PORTFOLIO
MANAGEMENT
RESEARCH
By With Intelligence

the journal of PORTFOLIO management

volume 24
number 1

FALL 1997

jpm.pm-research.com

Bull Market? Bear Market?
Should you really care?

Robert D. Arnott and Peter L. Bernstein

research affiliates™

Bull Market? Bear Market?

Should you really care?

Robert D. Arnott and Peter L. Bernstein

Too much of what we hear about bull and bear markets and their true meaning for investor wealth skims the surface without fathoming the fundamental truths that lie beneath. For most long-term investors, bull markets are not nearly as beneficial, and bear markets are not nearly as damaging, as most investors seem to think.

Our industry is focused on the goal of achieving superior returns for our clients and, ultimately, the beneficiaries of our clients' portfolios. Clients expect gains of 1% to 2% or more above their benchmarks, and managers risk client dissatisfaction if they fail to achieve those goals. The benchmarks themselves are also expected to deliver strong real returns, over and above inflation and over and above the long-term growth of the obligations that the portfolio is designed to serve; many investors expect real inflation-adjusted returns of 5% on a long-term basis.

The Ibbotson data base encourages us to believe that equities can deliver at least 6% real returns reliably and that a well-crafted balanced portfolio of equities and fixed-income can deliver 5% real. While careful analysis of these data suggests that such expectations are too lofty, many investors expect no less. Extended periods of double-digit returns, as we have seen over the past twenty-two years, are certainly plausible — one thing that is certain about our business is that anything can happen — but what about the decades ahead or, for those of us who aspire to immortality, the centuries ahead?

Two questions and several possible answers relat-

ROBERT D. ARNOTT is president and chief executive officer of First Quadrant L.P. in Pasadena (CA 91101).

PETER L. BERNSTEIN is president of Peter L. Bernstein, Inc., in New York (NY 10022).

ing to real returns in Exhibit 1 can help to illustrate the "miracle of compounding." We offer these questions as more than curiosities or puzzlers. They lead to some unusual reflections on the nature of portfolio wealth and on the meaning of bull and bear markets. Much of the conventional wisdom about investing centers around continued 5% (or higher) real returns, which are simply not sustainable in the very long term. If one expects only small long-term real returns, which are more realistic than current expectations, then a deeper understanding of the impact of bull and bear markets becomes a great deal more important.

WHAT IS PORTFOLIO WEALTH?

Portfolio wealth is the ability of a pool of assets to support the owner's obligations, for as long as those obligations are expected to persist.

Ultimately, any portfolio has a life cycle. A pension fund seeks to serve pension obligations for retired and active employees through the date of death of the last current active employee. For most pension portfolios, if one were to value-weight these liabilities, this gives a "liability duration" of around fifteen years (keep in mind that duration is the value-weighted time to a payment, which means that the duration generally cannot exceed the reciprocal of the yield).

For the eighty-year-old, with a life expectancy of around eight years, the corresponding "liability duration" is just under four years, assuming this individual wants to spend the money on a straight-line basis. For the twenty-year-old, with expected real returns of 5%, the "duration" served by this portfolio might well approach the theoretical maximum (at this yield) of twenty years. Finally, for university endowments and foundations, the assets may well be intended to serve a perpetuity, with a duration that is, by definition, the reciprocal of the expected real returns.

THE DIMENSIONS OF PORTFOLIO WEALTH

Portfolio wealth is not the nominal assets owned by an individual, a pension, a corporation, or a foundation. In 1900, $500,000 meant a great deal more than it means today. The crux of the issue here is what your wealth will buy you. Liabilities enter into the picture as well. Someone who owns a $500,000 house with a $400,000 mortgage is less wealthy than a person with a $500,000 unencumbered liquid portfolio.

More important than the purchasing power of one's portfolio wealth (net of liabilities) is the *net present value* of that purchasing power over time. It is an irony, but a hard truth, that an eighty-year-old man with $500,000 is far "wealthier" than a twenty-year-old woman with $500,000. The eighty-year-old can choose to spend the principal over his remaining life expectancy, and could actually buy an annuity that would pay nearly $100,000 per year for life, affording

EXHIBIT 1
QUIZ ON LONG-TERM RETURNS

Question 1: If you had invested a single dollar in the year 4 B.C. at 5% compounded annually, how much wealth would you have in 1997?*

a. Your own weight in gold.
b. Enough to buy Bill Gates's new $40 million house from him.
c. Enough to buy all of Microsoft, including Bill's modest stake.
d. Enough to buy the GDP of the United States, with room to spare.

