

The Telltale Chart

Keynote Speech by John C. Bogle
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It's always a special privilege to speak at the Morningstar Forum. Given the deep interests of the professional financial advisers and informed individuals who come here, this annual gathering is likely the finest aggregation of dedicated investors one is likely to find. This year, it's a special thrill for me, because the Forum is the meeting place for the kick-off of Diehards III, the third annual gathering of the Vanguard shareholders who call themselves "the Bogleheads."

As many of you know, during the past few years I've done much speaking and writing on the profound weaknesses that permeate much of the mutual fund industry, the recently catalogued, but far earlier apparent, sins of Corporate America and the Wall Street community, and the strong likelihood of far lower stock market returns. Today, I'd like to stand back from those issues and discuss fundamental investment principles, including (at the close of my remarks) the principles that govern the equity market. In short, I'm going to step down from my pulpit and stand before my blackboard.

The first sentence of Edgar Allan Poe's *The Telltale Heart* reads: "True!—nervous—very, very awfully nervous I have been and am . . . but will you say that I am mad?" And I confess to being a tad nervous as I tackle a subject that I frankly wouldn't *dare* to tackle before most audiences. But this congregation of so many avid investors under one roof emboldens me to address an important subject, and, after the great bull market, the great bubble, and the great burst we have witnessed, a timely one as well. And if my guess is right, this is an audience that can handle it.

I hardly need tell you that the key to whatever success I may have enjoyed during my long investment career is that the Lord gave me enough common sense to recognize the majesty of simplicity. But I've learned that to discover the priceless jewels of simplicity, it's often necessary to cut through a swath of complexity. Today, the complex subject I'll discuss is reversion to the mean; the jewel of simplicity is the telltale chart.

The Telltale Heart, of course, is the story of a heart that doesn't seem to stop beating (sort of like mine, come to think of it!). Even after the death of its owner, its steady drumbeat ticks away like "a watch enveloped in cotton" and becomes more and more distinct. So reversion to the mean—RTM, the pervasive law of gravity that prevails in the financial markets—never stops. While its drumbeat is hardly regular, it never fails. For the returns of market sectors, of managed investment portfolios, and even of the market itself mysteriously return, over time, to norms of one kind or another.

Some of you may recall that RTM was the subject of Chapter 10 of my 1999 book, *Common Sense on Mutual Funds: New Imperatives for the Intelligent Investor*. But few of you know that the genesis of that chapter was a speech that I gave at Massachusetts Institute of Technology in 1998, where I had been invited to speak at its Distinguished Lecture Series at its Lincoln Laboratories think-tank. It is not insignificant that the audience of scientific researchers was laced with Ph.Ds. I hope you are complimented that it is before you that I address the subject again.

Six Manifestations of RTM

Today I'm going to talk about how RTM can help us to understand financial markets and thereby become more successful investors. I'll talk first about RTM in market sectors, focusing first on large-cap and small-cap stocks and second on growth and value stocks. Next, I'll turn to RTM in the returns of the recently beleaguered Standard & Poor's 500 Stock Index relative to total U.S. stock market. Fourth, I'll talk about the reversion of equity mutual fund returns to the market mean. Then—in part because the Bogleheads would be disappointed if I didn't—I'll turn to RTM as it is reflected in the results of what have become known as "Slice and Dice" portfolios; essentially diversified portions that seek to outpace the broad market index by systematically overweighting various sectors. Finally, I'll examine the question of whether stock market returns themselves revert to one kind of mean or another.

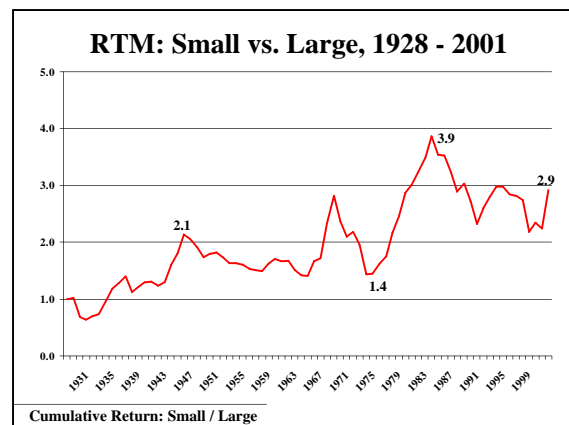
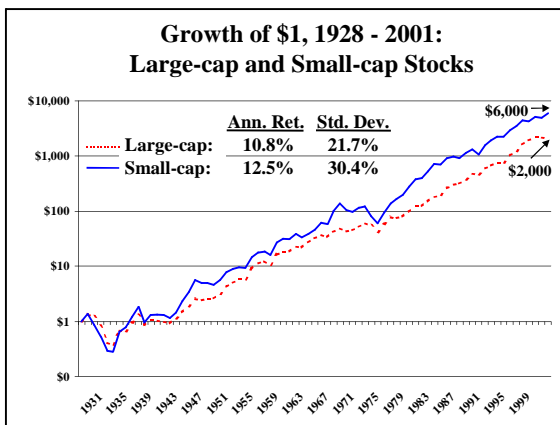
Giving you this copious stream of information will require me to flash a total of no less than 18 Power Point charts up on the screen. That's a tall order, but if you'll just hold in the back of your minds the remarkable similarity of each of the charts showing RTM—the irregular swings above and below the mean—with which I summarize each of these six points, I think you'll understand my line of argument. For the telltale chart that demonstrates the tendency of investment phenomenon to revert to the mean repeats itself in each example. When I conclude, I hope you'll share my conclusion: *The most successful investors will respect the power of reversion to the mean.*

