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Macro Research & Strategy

Countercyclical Indexing

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The biggest challenge for any investor involves aligning their tolerance for risk with the cyclical nature of the markets. Too many investors fail to balance their actual perception of risk with the way that the business cycle evolves as relative asset class risks change. A Countercyclical Indexing strategy can help us better align the way investors perceive risk with the way we actually manage portfolios.

> "Risk comes from not knowing what you're doing."
> - Warren Buffett

What is Countercyclical Indexing?

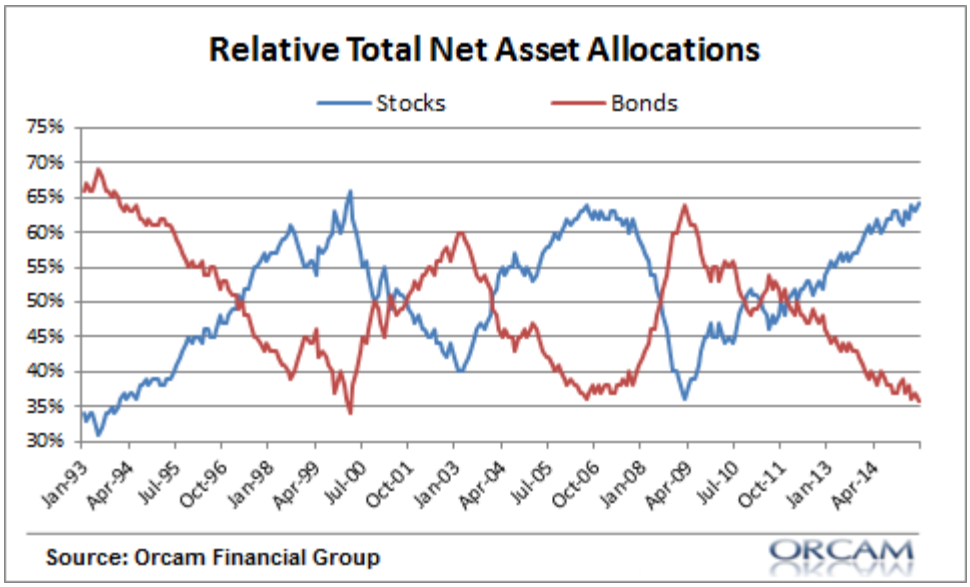
The financial markets are comprised of asset classes that are inherently dynamic. This means that the relative risks of asset classes are constantly changing over the course of the business cycle's changes. But as the business cycle shifts our risk profiles tend to remain the same. This can result in a misalignment between our asset holdings and the risks they contribute to our portfolios.

Traditional portfolio theory says that we should rebalance a portfolio back to its nominal weighting over the course of the business cycle. For instance, a 60/40 stock/bond portfolio is adjusted at times to rebalance back to a 60/40 weighting as stocks tend to become overweighted relative to bonds due to outperformance. But this linear and static portfolio allocation will expose investors to high levels of risk at the riskiest points in the business cycle because a 60/40 stock/bond portfolio is actually less risky early in the cycle and more risky late in the business cycle.

Traditional portfolio theory fails to account for the dynamism of relative risks in portfolios. In other words, traditional portfolio theory does not account for the dynamism of the business cycle which

results in portfolios that do not properly account for changing risks during the course of the cycle. This leaves your risk profile misaligned with asset class risks at various points in the business cycle.

This is due to the fact that, as assets rise relative to other assets, they often become increasingly risky. Likewise, as certain assets decline in value they become less risky relative to other assets. This means most investors are overweight risk late in the business cycle and underweight risk early in the cycle. We can quantify this empirically, for instance, because stocks have historically performed better in the first half of the business cycle than they have in the second half of the business cycle when accounting for relative risks and returns. Despite this reality most investors chase returns late in the business cycle and sell early in the business cycle. Not accounting for the dynamism of relative risks in asset classes means most investors underperform on a risk adjusted basis over the course of the cycle.



To better understand this dynamism we can look at investor behavior. The chart at the right shows the relative total net asset allocations of the world's largest Exchange Traded Funds. As you can see, investors tend to chase performance. That is, they embrace stocks well into bull markets and shun them during bear markets. This leaves the investors overweight risk late in the market cycle when these assets are most risky and underweight the riskiest assets early in the market cycle when they are least risky.

The most interesting takeaway from this data is that the investor who tracked this allocation significantly underperformed (in risk adjusted terms) the investor who did the exact inverse. The investor who followed the relative weighting generated an average annual return of 8.9% with a standard deviation of 13.9 since 1993.

