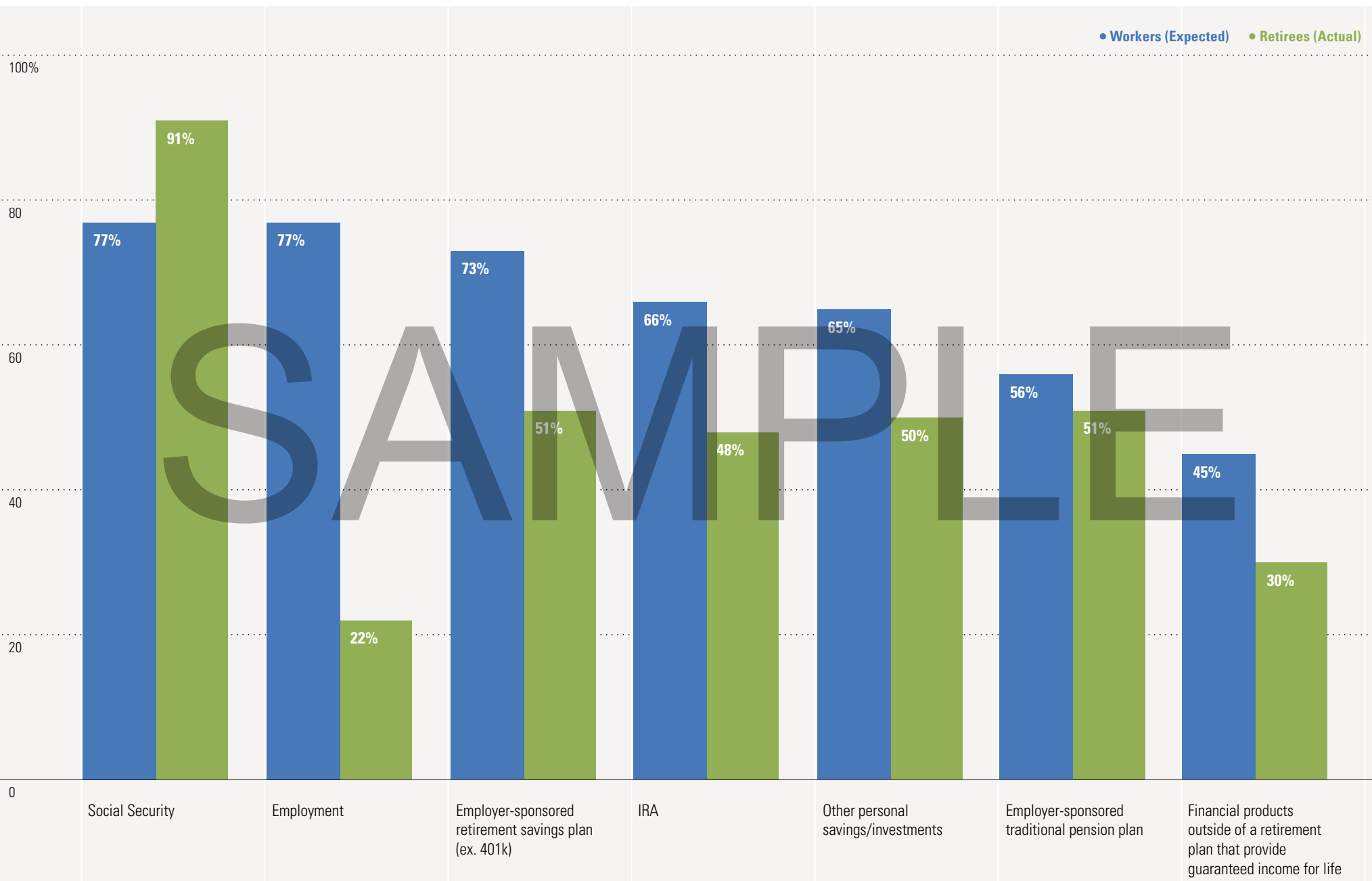


# Personal Savings Expected to Play a Larger Role in Retirement

Survey of retirement income sources



Source: Employee Benefit Research Institute, 2011 Retirement Confidence Survey, March 2011.

## Personal Savings Expected to Play a Larger Role in Retirement

Survey of retirement income sources

The sources from which current workers *expect* to receive their income during retirement differ from the sources from which current retirees *actually* receive their income.

Source: Employee Benefit Research Institute, 2011 Retirement Confidence Survey, March 2011.