I begin by criticizing the vastly over-simplified but typical way we look at long-term results. We hear, for example, that “small-cap stocks outperform large-cap stocks by almost two percentage points a year,” using as evidence the entire historical record we have available (from, as it happens, 1926 to 2002). Or that the, well, Magic Fund “has beaten the market by eight-and-a-half percentage points a year over its lifetime.” Or that “stocks provide higher returns than bonds,” in each case without acknowledging that each and every comparison we see is *period-dependent*. Whether or not the period has been selected to prove a point, neither the starting date of a comparison nor its concluding date are random. Compilations of historical financial market returns are not actuarial tables, and, as you'll see, the past is *not* prologue. Indeed, it is usually, well, anti-prologue. Each thesis, it turns out, tends to bear the seeds of its own antithesis.

1. RTM – Large-Cap Stocks vs. Small-Cap Stocks

Few investment principles are as unchallenged as the perennial assertion that over the long-run small-cap stocks outperform large-cap stocks. The data we have available are unequivocal on this point: Since 1928, according to the University of Chicago Center for Research in Securities Prices (CRISP), small stocks have provided an annual return of 12.5%, vs. 10.8% for large caps. And, over that 74-year period, the long-term compounding works its magic; each dollar in small-cap stocks grows to \$6,000, while each dollar in large-cap stocks grows to just \$2,000. Bear in mind, of course, small-caps carried a higher risk (standard deviation of 30% vs. 22%). But after adjustment to that higher risk level the, large-cap annual return rises to 12.9%, *higher* than for small-caps. So never ignore risk.

But that imposing chart—like the proverbial bikini—conceals more than it reveals. I would strongly urge you to not accept that conclusion without transforming it into the telltale chart that is devised simply by dividing the *cumulative* returns of one data series into another, year after year—in this case dividing the cumulative large-cap stock return into the cumulative small-cap return. Then we see that the long period was punctuated by a whole series of reversions to the mean. Virtually the *entire* small-cap advantage took place during the first 18 years. Then large-cap (14.2% per year) dominates small-cap (11.7%) from 1945 through 1964; small-cap through 1968 (32.0% vs. 11.0%); large-cap through 1973 (2.5% vs. -10.8%). Then small-cap through 1983, large through 1990, and so on. On balance, these to-and-fro reversions have cancelled each other out, and since 1945 the returns of large-cap stocks and small-cap stocks have been virtually *identical* (12.7% vs. 13.3%). So ask yourself whether the evidence to justify the claim of small-cap superiority isn't too fragile a foundation on which to base a long-term strategy.



Then, ask yourself too if the data are accurate. Reconstructing past returns of market segments is no mean task, especially among small-cap stocks. Ask yourself whether transaction costs are accurately imputed (or even imputed at all), and whether survivor bias is present. Together, these issues raise questions about the validity of even the most responsibly-conducted of academic studies. And then, even if they're valid, ask yourself whether the game is worth the 40% increase in investment risk.

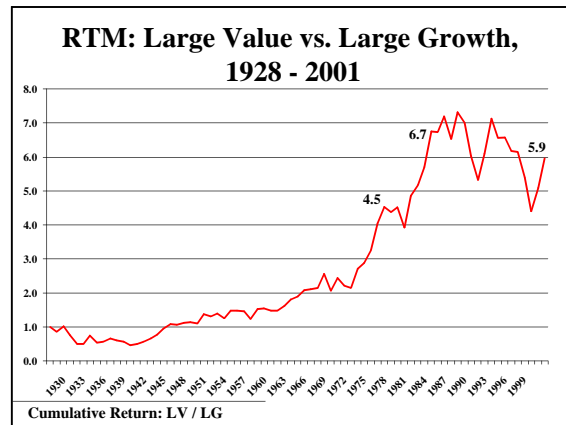
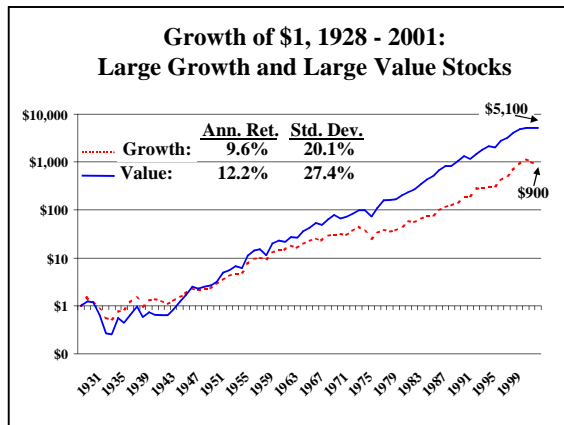
Finally, ask yourself the extent to which any of the results of what are in effect indexes of market sectors can be replicated in the real world of investing. Investing costs money, and it is a

truism—and increasingly a trite one—that all of the investors in the stock market (or in any discrete market sector) *earn* the market return *before* the costs of financial intermediation, but actually *receive* the return *after* those costs. If the cost of implementing a small stock strategy exceeds the costs of a large stock strategy by one percentage point a year or more, as seems to be the case, even if the alleged long-term advantage reflected in the data in fact materializes, the victory may be pyrrhic.

