



ALLIANCEBERNSTEIN®

MARCH 2024

Too Much Certainty Is a Terrible Thing: Benchmarks and the Meaning of Risk

We think that the approach to benchmarking used by much of the industry should be questioned. Our thesis is that we are in a new regime, with different structural forces compared to those that existed prior to the pandemic. This raises questions about the validity of benchmarks that were set before then.

We suggest that, in an environment of higher equilibrium inflation and lower real return from financial markets, inflation should play a larger role as a benchmark for many investors. Meanwhile, in the assessment of active managers, the benchmark should probably be multivariate and managers should take into account cheap access to factors.

This issue has implications for the meaning of risk. Is risk the deviation from a financial market index, some measure of volatility or the loss of purchasing power?

Inigo Fraser Jenkins

Alla Harmsworth

Additional Contributors: Robertas Stancikas,
Harjaspreet Mand and Maureen Hughes

Certainty Is an Emotional State, Not an Intellectual One

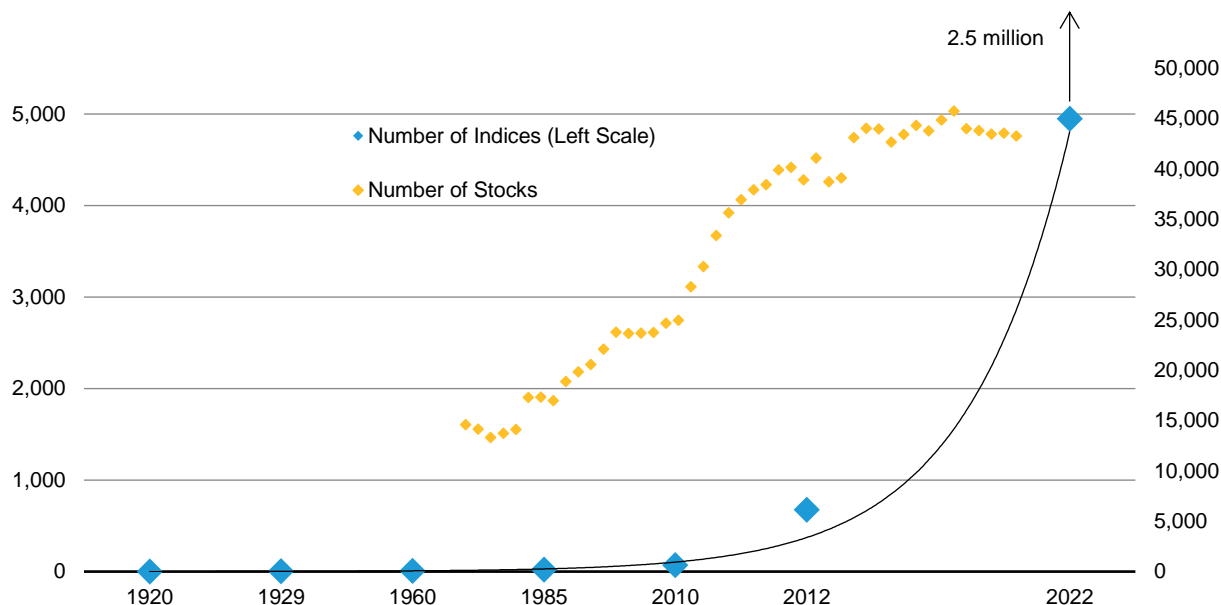
A change in investment regime prompts all kinds of questions about the appropriate response. Some are immediate: How does one protect a portfolio against inflation or more active central bank policy? Others are direct responses to changes in markets: Is now the right time to buy duration? But still other questions are more subtle and only arise after some time has elapsed. These questions tend to be more methodological—not associated only with *what* to invest in, but *how* one invests.

Two such questions that we address here are the intertwined issues of which benchmark investors should use and what that means for the appropriate metric of risk. Rather than simply stating that such and such benchmark is appropriate, there is a more interesting discussion to be had about what a benchmark is for.

And what is the appropriate measure of risk? Starting with its opposite, certainty is an emotional state, not an intellectual one. By corollary, the degree of risk that one is taking is not something that is quite as clear and tangible as the industry would usually make out.

The financial industry is awash with benchmarks. There are more than 2.5 million equity indices alone that could plausibly count as benchmarks. What on earth, one may reasonably ask, is the use of that? Surely benchmarking and index creation is the only area of human expertise in which the number of buckets for classifying things exceeds the things being classified (roughly 40,000 individual stocks) by a multiple of 60 (*Display 1*). This situation confuses notions of risk. Is the investor's risk an absolute quantity such as standard deviation of returns? Does risk lie in how much one deviates from a financial-market index? Or is it something else altogether?

DISPLAY 1: THE NUMBER OF EQUITY INDICES EXCEEDS THE NUMBER OF STOCKS 60-FOLD



Historical analysis does not guarantee future results.

For the number of indices, the first five data points are based on Jeffrey Wurgler, "On the Economic Consequences of Index-Linked Investing," *Challenges to Business in the Twenty-First Century: The Way Forward*, ed. W.T. Allen, R. Khurana, J. Lorsch and G. Rosenfeld (Cambridge, MA: American Academy of Arts and Sciences, 2011). The last two data points refer to the cumulative number of factor indices (4,274 per Scientific Beta) and exchange-traded funds (673 per Morningstar). We have fitted an exponential curve, although we have left the scale on the x-axis nonlinear on purpose, as in fact the recent rate of index creation exceeds that fitted by an exponential curve. S&P's claim of a million indices spans all asset classes, 850,000 of which it says are equity indices. The overall estimate of 2.5 million equity indices comes from the 6th annual survey by Index Industry Association.

Through November 30, 2022

Source: Index Industry Association, Morningstar, Scientific Beta, S&P, World Bank, The World Federation of Exchanges, Jeffrey Wurgler and Alliance Bernstein (AB)

This is where the change in regime comes in. We argue that the next decade will deviate from the 1980–2020 period, with higher inflation and lower real growth. There is also a significant parallel shift in how growth in the economy is funded. The proportion of capital raised from private markets has been growing and is now greater than at any point in the last five decades. There seems to be no realistic prospect of this trend changing anytime soon. The stock of shares in developed-world public equity markets will continue to shrink unless buybacks are outlawed and listing rules are changed. Likewise, regulations on how much risk banks are allowed to take imply a further decline in the share of credit created by banks versus that sourced from private markets.

We make no value judgment in this paper about the merits of this shift, but it does represent a change from recent decades: in the US, capital for corporate investment tended to come from public equity and credit markets, while in Europe a mix of equity markets and bank credit dominated. At the end of this paper, we will return to this point of the inherent endogeneity of investment returns, savings needs and sources of capital in the economy. If more growth capital is being raised through private sources, then it seems odd that, at the highest level, benchmarks don't reflect that trend in some way.

We suggest that the question of the appropriate benchmark is intimately linked to notions of risk. We argue that, ultimately, the purpose of all investing is to pay for activities in the real economy. After all, what other reason could there plausibly be? We recognize that in the construction of retirement and savings systems there are individual funds that do not face an inflation hurdle directly and have nominal liabilities, but for the vast majority of investment activities the goal is ultimately a real return target.

In the 1980–2020 period, inflation fell and public equity and bond markets rose; an inflation benchmark might have appeared too easy a target to beat, especially when holding active managers to account. A lot of the overall return the active industry

generated in this period was “beta” (equity market exposure, duration, value-factor exposure, etc.); hence, the \$4.5 trillion rotation from active into passive equity exposure in this period.

The view that many investors have of benchmarks has been molded by the experience of the last few decades, with strong financial market returns and quiescent inflation. This likely made it look as if financial market indices were the only benchmark that could count, with financial assets far outstripping real assets in terms of cumulative returns (*Display 2*).

DISPLAY 2: FINANCIAL VERSUS REAL ASSET PERFORMANCE



Past performance does not guarantee future results.

Note: Financial assets include US equities and US 10-year government bonds. Real assets include US real estate and Bloomberg commodities indices.