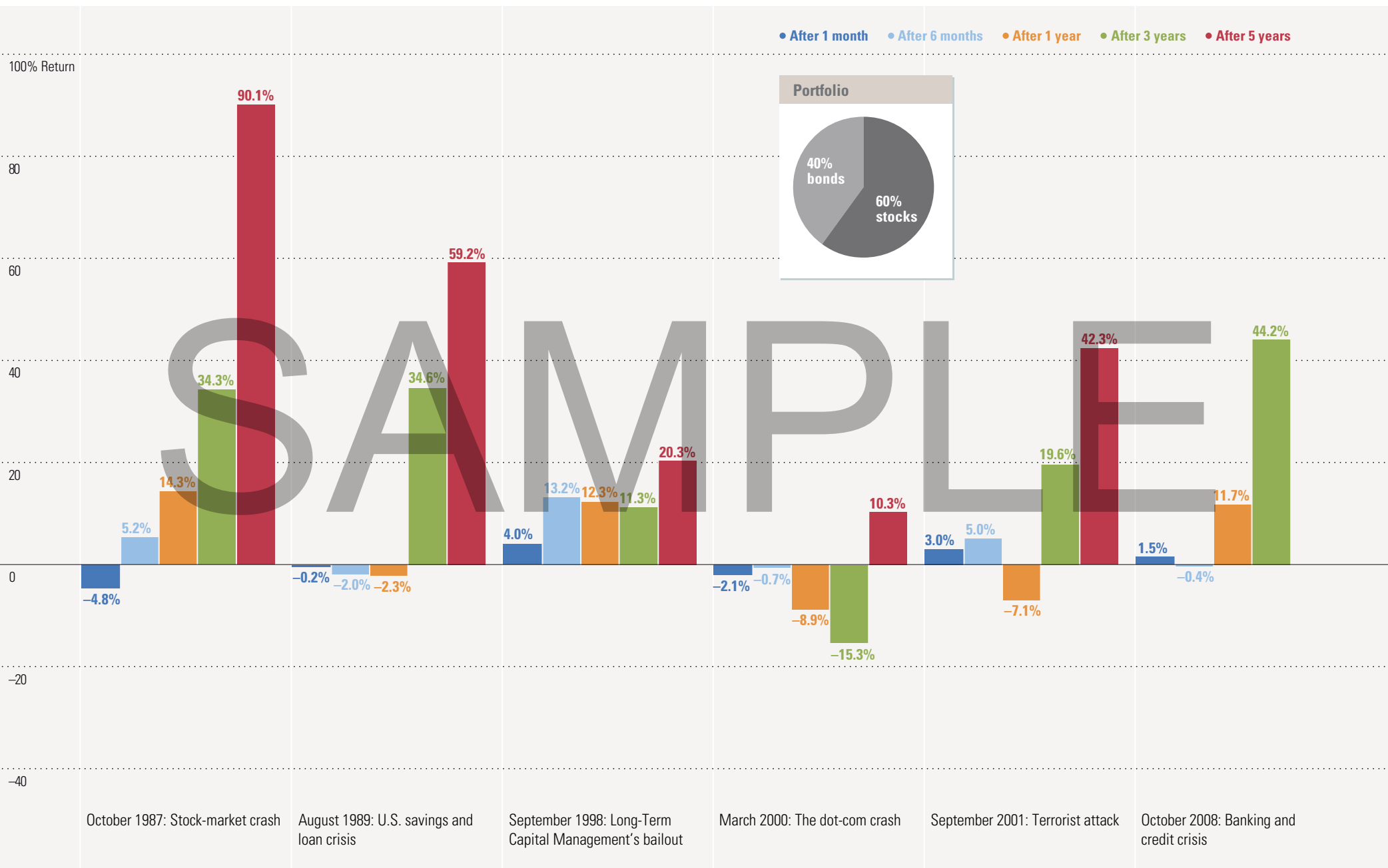
The graphs illustrate that while only 50% of current retirees utilize their personal savings for retirement income, 65% of current workers anticipate personal savings to play a role during retirement. 73% of workers expect to receive retirement income from an employer-sponsored retirement savings plan, such as a 401k, while only 51% of those already retired actually receive income from such a source. A whopping 91% of retirees say they derive some of their income from Social Security, as opposed to only 77% of current workers who expect to rely on this source.

Traditionally, Social Security and company pension plans were primarily depended on to fund an individual's retirement. As the retirement income gap grows larger, however, the current belief is that these established retirement income sources will no longer play as prominent a role. Personal savings, as well as employment during retirement, are expected to play a much larger role funding future retirement needs.

SAMPLE

# U.S. Market Recovery After Financial Crises

Cumulative return of balanced portfolio after various events



Past performance is no guarantee of future results. Returns reflect the percentage change in the index level from the end of the month in which the event occurred to one month, six months, one year, three years and five years after. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.



## U.S. Market Recovery After Financial Crises

Cumulative return of balanced portfolio after various events

Stock prices suffer during financial crises. However, a balanced portfolio can help mitigate some of the risk. This image illustrates the cumulative returns of a balanced (60% stock/40% bond) portfolio after six historical U.S. financial crises. In the short term, uncertainty from such external shocks can create sudden drops in value. For example, the balanced portfolio posted a negative return in the month following three of the six analyzed crises. Over longer periods of time, however, returns were much more attractive, and investors who stayed the course reaped considerable rewards.