2. RTM – Value Stocks vs. Growth Stocks

I won't belabor those important qualifications of data integrity, risk, and real world costs. But each also comes into play in the next area that I'll consider, value stocks vs. growth stocks¹. Here, the long-term difference is even *more* dramatic than small vs. large: The annual return since 1928 is reported as 12.2% for large-cap value stocks and 9.6% for large-cap growth stocks, a difference of fully 2.6 percentage points. The compounding of those returns results in a stunning chasm in the final value of an initial dollar: Value \$5,100, Growth \$900. Again, higher risk (standard deviation of value was 27%, vs. 20% for growth) accounts for much of the gap, but even the increased *risk-adjusted* return of 11.2% for growth stocks falls one percentage point short of the value outcome. The data are so impressive that one wants simply to say: *Case closed!*

But now let's turn to our telltale chart and carefully examine the record. While the RTM is hardly as clear as its earlier counterpart, we can observe some significant things going on. Curiously, during the first 27 years (!), not much happens. Growth wins by a bit in the first 12



¹ The data for these charts are provided in the famously comprehensive studies undertaken by Professor Kenneth French of Dartmouth and Eugene Fama of the University of Chicago.

years, value in the next 11, after which both series deliver about the same annual returns through 1961 (16%). Value leads again through 1968, and after a four-year hiatus rises again through 1977, pauses for four years, and then surges through 1988. Then comes the heft of the great bull market, with growth leading value fairly consistently and by a wide margin (21% vs. 16% annually) through 1999. That sharp dichotomy was then followed by the sharpest mean reversion in market history, with growth toppling by -28% in 2000-2001, with value off less than 1%. RTM strikes again! But, perhaps surprisingly, over the entire period 1984-2001, growth (15.3% per year) retains a fragile grip on its leadership over value (14.4%).

The data I've shown you, of course, represent the statistical reconstruction of market sector returns. So, I'd now like to examine not abstract portfolios, but growth and value *mutual funds* that operate in the real world. The data are available from 1937, and the general patterns parallel those of the French-Fama study, but with a curious dichotomy. While the average annual return of the *growth* mutual funds (11.6%) during this long period actually exceeded the French-Fama large-cap growth stocks (11.2%), the *value* mutual fund return of 11.0% fell far below that of French-Fama value return of 15.2%, perhaps because the Fama-French value *portfolio* has a risk fully 45% above the value *funds*. Nonetheless, the French-Fama combined growth and value returns exceed the combined fund returns by 1.9% per year, a pretty good approximation of the costs that mutual funds incur. So investors should not ignore the obvious costs of implementing a strategy that rises, pristinely, out of academic studies that cannot be precisely replicated in the real world.

The reason for the dichotomy between these markedly different sets of growth fund and value fund relative returns may rest on the fact that value managers invest less on the basis of the statistical criteria that sector indexes use to differentiate growth stocks from value stocks (usually price-to-book-value) and more on other factors. But in any event, the validity of the growth and value index statistics rests on the soundness of the indexes used in measuring the sectors they purport to represent. Consider, for example, the S&P/Barra Growth Index. Based on relative price-to-book ratios, this Index categorizes 50% of the weight of the S&P 500 Index as growth stocks. When their prices soared during the 1990s, the number of growth stocks in the index tumbled from 220 to 106 in 1999—114 erstwhile growth stocks were unceremoniously shoved into the Value Index. Then, when growth stocks stumbled, 51 “value” stocks returned to the Growth Index, bringing the present total to 157—and rising! With the huge asset write-downs we're currently seeing, many former growth stocks are now defined as value stocks. So

differences in both management costs and index composition should make us extremely cautious about the application of abstract data to the real world.

In any event, place me squarely in the camp of the contrarians who don't accept the inherent superiority of value strategies over growth strategies. I've been excoriated for my views, but I'm comforted by this reported exchange between Dr. Fama and a participant at a recent investment conference: "What do you say to otherwise intelligent people like Jack Bogle who examine this same data and conclude that there is no size or value premium?" His response: "How far are they from the slide? If I get far enough away, *I don't see it either* . . . Whether you decide to tilt towards value depends on whether you are willing to bear *the associated risk* . . . The market portfolio is always efficient . . . For most people, the market portfolio is the most sensible decision." Amen!

3. RTM in the Market Portfolio

Like Dr. Fama, I believe that *the market portfolio is the most sensible decision*. It takes the need for judgement out of your decision making; it reduces cost; it increases tax-efficiency; it avoids the need to pore over past market data to figure out why the data are what they are. Then, if you accept the data, you have to decide whether or not the patterns it has revealed will persist during the span of years remaining on your investment horizon.

In a temporal sense, the all-market portfolio is consistent with the spiritual argument about the existence of God put forth by Pascal three centuries ago. If you bet God *is*, you live a moral life at puny cost of giving up a few temptations. But that's *all* you lose. If you bet God is *not* and give in to all your temptations, you're forever damned. *Consequences*, Pascal concluded, must outweigh *possibilities*. Similarly in the stock market, if you bet the market is efficient and hold the market portfolio, you'll earn the market's return. But if you bet against it and are wrong, the consequences could be painful. Why would you run the risk of losing, perhaps badly, when the market return, earned by so few over the long-run, is there for the taking?

