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A NOTE ON THE CURRENT FINANCIAL CRISIS

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Although I forbear from making short-term forecasts, it would be inexcusable complacency or negligence were I not to comment on the current state of the stock market and to express a view on what to do in the present circumstances.

My recommendation is that, to the extent that you ought to have stock in your portfolio—and I'll return to this premise later—you should remain invested in the market, come what may. You may have heard this steadying advice from other financial advisors. While this advice is what it is, some of the arguments I've read in support of it seem to me to be complacent or anodyne. I'd like to present the case in my own fashion.

There are three complementary ways of looking at the stock market with a view to deciding what to do in the face of turmoil. I'll call them the statistical approach, the valuation approach, and the mosaic approach.

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What Do the Historical Statistics Tell Us?

Let's first consider the historical statistics. I'm looking at monthly stock market returns from 1926 through 2007.¹ Let's assume that during past crises, you had no foresight on how the market would behave, but a sharp decline made you so queasy that you sold stocks and converted them to cash after a sharp decline. Indeed, your foresight was so poor that you sold stocks only at the end of each of the ten worst months for the stock market since 1926. Then, you waited a full year until you decided to put all that money back into the stock market. The average annual return that your money would have earned (before factoring in trading costs and tax effects) would have been 11.27%. If you had, in contrast, stayed fully invested, your average annual return would have been 12.26%, almost a full percentage point higher. If you were very, very cautious and waited two years to get back into the market, your average annual return would have been 11.44%, just slightly better than the result of waiting one year.

But that span of years encompasses the Great Depression, a period of exceptional market volatility and losses. Let's consider, instead, only the post-war period, 1946 through 2007. If you had pulled your money out of the stock market at the end of the ten worst months during this period and waited a year before jumping back in, your average annual return

would have been 10.87%, versus 12.69% if you had stayed in the market. If you had waited two years, your average return would have been 10.06%, somewhat worse than if you'd waited just one year.² If a difference in average return of one percentage point sounds small, then I should point out that when compounded over many years, it can create an enormous difference in wealth.

This suggests (although it does not prove) that you will be better off leaving your money in the market even through the present crisis.

The argument unquestionably has flaws. It assumes completely imperfect foresight. If you had anticipated each of the ten worst months and pulled your money out just before, the argument would be weaker. It assumes month-over-month data. It assumes that you looked only at a recent decline, not at the nauseating volatility that might have occurred intra-month. And—speaking of volatility—it ignores the lower volatility of sitting in cash while the market bounces around. Lost return might have seemed to you in retrospect a fair trade for a more settled stomach. (My last semi-annual [newsletter](#), issued in January 2009, included an essay on investment risk, which explored the concept of risk as volatility.) The argument assumes arbitrary periods (one year, two years) of waiting until the coast seemed clear. It assumes an arbitrary number (10) of historic market drops. And, perhaps most significant, it considers historical data, because that's all that we have, rather than what might happen in the future. From the point of view of a statistician, these are very small samples, and they include only one gross investment crisis, the one that accompanied the Great Depression. A statistician can't draw inferences from a sample of one. We're in the process of adding a second gross investment crisis to our sample of data, but even when this one is over, we won't have enough information to enable us to generalize with confidence.

All the same, we can draw one clear conclusion: the historical statistics do *not* argue for pulling your money out of the market now. It is less clear that they argue that you should stay in the market during this crisis.

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Is the Market Undervalued?

The second approach to deciding what to do in the current market is to try to determine if the market looks cheap or dear. That is, given what the companies that make up the market are likely to earn in the future, do they look undervalued or overvalued? The most common way of getting at this is to look at the price-to-earnings, or P/E ratio. (Analysts sometimes prefer to look at the earnings-to-price ratio, because the real possibility of earnings close to or equal to zero causes the P/E ratio to become meaningless; you can't divide by 0.) The underlying idea is that the companies in the stock market are worth a multiple of what they earn. We don't know what the correct multiple should be, but we can compare the current value of the multiple to its long-run average. If it's above the average, the market is said to be overvalued; if it's below the average, the market is said to be undervalued. There is a supposition that if the market is undervalued, it should subsequently go up, and if it is overvalued, it should go down.