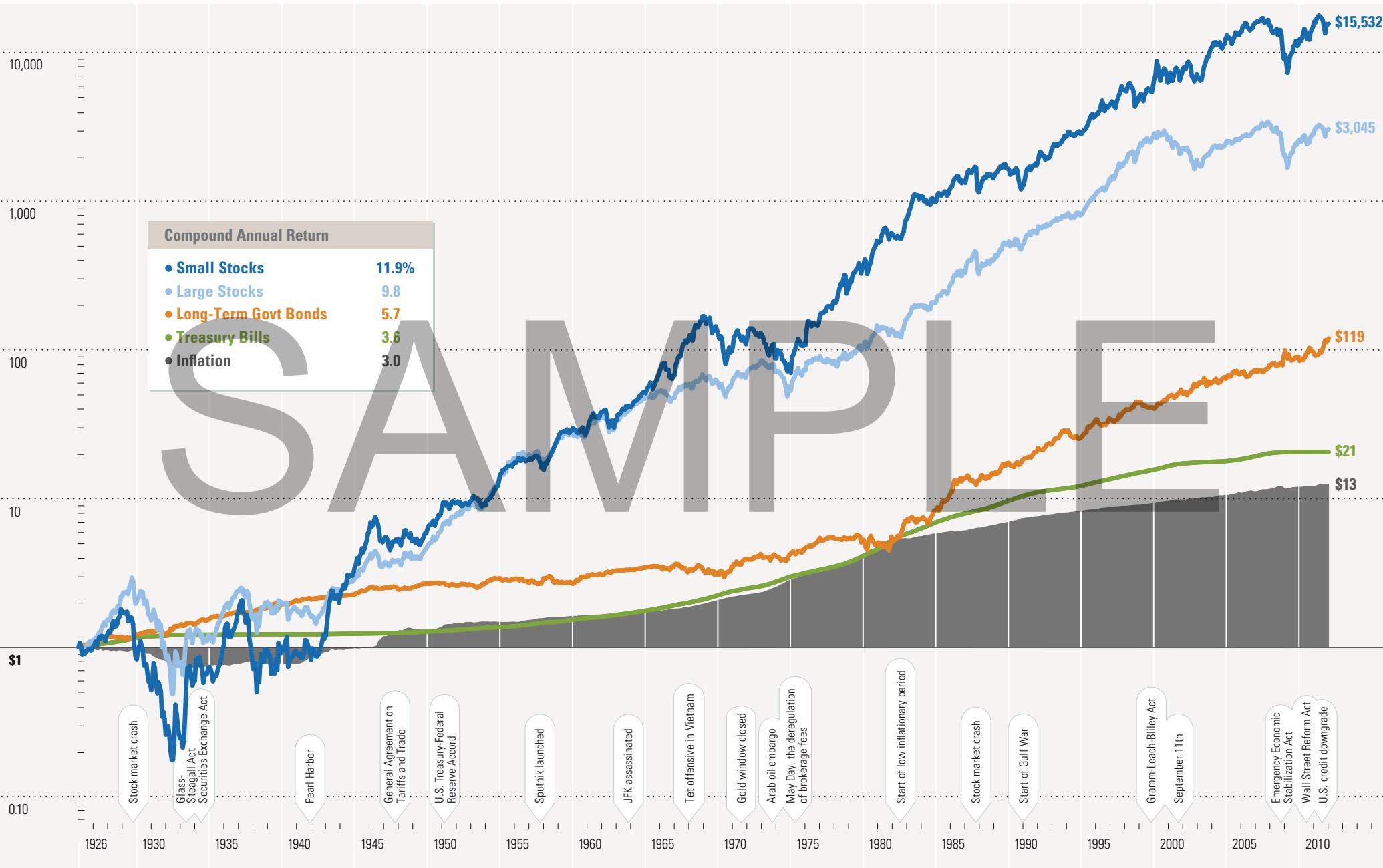
Fear and uncertainty might lead investors to sell their investments during tough times, putting downward pressure on prices. Trading because of these emotions can be detrimental to a portfolio's value. By selling during downward price pressures, investors might realize short-term losses. Furthermore, this is compounded as investors wait and hesitate to get back into the market, possibly missing some or all of the potential recovery. The lesson here is that patience can pay dividends.

Diversification can also limit losses during turbulent market conditions. One of the main advantages of diversification is reducing risk over the long run, not necessarily increasing return. While stocks offer the potential for higher returns, the downside risk can also be extreme. A diversified portfolio can help mitigate such extreme swings in value.

Government bonds are guaranteed by the full faith and credit of the U.S. government as to the timely payment of principal and interest, while returns and principal invested in stocks are not guaranteed. Stocks have been more volatile than bonds. Diversification does not eliminate the risk of experiencing investment losses.

Source: Stocks are represented by the Standard & Poor's 500<sup>®</sup>, which is an unmanaged group of securities and considered to be representative of the stock market in general. Bonds are represented by the 20-year U.S. government bond. Calculations are based on monthly data. Data assumes reinvestment of all income and does not account for taxes or transaction costs. For the U.S. savings and loan crisis, August 1989 was chosen because that was the month the Financial Institutions Reform, Recovery and Enforcement Act of 1989 was signed into law. For Long-Term Capital Management, September 1998 was chosen because that was the month the hedge fund was bailed out by various financial institutions. For the banking and credit crisis, October 2008 was chosen because that was the month the Emergency Economic Stabilization Act was signed into law.

SAMPLE



Past performance is no guarantee of future results. Hypothetical value of \$1 invested at the beginning of 1926. Assumes reinvestment of income and no transaction costs or taxes. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## Ibbotson SBBI

