Lifeworks

The Moneyball Theory for Capital Markets

Why your retirement strategy needs hedging now more than ever.

Includes: asset selection process ("return-to-risk", "correlations"), current record valuations ("CAPE ratios"), market regime diversification (hedging).

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Portfolio theory often gets too esoteric. For once, we have a good excuse to use sports analogies: Great investment managers and sports coaches are no different.

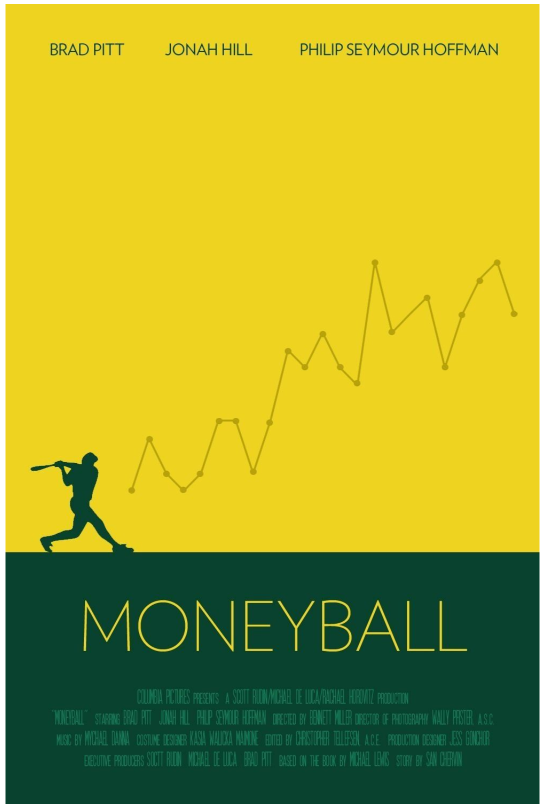
If you haven't watched Moneyball (starring Brad Pritt), or read the eponymous nonfiction by Michael Lewis, don't worry. References to movies and books in financial pieces are usually superficial and so are mine. Moneyball recounts the endeavors of Oakland Athletics' general manager Billy Beane to assemble a team in 2001. With one of the lowest budgets in Major League Baseball, Beane uses statistical research to transform baseball operations and, in the process, the whole game.

Moneyball and sports in general teach two salutary lessons for your retirement strategy:

1. **The best edges are hidden**
2. **Only them lead to consistent success**

Beane used heavy data and rigorous modelling to identify undervalued players. At the time, that was unusual as well as demanding: Easily reproducible techniques do not produce serious edges.

It goes without saying: You only gain the upperhand if you achieve something competitors cannot. Likewise, investment assets with rare and desirable characteristics are harder and costlier to find.



But what is it, exactly, that constitutes a rare characteristic? And what makes it desirable? Why is it hidden and how can you unearth it?

What's a rare characteristic?

Let's begin with what is not rare: assets that deliver high positive returns through favorable market regimes (low positive inflation and substantial economic growth) and depreciate through adverse market conditions (high inflation or deflation and stagnant or negative economic growth). Almost all stocks are in that category, bonds are increasingly close to that category for reasons I explain below, and real estate is there too. That they are common, as opposed to rare, does not mean that these assets are undesirable per se. But they lack one key element: complementarity. As a result, you cannot rely only on them to succeed consistently.

Sports will make it clearer, let's switch to basketball. In a team, no single element should be evaluated in isolation. It is all the more true of an investment portfolio. Coaches seek players that, when assembled, will make their teams win. Great players are not rare and many franchises have one or more of them. There are many James Harden's, Carmelo Anthony's, and Blake Griffin's who can average 20 points per game. That's not a rare characteristic and, in and of itself, not enough to make a team win. Indeed, Harden, Anthony, and Griffin have never won an NBA title. Likewise, there are plenty of Microsoft's, Berkshire Hathaway's, and Visa's whose stocks can average a 20% annualized return with only 20% volatility. 20:20, equals 1.00, constitutes a relatively high return-to-risk ratio. But that metric is exactly like the player's 20 average points per game: a dangerous trap. Intrinsically, 1.00 is fantastic, but when all market risks are taken into account, that doesn't make you win the retirement game. What is going to happen during the next market regime shift? They will tank altogether, as they did in March 2020, irrespective of their high average return-to-risk ratio.

What is complementarity in the context of portfolio engineering?