Answer: d...and then some. $1, growing at 5% per year for 2001 years, becomes roughly 2,510,000,000,000,000,000,000,000,000,000,000,000,000,000, or $\$2.51 \times 10^{42}$. This buys 2.71×10^{41} grams of gold. This much gold would be a sphere some 218 *million* miles in diameter, growing larger by 10,000 miles *per day*. Only about a 1.5% real return would be needed to purchase the entire United States GDP.

Question 2: If you had invested at a 5% real return the apocryphal $24 of beads and trinkets with which the Dutch acquired Manhattan Island in the year 1630, would you today have enough to buy:**

a. A solid gold Rolex.
b. A large mansion overlooking the Hudson River.
c. The Plaza Hotel *and* the Ritz Carlton Hotel, overlooking Central Park.
d. The entire borough of Manhattan, including all the development and construction that's taken place in the past 367 years.

Answer: c. At 5% real growth, from 1630 to 1997, you would now have $25 billion. You could buy both hotels with one year's *interest* on this money! But, you would need a healthier 6% real return to buy all of Manhattan.

*Since U.S. dollars were not yet in existence, let's presume that we begin with 1/350th of an ounce of gold, roughly the size of the head of a pin.
**$24, when U.S. dollars first came into existence, would have bought 1.2 ounces of gold, now worth $420.

him the ability to enjoy a rather nice lifestyle. Absent considerations of other earned income, the twenty-year-old woman has to ration the $500,000 over a much longer life expectancy; she can spend only a bit over $25,000 per year, indexed to inflation, and then only if she can reliably earn 5% real returns on the money over the coming decades (a daunting challenge — see Exhibit 2 on real returns).

DO BULL AND BEAR MARKETS MATTER?

If the investor is a university endowment, engaged in a building program that will consume half of the university endowment, bull and bear markets *absolutely* matter: A bear market could obliterate the principal that is needed to pay for the buildings. For most categories of institutional investors, the obligations bear more resemblance to a perpetuity. The important point for the true long-term investor, seeking to build portfolio wealth to serve a spending series that is intended to be a perpetuity, is that *bull and bear markets don't affect possible prospective real spending very much.*

A bull market raises the asset value, but delivers a proportionate reduction in the prospective real yields that the portfolio can deliver from that point forward. A bear market leads to a reduction in portfolio value, which is roughly offset by an increase in the prospective real yields of the portfolio, ceteris paribus. On rare occasions, as when the entire financial system was on the verge of collapse in the early 1930s, prospective real dividends were sinking along with securities prices, but even then by a far lesser amount.

Only *relative* performance among the alternative investment assets makes a material difference. If stocks tumble and bonds do not, and if one is invested in stocks, then prospective long-term buying power (portfolio wealth) has been lost. If bonds soar and stocks do not, and one is invested in stocks, then missing the bond rally incurs a real opportunity cost.

Bull and bear markets matter only to the extent that 1) the obligations served by a portfolio have a relatively near-term horizon, or 2) there is a dispersion in returns across markets, with an investor riding with the best or worst of these markets. This is another reason asset allocation is so critically important.

What, then, is "portfolio wealth" for the endowment or foundation that seeks to serve a perpetual obligation? Here the answer has to do with the anticipated purchasing power *as a perpetuity* of the portfolio. The emphasis is important — what follows applies only to a portfolio that is designed as a perpetuity.

If markets are high and the prospective real returns are only 3%, the purchasing power of the portfolio is not large relative to the nominal assets in the portfolio. Indeed, 5% spending would gradually deplete the real value of the portfolio over time. Conversely, if the market has recently tumbled, and the prospective real returns are in the 6% range or higher, as was the case in 1982 and 1974, the purchasing power of the portfolio can actually *increase* from that point forward, even if 5% a year is consumed by spending of one kind or another.

In effect, when market prices are down, signifying that investors are uncertain about the future and are pricing assets to reflect their *demand* for 5% or higher real returns, foundation spending can then be reduced, within the guidelines of current law, to a level that the assets can sustain without invading the real value of the corpus of the portfolio. Thus, because of the improved *prospective* returns, bear markets can actually be more desirable than bull markets for the "perpetuity investor" (endowments, foundations, and twenty-year-olds). Certain categories of family trusts see essentially the same effect, and are actually just as well off after a bear market as they are after a bull market.