Stocks, Bonds, Bills, and Inflation 1926–2011

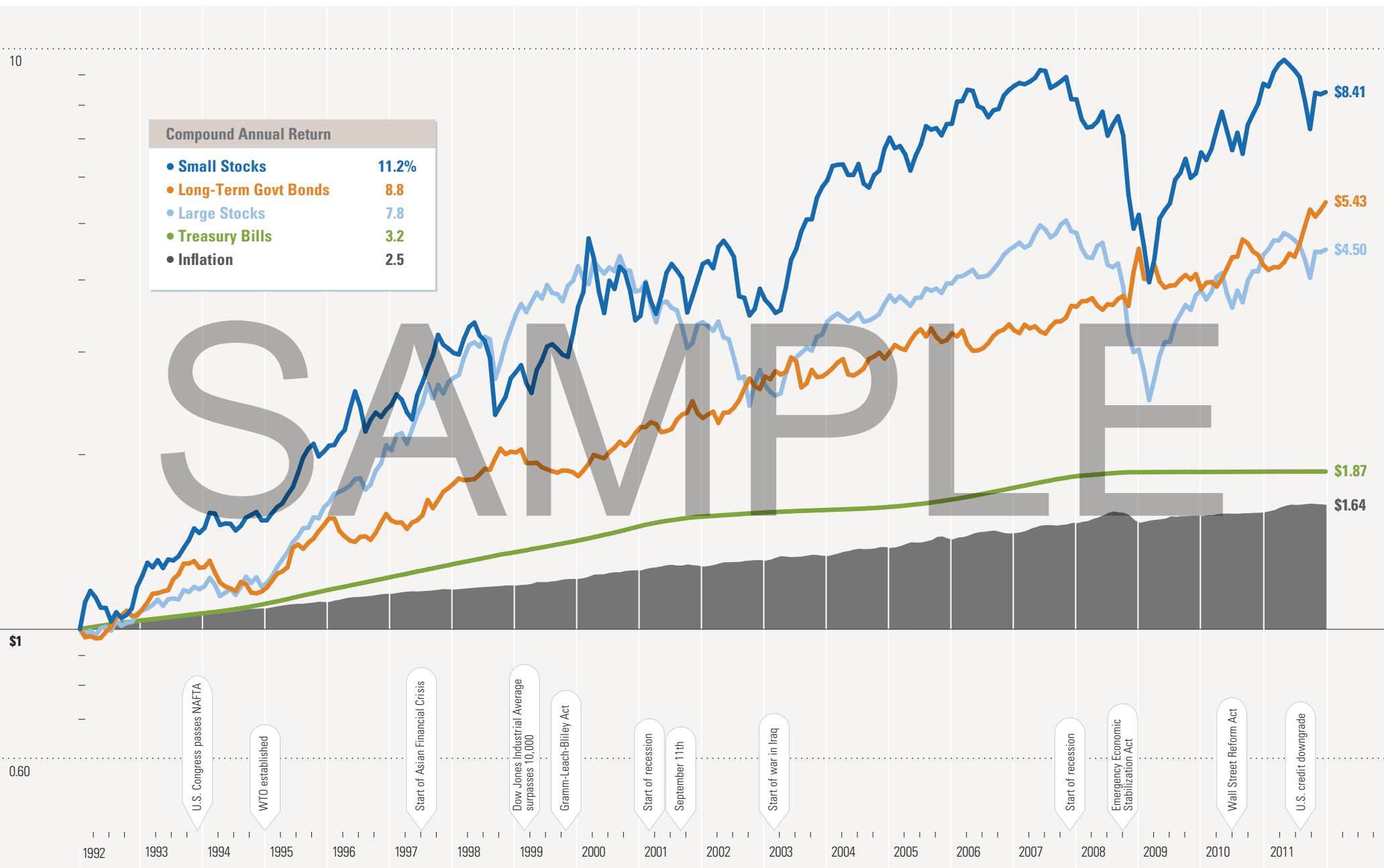
An 86-year examination of past capital market returns provides historical insight into the performance characteristics of various asset classes. This graph illustrates the hypothetical growth of inflation and a \$1 investment in four traditional asset classes over the time period January 1, 1926 through December 31, 2011.

Large and small stocks have provided the highest returns and largest increase in wealth over the past 86 years. As illustrated by the image, the fixed-income investments provided only a fraction of the growth provided by stocks. However, the higher returns achieved by stocks are associated with much greater risk, which can be identified by the volatility or fluctuation of the graph lines.

Government bonds and Treasury bills are guaranteed by the full faith and credit of the United States government as to the timely payment of principal and interest, while stocks are not guaranteed and have been more volatile than the other asset classes. Furthermore, small stocks are more volatile than large stocks, are subject to significant price fluctuations and business risks, and are thinly traded.

Source: Small Stocks—represented by the fifth capitalization quintile of stocks on the NYSE for 1926–1981 and the performance of the Dimensional Fund Advisors (DFA) U.S. Micro Cap Portfolio thereafter; Large Stocks—Standard & Poor's 90<sup>®</sup> index from 1926 through February 1957 and the S&P 500 index thereafter, which is an unmanaged group of securities and considered to be representative of the stock market in general; Long-Term Government Bonds—20-year U.S. Government Bond; Treasury Bills—30-day U.S. Treasury Bill; Inflation—Consumer Price Index.

# SAMPLE



Past performance is no guarantee of future results. Hypothetical value of \$1 invested at the beginning of 1992. Assumes reinvestment of income and no transaction costs or taxes. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## Ibbotson SBI

Stocks, Bonds, Bills, and Inflation 1992–2011

Examining the past 20 years of capital market returns can provide historical insight into the performance characteristics of various asset classes. This image illustrates the hypothetical growth of a \$1 investment in four traditional asset classes, as well as inflation, over the time period January 1, 1992 through December 31, 2011.

Over a 20-year time period, one would expect stocks to produce greater returns and higher ending wealth values than fixed-income investments. Small stocks were, indeed, the top performers. However, due to the two major crises and associated stock market declines experienced during the “lost decade,” large stocks performed more weakly than bonds. Also, stocks are generally associated with much greater risk, which can be identified by the volatility or fluctuation of the graph lines.

Government bonds and Treasury bills are guaranteed by the full faith and credit of the U.S. government as to the timely payment of principal and interest, while stocks are not guaranteed and have been more volatile than the other asset classes. Furthermore, small stocks are more volatile than large stocks, are subject to significant price fluctuations and business risks, and are thinly traded.