Sports management has become very smart about measuring how players help the team win. Basketball fans will understand why the San Antonio Spurs' Big 3 [Tim Duncan + Manu Ginobili + Tony Parker] is a better combination than a hypothetical Big 3 [Tim Duncan + LeBron James + Derrick Rose]. Although James and Rose are more skilled and have better statistics than Ginobili and Parker intrinsically, coach Gregg Popovic could spot the hidden characteristics that would make them win four NBA championships.

But our industry lacks an easy metric to evaluate how different assets help a portfolio win. Alas, too many institutions, advisors, and investors buy into the return-to-risk myth and focus on layering on assets with high return-to-risk ratios. As an adverse consequence, the return-to-risk ratios of their overall portfolios are lower than those of the single assets they contain. In other words, they underperform on a risk-adjusted basis in a similar fashion to these basketball teams made up of superstars who do not play defense. What is causing this? Simply, past return, past risk, and return-to-risk of a single asset ignore or hide many characteristics that are crucial to the long-term performance of a portfolio:

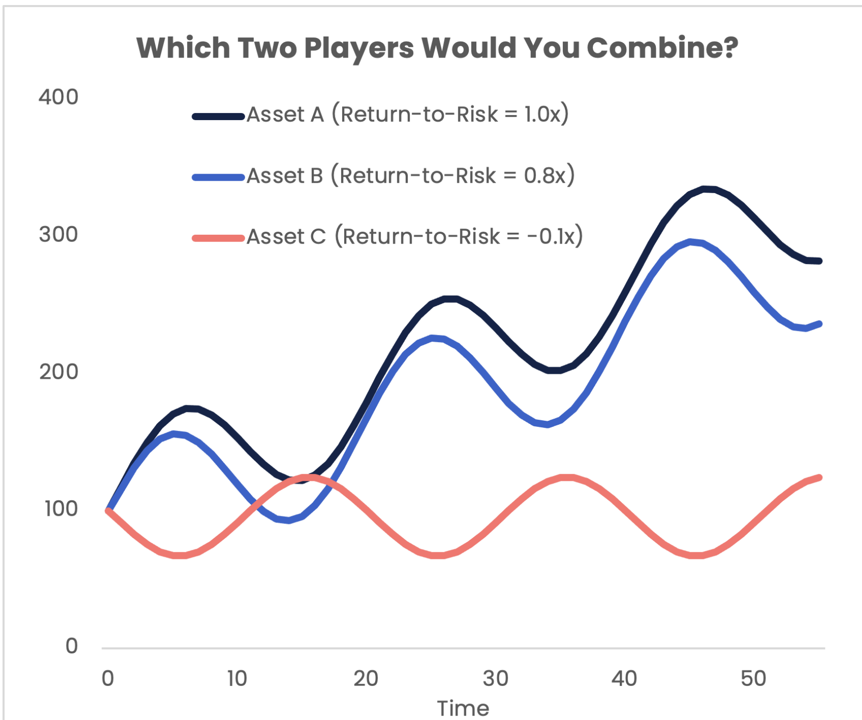
- The so-called "correlation" of said asset to other assets, i.e. the degree to which it moves in relation the others
- Its so-called "skewness", which influences the frequency of negative returns
- Its so-called "kurtosis", which influences the magnitude and frequency of its drawdown
- Its future behavior through different market regimes
- And many others

To put it harshly, past return, past risk, and return-to-risk, like average points per game, are half-illusions.

Portfolio management should be as smart as coach Gregg Popovic. By leveraging data and quantitative models, managers can unearth the hidden synergies between assets. What follows is a simplified example of quantitative analysis applied to portfolio selection. It focuses on a key hidden characteristic: correlation.

Intuitively, which two assets among A, B, and C from **Chart 1** would you combine? Most investors would pick A and B as the two building blocks of their portfolios – including professional investors in more complex contexts.