Through November 30, 2023

Source: Bloomberg, Global Financial Data, Robert Shiller's database, Thomson Reuters Datastream and AB

If inflation is higher and returns from long-only positions in major asset classes (i.e., the most widely used benchmarks) are lower, then it begs the question: Are those widely followed indices the appropriate benchmarks anymore?

The choice of benchmark will depend on the goal of the investment. Other influences may be a feature of the investment regime, in a long-term, slow-moving sense. For example, many private investments face hurdle rates that determine fees, which are set at around 6%. But these hurdle rates were set in an environment of low or zero real interest rates. With cash yielding 4%–5% in nominal terms, should those hurdle rates be revisited?

Using defined contribution retirement investing as a case in point, the probability of a hardship outcome, with a plan participant reaching retirement with a savings pot that is insufficient to pay for retirement, is increased in a lower real return world. With such a prospect, what is the greater risk? That participants run out of money, or that they deviate from a financial market index? In this case, we suggest that the ultimate benchmark is the required annual cash flow needed in retirement to avoid running out of money. This benchmark will be linked to inflation and a desired standard of living.

Sovereign wealth funds may have requirements to fund national investments or may take a role as a quasi-national pension system. These funds will likely also need a benchmark that is linked to inflation—in this case, probably an expected national inflation rate stretching some decades into the future.

Benchmarks have a role both as a target or required return and as a tool for assessing the value added or detracted by given return streams or sizing decisions. This latter point is a crucial element of resolving the inherent agency issues in any outsourcing of financial asset management. In that sense, setting a benchmark is part of the governance structure in engaging an asset manager.

In a previous [black book](#), we devoted a chapter to “The Emptiness of Precision”—the idea that we like to be exact in investing (with very good reason), but that this precision has limited utility if the target is wrong.¹ It is this point at which the “too much certainty is a terrible thing” portion of our title aims. The huge number of benchmarks gives a veneer of certainty, but that certainty may be misguided if a change in regime renders previous benchmarks redundant.

Tension Between Concepts of Risk

The new regime creates a tension between two different concepts of risk: risk measured as the ability to maintain purchasing power is now in conflict with risk measured as the standard deviation of returns.

There is nothing new in the observation that different risk metrics can give contradictory readings. An example would be that comparing standard deviations of returns versus the presence of tails which are non-normally-distributed will favor different assets. What is different with the new regime is how the change in macro environment has disturbed a balance between traditional risk metrics, which are based on the distribution of returns, and the need to beat inflation.

The reason for this tension, we would argue, is that most investment activity is for ultimately meeting some need that is based in the real economy (retirement, healthcare costs, etc.). Any risk that return may fail to keep up with costs in the real economy would therefore be a significant issue. Faced with a risk of lost purchasing power, we suggest that other risk metrics, while still critical, may become secondary. Given a tougher set of choices in a low-real-return world, it may be necessary to increase risk defined, say, as absolute standard deviation of returns from a financial index, in order to reduce the potential for the greater risk of lost purchasing power.

In this paper we will explore different possible benchmarks, what their role is in the new regime that we face and what investors should do. Ultimately, a change in benchmark is linked to questions of governance and potentially leads to a change in strategic asset allocation (SAA). Shifts in SAA are the practical end point of this work.

The Tyranny of the Market-Capitalization Benchmark

Weighting by market cap is so ubiquitous that it may seem perverse to question it. Let's be clear: we think that market-cap weighting does have a central role to play that will not change, but it may have limits as a benchmark.

For listed equities, market cap is definitionally the only benchmark that everyone can agree on and buy. (If everyone agreed on any other definition and bought that way, then *that* would become the market-cap-weighted benchmark.) It is the weighting scheme with the greatest liquidity. For those who persistently believe that markets are efficient, it is the default approach (the riposte from believers in value investing, of course, is that the cap-weighted index overweights expensive stocks and underweights cheap ones). In practical terms, it has outperformed other constructions in recent years. Making tactical calls against the combined US-growth-momentum trade has been a painful career-hurting choice of late. One of the big investment questions is whether this pain will continue, but that question is distinct from the role of the cap-weighted index as a benchmark.

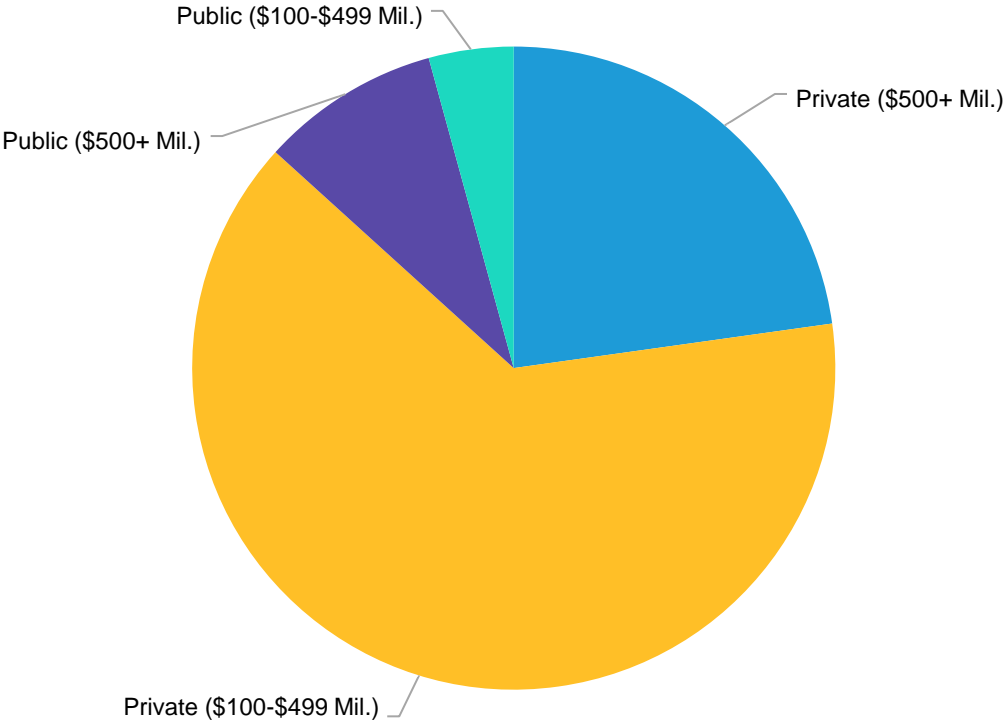
One of the simplest arguments in favor of a cap-weighted index of listed assets is that it is cheap to buy as an index fund, with plentiful liquidity. We return later in this paper to examine how the growing weight of private capital is structurally changing the role of public markets. But participation in private markets entails higher fees and potentially significant liquidity costs. A cap-weighted position in public markets is hardly a “passive” position if one's liabilities are ultimately linked to inflation, but it does not have barriers to entering and exiting positions, and it is a simple proposition to understand. Simplicity, after all, should not be underrated as a benchmark attribute.

¹ Inigo Fraser Jenkins, [Are We Human or Are We Dancer?](#), Bernstein Research, July 6, 2021.

The cap-weighted benchmark does have various limits. While it is the only equity index that everyone can buy, it does not have to be the opportunity set that any given investor has to face. For example, fewer than 15% of US companies with more than \$100 million in revenues are publicly traded, so the overall equity exposure offered by the cap-weighted public index is limited (Display 3).

When we forecast the expected returns for private versus public equity, one benefit that private equity investors enjoy is that they can choose which sectors to invest in and they are not forced to conform to a cap-weighted index. Arguably, this is one of the key advantages of private equity.² We think, at the moment, that for private equity in aggregate, this advantage looks set to be compensated for by the extra fees charged versus public equity. So our current forecast is that the net-of fee return on the average private equity investment will be the same as that for public equity. The reason to hold private equity is the fund-selection opportunities inherent in the wide dispersion of outcomes, not the asset-class “beta.”

DISPLAY 3: FEWER THAN 15% OF COMPANIES WITH OVER \$100M REVENUE ARE PUBLICLY TRADED



Historical analysis does not guarantee future results.