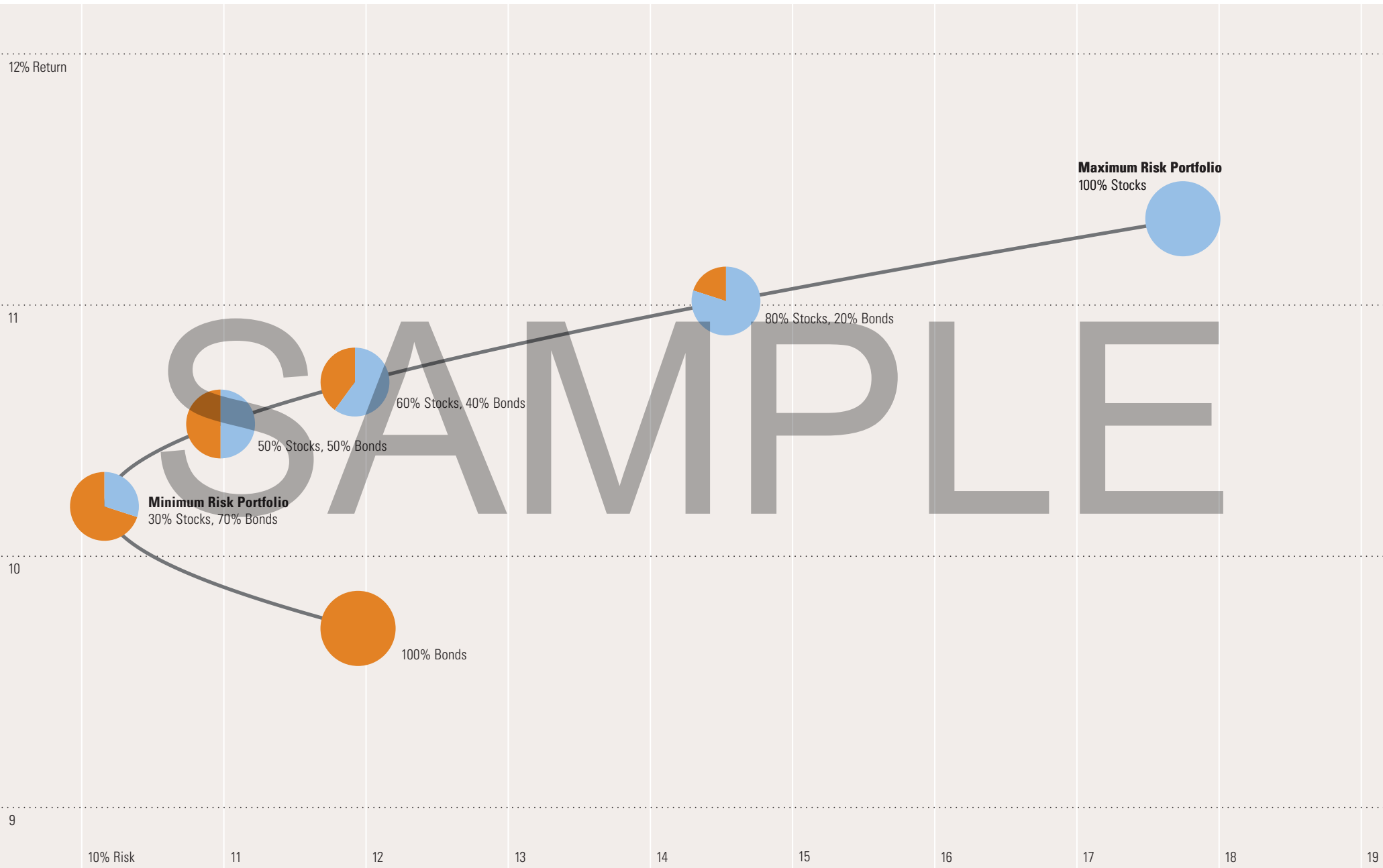
Source: Small Stocks—represented by the performance of the Dimensional Fund Advisors (DFA) U.S. Micro Cap Portfolio; Large Stocks—Standard & Poor’s 500®, which is an unmanaged group of securities and considered to be representative of the stock market in general; Long-Term Government Bonds—20-year U.S. Government Bond; Treasury Bills—30-day U.S. Treasury Bill; Inflation—Consumer Price Index.

# SAMPLE



# Stocks and Bonds: Risk Versus Return

1970–2011



Past performance is no guarantee of future results. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## Stocks and Bonds: Risk Versus Return

1970–2011

An optimal portfolio is simply the mix of assets that maximizes return at each level of portfolio risk and minimizes risk at each level of portfolio return. The efficient frontier is the line that connects all optimal portfolios across all levels of risk. This image illustrates an efficient frontier for all combinations of two asset classes: stocks and bonds.

Although bonds are considered less risky than stocks, a portfolio composed solely of bonds is not, in fact, the Minimum Risk Portfolio. As asset classes, stocks and bonds are not highly correlated. That is, they tend to move independently of each other. Sometimes stock returns may be up while bond returns are down, and vice versa. Because of these offsetting movements, adding just a small amount of stocks to an all-bond portfolio actually reduces the overall risk of the portfolio. However, any additional allocation to stocks beyond this minimum point causes both the risk and return of the portfolio to increase.

Diversification does not eliminate the risk of experiencing investment losses. Risk and return are based on annual data over the period 1970–2011 and are measured by standard deviation and arithmetic mean, respectively. Standard deviation measures the fluctuation of returns around the arithmetic average return of the investment. The higher the standard deviation, the greater the variability (and thus risk) of the investment returns. Government bonds are guaranteed by the full faith and credit of the United States government as to the timely payment of principal and interest, while stocks are not guaranteed and have been more volatile than bonds. The data assumes reinvestment of all income and does not account for taxes or transaction costs.

Source: Stocks—Standard & Poor's 500®, which is an unmanaged group of securities and considered to be representative of the stock market in general; Bonds—20-year U.S. Government Bond.

