “Bubble Logic.” Those who want the full version, which unfortunately still applies to today, may consult the AQR Capital website at www.aqrcapital.com. Also, please note that AQR Capital or Cliff Asness may be short or long any security mentioned in this piece at any time, and this piece is solely the opinion of the author.

P/E. Yes, and using today's prices and an E you could only get from Marty McFly, the S&P 500's P/E is a paltry 7.³ A more mundane reason to avoid using earnings forecasts is that we do not have a long history with which to compare. Thus, this short note concentrates on using only various versions of trailing earnings to examine the market today. The second thing I don't do is get into the controversy of regular earnings vs. pro-forma vs. operating vs. everything else. I use regular earnings as reported by S&P and gathered by DataStream. However, as an aside, please note that "pro-forma" I'm 6'2" and have all my hair (those who know me will understand that under GAAP standards I'm somewhat less impressive).

First, let's look at the standard P/E where the price (as is the case for all the analysis) is the price on 9/30/01, and the E is the trailing one-year E. The data goes back to the last part of the 19th century:



On this scale, we can, by simple visual examination, say that while P/Es are down from the embarrassing levels of March of 2000, P/Es are still very high by historical standards. In fact, looking back to 1950 today's market P/E is in the 95th percentile (only 5% of the monthly observations are above the 9/30/01 value). Going all the way back to 1881 we are now in the 98th percentile. Also note that P/Es are above anytime in history prior to the 1999-2000 bubble, including the peak before 1929's crash. Cheap? I think not.

Now, one thing you'll notice in the above graph is that the P/E shot up near the end of our sample. This occurred even as the market fell. That is what the optimists criticize about using P/E to value the market today. Because earnings have plunged (the denominator of P/E), P/E went up. Optimists say, with some validity, that looking at one short-term bad year for E will overstate the "true" P/E. The "true" E should be based on a more normal level of earnings (curiously enough this is what the pessimists said, and the optimists laughed at, in 1999 when earnings were at a cyclical high).

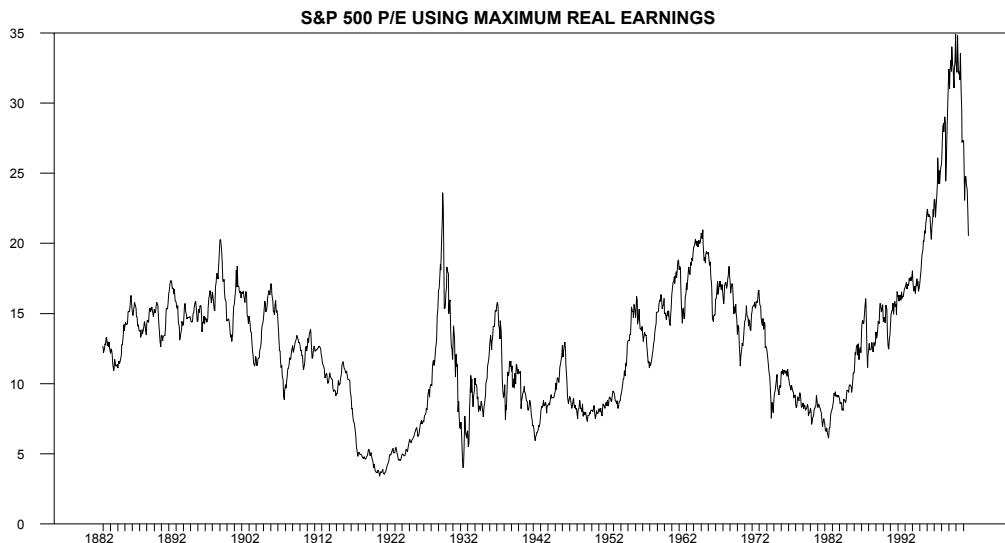
³ For those who didn't grow up in the early 80s, Marty McFly could time travel, so the reference is to P/Es calculated using today's prices and perhaps year 2020 earnings. In my next editorial maybe I'll tell you about John DeLorean.