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If, on the other hand, you had weighted bonds and stocks at their inverse weightings (for instance, the 2014 weighting would be 40% stocks and 60% bonds) then you would have generated an average annual return of 8.2% with a standard deviation of 6.4. In addition, this portfolio weighting had a max calendar year drawdown of just -3.6% in 2008 versus the –28% loss in the market tracking portfolio. Accounting for the dynamism of the market and trading against the current weightings generated similar nominal returns while taking far less risk.

Countercyclical Indexing—A Strategy Built on a Solid Foundation

A Countercyclical Indexing approach is relatively inactive (meaning we don't make frequent changes to the portfolios on a quarterly or annual basis), however, we do tilt portfolios on a cyclical basis as relative risks evolve. We rebalance to adjust for risk because we know that investors have perceptions of risk that can be dynamic relative to the financial markets. Importantly, this strategy can be implement in a manner that is completely consistent with standard index rebalancing (as often as one likes), low fees and tax efficient allocation. That is, Countercyclical Indexing can be an extremely inactive approach in order to maximize tax and fee efficiencies.

Most investors tend to chase performance as assets increase in value. But what they're really chasing is not performance, but risk. This is why so many investors tend to buy high and sell low. A Countercyclical Indexing approach is designed to counterbalance this response. We adjust for risk as the cycle evolves thereby helping to keep the client's risk tolerance in-line with that of the various asset classes we hold in underlying portfolios.

This approach is grounded in global macro understandings, but is also derived from two time tested approaches – Ray Dalio's Risk Parity approach and William Sharpe's Adaptive Asset Allocation approach. Risk parity seeks to create parity between the risks of various asset classes over the course of the portfolio's lifetime while William Sharpe's Adaptive Asset Allocation approach accounts for the inherent dynamism of the financial markets and adapts the asset allocation of the portfolio to account for changes in market values of major asset classes.

Countercyclical Indexing is a blend of these two approaches. However, unlike Dalio's Risk Parity approach we don't seek to create parity across risks in the portfolio. Instead, we utilize an adaptive methodology similar to William Sharpe's Adaptive Asset Allocation style based on the understanding that market values and risks are dynamic in an effort to create parity between the investor's risk profile and the relative risks of the asset holdings.

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Although the investor's risk profile is generally static over the course of the business cycle, the investor's portfolio will actually change over the course of the business cycle and expose them to varying degrees of risk. The Countercyclical Indexing approach establishes a portfolio management approach that is more consistent with the way investors actually perceive risk over the course of the business cycle and increases the probability of improving risk adjusted returns as well as helping to meet the investor's financial goals.

A Deterministic & Probabilistic Foundation

When we approach portfolio management we have to understand that we deal in probabilities and not certainties. No one knows the future, but we can, with a high probability, understand the foundational drivers of a financial system and derive some likelihood of potential outcomes. This probabilistic approach should be the foundation from which any sound portfolio management approach begins.

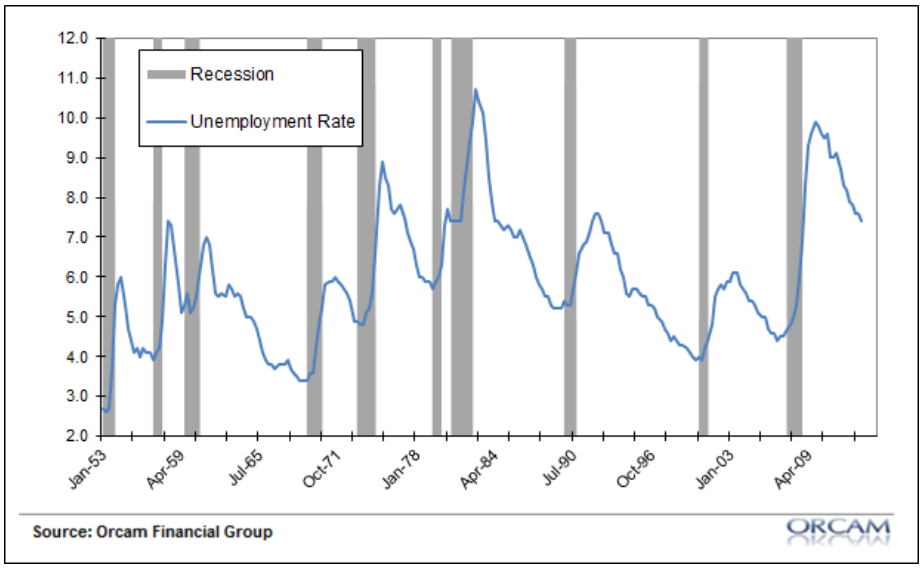
We know that much of what happens in the markets on any given day, month or year is purely stochastic and random. We never know for certain why or when buyers and sellers will meet at certain prices. And we know that what happens in the past is not necessarily directly tied to the future because the financial system, as well as its participants, are dynamic and evolving. But that does not mean there is no deterministic, or underlying driver of future outcomes.