Note: S&P Capital IQ data as of December 2022; most recent data from Statistics of US Businesses (2017) used to triangulate S&P Capital IQ estimates for privately held company counts by revenue band
 Source: Bain & Company, S&P Capital IQ, US Census Bureau and AB

Another concern with relying on market-cap-weighted benchmarks is that they may inadequately capture long-term path risk. Or, to put it another way, part of the success of the cap-weighted index might be the “recency” bias of the last 70 years—with the US having been a huge success from a growth perspective. Going back over a longer period, the two largest equity markets in 1900, the UK and the US both “worked,” albeit with one being much more successful than the other.

² Inigo Fraser Jenkins and Matthew D. Bass, *The Role of Private Assets in Strategic Asset Allocation: a Macro Perspective*, AllianceBernstein, May 10, 2023.

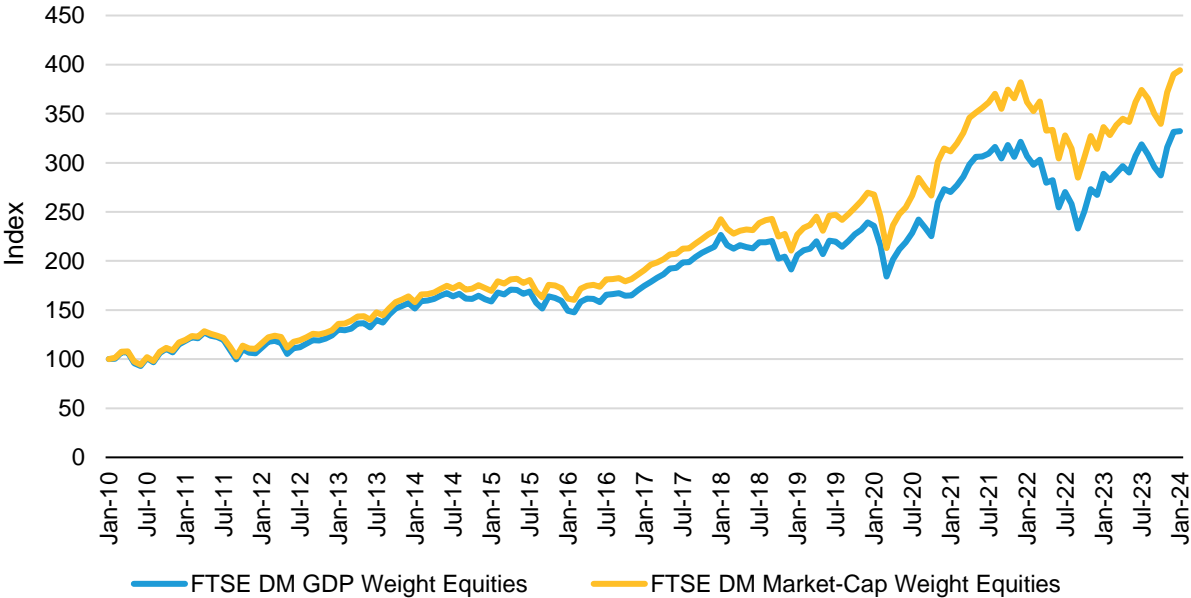
However, if one considered the next five largest markets in 1900 based on market cap (Germany, France, Russia, Austria-Hungary and Belgium³) they all went to zero, or close to zero, at some point in the subsequent 50 years—in some cases more than once. And some of those countries didn't continue to exist in the same form. Although Japan and Argentina were not in the top 10 in 1900, they provide further examples of markets that went on to become significant but then lost all their value as a result of war or inflation. Long-term investors should take this into account and seek broader diversification in response.

If linking benchmarks to the real economy is important (a point we return to later), might GDP-weighted indices help in this regard? If so, it could help solve the problem of determining the correct way to weight different regions together. This can lead to a different pattern of returns because not all countries have the same degree of stock market penetration, and preferences as to how capital is raised to fund growth can vary across regions in ways that are sticky.

As market cap/gross domestic product is a metric of market valuation (sometimes called the Buffett indicator), weighting this way introduces a value tilt into the index construction. This may in theory have advantages, but in practice it means that it has underperformed the market-cap index, mainly because of the persistent strength of the US market in recent years (*Display 4*). It is not within the scope of this paper to comment on whether that is a signal to make a call on the US market—we discuss that in other research papers—but it is a reason for the unpopularity of such an approach.

Finally, we also point out that market-cap weighting only works for public equities. It would be undesirable in bond and credit indices, as it would overweight the most indebted countries or companies, and it is hard to apply for other markets outside of bonds and equities.

DISPLAY 4: PERFORMANCE OF ALTERNATIVE WEIGHTING SCHEMES FOR EQUITY INDICES



Past performance does not guarantee future results.

DM: developed-market
 As of January 30, 2024
 Source: FTSE Russell, Thomson Reuters Datastream and AB

The Impossibility of a Cross-Asset Benchmark

Another aspect of the limitations of financial market benchmarks is the impossibility of a natural, default cross-asset benchmark. The market-cap benchmark has a potentially privileged position within equity markets, but there is no possible equivalent that spans asset classes. A true believer in efficient markets would just add everything up. In such a worldview, there is just one index of everything held in accordance with its market weight. This is not really possible in practice; fundamentally, it

would likely be a highly inefficient way to deploy risk from the investors' point of view, and hence it would not be in any sense useful as a benchmark. So we are left with the view that a "natural" cross-asset benchmark is impossible. By corollary, there is no such thing as passive investing when it comes to asset allocation.

Applying this implication to portfolio allocations raises questions about the meaning of "overweight" and "neutral." If we are indeed seeing a profound change in the macro environment, it is hard to be definitive about what counts as "overweight" or "neutral." This issue comes to a head in one of the most important allocation debates we have with clients now: what their duration exposure should be. There is a tactical element here, based on whatever assumptions one may want to make about the near-term path of interest rates, but that is not our focus in this work.

The strategic component to the question recognizes a long-term positive return from duration and its ability to diversify compared to risk assets in recent decades. However, we can show that it is very hard to outline a "normal" return from duration. The return over the period 1980–2020 was 4% per annum (the excess return of US 10-year bonds over cash), but that reflected very special starting conditions; a longer-run average (in a multicentury sense) is probably closer to 1% per annum. Likewise, we have argued elsewhere that the diversification ability is likely to be less than it was in recent decades. The bottom line for the discussion here: on the one hand, exposure to duration is more attractive now than it has been for some years, given the increase in yields, but its strategic role is likely less than in recent decades. Should one be underweight duration? What does "underweight" even mean?

The allocation issue is even more complex once one has a mix of public and private assets, and as a result, we seem doomed to follow heuristics. Hence, the starting point for allocation is often still 60:40 or, failing that, peer analysis. Neither approach fills your author with much comfort. Who is to say that the peer group is right, especially when the facts change? Such an approach only really covers the (albeit significant and unhedgeable) career risk inherent in being very different from the crowd.

Why 60:40? We have always found it remarkable that the closest thing cross-asset investors have to a benchmark has a seemingly unknown origin with no pretense of theoretical support. Theoretical support is not a requirement, of course. After all, this is only finance, not physics—there is no "science of investing," and rules of thumb have long held an important place.