If you take the current level of the market, as represented by the S&P 500 index as of Friday, 13 March 2009, which is 756.55, and divide this by the average operating earnings per share

of the market over the ten years ending December 2008, which is 61.08,³ you get a P/E ratio of 12.39. If you prefer to use the average of operating earnings over the ten years ending December 2009 (estimated), you get a P/E ratio of 12.13.⁴

These are both quite a bit less than the long-run historical average of the P/E ratio of the S&P 500 index, which is 15.5. This implies that the market is not overvalued and, on the contrary, seems to be distinctly undervalued. Last autumn, The *New York Times*' economics columnist David Leonhardt wrote a reasonable [column](#) based on this analysis,⁵ which I cited in an earlier version of this essay. It was unclear then that the market was very much undervalued. Although it seems to be so now, one cannot be completely confident in that conclusion. Corporate earnings were very strong for the last few years, but in the present recession, they have been dropping, making the P/E ratio based on the most recent twelve months' earnings higher for any given price. (Professor Robert Shiller, of Yale, advocates using ten years of trailing earnings in order to smooth short-term fluctuations, but of course, this is looking backward, and the market sets prices by looking forward, however imperfectly.) All the same, operating earnings would have to remain at their current low level for a very long time indeed to return the prospective P/E ratio to 15.5 at anything like the current price.

You may have seen a recent [article](#) by Professor Jeremy Siegel, of the Wharton School, in the *Wall Street Journal* in which he argued that the earnings figure for the S&P 500 was being calculated incorrectly. His point was that, if the earnings are reckoned in the way he suggested, the P/E ratio is much lower, meaning that the market is far more undervalued than it appears to be by the conventional reckoning. I did not find his argument for the recalculation of the earnings of the S&P 500 to be persuasive.⁶

The P/E ratio is hallowed by tradition as a market valuation tool, but it is a blunt instrument.⁷ There are alternative methods for valuing the market (such as the so-called "Fed Model"), and most are worse.

As we can with historical statistics, we can draw one clear conclusion from market valuation: It does *not* argue for pulling your money out of the market now. But once again, it is much less clear that there is a strong case to be made for staying in the market.

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Can We Forecast the Market, or, If You're so Smart, Why Didn't You Tell Me to Get out of the Market before the Crash?

The third approach to dealing with the current predicament is to construct a narrative forecast of what will happen in the economy. I refer to this as the "mosaic" approach.⁸ Like an historian constructing a narrative of past events that may create a plausible explanation of how decisions were made, how movements and cultures arose and changed, or how ideas transmuted, an economist can pull together information from various parts of the world and put it together in a mosaic organized by economic theory; he thereby creates a plausible story of how events will unfold, and how the stock market will behave in response. But the historian's task is much easier than the economist's, because the historian is predicting the past, whereas the economist is predicting the future. In this sense, the historian's forecasts, very much unlike the economist's, always turn out correct.

The economist's task is so difficult that even if he can forecast the market correctly, he can still do worse than the market. Here's an illustration:

Let's assume that the economist can form a correct forecast of what the stock market will do over the next two years. (That is, the economist is not so precise that he can predict the market's direction for a month or even a year, but his vision extends over twenty-four months.) Also, let's assume that the forecast is always just a month too early. (Better than being too late.) There are many ways of playing this game, but this setup doesn't seem too unfair to the economist: a broad outlook, a little early, but otherwise *always correct*.⁹ Month after month, our economist makes a market forecast and moves money between stocks and cash, depending upon whether his outlook for stocks over the next twenty-four months is positive or negative, although he's always a month early.

If our economist had done this from 1926 through 2005¹⁰, his average annual return would have been 10.31%. If he'd stayed fully invested in the market, his average annual return would have been 12.29%. Leaving out the Great Depression and looking at just the postwar years doesn't change the story. (Let me clarify what I'm doing: I used historical statistics earlier to show what might have happened if you simply reacted to market declines; now, in contrast, I'm using them to show what might have happened if you'd had foresight.)

In short, the economist can be right and yet still be wrong.

You can begin to appreciate why I refuse to make short-term market forecasts. It's not merely because I want to avoid looking foolish. It's because my forecasts would likely ill-serve my readers and clients.¹¹ My goal is not to anticipate significant market swings so much as it is to manage my clients' portfolios in such a way that they can absorb the impact of a dramatic decline and to take advantage of market increases.

Beyond this, you should bear in mind that although the economy as a whole and the stock market by itself are connected, their coupling is very loose. If the stock market reflects, as it ought, the consensus outlook for company performance, then it should be predictive of the economy. If this is the case, and we are in the depths of the recession, then the market may already have wrought its worst on our portfolios. Most forecasts that you see are probably for the economy, not the market.