# SAMPLE

# Risk of Stock Market Loss Over Time

1926–2011



Past performance is no guarantee of future results. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## Risk of Stock Market Loss Over Time

1926–2011

Though stocks are often considered risky investments, the long-term gains of the overall market can offset short-term losses for investors with longer holding periods. Investors can expect to experience losses from time to time when investing in the stock market. With a long investment horizon, however, stock-market losses could potentially be recouped.

This graph illustrates the realized losses in the stock market for one-, five-, and fifteen-year holding periods. Of the 86 one-year periods from 1926–2011, 24 resulted in a loss. However, with holding periods of five years, only 12 of the 82 overlapping five-year periods resulted in a loss. Moreover, none of the 72 overlapping fifteen-year periods from 1926–2011 resulted in losses. Keep in mind that past performance is no guarantee of future results. Holding stocks for the long term does not ensure a profitable outcome and investing in stocks always involves risk, including the possibility of losing the entire investment.

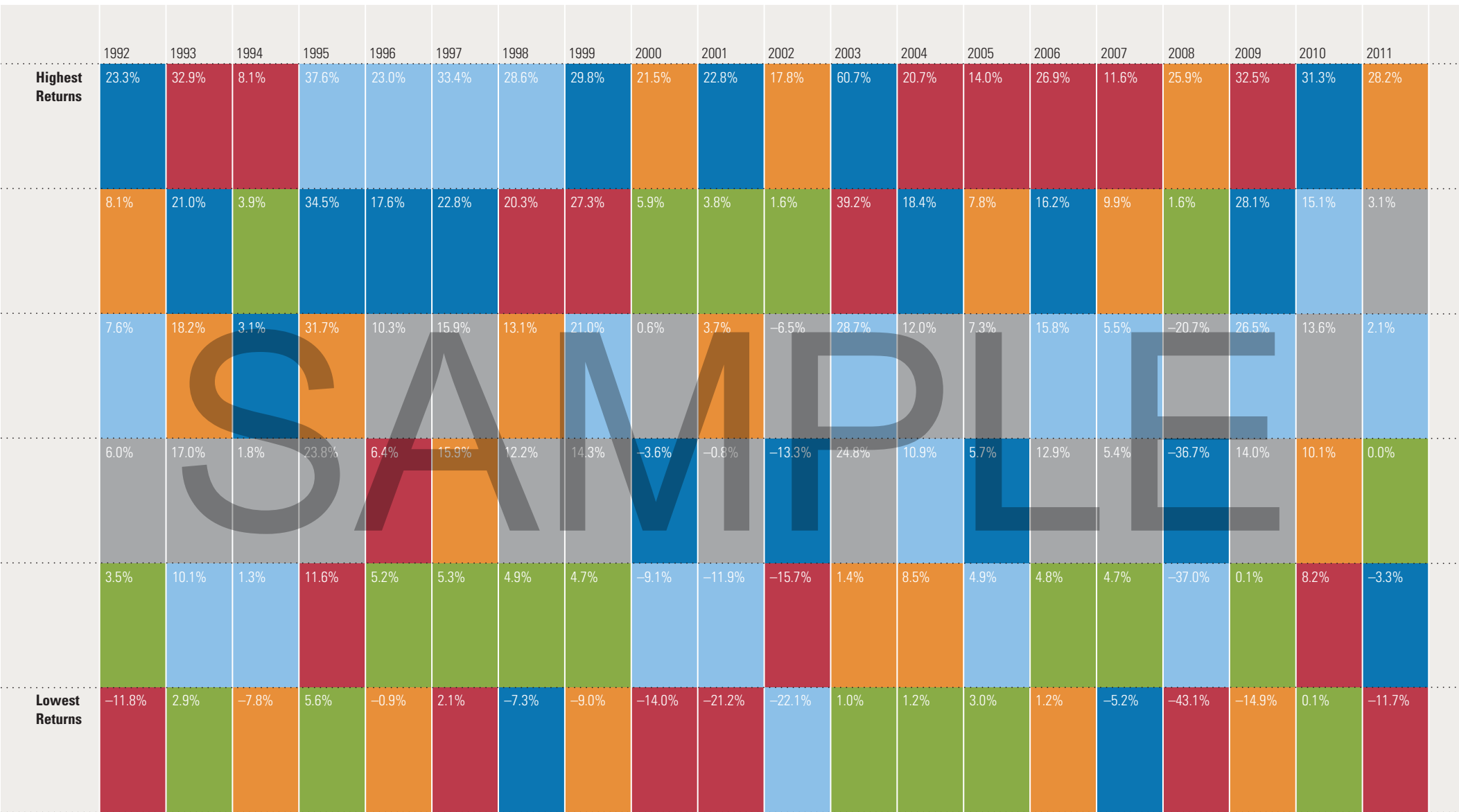
Stocks are not guaranteed and are more volatile than other asset classes. The data assumes reinvestment of all income and does not account for taxes or transaction costs.

Source: Large Stocks—Standard & Poor's 90® index from 1926 through February 1957 and the S&P 500 index thereafter, which is an unmanaged group of securities and considered to be representative of the stock market in general.

# SAMPLE

# Asset-Class Winners and Losers

Annual asset-class returns from highest to lowest



● Small Stocks
● Large Stocks
● Long-Term Government Bonds
● Treasury Bills
● International Stocks
● Diversified Portfolio

Past performance is no guarantee of future results. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.



## Asset-Class Winners and Losers

Annual asset-class returns from highest to lowest

It is impossible to predict which asset class will be the best or worst in any given year. The performance of any given asset class can have drastic periodic changes.

