Is Modern Portfolio Theory Still Modern?

By Anthony B. Davidow, CIMA®
Modern portfolio theory (MPT) assumes that investors are risk averse, meaning that given two portfolios that offer the same expected return, investors will prefer the less risky portfolio. The implication is that a rational investor will not invest in a portfolio if a second portfolio exists with a more favorable profile of risk versus expected return.¹

MPT has a number of inherent limitations. Investors aren’t always rational—and they don’t always select the right portfolio. Investors often chase returns, especially during bull markets. Markets aren’t always efficient, and they are prone to boom and bust periods. Long-term capital market assumptions (CMAs) are used in mean–variance optimization models; however, returns, risks, and correlations aren’t stable over the long run.

This article addresses some of the limitations of MPT and evaluates alternative techniques for allocating capital. Specifically, it will delve into the following issues:

- What are the various asset allocation approaches?
- What are the limitations of each approach?
- How should advisors evolve their approaches?
- What is the appeal of a goals-based approach?
- How should advisors use third-party models?

**ASSET ALLOCATION METHODOLOGIES**

Critics will point to the limitations of MPT, but many of the alternative methodologies have drawbacks as well. Table 1 identifies a few of the more popular approaches and the corresponding limitations. For MPT and PMPT (post-modern portfolio theory), the biggest limitation is with respect to the robustness and accuracy of the data used to optimize. Using only long-term historical averages of the underlying asset classes is a flawed approach. Long-term data should certainly be considered—but what if the future isn’t like the past?

The long-term historical annual return of the S&P 500 has been 10.3 percent (1956–2019). The equity allocation provided substantial growth, and the fixed income allocation provided income through retirement. Equity returns likely will be lower than their historical averages, and bond yields are at generationally low levels. In fact, globally there are roughly $12 trillion in negative yielding bonds.

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Approach</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Portfolio Theory (MPT)</td>
<td>MPT is the optimal combination of asset classes to maximize the return for a given level of risk or minimize the risk for a given level of return.</td>
<td>Dependent on robustness and accuracy of capital market assumptions (return, risk, and correlations). MPT assumes that investors select the best portfolios rather than the highest-returning portfolios.</td>
</tr>
<tr>
<td>Post-Modern Portfolio Theory (PMPT)</td>
<td>PMPT builds on MPT, focusing on optimizing the downside risk of a portfolio, rather than the mean variance of returns.</td>
<td>Dependent on robustness and accuracy of capital market assumptions (return, risk, and correlations). PMPT reduces the risk of the overall portfolio but may lag in rising markets.</td>
</tr>
<tr>
<td>Black-Litterman</td>
<td>Black-Litterman builds on MPT, focusing on the equilibrium assumption that the allocation to a particular market should be proportional to the underlying market size.</td>
<td>Larger asset classes will have a disproportional impact on model results, and smaller asset classes will have minimal impact on results.</td>
</tr>
<tr>
<td>Liability-Driven Investing (LDI)</td>
<td>LDI is an approach designed to match future flows to future liabilities by size and duration.</td>
<td>This is typically an institutional approach used for defined benefit plans with predictable cash-flow needs.</td>
</tr>
<tr>
<td>Risk Parity (Risk Premia Parity)</td>
<td>Risk parity focuses on allocating equally to risk, as defined by standard deviation, across asset classes.</td>
<td>Risk parity helps in limiting risk, but this approach likely will lag in rising markets where investors are rewarded for taking on risk.</td>
</tr>
<tr>
<td>Goals-Based Investing (GBI)</td>
<td>GBI solves for the various goals of individual investors including accumulating wealth, saving for a home, sending a child to college, or generating income in retirement income, among others.</td>
<td>Investors are prone to chasing returns, and it can be challenging to keep them focused on their goals. Goals may change over time, so it is important to revisit goals periodically.</td>
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According to J.P. Morgan’s recent long-term capital market assumptions, U.S. large-cap equity returns are projected to be 7.2 percent over the next 10–15 years, with aggregate bonds projected to be 2.8 percent and cash 1.6 percent (all well below the long-term historical average) (see table 2). The lower assumptions are driven largely by the current global economic environment. Note, the CMAs have changed to reflect the recent volatility associated with COVID-19.