I avidly follow the economic forecasts. In particular, I have recently taken to following the blog [The Baseline Scenario](#),¹² created and maintained by Professor Simon Johnson of MIT and formerly chief economist at the International Monetary Fund, and two associates. I also follow with great interest the analyses of Professor Nouriel Roubini, who, unlike Professor Johnson, does not, unfortunately, offer a free blog. He has become something of an economic superstar, not just because he accurately foretold the credit crisis—the world is full of forecasters who are occasionally lucky—but because, in addition, his credentials are strong and his analyses are cogent. This increases my confidence that he's on to something. You can read [here](#) an old interview with him.¹³ But I don't confuse his commentary with his stock market forecasts.

So Should I therefore Always be Fully Invested in the Stock Market?

Despite superficial appearances, my foregoing discussion does not argue for your being fully invested in the stock market. At the outset, I wrote, “To the extent that you ought to have stock in your portfolio, you should remain invested in the stock market.” We have seen that, to the extent that you have started with an investment in the stock market, there is little to gain and perhaps something to lose in shifting money into and out of the market in reaction to present dread or delight, or in response to highly imperfect forecasts. But if you’re inclined to seek safety in cash, I wouldn’t, unlike some financial advisors, try very hard to dissuade you. The numbers and arguments that I have presented suggest that there is little reason to think that you’ll be better off in the long run if you do this, and some reason to fear that you might be worse off, but there is not a conclusive case that this would harm you, at least in the short term.

Do you now feel that you have less ability to handle investment risk than you had a couple of years ago? If so, it is more likely, not that your tolerance for risk has decreased, but that you were not properly informed about risk at the outset of your investing experience. Those of us professionals who have spent much time studying and thinking about investment risk knew all along that such calamities were possible. The stock market is inherently risky, but the risks don’t always manifest themselves.

You have probably been listening to and reading news reports on the present financial crisis, and you may quibble with me by pointing out this crisis has specific causes. Had not the chieftains of finance been greedy and reckless, you may think, then the market would have been a sound investment. My response is that some other disaster would likely have befallen us, sooner or later. By analogy, driving a car is risky. You can drive a car safely for twenty years, and then be involved in a major accident, perhaps through a lapse of attention on your part, or perhaps because someone else was reckless. That doesn’t mean that your first twenty years of driving were riskless. The insurance industry makes useful distinctions among hazards, perils, and risk. A peril is a cause of loss, and a hazard is a condition that may give rise to or increase the risk of a loss. Being invested in the stock market is inherently hazardous, as is driving a car. Bad public policy decisions and bad management of financial institutions are perils, like drunk drivers. If you reduce the hazard, you reduce your exposure to the perils. A good financial advisor ought to explain to you the hazardous nature of investing in the stock market. To the extent you cannot handle the risk of the stock market, either psychologically or financially, your portfolio ought to be invested in safe assets like cash or other low-risk investment vehicles. There are also ways of mitigating stock market risk without necessarily reducing return significantly. In essays in coming issues of my newsletter, I will discuss investment risk, the relationship between risk and return, and the nature of risk tolerance.

If the present crisis has forced upon you the conclusion that you had too much stock in your portfolio, it may also, alas, have made more appropriate arrangements for you. That is, if you already held some low-risk assets, like cash, they have now become, by default, a much larger proportion of your portfolio. Before converting your remaining stock exposure to

cash, consider whether your portfolio now has something closer to the proportions of stocks and low-risk assets that it ought to have had all along.

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Conclusion

Probably like you, I am disconsolate at the diminution of my investment portfolio, and I have a gut fear that the stock markets will continue to decline. But a gut feeling is an insufficiently robust foundation for making investment decisions. Limited historical evidence suggests that there is nothing to be gained and probably something to be lost by moving out of stocks and into cash after a severe drop in the market. And if we look at the valuation of the stock market right now, there is little reason to think that it is still overvalued; this also suggests that it is now too late to move to the safety of cash. If, however, even after due regard to these points, you choose the comfort of moving your money out of the market and into cash, you probably won't do yourself gross harm.

The stock market is inherently risky. The risks are usually not manifest, but there is always the possibility, however small, of a calamitous decline in value, either suddenly or over time. Even a moderate ability to predict a market crash may be insufficient to spare an investor a loss in the market, and may even produce worse results than a buy-and-hold policy. A good investment advisor ought to be familiar with the risk of the stock market and should inform you of the danger. (Many companies that sell investment products, however, have long scanted this risk.)

Your ability to handle investment risk should be more or less constant if your financial requirements don't change and you continue to have the means to fund them.¹⁴ It depends on your circumstances and psychology, and it should be unresponsive to the perils of investing as they appear.

If the current financial crisis has made you more aware of the risks of investing in stocks than you were before, and you now understand that these risks are more than you can handle, then you may have good reason to convert some or all of your stock holdings, already diminished, to cash or other less risky assets. But this should be *only* because you now have a better understanding of your ability, or inability, to deal with a severe decline in the value of your portfolio. It is, unfortunately, rather late to have learned this. Both sadder and wiser, you should not later shift money out of cash and back into stocks when the market next becomes euphoric.