Chart 1

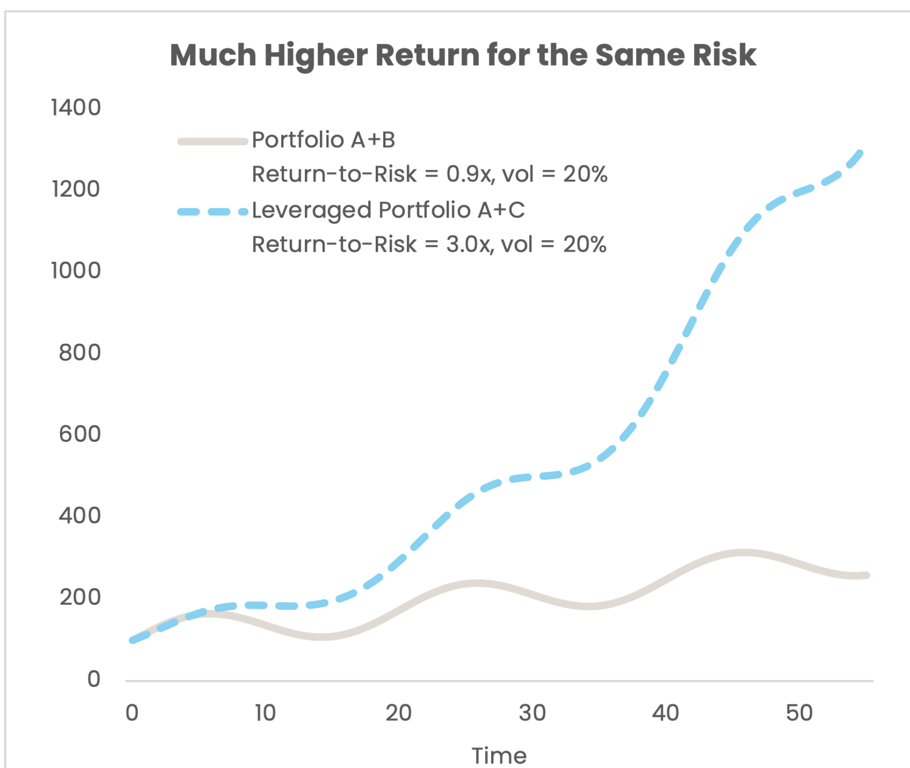


But the rigorous quantitative answer says otherwise. **Chart 2** compares the path of portfolio A + B with portfolio A + C and shows that the combination of one asset with positive return (A) and one with negative yield (C) and outperforms on a risk-adjusted basis: the overall return is similar for much less risk

Chart 2

Chart 3 adds "leverage" to A+C so as to equalize its risk to A+B's and allow us to compare apples to apples. The outperformance is dramatic.

Chart 3



Conclusion: Anti-correlation is a desirable characteristic. Along with the characteristics listed above, it is one of many that help you win consistently through different market regimes – not asset classes and geographies.

Why is diversification across market regimes more relevant now than ever?

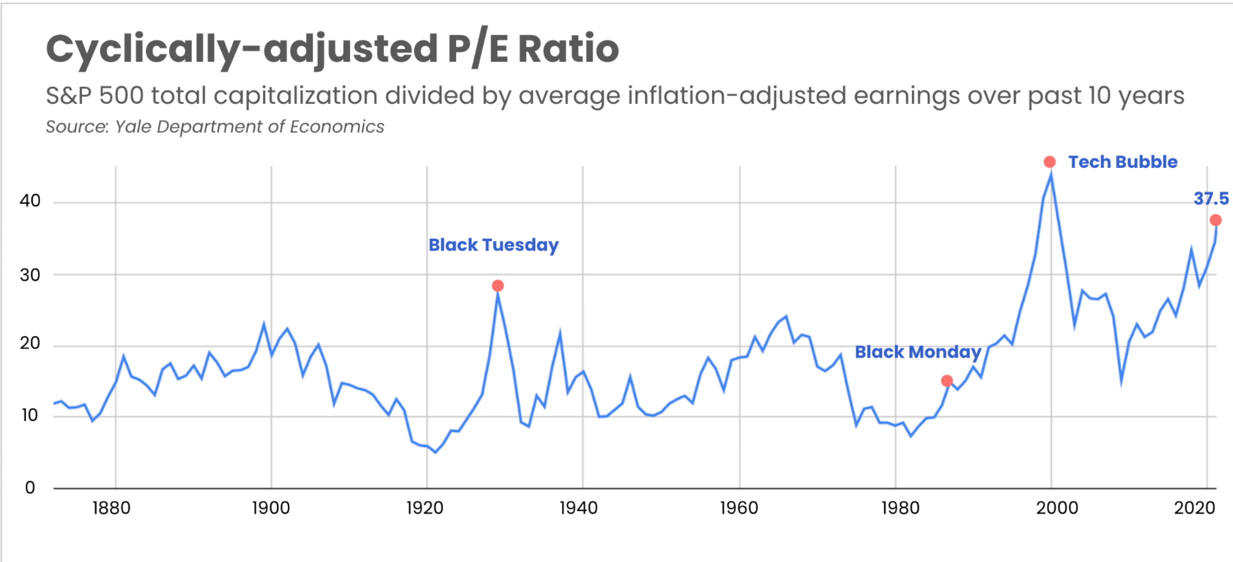
For two reasons:

