

The Mechanics of Long Term Investing

Thomas Niss — 13 July 2026

This text deliberately follows the structure of William F. Sharpe's seminal piece "The Arithmetic of Active Management."

"Our clients earn 25% per year — long term."

"The stock market is too risky for retirement savings."

"It is wiser to wait until markets are safe again before starting a savings plan."

Statements such as these are made with alarming frequency by investment marketers and by many earnest financial advisors — sometimes selling the promise of extraordinary returns, sometimes selling protection against fear of the market. In some cases, subtle and sophisticated reasoning may be involved. More often (alas), the conclusions can only be justified by assuming that arithmetic and time have been suspended for the convenience of those who choose to sell one or the other.

If "return" and "risk" are defined in sensible ways, then

(1) over a long accumulation period, the return on a systematic savings plan in a broadly diversified equity fund converges toward the value creation of the underlying companies, and

(2) value creation is economically bounded — from above by competition, from below by the profit motive of enterprise — so the long-term return of such a savings plan falls within a corridor that narrows as the holding period lengthens, even though short and medium-term returns roam widely.

These assertions gain force with every year of the accumulation period. They depend on the decomposition of total returns, the arithmetic of averages, a functioning market economy, and portfolio construction which continually reconstitutes the holding toward the economy's currently viable enterprises — honoring winners and replacing losers. Nothing else is required.

Of course, certain definitions of the key terms are necessary.

A broadly diversified equity fund holds securities across a wide set of regions and sectors, such that fund returns before costs approximate the aggregate value creation of the underlying enterprises. A savings plan is the systematic contribution of a fixed amount at fixed intervals to such a fund over an extended accumulation period.

Over any specified time period, the total return on a diversified equity holding can be decomposed into three components: dividends per share, growth in earnings per share, and the change in the earnings multiple. The first two together constitute value creation. The third reflects changes in investor pricing behavior. The decomposition follows Bogle (1991) and Bernstein and Arnott (2003).

Consider a saver contributing a fixed amount each month for thirty years — 360 purchases at 360 different prices. Some purchases are made in expensive markets, some in cheap ones. Over thirty years, the expensive and the cheap months largely cancel, and what the saver effectively pays is close to the market's average valuation. The same holds for the dividends her contributions

buy: expensive months lock in low dividend yields, cheap months high ones, and again the average is what remains.

One thing does not average out: the market's valuation at the end, when the accumulated capital is priced for the last time. But the longer the plan runs, the smaller this effect becomes — valuations move within limits, while value creation compounds without limit. Moreover, the saver is not defenseless against the final valuation.

A retirement saver does not need her entire capital on the morning of her sixty-fifth birthday; she needs monthly income for the years that follow. Suppose, then, that she saves monthly for ten years and afterwards withdraws monthly for ten years, the withdrawal amount recalculated once a year so that the capital lasts the full period. There have been 440 opportunities to run this twenty-year structure since 1970. Relying on data for the MSCI World Net Total Return Index in USD terms, the worst of them — beginning in July 1997, saving through the dot-com boom and bust, then withdrawing through the financial crisis — paid out 1.6 times the money invested. The median structure paid out 2.4 times the contributions, the best 5.0 times. Not one of the 440 paid out less than was put in. Even the thirteen start dates whose pure accumulation result was negative after ten years paid out between 1.6 and 1.8 times the contributions once the withdrawal phase is included. The reason is symmetry: a withdrawal plan replaces the single realization date with 120 of them, so the exit valuation is averaged exactly as the entry valuations were. The saver who averages in and averages out replaces the terminal multiple with an average multiple.

This supports assertion 1. Only the decomposition of returns and the arithmetic of averages were used in the process — the averaging applied at the exit as well as the entry. To be sure, we have belabored the obvious, but the ubiquity of statements such as those quoted earlier suggests that such labor is not in vain.

To support assertion 2, we invoke two structural properties of market economies.

The first is competition. Where firms compete freely for customers, capital, and talent, unusually high profits attract rivals, and the rivals compete those profits back down. This is why no diversified portfolio can compound at 25% for a generation: the businesses themselves cannot earn such returns for long, because competition does not allow it. For a while, investors can earn more than the businesses do — when prices rise faster than profits, as in the United States after 2009. But what rising prices give, falling prices take back. Over a full generation, the investor cannot earn much more than the enterprises she owns.

