
sidepocket

Research Department

The market has evolved in recent years, and investing strategies derived from Modern Portfolio Theory may not adequately compensate investors enough for the risk incurred.

This is especially evident for the roughly 20 million retail investors that have not previously had access to active management strategies like Tactical Asset Allocation, used by the wealthiest of investors to reduce the risk of large drawdowns.

The aim of this whitepaper is to not only offer an informative introduction to what makes **Sidepocket** work, but also why every investor may benefit from diversifying their stock market portfolios to the strategies that Sidepocket offers.

As the Research Department at **Sidepocket** Financial, our mission is to continue improving our ability to seek to generate returns for investors while attempting to reduce risk.

Introduction

Sidepocket aims to provide investors with the ability to harness the power of Tactical Asset Allocation ("TAA") to grow their assets while attempting to minimize risk. TAA is based on decades of empirical research, and can often provide much of the upside of investing in risky asset classes, while reducing a material amount of the risk associated with such investments.

Selecting Asset Classes

Equities

Historically, equities have been the primary driver of wealth accumulation for investors. In addition to driving growth, equities are the main asset class that offers protection of principal against the ravages of long-term inflation. To beat inflation, investors need a material allocation to equities, however equities have a high level of risk, expressing higher volatility than most assets as well as bear markets that often see a reduction in value of more than 30%.

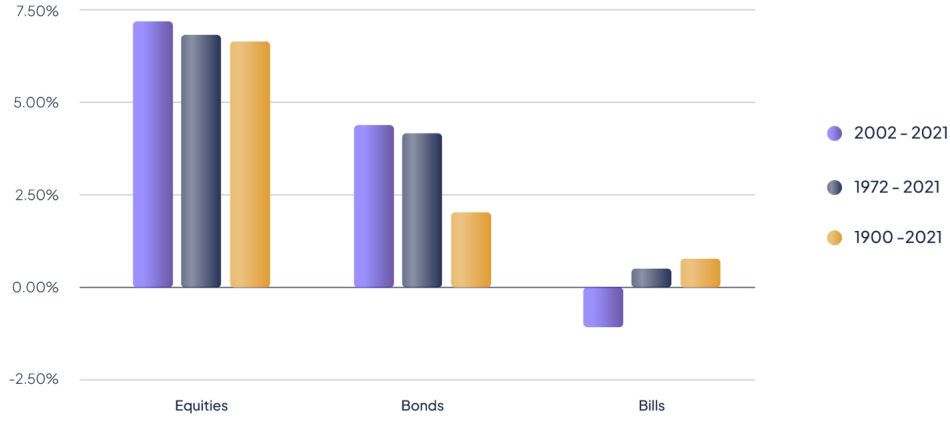
Bonds

Bonds, issued by companies and the US Government, are often the main driver of income for investor portfolios. High quality corporate bonds and US Government bonds ("Treasury Bonds") often have lower volatility than equities, but do not offer the same potential for appreciation.

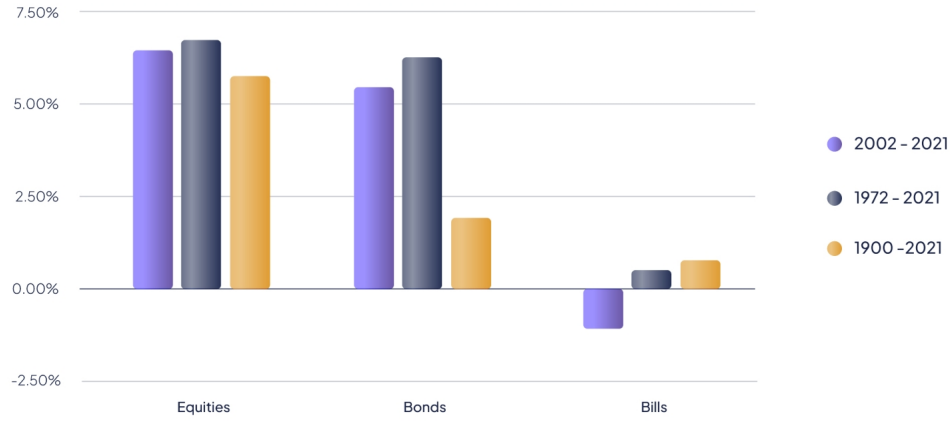
Below we can see long term historical real returns for US and Foreign Equities and Bonds. Please note that "real returns" means returns net of inflation.