Another way of calculating P/E borrows from Bob Shiller. Instead of using last year's E, use an average of E over the last ten years (inflation adjusted). This will produce higher P/Es. That led some to wrongly accuse Shiller of trying to make stocks seem more expensive. Comparing to a ten-year average will of course usually show higher P/Es as earnings usually grow over time, so the ten-year past average E is lower than today's E, and the P/E calculated this way is thus higher. However, this is irrelevant as we're only using the ten-year average to get an idea of what are reasonably normal earnings (i.e., to smooth out peaks and troughs), and we only compare this number through history. In other words as long as we're consistent it's all apples-to-apples. The graph of this 10-year earnings-based P/E comes next:



Well, on this scale we're now a tad cheaper than before Black Monday in 1929, but I don't think that's the tag line Abby Cohen and Ed Kerschner want to use to tout stocks. Can you imagine yelling, "Buy, buy, we're slightly cheaper than right before the crash of '29'"? No you probably can't. Excluding the 1999-2000 bubble, and the period right before October of 1929, we still have the most expensive stock market in recorded history. Including the bubbles, P/Es on this basis are in the 91st percentile over the modern era (post 1950), and are still in the 95th percentile going back to 1881. Stocks do look a little cheaper on the ten-year numbers (vs. history) than the one-year numbers we looked at earlier. Perhaps the bulls should apologize to Dr. Shiller and start using his methodology? Regardless, on this measure, which is not affected by any one-year plunge in earnings, stocks are incredibly expensive now.

Finally, let's look at a new measure. I call this the "wild-eyed optimist's P/E." We'll still use contemporaneous prices, but for E, we'll scan the previous ten-years of inflation adjusted earnings to find the best three-year period (John Hussman has looked at a similar version of P/E using one-year earnings). We'll then take 1/3 of that number as our version of normalized one-year earnings. Think of this as a "potential" P/E assuming we return to whatever earnings have been the best over the last decade. Even though it's wildly optimistic (and thus P/Es are lower), it is still fair as we are doing the same exercise through history, and thus still comparing apples-to-apples:



This measure looks a lot like Shiller's measure, just with lower P/E's (as the maximum earnings over the rolling prior ten years always exceeds the average). On this optimistic measure, prices today are approximately equal to those right before the crash of 1929, and are in the 88th percentile since 1950, and the 95th since 1881.

Basically, stocks are massively expensive vs. all of recorded history on *any* reasonable scale. They are down from their provably insane levels of March 2000 (and please quote me here, *any* strategists not saying boldly that they were stupidly expensive back in March of 2000 should have their math and/or motivations checked), but stocks are anything but cheap today.⁴

Now, let me return to the "Fed Model" arguments many advance. Many strategists calling stocks cheap today are using some version of this model. The idea here is that when inflation and interest rates are low, P/E's tend to be high. Therefore, the current environment of low inflation/interest rates can support today's high P/E's. One common, but flawed, explanation of why this should work is that stocks are the discounted present value of future cash flows, and when discount rates (interest rates) are lower, the present value of their future cash flows is higher. However, while true, this ignores another sobering reality. Over long periods nominal earnings growth moves reliably with the level of inflation. This means that when inflation is lower so is expected future earnings growth. The lower discount rates alone are indeed good for current valuations, but they come with lower expected future earnings growth, and that is not good. In fact, historically these effects are pretty much offsetting. Getting excited about low discount rates, while ignoring lower than normal growth, is Wall Street trying to have its cake and eat it too (actually, it's them trying to have *your* cake and eat it too). This mistake is often called "money illusion", comparing a nominal number like interest rates to a "real"

⁴ While there are of course many courageous and well meaning strategists on Wall Street speaking the truth as they see it (both bullish and bearish), for full disclosure I should share my view that a fair amount are simple shills for the bubble, who honestly should introduce themselves by saying "Hi, I'm not a strategist, but I play one on CNBC."

number like P/E. However, even considering that it's probably misguided, there is indeed a strong historical tendency to see high market P/Es when inflation/interest rates are low. The overwhelming evidence is that this is an error that reverses, and if you are a long-term investor (and who doesn't claim to be a long term investor) buying the market at a very high P/E is a bad idea viewed over the next decade regardless of starting interest rates or inflation. Essentially, what the strategists "forget" to tell you, or don't know, is that low inflation/interest rates might be the hook that historically gets you to buy stocks at high P/Es, but again, it's a mistake over anything but the short-term. It doesn't help at all in forecasting the next decade (or longer) of real stock market returns.⁵ Essentially, only regular old fashioned measures like P/E have any power to forecast long-term returns, and as we see above, pretty much all forms of this show stocks to be very expensive now. Finally, for the strategists who are bullish based on the Fed Model, I wouldn't dissuade them, just offer them the advice that they speak more clearly. Rather than just saying "stocks are currently 10-20% undervalued" as so many do (in the face of 95th to 100th percentile P/Es), perhaps they should say:

The best predictor of long-term stock returns is any solid form of valuation (e.g., P/E) unadjusted for interest rates. However, we know that even if the long-term looks ugly for stocks right now, markets can do some pretty wacky things over the short-term (oh, how we've proven that). Furthermore, one decent predictor of this wacky short-term movement has been the "Fed model" where the stock market yield (inverse of the P/E) is compared to interest rates. This seems to be something people look at, rightly or wrongly, so examining when it looks excessively high or low can be a pretty good short-term indicator. Thus, we're now making a *short-term* trading call that the market looks attractive. Of course, given the poor long-term outlook, this will make the rest of the next ten years, after we are right about the new frenzy, much worse.

Then, I'd have nothing to complain about.

In another attempt to justify today's P/Es, some make the case that we all should accept a higher multiple on stocks now that the world is safer (or we now realize it always was safe). Taking this reasoning to its illogical extreme was the book Dow 36,000. This book, influential for a brief period at the bubble's peak, argued that stocks never lost to bonds over any twenty-year period, therefore they aren't riskier, therefore they don't need to offer more return, therefore their P/Es are too low. This is so massively circular I'm dizzy just writing this sentence. Stocks have (please note the past tense) never lost to bonds over long periods precisely because they have always offered substantially higher returns. Without that, given their higher volatility, they will lose and lose big

⁵ One caveat. The "Fed Model" type comparison does have some empirical power for the next decade's *relative* return between stocks and bonds, as opposed to the real return on stocks alone that I discuss in the text above. Nothing changes the fact that a high P/E on stocks is a reliable forecaster of low long-term real stock returns, independent of bond yields. But, if the yield on bonds is also low, the "Fed Model" might help you choose between the lesser of two evils. Also, for forecasting 10-year relative returns between stocks and bonds, theory would say the Fed Model is still wrong and that you should compare the stock market's yield to the *real* yield on bonds (the bond yield minus expected inflation), not the nominal bond yield itself as in the normal "Fed Model." The difference can be large.

occasionally. Then the circle is complete, as any rational investor will demand a risk-premium. It is a difficult debate whether the learned authors of this book were incredibly incompetent in offering this argument, or knowingly misleading (or perhaps they meant their book as a parody to show us all the silliness of the bubble). But, either way, they offered this bold dramatic and obviously flawed argument not to other professionals, but to the man-on-the-street investing public at the height of a raging bubble. I have been wrong many times myself, for instance I spent most of 1999 being wrong, and investments are a field nobody is right about all the time (51% of the time is a noble target when predicting the short-term). But, the gross obviousness of this book's error, combined with its timing and target audience, make it hard to forgive (as apparently I haven't). To my knowledge no public apology and repudiation of the book's nonsense has been given.

Stepping back from the obvious inanity of Dow 36,000, there might be truth to the concept that investors have historically priced stocks assuming they were somewhat riskier than reality. Thus, stocks might deserve a higher P/E than historical average. But, again, please notice, when the bullish analysts tell you this, they are actually giving you a reason why you might accept **lower** stock returns going forward as they come hand in glove with a high P/E. They are not telling you why you can still achieve high expected stock returns, while starting from a very high P/E, because you likely cannot. The optimists like to say "interest rates are low and the world is safe, so you should accept a high P/E," and just leave it at that. But, the tacit conclusion they hope to leave you with is that stock returns will thus be "normal," with normal being the wonderful 1926-2001 experience investors have grown to require as birthright. How many times have we heard a Solomon-like strategist tell us in somber tones not to expect the 20%+ returns of the go-go 1995-1999 years, but rather more "normal" 10-12% stock returns going forward. Well, that's an attempt to seem reasonable and responsible, but in reality it is irresponsible and false. Let them say that "high P/Es are not that bad, but the high valuations that come with this benign environment lead us to forecast nominal stock returns of about 6-7% over the next decade," and again, I'll stop complaining. To be fair, to their credit, the one thing the authors of Dow 36,000 did get right was telling their readers that after 36,000, returns in the future would be equal to bonds. Today's strategists often do not get this right.