The second is the profit motive. Firms exist to produce profit for their owners; in a market economy, they do not give away their products and services. The motive alone guarantees effort, not success — some industries have strived for a century and accumulated little. The floor comes from combining the profit motive with the way the portfolio is built: companies that generate profits grow in weight, companies that fail shrink and eventually drop out, replaced by companies that can. The portfolio continually sheds failure and accumulates success. The floor this establishes is not generous — history contains long stretches of meager returns — but it holds, wherever the market economy itself survives.

The corridor can be measured. The multiples presented above for the MSCI World Net Total Return Index represent a capital-weighted return range from 4.4% per annum to 15.9% per annum, with a median annual return of 8.8%. (All figures in US dollars, before inflation and costs.)

Broad diversification is essential to the argument — with one caveat the honest version must carry. Expectations and reality can diverge sharply for individual regions or industries, and the resulting valuation extremes can take decades to be corrected by the underlying value creation. Japan's equity market between 1990 and 2010 remains the cardinal example: a valuation peak so far above the fundamental output of Japanese enterprise that even two decades of Japanese corporate earnings did not fully close the gap. A portfolio spanning many regions and industries is protected from such prolonged deviations, because corrections in one segment are typically completed while others are still creating value — but only insofar as no single market dominates the portfolio at extreme valuation.

Enough (lower) mathematics. Let us turn to the practical issues.

Why do statements about 25% returns and about the market being “too risky” continue to circulate, when the arithmetic and institutional logic point elsewhere? Three reasons stand out.

First, both extremes have willing audiences and profitable business models. On the upper end, promises of extraordinary returns sell trading platforms, subscription services, and concentrated actively managed products. On the lower end, warnings of excessive risk sell insurance, structured products, and “safe” alternatives whose costs are often hidden and whose long-term returns are subpar. The corridor in the middle is uninteresting to sell, because it requires the customer to buy nothing special — only to hold a reasonably priced diversified equity portfolio over time.

Second, the time-transformation of risk is deeply counterintuitive — and part of the academic literature sides with the skeptic. If returns were independent draws, time alone would not reduce risk: the probability of a shortfall falls with horizon, but its potential size grows, and the cost of insuring against it rises (Samuelson 1963; Bodie 1995). The transformation is, however, real for a different reason: equity returns are not independent draws. The prices of operating businesses are anchored by fundamentals, and valuations revert toward them, so long-horizon return variance grows markedly more slowly than independence would predict (Poterba and Summers 1988; Campbell and Viceira 2002 build the formal case that equities are safer for the long-horizon investor on precisely this ground). At one year, price fluctuations dominate. At thirty, the rate of value creation does. The savings plan amplifies the effect, because contributions purchase through the full range of market conditions. A redemption plan further supports this logic. Neither media reporting nor most professional education prepares the investor to see this.

Third, the corridor itself is invisible in day-to-day observation. Daily prices are reported hourly; quarterly earnings receive brief attention; the aggregate rate of value creation across a diversified portfolio over decades is not a metric that anyone reports. What determines the systematic saver's long-term outcome is, in effect, hidden behind the noise of the metrics that do get reported.

To repeat: properly measured, the realized return of a long-horizon savings plan in a broadly diversified equity fund converges toward the value creation of the underlying companies, and in a functioning market economy that value creation

lies within an economically bounded corridor. Analyses that appear to refute this principle usually measure over horizons too short for the mechanism to have done its work, or mistake the noise of price movements for the signal beneath them.

This need not be taken as a counsel of complacency. Individual savers can and do fare better or worse than the median, depending on their allocation choices, fund selection, and discipline through periods of market anxiety. But the primary driver of their realized long-term return is neither the multiple at which they started, nor the manager they chose, nor the timing of individual contributions. It is the value creation of the businesses they come to own, over the time they hold them — and the corridor within which that value creation is economically constrained to fall.

The relevant question for the systematic long-term saver is not “which stocks?” nor “when to enter?” It is “how long?” Given a sufficient holding period, the range of possible outcomes narrows — not suddenly, but steadily, at a pace set by the mechanics described above — and does so in a direction defined by economic activity rather than by market sentiment. Time is the systematic saver's most valuable asset — not because it produces higher returns, but because it produces more dependable ones.

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MSCI World Index, net total return, USD, monthly observations December 1969 – July 2026.