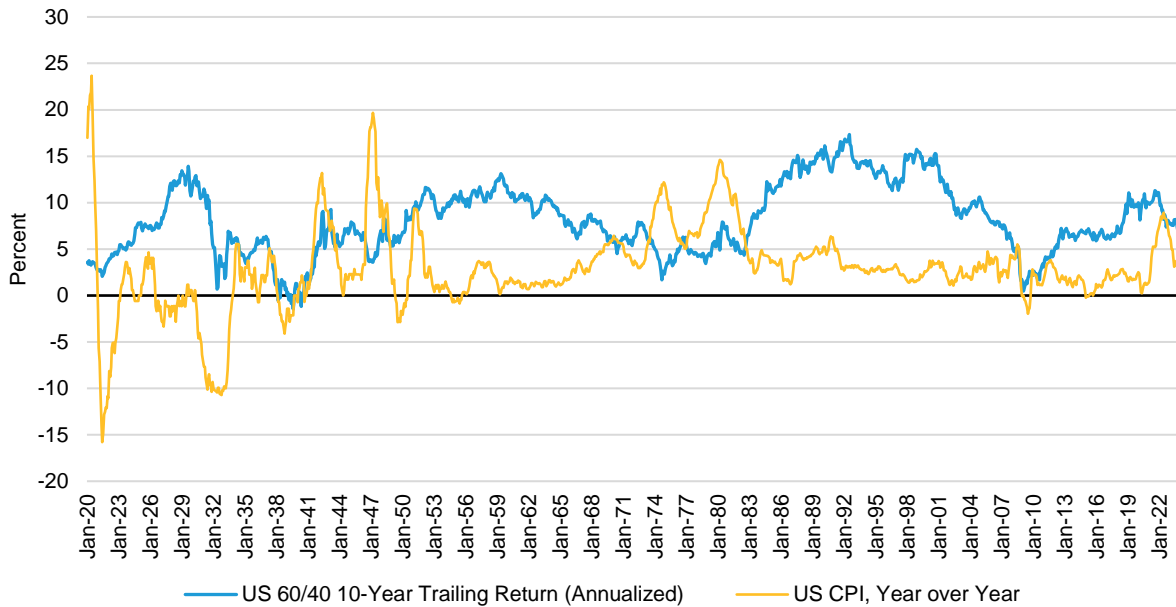
For such a widely accepted benchmark, there is surprisingly little detail on the actual origins of the 60:40 portfolio or when its use became widespread. Professor Stephen Foerster from the Ivey Business School has recently conducted an in-depth investigation of the subject.³ This included interviewing financial historians and journalists, all of whom presented different conjectures and timelines on the adoption of the 60:40 as the default benchmark. Foerster's investigation uncovered that the earliest mention of a balanced benchmark was in the early 1950s, when balanced fund allocation was 50:50 equity and bonds. He also showed that the balanced funds from large asset managers such as Wellington Management didn't deviate from 50:50 until the 1960s, when they shifted their allocation to 60:40.

The 60:40 has been highly successful in recent decades. *Display 5* shows the returns from a 60:40 in the US relative to inflation. The period since 1980 has seen the most successful return from the 60:40, in real terms, across all the history that we have seen. This record has been punctured recently, with 2022 being one of the worst individual years in the last century⁴.

³ See <https://www.benefitscanada.com/wp-content/uploads/sites/7/2023/11/Steve-60-40-portfolio-IIC-2023-11-12.pdf>.

⁴ The display shows 10-year rolling returns, so the size of the loss in 2022 is masked.

DISPLAY 5: THE 60:40 FARED WELL IN RECENT DECADES, BUT NOT ALWAYS

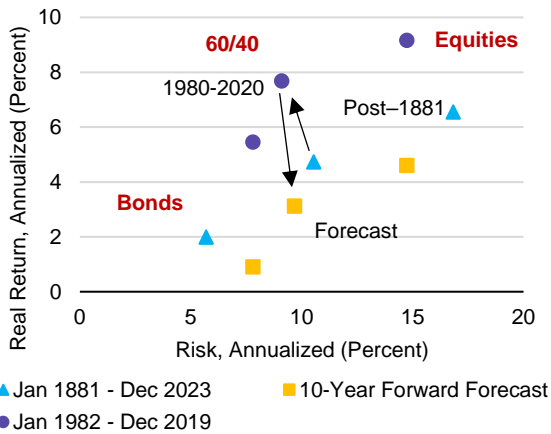


Past performance does not guarantee future results.

As of December 30, 2023
 Source: Global Financial Data, Thomson Reuters Datastream and AB

Looking to the future, the problem with the 60:40 is that our forecasts for equities, bonds and the correlation between them imply that the return/risk of a 60:40 portfolio will not only be far below the experience of the post-1980 period but also materially worse than the experience of the period since 1880 (Displays 6 and 7).

DISPLAY 6: THE 60:40 IS SET TO BE MUCH LESS EFFECTIVE AND HENCE A LESS USEFUL BENCHMARK OF REQUIRED RETURNS



Historical analysis does not guarantee future results.

As of December 30, 2023
 Source: Global Financial Data, Thomson Reuters Datastream and AB

DISPLAY 7: REAL RETURN/RISK RATIO OF THE 60:40 PORTFOLIO IN DIFFERENT DECADES

Real Return/Risk	Equities	Bonds	60/40
Jan 1881–Dec 2023	0.39	0.35	0.45
Jan 1982–Dec 2019	0.62	0.70	0.84
10-Year Forward Forecast	0.31	0.12	0.32

Current analysis and forecasts do not guarantee future results.

As of December 30, 2023
 Source: Global Financial Data, Thomson Reuters Datastream and AB

The best defense of the 60:40's role today is something along the lines of this: It represents a simple blend of the two biggest liquid asset classes that can be bought for a fee that is close to zero, brought together in proportions that have attained some authority simply by virtue of having been used for a long time. It is a benchmark in the sense of being a safe default choice for career risk.

That's not exactly a ringing endorsement, but maybe that's as good as it gets. But is the 60:40, in that case, a benchmark? The point of this discussion is not to trash the 60:40, which is a well-trodden path. Instead, it is to question the 60:40's status as a benchmark. If its return relative to inflation seems set to be lower, then its basis for offering a benchmark for portfolio weights seems hard to justify. Its omission of private assets seems even more difficult to accept. Another element of the regime shift taking place is that the source of capital to fund growth in the economy is undergoing a shift from public to private markets in both equities and credit.

Curators of Return Streams

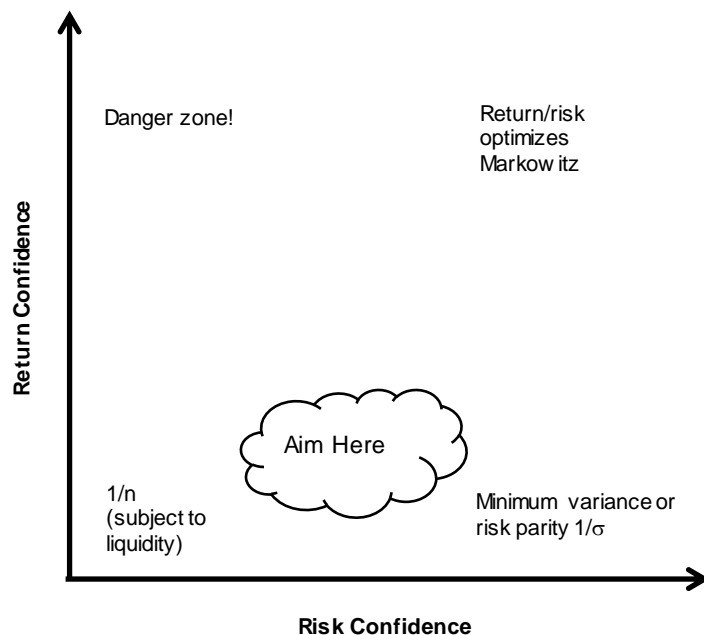
If there is no natural cross-asset benchmark, then an alternative is to consider, at a very fundamental level, what the job of a portfolio manager is. We suggest that one description is "curator of return streams." What we mean by this is that, abstracting from whether the returns in question are single securities, asset classes or active investment strategies, the real task of portfolio management is to bring available return sources together to meet a given set of requirements, taking into account their ability to mutually diversify.

Starting from this perspective leads to a very different place than the 60:40 or cap-weighted portfolios. If one has return streams in abstract, then suddenly there are other apparently simple ways of combining them that might be regarded as a default approach. Examples would be simply equally weighting return streams ($1/n$), 1/risk-weighting or equal-risk-contribution weighting. Other combinations are possible too.