¹ As of this writing (March 2009), I am still awaiting authoritative monthly return numbers for 2008.

² All of my return figures derive from *Ibbotson S&P 2008 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation 1926-2007* (Chicago: Morningstar, Inc., 2008).

³ I am using actual operating earnings through December 2007 plus estimated operating earnings through December 2008, as provided by Standard and Poor's on their web site:

<http://www2.standardandpoors.com/spf/xls/index/SP500EPSEST.XLS>

Robert Shiller, of Yale, prefers a ten-year average of earnings, which I use here. In the earlier version of this essay, I used the five-year average, which would make the P/E ratio even lower.

⁴ Standard & Poor's has an earnings estimate of \$64.37 for 2009, which is one of the higher estimates. Other firms, like Goldman Sachs, Citigroup, and Merrill Lynch have lower estimates, ranging from \$40 to \$51, which

would make the P/E ratio higher. See the numbers published in the *Wall Street Journal*, 9 March 2009, Dow 5000? “There’s a Case for It”:

http://online.wsj.com/article/SB123654810850564723.html?mod=todays_us_money_and_investing.

⁵ *New York Times*, 10 October 2008; David Leonhardt, *Economix* column: “How Cheap are Stocks?”:

<http://economix.blogs.nytimes.com/2008/10/10/how-cheap-are-stocks/?hp>

⁶ *Wall Street Journal*, 25 February 2009. Jeremy J. Siegel, “The S&P Gets Its Earnings Wrong”:

http://online.wsj.com/article/SB123552586347065675.html?mod=todays_us_opinion

See also the response by David Blitzer of Standard and Poor’s, *Wall Street Journal*, 28 February 2009, “S&P Does the Earnings Correctly”:

http://online.wsj.com/article/SB123578595417698647.html?mod=todays_us_opinion

⁷ For my more investment-savvy readers, I should like to point out we can sharpen the instrument just a little bit. If we let M (for “multiple”) = P/E, then we have $P = E / (1/M)$, and if we let $1/M = (r-g)$, where r is the appropriate discount rate for earnings and g is the rate of growth in earnings, we have the one-stage dividend discount or Gordon growth model. It may not be a completely otiose exercise to try to guess appropriate values for $r-g$. If P/E = 11.92, then $1/M = r-g = 8.4\%$, which, for any plausible value of r suggests that the market is expecting very low or even negative growth in earnings. Or, alternatively, if earnings are going to grow, that the market is undervalued. If P/E = 15.5, the long-run average, then $r-g = 6.5\%$, which suggests either a very high equilibrium discount rate or a very low consensus forecast of the long-run growth rate of corporate earnings. You might reasonably object to this analysis because of its reliance on historical earnings rather than future cashflows, and the simplistic nature of the one-stage dividend discount model. I’d reply only that it also shows up the limitations of the P/E valuation method.

⁸ I take this word from the “mosaic theory” of how a securities analyst can put together publicly available information and non-material information to evaluate a company and to estimate whether it is overvalued or undervalued. An analysis conducted according to the mosaic theory and its consequent investment actions do not violate the legal prohibition against insider trading. The term is used in other contexts, as well.

⁹ I have not cherry-picked this example of forecasting ability; it’s the only one I’ve tested. Of course, you can come up many, many other hypothetical examples of forecasting ability, some of which, such as presuming perfect foreknowledge of each month’s stock market returns, will be enormously successful. My chosen example is just a reasonably realistic case that actually allows for significant ability by the economist.

¹⁰ I’m using returns data through 2007, so December 2005 is the last month in which we know how the next two years turned out for the market.

¹¹ Again, I’d like to address my investment-savvy readers: If I wanted to time the market, I might combine all three approaches in a Bayesian analysis. My Bayesian prior would be an estimated incremental return from an analysis of the historical value added by market timing, which would be 0 or a little negative. I would then use a valuation approach to forecast a possible positive return to timing. I’d use the mosaic approach to conduct scenario analyses to estimate the appropriate probabilities. I would periodically update the probabilities in light of the outcome of my forecasts.

¹² <http://baselinescenario.com/>

¹³ *Advisor Perspectives*, 16 September 2008:

http://www.advisorperspectives.com/newsletters08/Our_Interview_with_Nouriel_Roubini.html

¹⁴ Actually, for most individual investors, the ability to handle risk tends to decline with age. But this is not as obvious as it seems, and it’s a subject for another day.

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