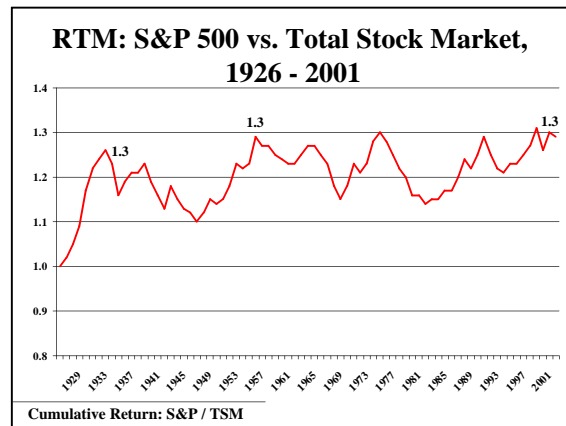
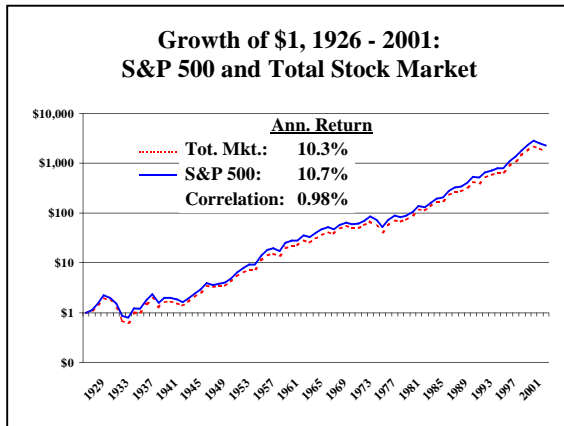
Still, we are faced with the question of how to *define* the market portfolio. When I started the first index mutual fund 27 years ago, the Standard & Poor's 500 Composite Stock Price Index was generally considered to be the appropriate market portfolio. Of course it

represented only 80% of the market, but there were few other indexes from which to choose. (The Wilshire 5000 Total Market Index, dating to 1970, was little-known and untested.) Today, the Wilshire is readily available and widely accepted, its validity as a proxy for the total U.S. stock market confirmed by both CRISP and French-Fama, which take the data as far back as 1926. The three indexes share correlations of something like 0.999, so there can be little doubt about their validity. An all-market index fund is clearly the optimal way to hold the U.S. stock market.

But I must spring to the defense of index funds linked to the Standard & Poor's 500 Index. While the 500 Index has been excoriated by Morningstar ("500 Index Funds Losing Their Allure?"), by *Money* magazine ("Is the S&P 500 Rigged?"), and by *Institutional Investor* ("Is Time Running Out for the S&P 500?"), I would answer those questions, "No," "No" and "No." The criticism has been greatly overdone. Yes, the 500 is heavily weighted by large stocks. But so is the U.S. stock market. Yes, during the great bubble, the 500 was dominated by overpriced technology stocks. But so was the U.S. stock market. Yes, many of the additions of large tech stocks in the 500 in recent years seem, in retrospect, absurd. But these companies were already major factors in the market itself. Yes, its composition changes substantially over the years, but so does the composition of investors' portfolios. And yes, the 500 didn't even *become* the 500 until 1955. From its inception in 1926, it had been comprised of just 90 stocks. In all of these respects, the S&P 500 is a flawed index. But for all of the criticism heaped on it, *the S&P 500 works*.

So now the most important "yes" of all. For all of its real and imagined failings, yes, the S&P 500 has provided a truly remarkable representation of what we now know to be the returns of the total U.S. stock market. What is more, with a 10.7% annual return since 1926 it has actually *outperformed* the broader market's 10.3% return. But yet another telltale chart warns us not to look to the 500 for excess returns. This entire excess arose during 1926-1932. Since then, the 12.2% annual return of the S&P 500 has been *exactly the same* as the return of the total stock market. But overall, the RTM has been remarkably small; almost trivial. Yes, when large-caps dominate, as in most of the 1982-2000 bull market, the S&P 500 will dominate. And yes, when small-caps dominate (as in 1975-1980), the S&P will lag. But since the S&P continues to represent more than 75% of market's capitalization, it would seem a bit naïve to doubt that it will continue to revert to the market mean in the years ahead. One more valuable lesson from our telltale chart: Investors in 500 index funds need feel no compulsion to change horses and switch

to a total market portfolio—especially if it would result in a taxable capital gain. Over the long haul, the S&P 500 will do the same job of matching the market that it has always done.