We know that the markets are not entirely random because we can understand what drives the markets to do certain things. For instance, we know, with a high degree of certainty, that a capitalist system will tend to produce more goods and services over time as productivity and population growth increase. And this means that profits will tend to expand in the long-run. Since profits are the key driver of future stock prices we know that there is a very high likelihood of higher stock prices over very long periods of time. There is a deterministic and rational explanation for what causes stock prices to rise over long periods of time. This is not merely a random statistical set. Using a dynamic macro approach to portfolio construction can help us identify high probability outcomes and potential risks. Said differently, some degree of discretionary intervention is not only an intelligent part of sound portfolio management, but it is necessary.

Identifying High Probability Outcomes and Protecting Against Tail Risk

The existence and causes of the business cycle are hotly debated in economic circles, but one thing that's not controversial is the damage done in the periods of contraction of the cycle. Fears over recession are persistent in the news and particularly on Wall Street. Rarely does a day go by without someone declaring a new recession on the horizon or discussing the various reasons why a recession is a potential risk. Recessions are relatively rare events inside of the typical business cycle that expands 70-80% of the time. So why do policy makers, investors, the media and the general public obsess over recessions?

A recession, according to the NBER, "*is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales*."



From the perspective of policy makers it's obvious why there is a recession obsession. The unemployment rate, without fail, rises during a recession. Clearly, one of the worst things that can occur in an economy is job losses as this is consistent with an environment where output is going unsold and capitalists are reducing costs through their workforce as a result. It's nearly impossible to operate in this world without a source of income so when unemployment is high policy makers are at substantial risk of seeing themselves join the ranks of the unemployed.

The turmoil of a recession goes well beyond the labor market, however. In the last 40 years there have been three year-over-year periods where total household net worth declined. All three periods occurred inside a recession. The recent decline in household net worth was the greatest in the post-war era with households losing a staggering 19% of their total net worth (using quarterly figures).

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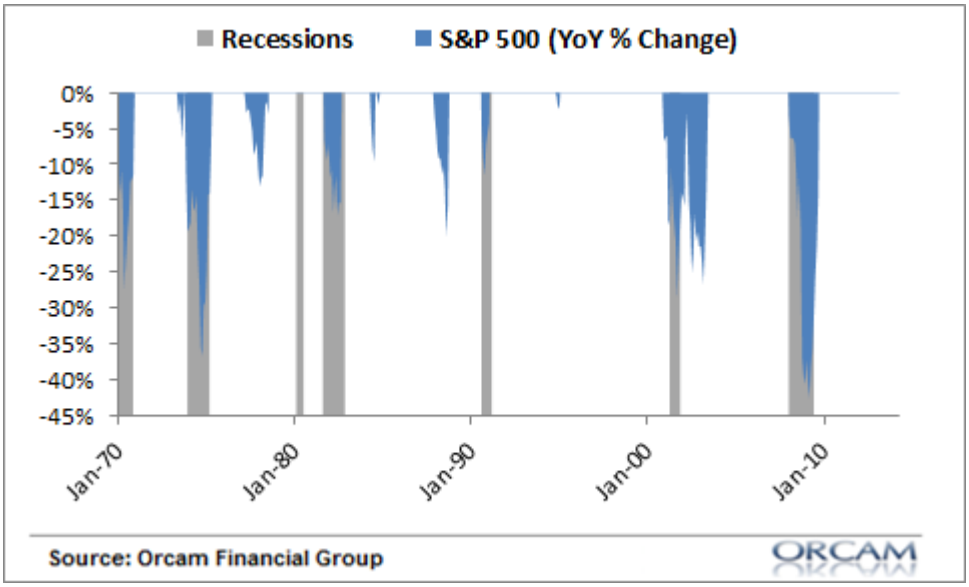
The real damage is done on a more micro scale and is a much more "in your face" type of loss in net worth. This is the real-time loss we see in equity accounts such as 401Ks, brokerage accounts and corporate net worth declines. In the last 50 years there have been just 4 technical bear market declines of 20%+ year over year (on a monthly basis). **All 4 occurred inside of a recession**. This explains Wall Street's recession obsession. A 20% decline in the equity markets requires a 26% appreciation in price just to get back to break-even. Since equities account for a substantial amount of household net worth this decline can be devastating and has far reaching ramifications.