Just to round out the discussion, let's review just a few of the other common bullish arguments, often repeated over the last few years, and some prominent recently (the bull's comments are in bold, my comments in *italics*):

- **Buy now as the stock market usually recovers 6 months before an economic recovery, so we must look over the "valley" to the future.** *True, the stock market is forward looking, but in recessions P/Es usually fall to low double or even single digits, not to near record highs like today. Those spouting this platitude should know and honestly address this fact. Buying at record P/Es in the middle of a recession just doesn't seem very smart. In fact, we can go further than this. Buying at super high P/Es is rarely a very good idea if you're a long-term investor. It was a disaster of an idea in March of 2000, and not because the*

economy subsequently fell or because the Fed took away the punchbowl. Those events were just catalysts for rationality to return, and ex-post excuses for those who were talking up the ponzi-scheme at the time. At current P/Es, we've already discounted crossing the valley and entering La-La-Land.

- **Buy, because the market has already “discounted” all the bad news.** *This is an offshoot of the “6 months before the recovery” point above, but deserves its own billing. Given the market is still at record or very near record prices, when bulls say the market has “discounted all the bad news”, or that the bad news is “in the price”, I think they are really saying “don't bother us with the reality we've previously chosen to ignore.”*

- **Forget prices, the evidence from 1926-2001 clearly shows that stocks always win over the long-term.** *This is the most oversold argument in show business. Stocks have (again, please note the tense) always won (let's call “winning” beating bonds) over any, say twenty-year period from 1926-2001. This occurred over a time when P/Es rose from around 10 to the high 20s, when you reinvested at an average dividend yield of over 4%, when bonds suffered from surprise extreme inflation shocks, and when the U.S. economically vanquished the world. Obviously, P/Es and dividend yields are not so low anymore, and presumably bonds are now priced to admit the possibility of future high inflation. To look at historical data and assume the past is perfect prologue is always dangerous, but particularly so with financial data that sometimes makes the opposite the case. For instance, if stocks were to rise 10,000% tomorrow (say, for instance, if Cisco were to forecast a stabilization in their business by 2005), historical estimates of stock returns would go through the roof, but rational future estimates must go down. The U.S. from 1926-2001 is a less extreme version of this example. Essentially, with stock prices much higher than in the past, their margin for error is gone, and the chance that stocks underperform bonds (or even inflation) over the next twenty years is real. This is not a forecast on my part, but an acknowledgement that the riskless days are over when buying at very high P/Es.*

- **Many respected strategists are bullish, and have gotten more so recently.** *Can someone explain to me why Wall Street employs strategists, but GM does not? Can you picture it, “We like cars now, we recommend some cars specifically, about 2/3 of them are GM cars, but definitely, cars look attractive now.” Like cars, Wall Street sells new and used stocks, and while again, there are numerous exceptions, many strategists are paid spokesmodels speaking slogans not science. I got a particular kick out of Ed Kerschner (UBS's well respected strategist) who's firm recently took out full page ads trumpeting his view that the S&P 500 will be up 50% from here by the end of 2002. If you do the math, based on his fair price at the end of 2002, he also thinks the S&P 500 was just about fairly priced in March of 2000 when it was selling for that 45 ten-year P/E we discussed earlier. Come on Ed.*