This image illustrates the annual performance of various asset classes in relation to one another. In times when one asset class dominates all others, as was the case for large stocks in the late 1990s, it is easy to lose sight of the fact that historical data shows it is impossible to predict the winners for any given year.

Investors betting on another stellar performance for large stocks in 1999 were certainly disappointed, as small stocks rose from the worst-performing asset class in 1998 to the best-performing one in 1999. Similarly, international stocks were the top performers from 2004 to 2007, disastrously sank to the bottom in 2008, and rebounded to the top position once again in 2009. These types of performance reversals are evident throughout this example.

Although investing in a diversified portfolio may prevent an investor from capturing top-performer returns in any given year, this strategy can also protect an investor from experiencing extreme losses. For example, in 2011 a diversified portfolio would have returned 3.1%, which was approximately 25.1% lower than the top asset class that year—long-term government bonds. However, the diversified portfolio would also have performed better than the worst-performing asset class—international stocks—by about 14.8% this past year. A well-diversified portfolio allows investors to mitigate some of the risks associated with investing. By investing a portion of a portfolio in a number of different asset classes, portfolio volatility may be reduced.

Diversification does not eliminate the risk of experiencing investment losses. Government bonds and Treasury bills are guaranteed by the full faith and credit of the United States government as to the timely payment of principal and interest, while stocks are not guaranteed and have been more volatile than other asset classes. Furthermore, small stocks are more volatile than large stocks, are subject to significant price fluctuations and business risks, and are thinly traded. International investments involve special risks such as fluctuations in currency, foreign taxation, economic and political risks, liquidity risks, and differences in accounting and financial standards. The data assumes reinvestment of all income and does not account for taxes or transaction costs.

Source: Small Stocks—represented by the performance of the Dimensional Fund Advisors (DFA) U.S. Micro Cap Portfolio; Large Stocks—Standard & Poor's 500<sup>®</sup>, which is an unmanaged group of securities and considered to be representative of the stock market in general; Long-Term Government Bonds—20-year U.S. Government Bond; Treasury Bills—30-day U.S. Treasury Bill; International Stocks—Morgan Stanley Capital International Europe, Australasia, and Far East (EAFE<sup>®</sup>) Index. The diversified portfolio is equally weighted between small stocks, large stocks, long-term government bonds, Treasury bills, and international stocks.

# Probability of Meeting Income Needs

Various withdrawal rates and portfolio allocations over a 25-year retirement



**Past performance is no guarantee of future results.** Results may vary over time and each time the simulation is run. **IMPORTANT:** The projections or other information generated by Morningstar regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. No transaction costs or taxes are assumed. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## Probability of Meeting Income Needs

Various withdrawal rates and portfolio allocations over a 25-year retirement

There are a number of factors that can affect whether a portfolio will last through retirement. The table shows how the rate of withdrawal and various portfolio allocations can affect the chance of meeting income needs over a 25-year retirement.

A high probability indicates it is more likely that an investor will meet their income need in retirement, while a low probability indicates that an investor is less likely to do so and may face a shortfall. Generally, the chance of a portfolio running out over a long retirement is less likely as the amount withdrawn decreases and as equities are added.

It is assumed that a person retires at year zero and withdraws a required income need each year beginning in year 1. Annual withdrawals are inflation-adjusted by the historical 1926–2011 inflation rate of 3.1% each year. Annual investment expenses were assumed to be 0.79% for stock mutual funds and 0.62% for bond mutual funds.

The image was created using Monte Carlo parametric simulation. This model estimates the range of possible outcomes based on a set of assumptions including arithmetic mean (return), standard deviation (risk), and correlation for a set of asset classes. The inputs used herein are the historical 1926–2011 figures. The risk and return of each asset class, cross-correlation, and annual average inflation over this time period follow. Stocks: risk 20.3%, return 11.8%; bonds: risk 5.7%, return 5.5%; correlation  $-0.01$ ; inflation: return 3.1%. Note that other investments not considered may have characteristics similar or superior to those being analyzed. Each simulation produces 25 randomly selected return estimates consistent with the characteristics of the portfolio to estimate the return distribution over a 25-year period. Each simulation is run 5,000 times, to give 5,000 possible 25-year scenarios. A limitation of the simulation model is that it assumes a constant inflation-adjusted rate of withdrawal, which may not be representative of actual retirement income needs. This type of simulation also assumes that the distribution of returns is normal. Should actual returns not follow this pattern, results may vary.