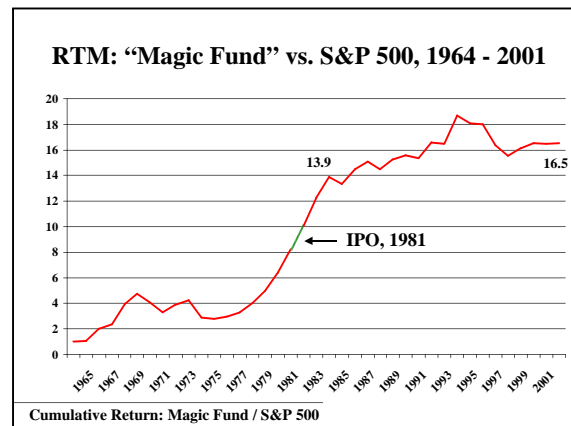
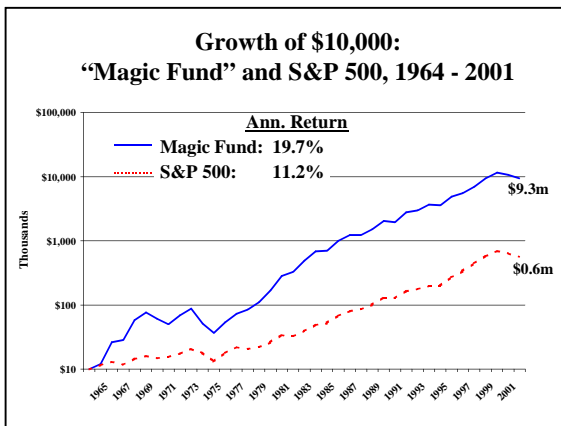


4. RTM in Equity Mutual Funds

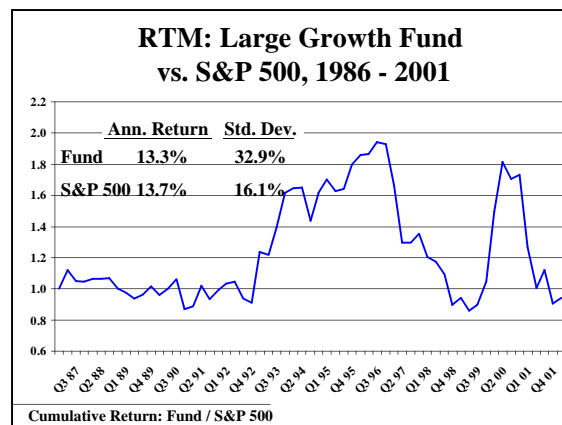
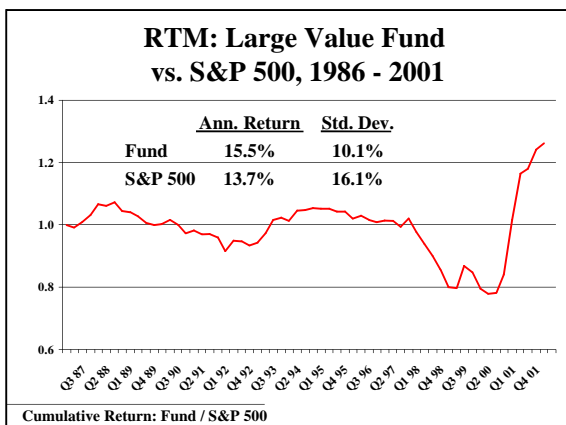
The telltale chart also helps us to observe the important role played by RTM in the returns of mutual funds. How much more we can learn if we look, rather than at a simple summary of a fund’s long-term record, at a chart showing its market-related returns over time! Consider the remarkable record of one of America’s greatest mutual fund success stories. I’ll call it the “Magic Fund,” for its long-term record is probably as good as a record as we can find. Formed in 1964, the annual return of Magic Fund averaged 19.7% per year, fully 8.5 percentage points ahead of the Standard & Poor’s 500 Index. Result: \$10,000 invested at the outset, with all dividends reinvested, would have been worth \$9.3 million(!) as 2002 began. The same investment in the index would have been valued at just \$560,000. It sounds like a marvelous record. And it *is*!

But now let’s convert those figures to an RTM chart. Like so many funds, the record was sensational in the early years when assets were small, and, in this case, before the fund ever became available to the public. From 1964 through 1981, Magic Fund’s return averaged 22% a year, putting to shame the relatively dismal 9% return of the S&P 500. By the time it was first offered to the public in 1981, it had soared to 10 *times* the market return. And in the first five years thereafter, it rose to almost 14 times the market’s return. Even as assets grew into the billions, and the tens of billions, and then over the \$30 billion mark, it continued to prosper, rising to nearly 19 times in 1993. From such lofty heights, of course, RTM becomes a virtual certainty,

and accelerates as the fund gets larger and larger, its portfolio inevitably more and more marketlike. By 1993, the game was over. It lost one-sixth of its edge by 1997, and since then, it has been in lock-step with the S&P 500. As the telltale chart shows us, Magic Fund's return has been virtually identical to that of the Index (14%). Indeed the chart suggests that it has now become a closet index fund, its old magic long gone. But the magic of the telltale *chart* remains, making obvious that the old order hath changeth, more than a dozen years ago.



I'll put up just two more RTM charts to reinforce the message that the telltale chart is almost essential in appraising the records of individual funds. In retrospect such charts might have protected fund investors from the ghastly penalties they paid for adverse fund selection during the late bubble. One is a well-managed, low-cost, value-oriented equity fund. Despite its low-risk strategy, it tracked the bull market nicely in 1986-1997, only to fall back during the technology mania. But when the day of reckoning came, it showed its staunch character. The other pattern is just the reverse: An aggressive growth fund is not particularly impressive during the early part of the period, but then soars as its high-risk strategy pays off in 1991-1995. Attracting large assets, it falters badly during 1996-1998, only to make one last surge in 1999. Then comes the bust that always follows the boom, and the fund collapses again. No, higher risk doesn't necessarily equate to higher returns. Such charts would have helped investors avoid the perils of the recent bubble.