There is a legitimate debate as to whether a combination of available return streams in this fashion takes the role of a strategy or a benchmark, but we will hold that debate to one side for the moment. At its most basic level, the choice of how to combine return streams comes down to beliefs about the level of knowledge one has about the future distribution of returns. If one can predict returns and risk with a high degree of accuracy, then life is simple. Markowitz has shown us how to combine such returns.⁵ One simply "plugs" them into an optimizer and—voilà!—the max Sharpe ratio combination is the answer. However, decades of psychology literature have shown that humans are overconfident in their ability to predict the future. The more humble approach is to assume no knowledge of future returns, in which case the simple, rational thing to do is equally weight all return streams and use the $1/n$ portfolio, *Display 8*. This approach has the benefit of simplicity, but in practice it is too dismissive of what we know. It turns out that the variance and covariance of returns have a stickiness to them, which is a function of their nature (a long/short equity momentum strategy will always have higher volatility than a long position in duration, for example). So this suggests a risk-parity approach, where each return stream has an equal risk weight. In practice, one does not have perfect knowledge about future variance, so somewhere between equal weighting and risk weighing may be the more desirable end point. We would argue that this can work for stock portfolios, for combinations of factors and for more generalized approaches to asset classes.

⁵ Harry Markowitz, "Portfolio Selection" *The Journal of Finance*, vol. 7, no. 1 (1952): 77-91.

DISPLAY 8: HOW TO WEIGHT THINGS DEPENDS ON ONE'S CONFIDENCE



For illustrative purposes only.

Source: AB

We stress that this holds in *theory*; in practice there are major caveats. One obvious caveat is that this allocation would have been terrible for many decades, given the strong return of global stocks. Another caveat is that equity risk combination requires leverage, possibly in a highly significant way. That alone may rule out that combination as a benchmark and leave it considered an “active strategy.” Yet another issue is that the approach assumes equal liquidity is available for the inputs, and it never is. So one has to overlay liquidity restrictions. The final problem is that it would leave one with a portfolio very different from how most investors work so, aside from leverage risk and liquidity risk, one is taking career risk.

These constraints mean that in practice this is unlikely to be an effective benchmark in many cases. It does, however, leave it as an attractive approach for some parts of an investment portfolio. For example, any element where the inputs have different levels of volatility but similar “status” is open to this approach—for example, in the combination of individual factors into an overall factor sleeve.

Required Return as a Benchmark

One way of interpreting a benchmark is setting it equal to the return that is actually required. This interpretation takes us back to the very origin of the word “index” in the sense of an index finger pointing the way. Our view is that the central challenge of investing in coming decades will be trying to generate enough return, within some framework of acceptable risks, to meet savings needs. In the context of heuristic benchmarks such as the 60:40, which we think is poised to see reduced returns, and with no natural cross-asset benchmark, we think required returns are a more obvious basis for a benchmark in the current environment.

We suggest that most investment activity takes place to fund a requirement in the real economy (retirement, healthcare, etc.). Thus, the ultimate benchmark for most investing should be linked to inflation. There is a legitimate discussion as to exactly *what* metric of inflation, but the point is that inflation might be a better benchmark than a financial market index in many situations.

Some investors do have a nominal benchmark. In some cases, this implies that the recent increase in bond yields offers a historic opportunity to de-risk. However, some investors use a nominal benchmark that we suspect might in fact have implied real components. An example is US state pension plans in which the target is set as a nominal return, such as 7%. Why is the target couched in nominal terms? This might have seemed sensible when inflation was falling, but if these are open schemes and plan participants are presumably expected to live on the proceeds, then one can conclude that the actual ultimate benchmark is *actually* a real one.

A specific example of setting a benchmark that is in line with required returns for real-economy outcomes is target-date strategies. Here, we can use the required return in retirement as a guide to what the benchmark might be. The UK's Pensions and Lifetime Savings Association (PLSA) has calculated⁶⁶ levels of income required for given retirement outcomes. Expressed in terms of median national income, the suggestion is that the minimum level required for most basic retirements is one-third of national median income. A "moderate" retirement requires two-thirds of national median income, while a "comfortable" retirement requires 107% of national median income. While this particular data is for the UK, we suggest that it is broadly applicable to developed economies. What varies across developed economies is the degree of other state support from social safety nets at the lower end of the wealth distribution.

We construct a simple model to determine the required return from a DC pension. We assume that an individual starts saving for retirement at age 20 (probably a fanciful assumption, we know) and remains employed with a salary growing at the Consumer Price Index rate plus 1% annualized. We assume that they save 8% of their salary per year and put it into an investment vehicle. They retire at 65 (also likely a fanciful assumption). On this basis, the investment vehicle would have to deliver 4% annualized return in real terms and net of fees over their working career to deliver a "moderate" retirement outcome, or 6% annualized in real terms for a "comfortable" retirement. These required returns form a required glide path of returns, and are shown in terms of the required size of the total savings pot in *Display 9*.

Note that since 1990 a 60:40 allocation to US equities and bonds delivered 6% annualized in real terms. However, our forecast is for this to fall to 3.8% annualized over the next decade.

How has the industry done relative to this required path? To answer that question, we then take the full sample of 2040 target-date funds for which data is available on eVestment database. Since 1995, they have delivered a geometric-average real return of 4.25% annualized after fees (*Display 10*). This is an acceptable return, but also somewhat depressing. The period since 1995 has witnessed, until recently, falling inflation and strong returns from both equities and bonds in the US. So even after this halcyon state, no extra cushion has been built up to protect against a lower real return future. From this current level, the universe of target-date funds would need to deliver 4% annualized return in real terms to achieve a moderate outcome, or 7% annualized to achieve a comfortable outcome. We regard a 7% real return as a target that is highly unlikely to be achievable at any scale. In the display below, we show what would be achieved if these funds managed to deliver 5% real return per annum from now until maturity.

⁶⁶ <https://www.retirementlivingstandards.org.uk/>

DISPLAY 9: ASSUMPTIONS FOR 2040 TARGET-DATE FUND GLIDE PATH

2040 Target-Date Fund

Assume 8% of salary contribution per year. Salary growth of CPI+1%

	Full-Period Required Real Return (Annualized)
"Moderate" Retirement	4%
"Comfortable" Retirement	6%
2040 Target-Date Cohort Real Return to Date	4.25%

	Required Real Return from Now to Retirement (Annualized)	
	No State Pension	With State Pension
"Moderate" Retirement	4.00%	0%
"Comfortable" Retirement	7.50%	5%
Implied Average Equity Weight Needed over Rest of Glide Path for a Comfortable Retirement	150%	100%

	% of Median Income Replaced	
"Minimum"	37%	
"Moderate"	67%	
"Comfortable"	107%	

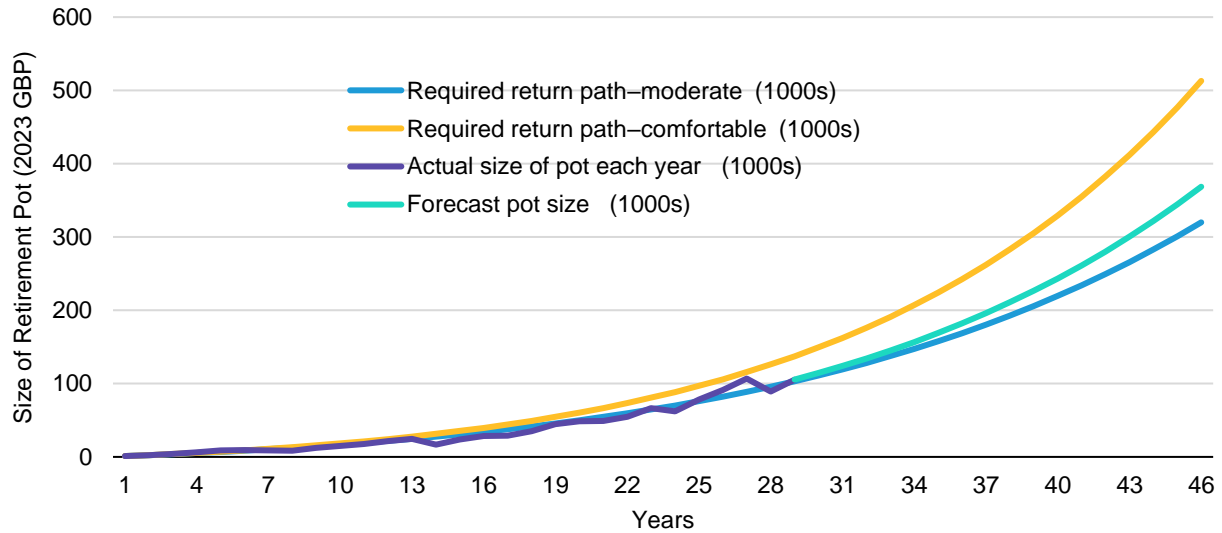
Current analysis does not guarantee future results.