1. Benefits of asset-class and geographic diversification are limited in today's market environment – which doesn't mean that they're non-existent.
2. Stock valuations are high – which doesn't mean that they're going to crash tomorrow.
3. The main political and economic forces that drove the market valuations up over the past 40 years seem to have lost steam – which doesn't that they will evaporate overnight

The table below illustrates reason #1. Interest rates falling to their 0% bottom – even though it's a soft bottom – have made finding anti-correlated assets harder. Between February 14 and March 23 of 2020, all traditional asset classes fell, in all parts of the world. Even more compelling, over the full year period, all stocks, corporate bonds, and major asset classes across the globe were significantly correlated to the S&P 500 index:

Asset class or Index	Correlation to S&P 500 in 2020
S&P 500	1.00
S&P Euro 350	0.71
S&P Emerging Markets	0.60
AAA Bonds	0.47
BBB Bonds	0.49
CCC or Lower Bonds	0.60
S&P Real Estate	0.89
Bitcoin	0.43
Ethereum	0.44

The chart below illustrates reason #2



For more than two decades, the cyclically-adjusted price-earnings, or CAPE, promulgated by Robert Shiller has been accepted as a gauge of whether stocks are overpriced. The ratio compares share prices to average inflation-adjusted earnings over the previous decade. A high ratio indicates a high price relative to value, i.e. overpricing, and a low ratio indicates a bargain.

This ratio is not without limitations. It doesn't take bond yields into account. And in reality, the level of bond yields has an effect on the multiple that stocks can justify. That is, very low bond yields, like today's, legitimately command higher stock valuations without implying overpricing. To understand that mechanism, you can refer to this primer on the discounting effect.

Still, the CAPE is back above 35 for only the second time in history, a figure that is hard to ignore. Many market commentators will conclude that we are at a peak or near a peak. Whether we are at a peak, or near it, and whether it is 10 days until we pass it, or 10 years, no one can tell. Not even the brightest economists, who seldom reach a consensus and often get predictions wrong (as they just did this week with non-farm payroll data and inflation) could tell.

For reason #3, consider the following list of political and economic forces that fueled the market booms over the past 40 years:

- Triumph of democracy and "end of history", social harmony generalized in the OECD
- Reagan and Thatcher's neoliberalism
    - Globalization
    - Taxes falling to near hundred-year lows
    - Unconstrained circulation of capital with increasingly low tariffs

- Digitalization and higher margins
- Interest rates falling from 17% to 0%
- Unprecedented asset-purchasing programs by central banks
- Favorable demographics with baby boomers coming into the labor force

Over that period, it is little surprise that investors could enjoy incredible outperformance of both stocks and bonds. But is this low-volatility, moderate-growth, low-rates, and low-inflation market regime repeatable for another 40 years? Many political and economic analysts will object:

- Debt is at a all-time high
- The middle class has not seen real middle wage growth since the 1970s
- Record economic inequalities are making way for egalitarian political forces (Bidenomics, EU's "social Europe")
- Demographics are very poor
- Rate hikes are likely and so is a potential comeback of inflation
- Geopolitical uncertainty (Iran, Israel, South China sea, Taiwan, Turkey, etc.)
- Wage increases in China and all of Asia-Pacific trigger margin pressures on corporations around the world
- Social cohesion is being challenged in many Western countries

If anything, a consensus seems to have emerged among political and economic leaders around the Western world to rethink and control capitalism, which will necessarily favor redistribution of wealth, increase the cost of capital, and decrease returns on capital. A good capital allocator should have this in mind.

So what should I do?

Don't predict, prepare.

If you are a Lifeworks client, you have entrusted your assets to a team of strategists that work hard to achieve anti-correlation. Our Protected Portfolio is ideally positioned today. It is a hedging strategy providing both upside participation in the equity market and downside protection against major market drops. We start with our flagship equity strategy and then carefully select some of the very few truly anti-correlated assets: put options on the whole stock market. Our puts are reliably anti-correlated instruments designed to protect against portfolio losses of more than 10% every 12-month period. The result is a truly diversified portfolio that delivers consistent returns across market regimes.

For more information, reach out to our team at support@lifeworksadvisors.com.

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