- **Real economic growth is going to be much stronger in the future than it has been historically, justifying today's P/Es.** *If it does occur, super strong earnings growth will indeed save the day, but this is nothing more than hope. Productivity gains, often pointed to as the reason for this optimism, have been shown to be overstated, and it doesn't even matter much if they are or aren't, because, as Jeremy Siegel points out (JPM 1999), most productivity gains accrue to workers or consumers, not to corporate EPS growth. Sometimes we hear that corporations are retaining much more cash than normal, rather than spending it through dividends (i.e., giving us back our money), and this is a huge positive for growth going forward. Unfortunately, as Rob Arnott and I show in a forthcoming paper, the opposite has been strongly true for 125+ years. That is, when corporations pay out less in dividends, they grow **less** going forward. One of our hypotheses for why is that all the cash burns a hole in their corporate pockets making them over-invest in marginally unattractive products. The recent telecom boom/bust springs to mind as what will forever be the best example of this dynamic. Finally, some fans of "efficient markets" make the case that earnings growth will be strong going forward partly because of the high cash retention discussed above, but also as a tautology because the market knows best and a high P/E means the market knows high growth is coming (these guys generally aren't selling stocks so I won't impugn their motives, only disagree with their conclusions). Unfortunately, in the same paper, Rob and I show that this also doesn't work over the last 125+ years. You are certainly allowed to believe in wonderful very long-term real earnings growth as a market savior, but again, please know that hope is all you've got to go on.*
- **Don't fight the Fed.** *This probably isn't the worst short-term rule to have, but please, if you find any "strategist" saying this, who also was telling you in late 1999 / early 2000 that interest rate increases don't matter to tech stocks, first laugh at them, then short something they recommend.*
- **Buy because the fall in earnings and the economy has started to slow (so called "2nd derivative" investing).** *The bitter-sweet part of this is that buying on weakness, looking for signs of a bottom and a turn in an undervalued situation are hallmarks of good contrarian investing. However, when perverted by the hands of perma-bulls into a recommendation to buy a market still at or near 125+ year highs, it's mildly distressing. To hear bulls talking about 2nd derivatives, when they proved in 1999 that their math skills are so wanting they considered subtraction to be addition's "tricky pal," it is really quite comical.⁶*
- **These things are not going to zero.** *Too obvious so I'll take a pass on making too much fun of this correct, but absolutely empty comment. It's snappy cousin, "these companies are still going to be around in ten years" is another version of the same. I guess the logical conclusion is "these things are not going to zero, so pay any price for them today." TIPS, T-bills, my collection of Happy Days*

⁶ I think I borrowed that from a David Letterman top 10 list.

memorabilia, etc., are all also not going to zero. However, that implies nothing about the right price for them today.

- **Buy because stocks are showing the strength to “shrug off” disastrous news.** *Check again. That is not just strength you are observing, it is also a maniac desire to see a return of the bubble. For proof, please note that it is really only the speculative tech stocks that seem to have this uncanny mutant ability. The fact that “shrugging off” (a new financial term) is often reported by the media and pundit choir as a positive sign of strength, and not dementia, is itself quite scary.*
- **Buy because stocks are finally meeting or beating expectations.** *Sorry, meeting or slightly beating expectations that were radically reduced last Tuesday (and many times before that) is not a reason to buy. Not if the stocks in question are still incredibly expensive for good times, let alone times of “reduced expectations.” That these earnings “victories” are usually pro-forma ones (translation: lies) only makes it all the more silly and offensive.*
- **The market is only falling because of Anthrax scares, or an unresolved presidential election, or anything else we hope will go away soon.** *The perma-bull pundits love to blame any fall on factors that (hopefully) will go away soon. No, the market isn’t falling because of disastrous earnings news and disastrous economic news, all in the face of sky-high valuations; but rather is falling for some reason that will either go away, or we can all gather up our courage and ignore (anyone for a shrug?). These pundits might be right about the catalyst for any specific day’s movement, but the conscious, or simply misguided, effort to blame short-term nonsense and ignore reality is real.*
- **Buy because it can’t get much worse from here.** *On one recent day (with tons of disastrous economic and earnings news, but a rising NASDAQ) an article describing the day’s activity carried the following quote “Some technology stocks are up after having bad earnings reports... People feel that they’re getting a handle on what the worst can be and hope that things can only improve.” I left out the person being quoted, as they shouldn’t be tarnished for accurately reporting what the mob was doing. By now you probably can guess what I’m going to say. “It can’t get much worse from here” might be a good reason to buy a horribly beaten down asset. It is a crazy joke of a reason to buy a super expensive one. Oh, and one more thing, yes it can.*

As a near-final aside, if you doubt it’s still a bubble, you need only observe investors on-going love affair with technology stocks and high expected growth stocks in general. It is still the case, as a legion of anecdotal and quantitative evidence will corroborate, that every recovery in this market seems to be led by wild rushes back into speculative nonsense (April and now October of 2001 spring to mind). There are a legion of individual investors, and little better investment-educated mutual fund managers, who think that their job is trying to pick the “bottom”, and that the good times (not normal times, but 1999-level good times) are about to return soon. You can’t have a Krispy