Simulated or hypothetical performance results have certain inherent limitations. Simulated or hypothetical trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that any account will or is likely to achieve returns or a volatility profile similar to those being shown.

As of February 7, 2024

Source: eVestment, PLSA and AB

DISPLAY 10: 2040 TARGET DATE REQUIRED AND ACTUAL RETURN



Current analysis and forecasts do not guarantee future results.

*Assuming 5% real return

As of January 18, 2024

Source: eVestment, Thomson Reuters Datastream and AB

As noted, the presence of a state pension or social security safety net can have a significant impact on this experience at the lower end of the distribution. Taking the UK as an example, if the state pension remains the same in real terms from now until 2040, then the current savings pot only needs to keep pace with inflation to achieve a “moderate” outcome. However, a real return of 5% annualized would still be needed to achieve a comfortable outcome. This assumes that the state remains solvent or, specifically, that any social backstop retains its same real-terms value. However, there will likely be pressure on this, given that the level of public debt/GDP is at the top end of its post-WWII range across the Organisation for Economic Co-operation and Development countries. In the US, the Congressional Budget Office projects that, based on current trends, social security will become the single largest component of government expenditure by 2050, at that point consuming more than 6% of GDP.

Multivariate Benchmark

The other aspect of a benchmark relates to certain parts of the portfolio, rather than the portfolio overall, and to holding active managers to account. The usual approach historically was to use a broad-market index that was cheaply available—the active manager has to beat that index after fees to add value. Things are not quite so simple anymore. It is now possible to buy simple and transparent factor strategies at very low fees as well; if the price of a simple factor is the same as the price of a broad-market index, then we suggest that both are benchmarks.

What this means is that the benchmark has now become multivariate, as opposed to being univariate. This might sound laboriously complex, but it is about making sure that investors only pay for active management when it is worthwhile. Separately, we have also shown that the return not explained by a linear combination of factors, which we call idiosyncratic alpha, is significantly more persistent than simple alpha defined as excess return.

To determine the idiosyncratic alpha of a fund, one needs to run a regression of relative fund returns versus relative factor returns:

$$r_{i,t} = \alpha_i + \beta_{V,i}Value_t + \beta_{Q,i}Quality_t + \beta_{M,i}Momentum + \beta_{R,i}Risk + \varepsilon_{i,t}$$

Where r is the relative return of fund i , α_i is the idiosyncratic alpha, and the betas measure the sensitivity of fund relative return to relative factor return. The adjusted R -square from the above regression shows how much of the fund's relative returns are explained by relative factor returns.

In this case, the universe of factors was selected based on what could be easily and cheaply accessible at scale by purchasing "smart beta" factor exchange-traded funds. The above equation can also be adjusted to measure the manager's ability to tactically time factors.

What Is Risk?

The case of the required path for DC investing offers a natural path to considering the options. For DC plans, if real returns are likely lower, then the other options are wearily familiar:

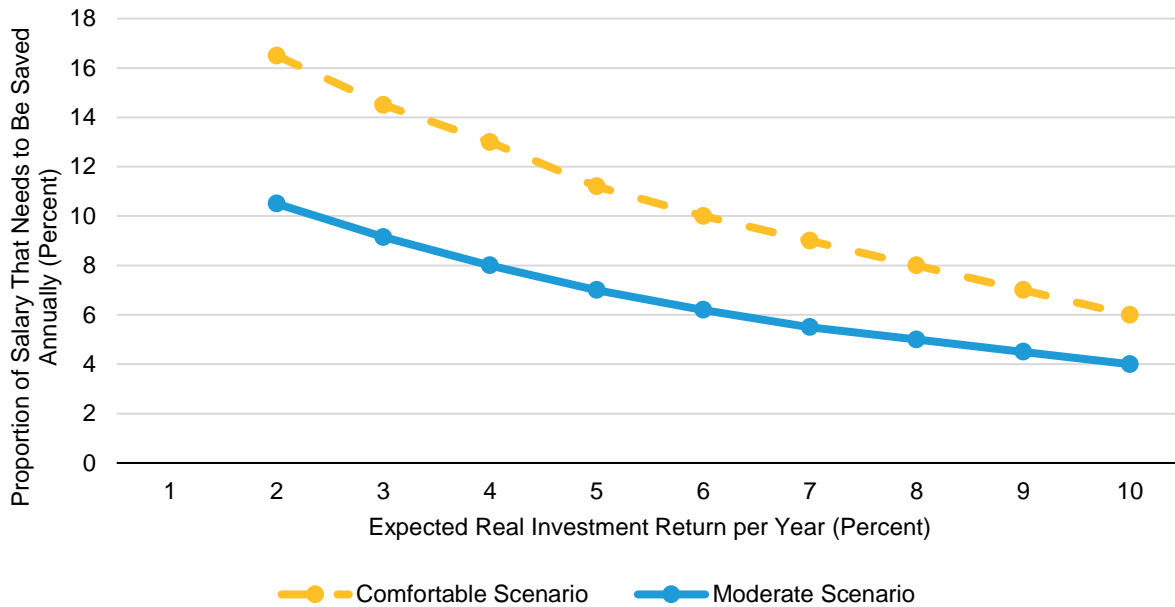
- Save more. The age-adjusted wealth of age cohorts falls as one moves down the age distribution, making this hard.
- Retire later. This presumably has to happen anyway and could be seen as a result of longer life expectancy, but it clearly carries political risks.
- Accept a lower standard of living in retirement. But this is hardly going to be acceptable. Moreover, older people make up an increasingly large part of the voter base and tend to actually vote.
- Dump risk onto younger generations. However, the demographic profile of most advanced economies and China makes this difficult. The way around it is to have mass migration, but good luck on that path politically. There is also a question of the available fiscal space, given public debt/GDP being at the top end of the post-WWII range.

Given this set of deeply unpalatable options, the easiest option politically is surely to allow more risk-taking (in a volatility sense) in the investment vehicles used to fund retirement. This approach can include both the assets invested in and the option to stay invested in risk assets through retirement.

In *Display 11*, we use the same lifetime savings model that underpinned our work on target-date funds, but recast it in terms of required savings rates each year. If we keep all other assumptions constant, it shows how the required share of salary that is saved each year varies as the achievable real return is changed.

The numbers are stark. If achieved real returns are maintained at the average level of a 60:40 strategy for the last 30 years at 6% per annum, then the required percentage of salary saved each month for a "moderate" retirement outcome is 6.2%, and for a "comfortable" retirement is 10%. However, if the return generated declines to our forecast for the 60:40 of below 4% annualized, then the required percentage of salary that must be saved each month for a "moderate" retirement outcome rises to more than 8%. For a "comfortable" retirement, it would be more than 13%.