Source: Dimson et al.

Annualized real returns for the USA, 1900-2021



Annualized real returns for theWorld ex-USA, 1900-2021



Selecting Investment Vehicles

Exchange-Traded Funds ("ETFs") are the primary investment vehicle used for Sidepockets. Certain Sidepockets with a high risk target may use individual stocks, as well.
[please see the Sidepocket Risk Map]

In addition to ETFs, some sidepockets will include Exchange-Traded Notes ("ETNs") as well as individual stocks, such as Apple (AAPL).

It should be noted that ETNs carry an additional risk, known as counterparty risk. This comes from the fact that ETNs are effectively debt obligations of the issuer, and the issuer could default on that obligation. ETNs can also provide leverage, as in the case of 2 and 3x (positive and negative) ETNs. ETNs that incorporate leverage are only used in Speculative sidepockets.

Allocating Assets Using Tactical Asset Allocation

Tactical Asset Allocation relies on heavily documented academic research into the dual phenomena of time series and cross sectional momentum. Time series momentum refers to the tendency of an asset to trend, or have extended runs in positive or negative performance. Cross-sectional momentum refers to the tendency of assets to experience runs in relative performance, both out-performance and under-performance.

For example, most are familiar with the concept of bull and bear markets; time series momentum simply attempts to quantify this well-known tendency of markets. Relative, or cross-sectional momentum, can be thought of in terms of an individual stock out or under-performing its sector for a sustained period of time.

Time Series Momentum Example

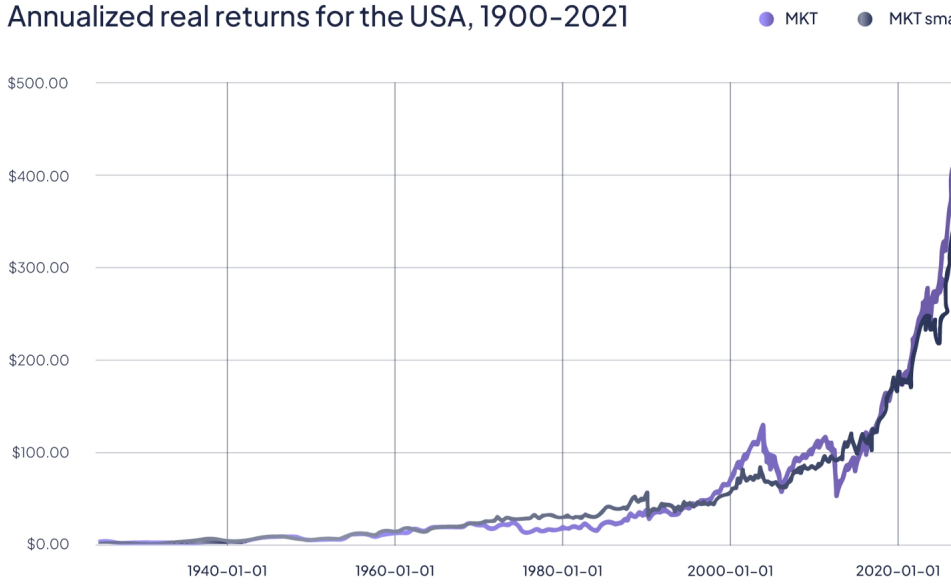
Reducing risk without sacrificing returns

In the following illustration, we use a very simple model to decide when to be invested in stocks or invested in cash. The model uses a simple moving average, or "SMA" of closing prices of an instrument. In this example, we are using a rolling average of ten monthly closing prices. At the end of each calendar month, we look at the closing price of the instrument and compare it to the average of the last ten monthly closing prices. If the closing price is above the simple moving average, we will buy the asset, or stay long if we were already long. If the closing price is lower than the simple moving average, we will sell the asset and go to cash, or stay in cash. For this illustration, we use the US Equity Market Return proxy (Mkt-Rf) from Kenneth French's website.