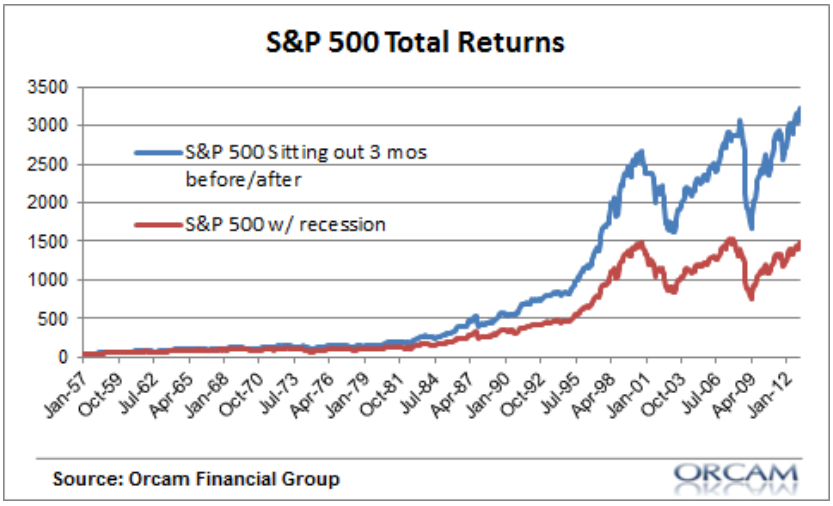


(Year over year % decline in S&P 500 – monthly basis)

If we look more closely at these tail risk events we can see that some of the losses have been tremendously devastating. For instance, the 2008 market decline resulted in a near 50% loss in the S&P 500. In order to break even from that loss an investor needs to generate a 100% return. If the S&P 500 compounds at a real, real return of 6.75% on average then it will take you almost 10 years just to get back to break-even. When you consider that most of our investing time horizons are just 30 years or so it goes to show why the risk of permanent loss is so widely feared.

Another perspective of this can be seen on the chart on the following page showing the difference in the total return of the S&P 500 if one were to sidestep the three months before and after a recession relative to the actual total return.

In other words, if you were able to forecast a window around which a recession would occur, subsequently moving to cash and then reinvesting on the back side, you would have generated a total return equal to DOUBLE of the actual S&P 500. Taking care of the downside has a tremendous impact on the potential upside and recessions are devastating in terms of their downside impact on the equity markets.



(Fig 2—S&P 500 total returns with and without recession)

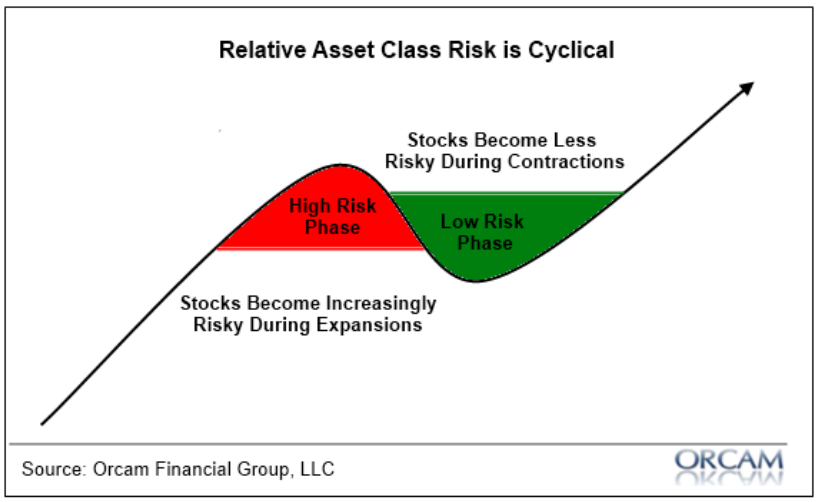
Of course, the business cycle is rarely in contraction so trying to time precisely when the business cycle shifts is likely a fool's errand, right? Yes and no.

"The business cycle is evolving and dynamic which means that our relative risks are dynamic, not static"

If we study the last 10 business cycles in the USA we know that the first half of expansion tends to coincide with the largest stock market gains. Likewise, the second half of expansions tends to coincide with weaker gains. Over the last 75 years the S&P 500 has averaged a 4.7% return in the second half of expansions including the recession phase. But during the first half of the expansion phase the S&P 500 generated an average return of 13.62%. What's interesting about these figures is not just the nominal return, but that the risk adjusted returns change dramatically as well. The standard deviation in both halves of the cycle is about 13.5%. This means that that 4.7% return was achieved while taking substantially higher risk. In other words, the risk of permanent loss was substantially higher in this period. In other words, the relative risk changes as the business cycle unfolds.