DISPLAY 11: THE COST OF LOWER RETURNS—REQUIRED SAVINGS RATES AS A FUNCTION OF EXPECTED REAL RETURNS



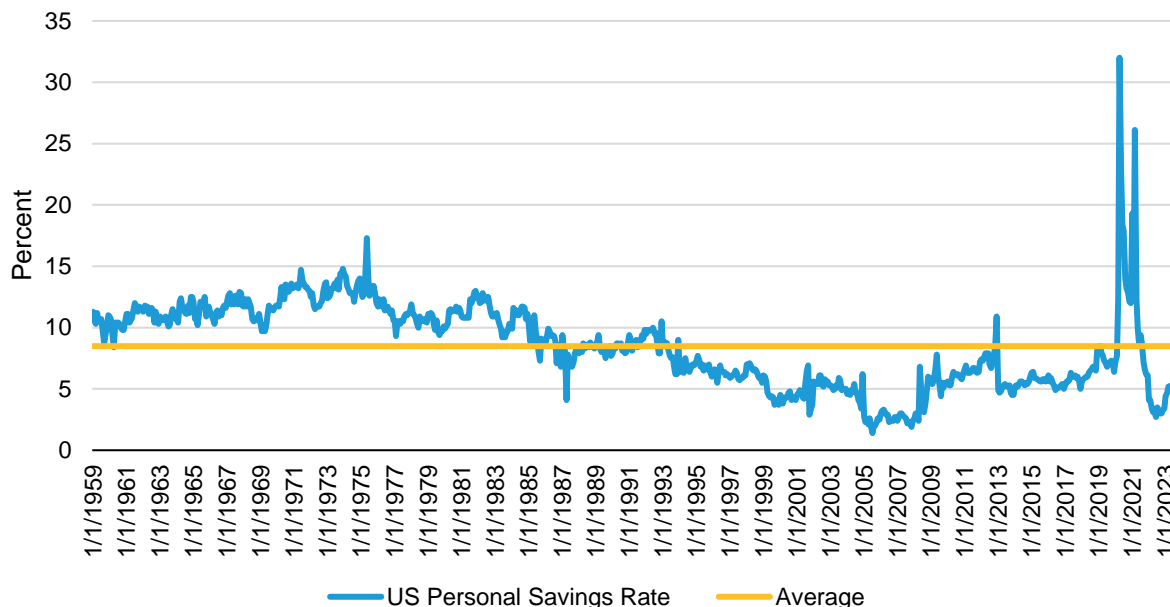
Historical analysis does not guarantee future results.

As of January 30, 2024

Source: eVestment, PLSA, Thomson Reuters Datastream and AB

To put this in context, the current US savings rate is below 4% (*Display 12*). If we ignore the enormous swings in the savings rate during COVID-19 as a result of the inability to spend and also of stimulus, then savings rates have been low since the early 1990s. This might have been tenable in the high-return, low-inflation regime in the pre-pandemic period, but achieving a comfortable retirement scenario in the current environment seems extremely unrealistic given these savings levels.

DISPLAY 12: US PERSONAL SAVINGS RATE



Historical analysis does not guarantee future results.

As of December 15, 2023

Source: Thomson Reuters Datastream and AB

To achieve even a “moderate” retirement scenario, the required real return would exceed 10%, which is at the very top range of historical return levels in the US. Based on the real return of around 4% achieved to date by the 2040 target-date funds, the savings rate would have to return to the historical average of greater than 8% to achieve a “moderate” outcome; for a “comfortable” retirement, the savings rate would have to rise very sharply to more than 13%.

The real risk here is that of a hardship outcome for the saver. In order to mitigate this, we think there are several distinct reasons why portfolio risk rises:

- Fundamental volatility is set to rise, given climate change, artificial intelligence and geopolitics.
- The covariance between assets, notably between stocks and bonds, is rising compared with recent decades.
- A rotation into higher risk assets is necessary in order to generate the required level of real return.

Conclusion

What does all this mean for portfolios? The key conclusion is that despite an apparent increased precision from the super-abundance of benchmarks, there is a risk that a new paradigm of lower returns and higher inflation reveals that many benchmarks based on financial market indices are insufficient. If the ultimate purpose of most saving activity is to meet “liabilities” set in the real economy, such as funding retirement or healthcare, then this implies that a benchmark based on inflation might be more appropriate. A 40-year period of strong financial market returns and quiescent inflation might have obscured this goal.

However, the story doesn’t end there. If inflation was the only benchmark, then many aspects of performance would be hidden. It would probably be hard to make inflation the benchmark for an individual portfolio manager who specializes within a given asset class; we think that this requires a multivariate benchmark that incorporates the “passive” factors that are possible alternatives for investment.

To be clear, this use of required returns with a link to inflation as a benchmark is really about long-term returns—it would probably not be appropriate on a quarter-to-quarter basis. The reason comes down to the question of what constitutes a “hedge” for inflation. We argue that this depends both on the level of inflation that one expects and also on one’s time horizon. An investor with a short time horizon requires an inflation-hedging asset to actually have a high correlation with inflation. For a long-horizon investor, by contrast, this is not the case. Instead, the requirement is to have an asset that generates a positive real return with a high degree of probability over an extended period of inflation. Such assets could include global equities, real estate and the value factor, all of which might have negative correlations to inflation in the short term. So, over short periods, the test might need to be about the path to a long-term real return rather than a direct comparison to inflation. This is an example of a case where it might be appropriate for investors to avoid tying themselves to the faux accuracy of a financial market benchmark and to eschew a specific index in favor of some form of scorecard that includes required levels of return and acknowledges different kinds of risk.

Whatever the exact form, most benchmarks need to address an agency problem whenever responsibility for management is outsourced, be that a specific mandate for stock selection or bigger questions of asset allocation. In this case, deviation from a benchmark measures the “cost of being different.” This, of course, underscores the whole notion of active risk and an entire industry of performance rankings. That is all well and good, but effectively using a peer group as the basis for measuring deviation may not be sufficient if there is a change in regime and a change in probability of meeting real-world requirements.

Benchmarks are normally seen in the light of a metric against which to measure a specific strategy. It is important to also stand back and consider the whole. In this case, there are two goals for the investment industry. One is to generate sufficient returns for investors and participants. The second is an emergent goal at the aggregate level: to fund growth in the economy. It is never the task of any individual portfolio manager to do that, but the end result of the actions of all portfolio managers and asset allocators is to do just that. Consider the role of a 60:40 benchmark in that light. This choice might have made sense when the bulk of capital raising for growth activities took place via public equities, public credit (in the US at least, with bank credit playing more of a role in Europe on that score) and the government sector. This structure is changing, though, and no longer offers a template for the future.

The relationship between capital markets and the real economy is changing. More specifically, the way that capital is being raised is changing. Makers of benchmarks might not think that this is something to concern them, but if one stands back from any individual investment strategy and considers the industry overall, it becomes plain that this shift in the nature of capital needs to be reflected in the concept of benchmarks. Across developed markets, the stock of public equities is shrinking. It has been for a decade, and it will continue to do so unless buybacks are outlawed, capital requirements are boosted for new start-ups and listing rules are changed—none of which seems likely.

A greater share of equity capital is from private markets today, a situation even more stark in credit markets, where regulatory requirements are encouraging banks to step back from credit provision, and there is a jump in the share of credit raised in private markets. Governments are the other share of growth funding, with part of that contribution coming from bond issuance. However, with levels of public debt/GDP at post-WWII highs, the prospect of net issuance increasing and likely higher equilibrium inflation, it is not at all clear that government bonds are as desirable as they were for the last 40 years. It raises the prospect that ownership of government debt may have to be coerced by “financial repression.” That hardly makes them an attractive contribution to a benchmark.

We make no value judgment (at least not in this paper) about this shift in the sources and nature of capital. However, the change implies that when assessing the industry overall, a 60:40 structure based on public equities, credit and bonds is out of kilter with the direction of the real economy and how it is served by financial markets. One could respond to this by augmenting the 60:40 as a benchmark with private assets. But this move would simply be layering heuristics upon heuristics. How would one decide what a new “default” weight to such assets would be? Including private markets also poses significant measurement problems in terms of performance and liquidity. The result: a benchmark that reflects the real economy directly—e.g., inflation—seems more attractive.