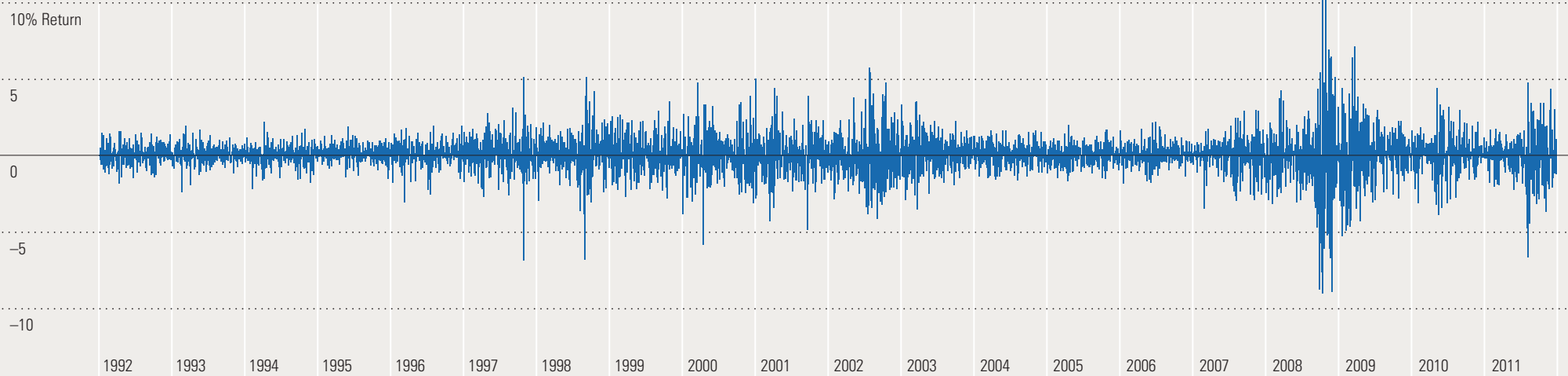
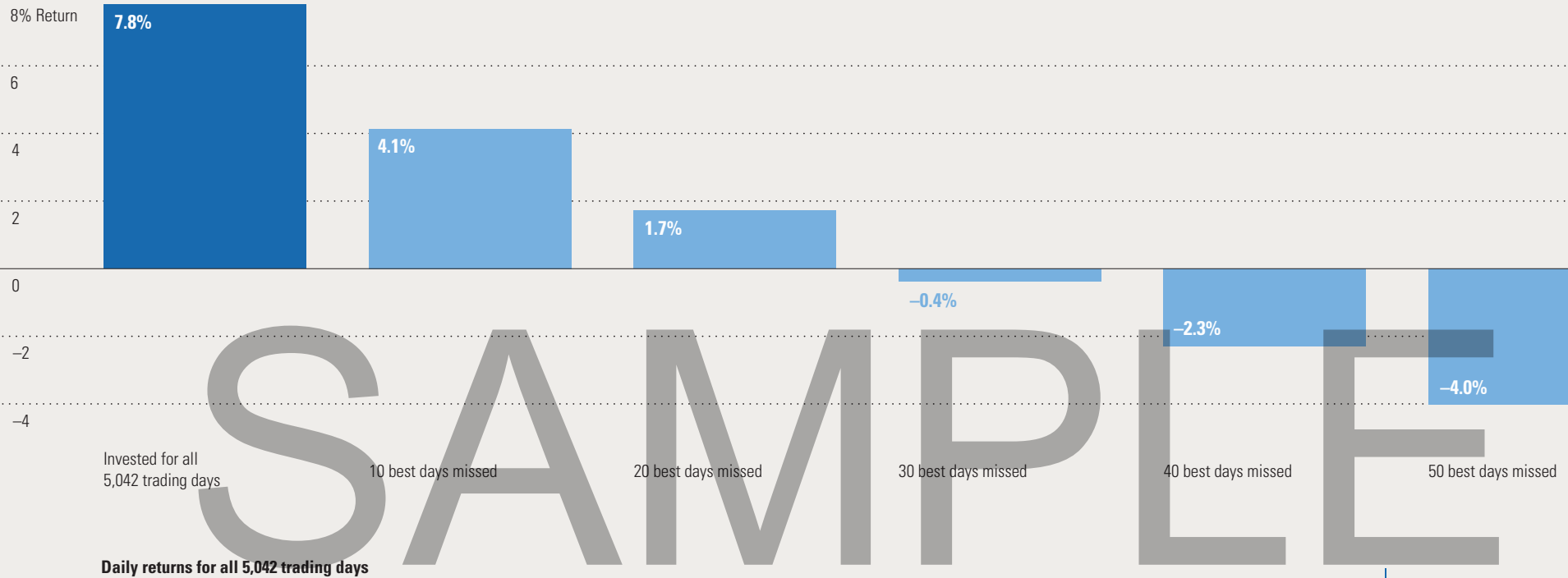
The data assumes reinvestment of income and does not account for taxes or transaction costs. Government bonds are guaranteed by the full faith and credit of the United States government as to the timely payment of principal and interest, while returns and principal invested in stocks are not guaranteed.

Source: Stocks—Standard & Poor's 90<sup>®</sup> index from 1926 through February 1957 and the S&P 500 index thereafter, which is an unmanaged group of securities and considered to be representative of the stock market in general; Bonds—5-year U.S. Government Bond; Inflation—Consumer Price Index; Mutual fund expenses from Morningstar.



# The Cost of Market Timing

Risk of missing the best days in the market 1992–2011



Past performance is no guarantee of future results. This data is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

## The Cost of Market Timing

Risk of missing the best days in the market 1992–2011

Investors who attempt to time the market run the risk of missing periods of exceptional returns, leading to significant adverse effects on the ending value of a portfolio. The top graph illustrates the risk of attempting to time the stock market over the past 20 years by showing the returns investors would have achieved if they had missed some of the best days in the market. The bottom graph illustrates the daily returns for all 5,042 trading days.

Investors who stayed in the market for all 5,042 trading days achieved a compound annual return of 7.8%. However, that same investment would have returned 4.1% had it missed only the 10 best days of stock returns. Further, missing the 50 best days would have produced a loss of 4.0%. Although the market has exhibited tremendous volatility on a daily basis, over the long term, stock investors who stayed the course have been rewarded accordingly.

The appeal of market timing is obvious—improving portfolio returns by avoiding periods of poor performance. However, timing the market consistently is extremely difficult. And unsuccessful market timing, the more likely result, can lead to a significant opportunity loss.

Returns and principal invested in stocks are not guaranteed. Holding a portfolio of securities for the long term does not ensure a profitable outcome and investing in securities always involves risk of loss.

Source: Stocks—Standard & Poor's 500®, which is an unmanaged group of securities and considered to be representative of the stock market in general.

SAMPLE