Kreme selling at a P/E over 100, an eBay still selling for a P/E of 150 (and a \$15B market cap), without realizing that investors have not “learned” much about investing, despite recent experience. Have investors “learned” that tech stocks are cyclical? Have they “learned” that the price at which you buy something matters (and I mean the actual price, not how much it’s fallen from some unconscionably high level)? These are rhetorical questions as the answers are obvious. For fun, go on any Krispy Kreme internet chat room. They are making precisely the same comments you heard on the Amazon chat room back in 1999. It is a time warp. When you mention this, they literally tell you “things are different this time” with a straight face. The Germans and French at least had the decency to wait a generation after Versailles before doing it all again. Sure, Krispy Kreme and eBay make actual money and run actual businesses, as opposed to the dot coms, but so does Cisco. Cisco was a joke at a P/E of 140 as it was priced in early 2000, and investors are still telling the same joke, only some of the punch lines have switched. And, rest assured, like Cisco at its peak (when it dominated the “recommended” lists), there are quite a few analysts out there with “buys” on both the 100+ P/E doughnut maker and garage sale. Amazing. Until stocks in aggregate sell for reasonable prices, and until every rally is not led by investors buying networking, internet, and software (and now doughnut!) companies they don’t understand, at still astronomical valuations⁷, this market is just not healthy.

Excluding the 1999-2000 period of insanity, stocks are approximately tied with September of 1929 for the title of *the most expensive U.S. stock market ever* (looking over 125+ years of data). This is robust to any reasonable definition of valuation, and is occurring at the depths of a recession that shows no sign of abating. If the recession does turn, while the short-term bubble brains will probably party, stocks have in fact already discounted a bigger recovery than is rational, and absent another bubble offer little extra upside, and long-term offer real downside as valuations are very high even for good times. This is important. A tremendous number of investors (and worse, those who call themselves “traders”) are waiting for any sign the recession is turning, assuming that an economic turn presages a return to the halcyon days of 1999. Well, maybe, but that’s trying to forecast a mania. If the recession soon turns to wild expansion, stock prices are still astronomical vs. similar times in history. If the recession does not turn soon, it is hard to imagine avoiding a disastrous confrontation between hope/hype, and reality. The bullish pundit crowd today repeatedly refers to stocks as “beaten up,” or when buying occurs, calls it “bargain hunting.” To repeat from my introduction: The fact that stocks could have fallen so much and *still* be so expensive, is a statement about how silly we all got in 1999-2000, and about the disingenuousness of those who didn’t sound the alarm back then. It is not a statement that stocks are cheap today. In fact, the opposite is true. Stock market “pundits” should have their mouth washed out with soap if they currently call stocks “historically undervalued” as many of them do today.

⁷ Now that these tech stocks have conveniently gone to negative earnings, P/Es, to the bull’s relief, are not relevant. But, again, who says we need to use this year’s E. For fun, go plug in the 1999 peak earnings into many of these babies. Those earnings are probably a cyclical high, and pumped up by “investment gains” and accounting gimmickry of all sorts, but the P/Es using inflated peak earnings still show the tech world to be very expensive. Paying very high multiples in good times is usually a bad idea. Paying these multiples (on peak earnings) for these companies in a recession (and a deep one for tech), well, that’s just nuts.

Bottom line – there might be some very good reasons for accepting lower than historical stock returns going forward, and my points above do not imply that you should sell all your stocks. Perhaps a much lower than historical risk-premium is in order, and perhaps we are there with today's very high P/Es. But if true, it's also true that you're not missing much being cautious. The ultimate possible upside, if all works out perfectly, is that we do not crash, but over the long-term stocks now offer a super-low risk-premium vs. history. This last possibility is very plausible, and shouldn't be dismissed, but conversely, neither should the idea that people might not be rational, calmly understanding the implications of low P/Es, and might not be so ready to accept very low long-term stock returns. After all, do the events of 1999-2001 strike anyone as a group of rational investors embracing and accepting a permanently low risk premium? If so, I missed that on "Power Lunch." If investors do decide they need more expected return from stocks, then look out below. In order to raise the risk-premium on stocks by 2% per annum going forward, today's prices need to fall about 50% from here. If this happens, the strategists may call them cheap without me writing a nasty essay.