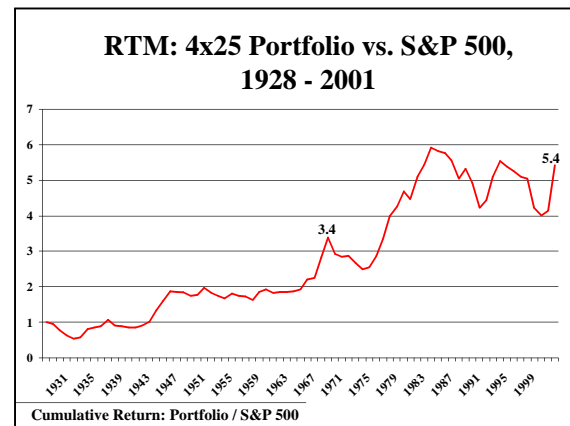
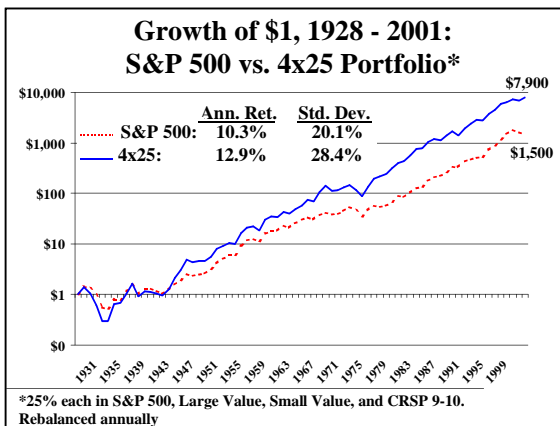
Years ago, I suggested that Morningstar replace its traditional chart with one that included the RTM that is so clearly illustrated by these telltale charts. Alas, the editors decided against it. In fairness, however, by showing quarterly returns relative to peer funds, the revised charts Morningstar now provides *do* capture some of the spirit of the idea. But, ever the optimist (if the seemingly ungrateful recipient of today’s free lunch!), I still hold out hope that Morningstar will reconsider and decide to employ telltale charts on its fund pages.

5. RTM and “Slice and Dice”

“Slice and Dice”—S&D to the Bogleheads—is often talked about not only on the Morningstar website, but among financial engineers, including those at (dare I admit it!) Princeton University. In its simplest form, the idea is to garner excess returns by holding a portfolio that a) adds to the market portfolio those asset classes that are deemed likely to deliver superior returns; b) introduces assets having a low correlation with the stock market; and c) periodically rebalances each asset class to its original weight.

Let’s quickly examine two such portfolios. First, a conventional one, one-quarter each in the S&P 500 Index, large value stocks, small value stocks, and stocks in the smallest two deciles—i.e. a portfolio that overweightes value and small-cap shares. Over history, it has clearly delivered: An annual return of 12.9% vs. 10.3% for the S&P Index, albeit with a 41% higher risk—a standard deviation of 28%, versus 20% for the S&P 500. When we bring the telltale chart into play, however, we see period-dependency and RTM at work. Note, for example, how much of its success came in the 1942-45 bull market, when it rose by 410%(!), nearly three *times* the 150% return of the S&P Index—doubtless a non-recurring event. Note too that the returns of the

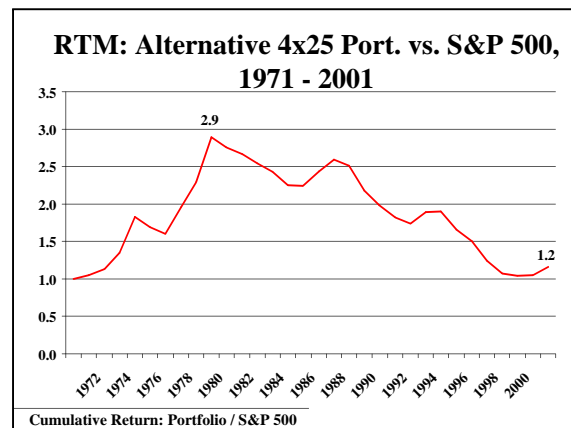
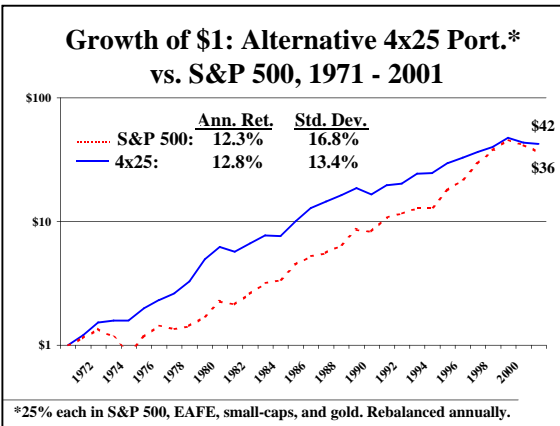
Index and S&D portfolios were virtually identical (13.8% and 14.0% annual return) for the next two decades, ending in 1964. Then the S&D portfolio surges intermittently through 1983, only to falter over the following 17 (!) years (annual return of 13.9%, vs. 16.3% for the S&P)—meaning that there was virtually no gap for 32 years—a pretty long horizon when you think about it. For the full period, of course, the S&D portfolio dominated, but if we simply levered the S&P 500 to equalize its risk with the S&D portfolio, its risk-adjusted return would have risen to 12.4%. Surely a shortfall of 0.5% is mere rounding error in a numerical exercise of this nature.