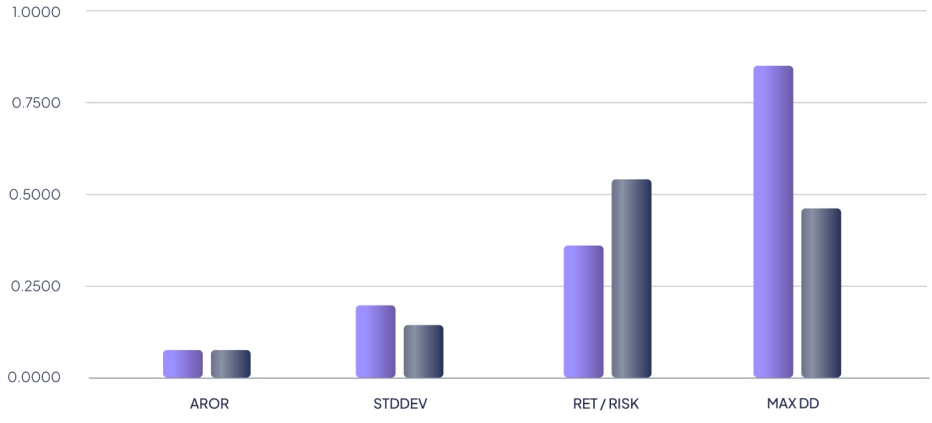
We can see in the chart and table below, that our very simple tactical model yields roughly the same return while materially reducing risk, providing a higher Sharpe ratio with a substantially lower worst drawdown.

Source: Kenneth French & Sidepocket Analysis

Annualized real returns for the USA, 1900-2021



MKT and MKT with SMA Filter



Validating Time Series Momentum with 1,000 Alternative Histories

While it is apparent that our simple model added value in observed history, it is prudent to ask whether it would have added value if the world had evolved in a different fashion. To address this concern, we can use the block bootstrap to simulate hundreds or thousands of alternative histories to test our simple model on. By doing this, we test our SMA model on data that neither we, nor the machine, has ever seen before.

A block bootstrap is very simple, and can be described using the following steps:

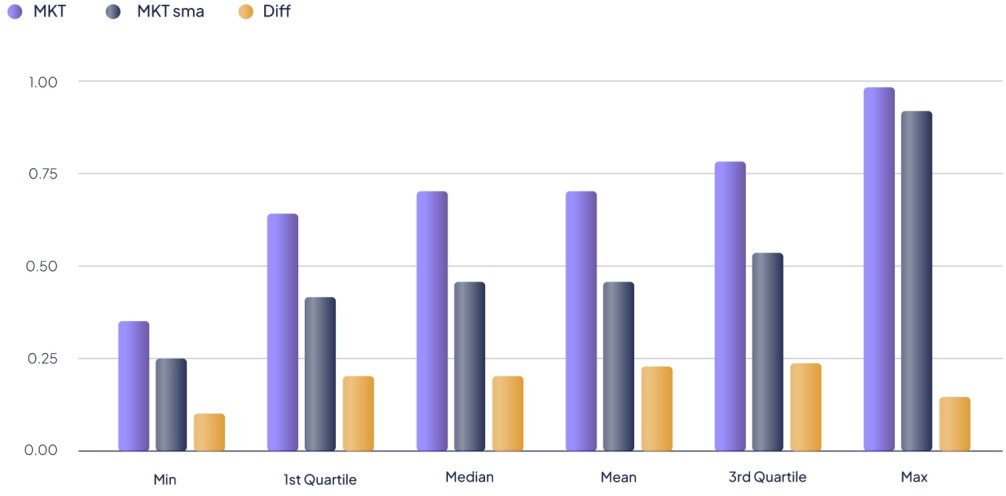
1. Select a block size. For this illustration, we use blocks of 12 months, but other block sizes yield similar results.

2. Perform a block bootstrap to create 1,000 time series that are similar to, but different from, the historical time series. The computer does this by randomly selecting blocks from the time series and putting them back together to yield a new time series with the same length as the original one. Some periods will be used multiple times, and some will be omitted.