All finance and investing is endogenous, really. One invests to meet specific real-world requirements. The structure of pension systems (at least in countries where they are funded) aims to ensure that retirement is possible. The degree to which that is possible depends on many things, but it includes achievable real growth rates and inflation. Meanwhile, those investment portfolios form a major part of the basis for funding real growth across the economy. The nature of benchmarks needs to reflect this link.

We have suggested in this paper that the definition of a benchmark is a key ingredient in what is meant by risk. The new regime that we think is likely holds potential for tension between the main definitions of risk that reference financial market benchmarks, standard deviation of returns or deviation from an index on the one hand, and risk, as in the loss of purchasing power, on the other hand. It is deviation from that real-economy benchmark that probably represents the greatest component to the most unhedgeable of all risks: career risk.

One needs to be very clear about what a given benchmark is to be used for. Is it to hold an active manager to account, to assess the efficacy of an asset-allocation decision or to provide a target or requirement that the investor has to meet? We think all of these are likely undergoing a change.

In our fictional research piece, "The Man Who Created the Last Index,"⁷ we pointed to the futility of the explosion of financial market indices with apparently ever-greater precision tailored to any subset of any market and weighted in whatever way might be the flavor du jour. It often seems that our industry, with its profusion of benchmarks, has lost sight of what the point of a benchmark is. A change in regime might be the impetus for the realization that something new is needed.

⁷ Inigo Fraser Jenkins, "The Man Who Created the Last Index," [Are We Human or Are We Dancer?](#), Bernstein Research, July 6, 2021.

For Investment Professional use only. Not for inspection by, distribution or quotation to, the general public.

INVESTMENT RISKS TO CONSIDER

The value of an investment can go down as well as up, and investors may not get back the full amount they invested. Capital is at risk. Past performance does not guarantee future results.

Important Information

The information contained herein reflects the views of AllianceBernstein L.P. or its affiliates and sources it believes are reliable as of the date of this publication. AllianceBernstein L.P. makes no representations or warranties concerning the accuracy of any data. There is no guarantee that any projection, forecast or opinion in this material will be realized. The views expressed herein may change at any time after the date of this publication. AllianceBernstein L.P. does not provide tax, legal or accounting advice. It does not take an investor's personal investment objectives or financial situation into account; investors should discuss their individual circumstances with appropriate professionals before making any decisions. References to specific securities are provided solely in the context of the analysis presented and are not to be considered recommendations by AllianceBernstein. AllianceBernstein and its affiliates may have positions in, and may effect transactions in, the markets, industry sectors and companies described herein. MSCI makes no express or implied warranties or representations and shall have no liability whatsoever with respect to any MSCI data contained herein. The MSCI data may not be further redistributed or used as a basis for other indices or any securities or financial products. This report is not approved, reviewed or produced by MSCI.

Note to All Readers: The information contained here reflects the views of AllianceBernstein L.P. or its affiliates and sources it believes are reliable as of the date of this publication. AllianceBernstein L.P. makes no representations or warranties concerning the accuracy of any data. There is no guarantee that any projection, forecast or opinion in this material will be realized.

Note to Readers in Canada: AllianceBernstein provides its investment-management services in Canada through its affiliates Sanford C. Bernstein & Co. LLC and AllianceBernstein Canada, Inc. It should not be construed as advice as to the investing in or the buying or selling of securities, or as an activity in furtherance of a trade in securities. **Note to Readers in the United Kingdom:** Issued by AllianceBernstein Limited, 60 London Wall, London EC2M 5SJ, registered in England, No. 2551144. AllianceBernstein Limited is authorised and regulated in the UK by the Financial Conduct Authority (FCA). **Note to Readers in Europe:** This information is issued by AllianceBernstein (Luxembourg) S.à r.l. Société à responsabilité limitée, R.C.S. Luxembourg B 34 305, 2-4, rue Eugène Ruppert, L-2453 Luxembourg. Authorised in Luxembourg and regulated by the Commission de Surveillance du Secteur Financier (CSSF). **Note to Readers in Switzerland:** This information is directed at Qualified Investors only. Issued by AllianceBernstein Schweiz AG, Zürich, a company registered in Switzerland under company number CHE-306.220.501. AllianceBernstein Schweiz AG is a financial service provider within the meaning of the Financial Services Act (FinSA) and is not subject to any prudential supervision in Switzerland. Further information on the company, its services and products, in accordance with Art. 8 FinSA can be found on the Important Disclosures page at AllianceBernstein.com. **Note to Readers in Australia and New Zealand: For Institutional Investor use only. Not for inspection by, distribution or quotation to, the general public.** This document has been issued by AllianceBernstein Australia Limited (ABN 53 095 022 718 and AFSL 230698). Information in this document is intended only for persons who qualify as "wholesale clients," as defined in the Corporations Act 2001 (Cth of Australia) or the Financial Advisers Act 2008 (New Zealand), and should not be construed as advice. **Note to Readers in Hong Kong: For Institutional Investor use only. Not for inspection by, distribution or quotation to, the general public.** The issuer of this document is AllianceBernstein Hong Kong Limited (聯博香港有限公司). This document has not been reviewed by the Securities and Futures Commission. **Note to Readers in Japan: For Institutional Investor use only. Not for inspection by, distribution or quotation to, the general public.** This document has been provided by AllianceBernstein Japan Ltd. AllianceBernstein Japan Ltd. is a registered investment-management company (registration number: Kanto Local Financial Bureau no. 303). It is also a member of the Japan Investment Advisers Association; the Investment Trusts Association, Japan; the Japan Securities Dealers Association; and the Type II Financial Instruments Firms Association. The product/service may not be offered or sold in Japan; this document is not made to solicit investment. **Note to Readers in Singapore: For Institutional Investor use only. Not for inspection by, distribution or quotation to, the general public.** This document has been issued by AllianceBernstein (Singapore) Ltd. ("ABSL", Company Registration No. 199703364C). AllianceBernstein (Luxembourg) S.à r.l. is the management company of the Portfolio and has appointed ABSL as its agent for service of process and as its Singapore representative. AllianceBernstein (Singapore) Ltd. is regulated by the Monetary Authority of Singapore. This advertisement has not been reviewed by the Monetary Authority of Singapore. **Note to Readers in Taiwan: For Institutional Investor use only. Not for inspection by, distribution or quotation to, the general public.** This document is provided solely for informational purposes and is not investment advice, nor is it intended to be an offer or solicitation, and does not pertain to the specific investment objectives, financial situation or particular needs of any person to whom it is sent. This document is not an advertisement. AllianceBernstein L.P. is not licensed to, and does not purport to, conduct any business or offer any services in Taiwan. **Note to Readers in China:** This information contained here reflects AllianceBernstein Hong Kong Limited ("AB") or its affiliates and sources it believes are reliable as of the date of this publication. This presentation has been provided to you for the sole use in a private and confidential meeting. AB makes no representations or warranties concerning the accuracy of any data. There is no guarantee that any projection, forecast or opinion in this material will be realized. Past performance does not guarantee future results. The views expressed here may change at any time after the date of this publication. This presentation is for informational purposes only and does not constitute investment advice. AB does not provide tax, legal or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions. This presentation or any information contained or incorporated by reference herein does not constitute an offer to sell or the solicitation of an offer to purchase any financial instrument, product or service sponsored by AB or its affiliates within the People's Republic of China ("PRC", for such purposes, excluding Hong Kong, Macao and Taiwan). **Note to Readers in Vietnam, the Philippines, Brunei, Thailand, Indonesia and India:** This document is provided solely for the informational purposes of institutional investors and is not investment advice, nor is it intended to be an offer or solicitation, and does not pertain to the specific investment objectives, financial situation or particular needs of any person to whom it is sent. This document is not an advertisement and is not intended for public use or additional distribution. AllianceBernstein is not licensed to, and does not purport to, conduct any business or offer any services in any of the above countries.

The [A/B] logo is a registered service mark of AllianceBernstein and AllianceBernstein® is a registered service mark used by permission of the owner, AllianceBernstein L.P.

© 2024 AllianceBernstein L.P., 501 Commerce St., Nashville, TN 37203

ICN20240383