It is not insignificant, of course that the value/small-cap tilted S&D portfolio we've examined was chosen largely in hindsight, reflecting the all-too-human temptation to rely on sectors that commend themselves by their past success. So, let's take a look at what an investor might have done 30 years ago. We'll hold a 25% S&P 500 position and then add three 25% alternative classes that might have been popular at the time: Small-cap, international, and, because it is the single asset class that most diversifies an equity portfolio (i.e., has the lowest correlation to the stock market of any asset class), gold (it didn't look silly *then!*). Now let's examine the record of this alternative portfolio. Obviously, this chart tells a different story. While the S&D portfolio again wins, it wins by only a modest amount—a 12.8% annual return for the 4x25 portfolio versus 12.3% for the S&P 500. Still, the value of \$1 grew to \$42 in the 4x25 portfolio, compared to \$36 for the Index, a nice payoff for what proved to be, on balance, a smart selection of sectors.

But now see what the telltale chart reveals. First, the entire excess return—and then some!—appears in the first nine years, when gold boomed. Second, strength in the international sector pretty well maintained that gain through 1988, after which international stocks lagged the

S&P 500, often by double-digit amounts, for seven of the next ten years. Yet, despite the recovery of this alternative 4x25 portfolio during the past two years, its cumulative average return of 10% since 1979 pales by comparison with the S&P 500 return of 15%. The telltale chart then, tells us two distinctly contradictory tales about this version of the S&D strategy: Yes, it wins during the first 8 years; no, it loses during the last 22.

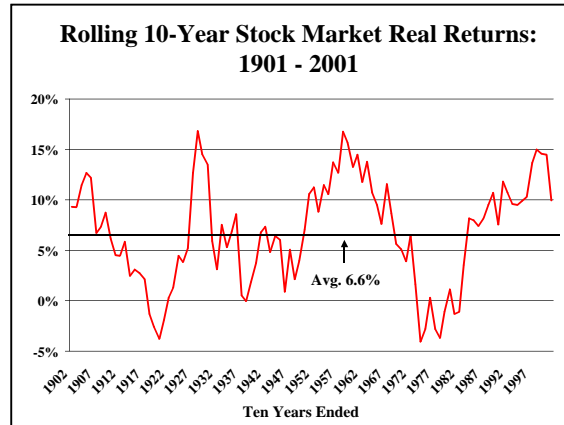


So Slice and Dice is what you make it. Like all other investment strategies ever devised by the mind of man, sometimes it works and sometimes it doesn't. Uncertainty rules. Even if the overall program appears to outpace the Index, over a long inevitably period-dependent span of years, don't forget how little (!) it costs to emulate the total stock market in the real world nor how much (!) it costs to use active funds to fill the S&D boxes, and even to use passive funds to do so. If we take the extra risk into account, there's a real question about whether the game is worth the candle. And even if you don't accept my challenge to S&D, I urge you, before you plunge into a 4x25 portfolio, to put more than 25% in the total market—say 55%. Then put just 15% in the three slices that you dice, thereby taking much of the risk out of your decision. Think then, about a $1 \times 55\% + 3 \times 15\%$ portfolio. If it is true, as Dr. Fama (and most other academics, to say nothing of many, many practitioners) says, that “for most people, the market portfolio is the most sensible decision,” you might as well make the most of it.

6. RTM and The Stock Market

And, yes, reversion to the mean is the rule, not only for stock sectors, for individual equity funds, and for investment strategies that mix asset classes, it is also the rule for the returns provided by the stock market itself. If we go back through a century of stock market history (using Jeremy Siegel's data), it's easy enough to chart it: The real (inflation-adjusted) return on

stocks has *averaged* 6.6% per year, but with considerable extremes. This powerful panorama shows that the highest ten-year annual returns have ranges around 15%, coming in the mid-1900s, the late 1920s, the early 1960s, and the late 1990s. Then, in the late 1910s, the late 1930s, and the late 1970's, returns tumbled to 2% or less, sometimes even negative. Since the market's 15% return in the decade ended in 1998 was the third highest in all history, one can only hope that the full might of RTM does not strike again.²



Why do stocks provide such high returns in some periods and such low—even negative—returns in others? Part of the reason is that the course of our economy is not smooth. We have prosperity and recession, even boom and bust. Those are simply the *economics* of enterprise, and while they *may* be *tamer* than in the past, they are not *tamed*. But there is more: The *emotions* of investors, whose greed leads them to value stocks too dearly at one moment and whose fear leads them to value stocks too cheaply at another. It is this combination of economics and emotions that shapes stock market returns.