All of this makes perfect sense because it means that stocks become riskier as they rise in price. Although it is often counterintuitive, stocks become less risky when they fall and more risky when they rise. Likewise, the business cycle and the markets become more risky as we get deeper into the expansion. But our risk profiles often don't account for this. In fact, most investors get more aggressive *after* they've seen stock markets rise. This complacency results in investors positioning themselves precisely wrong at the precisely wrong points in the cycle.

This is true not only of stocks, however. As Vanguard noted in "*Investment Case for Commodities? Myths and reality*" there is strong evidence that commodities tend to be strong performers late in expansions and poor performers early in recessions due to inventory de/restocking. Likewise, bonds tend to perform best late in a recession when fear levels are highest.



This discrepancy in relative asset class risks creates a tremendous problem for asset allocators—since we know that the markets are dynamic and cyclical with changing risks at points in the cycle then how confident can we be in our allocations if they too are not adaptive? For instance, a pure indexing strategy without rebalancing will tend to be weighted towards the best performing instruments at points in the cycle when they carry the highest risks. This portfolio will have a natural tilt towards the highest risk assets at the very worst times in the cycle and will be underweight the most attractive assets at the worst point in the cycle. This results in a misalignment between your risk profile and the risks in the underlying asset classes.

Likewise, a passively rebalanced portfolio fails to account for the changing relative risk dynamics in the underlying assets. A passive 60/40 stock/bond portfolio, for instance, is essentially an equity heavy portfolio with the majority of variance coming from the stock portion (over 80% of the variance comes from the stock allocation), but the attractiveness of stocks relative to bonds is dynamic in this underlying portfolio. This means that the portfolio is constantly being rebalanced back towards an inherent overweight towards risk even though the risks tend to increase as the business cycle unfolds.

For instance, in the period from 1980-2013 a total bond portfolio generated a compound annual growth rate of 8%, standard deviation of 6.9 with a max drawdown of just -2.65% while an all stock portfolio compounded at 11.3% with an annual standard deviation of 18.5 and a max drawdown of –40.5%. This shouldn't happen in a world where stocks are supposed to generate higher returns given their relative risk. But investors who were overweight stocks in this period were simply generating a slightly higher nominal return in exchange for a substantially higher level of risk. The investor who didn't account for the relative risks of asset classes was unnecessarily exposed to large stock market declines thereby resulting in a reduction in their risk adjusted return.

This means that the investor's perception of risk is not always aligned with this simple portfolio allocation which is a static allocation in a dynamic environment. How confident can we be that these asset allocations will help us achieve our financial goals if our portfolios aren't also adaptive and tilting various factors to account for this dynamic risk landscape? Said differently, the concept of a truly "passive" investing approach misunderstands the dynamism of the financial system as it attempts to apply linear modeling to a non-linear system.

Of course, no one can predict when expansions and contractions will occur precisely and sidestep the market's every downturn, but we believe it is prudent to implement a portfolio management style that accounts for the probabilistic increase in recession and tail risk as well as the reality that the business cycle is in expansion far more often than it is in contraction. This approach allows investors to keep their risk perceptions better aligned with the actual underlying risks in asset classes. We can't predict the future precisely, but we can account for changing relative risks to ensure that our portfolios remain in-line with the way we perceive risk during the business cycle. This allows us to tilt our portfolios to account for the fact that our risk profiles are dynamic during the business cycle because the risks in certain asset classes are dynamic during the cycle.

All investors rebalance in order to help maintain their risk profile. But not all investors rebalance based on relative risk assessment. The Countercyclical Indexing approach implements a cyclical adjustment in portfolios that accounts for the way that risks in underlying assets evolve over the course of the business cycle. This helps us to increase the probability that the investor's perception of risk will remain aligned with the relative risks of various asset classes as the business cycle unfolds and evolves.

Of course, taxes and fees are important frictions in any strategic asset allocation plan. Countercyclical Indexing need not be any more "active" than a standard indexing and rebalancing approach which gives it similar tax and fee efficiencies. Countercyclical Indexing is, for all practical purposes, a more thoughtful and quantitative form of rebalancing a portfolio as it changes.

This low fee, tax efficient and risk focused form of adaptive asset allocation maintains a portfolio of assets that is in-line with the risk profile of the investor thereby helping to achieve better risk adjusted returns and better serve the financial goals of the investor.

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