The institutional investors that are most similar to a true perpetuity are foundations. The individuals who fund foundations usually want those assets to act as an immortal memorial to their lives and careers. As foundations have to spend at least 5% of their assets to remain tax-exempt, the managers of foundations should actually be hoping for bear markets!

Following a bull market, building a portfolio for the future with real returns of 5% or more is extremely

EXHIBIT 2
REAL RETURNS

Question: During the nearly 200% bull market between 1991 and 1996, how much did the real dividend level generated by the S&P 500 grow?

a. 100%, or 12.5% per year.
b. 50%, or 7% per year.
c. 25%, or 3.7% per year.
d. 10%, or 1.6% per year.

Answer: d. Despite 14% annual real returns on stocks, the *real* income stream produced by the S&P 500 rose only 1.6% per year between 1991 and 1996.

difficult. This means that the 5% spending rule requires larger spending than the portfolio is likely to sustain without eroding the real value of the corpus of the portfolio.

The administrators of the foundation, who often derive satisfaction from the power accorded them by their ability to grant money, may enjoy disbursing the rising spending stream. But, in fact, what was intended by the founders as a perpetuity will then become a "wind-down operation," with assets eventually dissipated.

After a bear market, the administrators of the foundation may be disappointed at the reduced spending triggered by a bear market, but real returns of 5% or more in the future are that much easier to achieve. Spending can be reduced to a level that is now sustainable over time. The real value of the corpus can actually grow, even after 5% spending, increasing the likelihood that the foundation portfolio will last for generations to come. The originators of a foundation, their hope for a perpetuity subverted when spending exceeds sustainable real returns in a bull market, might well cheer the arrival of a bear market. Indeed, the longer the market stays down, the better!

IF BULL AND BEAR MARKETS DON'T MATTER...WHAT DOES?

For most categories of institutional investors, bull and bear markets matter relatively little. To be sure, an investor would ideally like to see a bull market late in the life of a portfolio, when the investor is more interested in spending the corpus or principal of the portfolio (disinvesting) than in seeing prospective strong real future returns. For most categories of long-term investors, however, this is not an immediate concern. For investors who want long-term prospective rates of return to improve, what matters is whatever can boost the prospective future real purchasing power of the portfolio.

What can do this for an investor? Alpha. Or, more specifically, alpha measured relative to whatever portfolio bears the closest resemblance to the obligations served by that portfolio (typically, liabilities). In other words, a positive alpha boosts portfolio wealth by boosting the prospective real income stream that the portfolio generates in the future, while a negative alpha does the opposite.

What categories of alpha matter? Alpha can be separated loosely into three categories: asset allocation, issue selection, and arbitrage. Naturally, the lines separating the three categories are indistinct, and there are many avenues that span more than one category. Asset allocation alpha occurs as a consequence of any asset allocation stance that differs from the liabilities or net present value of future portfolio obligations.* Issue selection and arbitrage strategies are other avenues for alpha.

Alpha is obviously a two-edged sword. The quest for positive alpha carries with it a risk of negative alpha. Negative alpha *reduces* future real yields, just as positive alpha increases it.

The key point here is a simple one. Bull and bear markets matter relatively little to the long-term investor because prospective real yields rise (or fall) with any market decline (or rally), all else held equal. Alpha, on the other hand, has a direct impact on prospective future real yields.

CONCLUSION

In short, portfolio wealth is not simply assets. Nor is it the simple tally of assets less liabilities that convention prescribes. That simplistic definition of wealth might be termed "current wealth."

The magnitude of the real income stream that assets can purchase is by far the more important measure of portfolio wealth for most categories of investors, whether individuals, endowments, foundations, or pensions. This measure of portfolio wealth is only tangentially related to current net worth. To the extent that the current net worth rises or falls with the vagaries of the capital markets, the real income stream that that portfolio can generate over the long run to perpetuity often barely moves.

At the nadir of the Great Depression, stocks had fallen 90%, but the real inflation-adjusted dividends that a stock portfolio could produce, assuming reinvestment of dividends, were down only 25%. For the more prudent balanced investor, with a fifty-fifty stock-bond mix, the asset value of the portfolio was down 56%, but the *real* income generated by the portfolio was down only 8% — and this during the greatest bear market in the 200-year history of the United States.

ENDNOTE

*More specifically, asset allocation departures from the asset mix that represents the best-fit or closest replication of the obligations served by the portfolio will generate alpha. This can be *structural* alpha as a result of policy decisions that differ from the liability-matching asset mix, or it can be a consequence of active *tactical* asset allocation decisions.