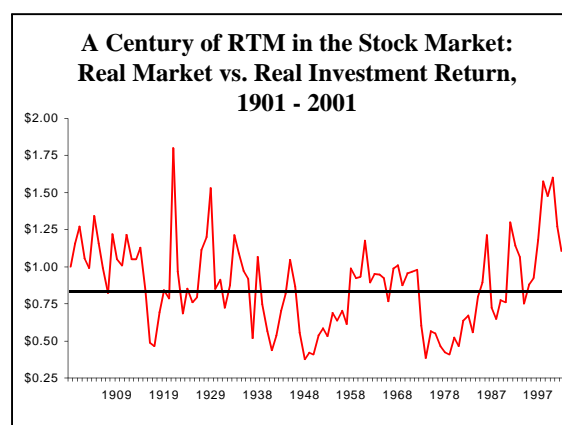
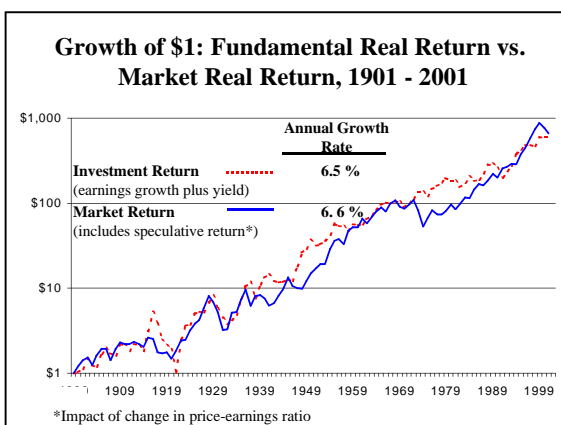
Economics is reflected in *investment* return (earnings and dividends), emotions are reflected in the *speculative* return (the impact of changing price-to-earnings ratios). During the past century, the real investment return was 6.5%, accounting for the lion's share of the market's 6.6% real return, with speculative returns contributing just 0.1%. Clearly, the cumulative investment return is the piper that plays the tune, with earnings and dividends climbing year after year—sometimes faster, sometimes slower, sometimes even falling. While stock market returns

² I've often addressed the issue of expected stock returns during the first decade of the 21st century—at length in *Common Sense* (especially in the appendix that compares 1999 with 1929), in *The First 50 Years*, (especially Chapter 4), and in numerous speeches over the past three years (available on the Bogle Financial Markets Research Center website at Vanguard.com).

dance assiduously to the investment tune, but periodically move above or below, seemingly independently. But the iron law of investing is apparent: *In the short run, speculative return drives the market. In the long run, investment return is all that matters.*

While only our faith that our nation's capitalistic economy will continue to thrive can give us confidence in the long-term course of dividends and earnings, it is not faith but common sense that tells us when stock prices get substantially misaligned with corporate values. When the stock market's cumulative *total* return diverges significantly from the market's *investment* return, then it is only a matter of time until the two converge again. Here is where RTM comes into play. This final telltale chart reflects the division of the cumulative investment return into the actual market return at the end of each year. Result: These aberrations between investment return and market return are dramatically highlighted. Thus, the misalignment of prices with values at the 1929 peak was followed by the crash of the 1930s. On the other hand the low valuations of the late 1940s and early 1950s laid the foundation for the go-go era of the mid-1960s and the "Favorite Fifty" craze of the early 1970s. The resulting bust set the stage for the great bull market that began in August 1982 and ended abruptly in March 2000.

At that point as the chart shows, the disjunction between *market* returns—stock prices—and investment returns—enterprise values—only once before had been wider, so predicting a subsequent decline was no great challenge. But while we may know a lot about *what* will happen in the financial market, we never know *when* it will happen. Indeed the ratio was at 120—a clear warning sign—at the end of 1997. Yet the ratio continued to rise until it hit 150 at the end of 1999, and rose even further to 160 at what proved to be the 2000 peak. Yet despite the subsequent 40% market drop we have so far endured, the ratio remains at 110, still above the baseline. Where it goes next, *nobody* knows. But history and the iron rule of RTM strongly suggest caution, since valuations remain high today. The future will depend on subsequent earnings growth. So we'd best hope American business turns its attention away from the ghastly financial manipulation of recent years—focused on hyping stock *prices* in the short-term—and to its traditional character—focusing on building corporate *values* over the long-term. That's a far harder job, for innovation, productivity, efficiency, economy—yes, and leadership and character too—are tough standards to measure up to in a competitive global economy. But it is what our society must demand of our corporate stewards.



This Too Shall Pass Away

The message of the telltale chart is universal. Unlike the regular, louder, ever more distinct pulsations of the telltale heart in Poe’s frightening story, however, reversion-to-the-mean in the financial markets is irregular and unpredictable—sometimes fast and sometimes slow, sometimes distinct and sometimes almost invisible. Just when we despair of its universality it strikes again. And so there is always hope—today, for those who await the almost inevitable recovery in stock prices. But I remind you that while we may know *what* will happen, we never know *when*. So rather than relying on hope—never a particularly good idea in the stock market—rely on an asset allocation that focuses not only on the probability of reward, but the consequences of risk.

It occurs to me that the best advice I can leave you with today came in my first book, written ten years ago. It was a *Caveat Emptor* entitled, “This Too Shall Pass Away,” the advice given to an Eastern monarch that would be “true and appropriate in all times and situations.” I described it as wise advice for investors in the financial markets, who “feel richer when the market rises and poorer when it declines . . . although the underlying value of the business enterprises that comprise the market may have changed not a whit.” I cautioned investors not to give way to a bull market atmosphere and become infected with the enthusiasm and greed of the great public, any more than *you* should give way to a bear market atmosphere and become infected with the negativism and fear displayed by the great public. Your success in investing, I

wrote, “will depend on your ability to realize, at the heights of ebullience and the depths of despair alike that ‘This too shall pass away.’”

I can hardly wait!

Note: The opinions expressed in this speech do not necessarily represent the views of Vanguard’s present management.
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