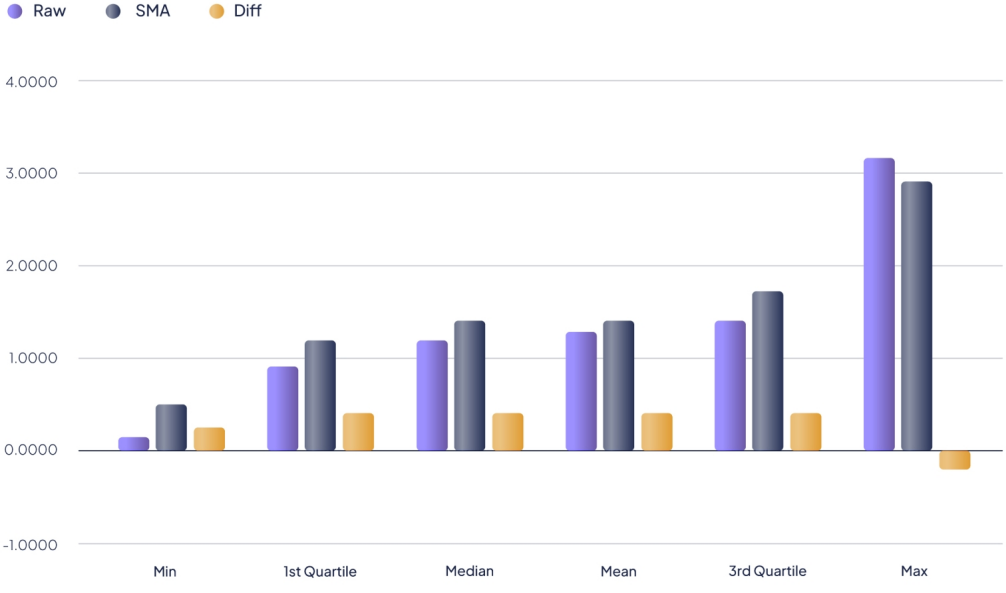
3. Apply our simple model to each of the 1,000 alternative histories and look at the distribution of the results.

Source: Dimson et al.

Annualized real returns for the USA, 1900-2021



Shape Ratios



Sidepocket Risk Map

It is very important for investors to understand the risks they are taking. Risk can be viewed in a number of ways, two of the most popular being volatility, or standard deviation, and maximum drawdown, or the largest peak to valley decline in value. In addition to risk, investors need to consider the time horizon of their investment. This is important, because all other things being equal, a longer time horizon allows an investor to take on more risk, as well as the potential for greater returns. In the Sidepocket application, you will see various categories of Sidepockets, along with differing risk categories. Below we share a (hopefully) plain-English description of the risk levels you will see, based on well-known assets.

Asset-based Risk Descriptions

Highest Risk	Volatility and drawdown you'd normally have in a portfolio of only equities, where the investor is picking individual securities.
High Risk	Volatility and drawdown you'd normally expect from an equity index, such as the S&P500, Dow 30 or Nasdaq 100.
Moderate Risk	Volatility and drawdown you'd normally expect from owning a 60/40 portfolio of stocks and bonds, such as the S&P 500 and Aggregate Bond Index.
Low Risk	Volatility and drawdown you'd normally expect from owning the Aggregate Bond Index.
Lowest Risk	Cash and cash equivalents, such as short term Treasury Bonds (1-3 years) and Treasury Bills (1-3 months).

Sidepocket Costs

Sidepocket does not charge fees for transactions, rather, **Sidepocket** charges a flat monthly fee or an asset-based fee, whichever is greater. For accounts which qualify for the AUM based pricing, an annual fee of 79 basis points (0.79 %) is applied on a monthly basis, or (1 /12 * 0.0079). Other account fees, such as annual IRA maintenance and ACAT related fees may apply.

Potential Tax Implications Of Sidepocket Models

Sidepocket is not a tax advisor, and cannot provide advice on the potential tax implications of any Sidepocket. It has been noted that many TAA strategies tend to have a relatively large number of short-term losses and a smaller number of long-term gains, which may have a positive impact on taxes for investments in taxable brokerage accounts. In all cases, please consult your tax advisor, as Sidepocket cannot and will not provide tax advice.

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Time Series Momentum

Time Series Momentum (AQR): https://www.trendfollowing.com/whitepaper/b.pdf

A Century of Evidence on Trend Following (AQR): https://www.trendfollowing.com/whitepaper/Century_Evidence_Trend_Following.pdf

Two Centuries of Evidence on Trend Following (CFM): https://www.trendfollowing.com/whitepaper/Two_Centuries_Trend_Following.pdf

Risk Adjusted Time Series Momentum (Quantica): https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457647

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Market Returns & Data

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Market Return data: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html