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Natural catastrophes are inevitable, so are market meltdowns

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There is a branch of statistics called extreme value theory that assesses the risk associated with highly unusual events like natural catastrophes, and market crashes.

The tragic effects of the earthquake and tsunami in Japan have highlighted the calamitous consequences of major natural disasters. Fortunately, such catastrophes are rare. When they occur, many people are shocked.

They shouldn't be. Natural catastrophes are inevitable. Take the proverbial 100-year flood. Many people believe that such a disastrous flood has only a remote chance of occurring. In fact, although a 100-year flood has only a 1% chance of occurring in any given year, statistically, as periods exceed one year, the likelihood of incidence rises. Over 25 years, the 100-year flood has a 22% chance of occurrence while over 50 years, the probability increases to 39%. The probability rises until a catastrophe is a virtual certitude.

These same grim statistics apply to financial markets. There is actually a branch of statistics called extreme value theory that assesses the risk associated with highly unusual events. Originally pioneered by engineers to model rare events like disastrous floods, it has become fertile ground for financial experts as they grapple with the likelihood of ruinous financial freefalls.

What they have discovered is that financial meltdowns are not only inevitable but occur more frequently than normal probabilities imply. For example, the massive 57% decline in the U.S. stock market from October 2007 through March 2009 was not a once in a lifetime event. It is similar in scope to 49% decline in 2000-2002 as well as the 48% decline that occurred in 1973-1974.

Financial experts have also found that volatility tends to recur in periods of economic and monetary instability. The Great Depression in the 1930's was characterized by not only the famous market crash of 1929 through 1932 when stock prices fell an astounding 86%, but a further 55% decline in 1937-38. The 1973/74 bear market was preceded by a 36% drop in 1968-1970. Some analysts believe the fragile economic backdrop to the current stock market combined with expensive valuations boosts the risk of a nasty, back-to-back decline.

Colossal market drops are not readily predictable. Like tsunamis, they arrive and wreak havoc with little warning. Take the October 1987 crash when the market dropped by over 20% in one day. It came out of the blue and even today, its causes are shrouded in mystery. I have talked with several PhD's who specialize in financial models that anticipate extreme market movements and they find that even models with some predictive power give off so many false signals that their efficacy is blunted or they work only in certain time periods and not others. As Yogi Berra said, "It's tough to make predictions, especially about the future."

Every asset suffers meltdowns. Gold prices fell by nearly 50% in the mid-1970's. Oil prices plunged over 75% in the early 1980's. Real estate endured a deep bear market in the early 1990's. Even government bonds have had periods of horrendous value erosion when inflation has taken off.

The inevitability of catastrophic price declines makes strategic asset allocation vital. Robust diversification across a broad range of assets will buffer a portfolio from precipitous price declines in any particular asset. Even in 2008, when both equities and real estate were in freefall, government bonds and gold had positive returns.

The strategic mix also needs to be balanced; excessively conservative or aggressive strategies rarely work out well, particularly for retirees living on their capital. By committing to a long-term investment strategy with a balanced strategic mix at its foundation, an investor also avoids being whipsawed by futile attempts to time every market downturn.

Ultimately, strategic asset allocation is an investor's best insurance protection against the next financial tsunami.

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