Many of the approaches listed in table 1 are influenced by the CMAs used in the models. CMAs also are used in financial-planning tools. The inputs need to make sense and not rely upon flawed historical data. Relying upon flawed CMAs may lead to overestimating returns and income—and falling short of investor expectations.

All of the approaches in table 1 are impacted by flawed CMAs, producing a “garbage-in, garbage-out” result. Merely using long-term historical averages may lead to higher expectations for returns and income than may be achievable today. Plus, with elevated correlations, investors may not achieve the desired diversification benefits.

Although MPT, PMPT, and Black-Litterman are somewhat similar in approach, the nuances of each lead to different resulting portfolios. Liability-driven investing (LDI) and risk parity are more institutional approaches and may not be the best approach for high-net-worth families. Goals-based investing (GBI) has become increasingly popular because it aligns with investors’ goals and makes intuitive sense. Reporting and reinforcing progress relative to those goals can be challenging, especially in light of the financial media’s fixation on record highs.

Nobel laureate Harry Markowitz once claimed that “diversification is the only free lunch in investing.” The free lunch is accomplished by introducing asset classes that don’t move in lockstep with one another. You could say that the correlations among asset classes are the secret sauce of MPT. Unfortunately, correlations aren’t static—and, in fact, they have been increasing over the past several years (see figure 1). This is due in part to the inter-connectivity of the various markets and the central competition or coordination among those markets.

### SELECT LONG-TERM CAPITAL MARKET ASSUMPTIONS (10–15 YEARS)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>AC World Equity</td>
<td>6.5%</td>
<td>8.1%</td>
<td>1.6%</td>
</tr>
<tr>
<td>U.S. Large Cap</td>
<td>5.6%</td>
<td>7.2%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>9.2%</td>
<td>10.5%</td>
<td>1.3%</td>
</tr>
<tr>
<td>U.S. Treasuries (Intermediate)</td>
<td>2.7%</td>
<td>2.2%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>U.S. Aggregate Bonds</td>
<td>3.1%</td>
<td>2.8%</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>8.8%</td>
<td>9.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cash</td>
<td>1.9%</td>
<td>1.6%</td>
<td>-0.3%</td>
</tr>
</tbody>
</table>

Source: LTCMAs, J.P. Morgan Asset Management Multi-Asset Solutions, data as of April 20, 2020

### SELECT CORRELATION DATA

<table>
<thead>
<tr>
<th></th>
<th>January 1, 1999–December 31, 2008</th>
<th>January 1, 2009–December 31, 2018</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>0.90</td>
<td>0.90</td>
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<tr>
<td>3</td>
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<tr>
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<tr>
<td>6</td>
<td>0.81</td>
<td>0.79</td>
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<tr>
<td>7</td>
<td>-0.14</td>
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<td>9</td>
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<td>0.64</td>
</tr>
<tr>
<td>10</td>
<td>0.52</td>
<td>0.52</td>
</tr>
</tbody>
</table>

**Correlation Ranges**

- 0.9–1.0
- 0.7–0.9
- 0.3–0.7
- 0.0–0.3
- <0.0

**Asset Classes**

1–U.S. Large Cap
2–U.S. Small Cap
3–International Developed Large Cap
4–International Developed Small Cap
5–Emerging Markets
6–U.S. Core Bonds
7–Global Bonds
8–High Yield Bonds
9–REITs
10–Commodities

Source: Zephyr STYLEAdvisor 2019

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Figure 2

BEYOND THE 60/40 PORTFOLIO

60/40 Portfolio

Forward-Looking Models

Potential Alternative Asset Classes
- Commodities
- Private Equity/Debt
- Private Real Estate
- Alternative Investments
  (Global Macro, Managed Futures, Long/Short Equity, Alternative Credit, etc.)

It may be prudent to employ some form of tactical approach during turbulent times when markets don’t act rationally.

Advisors should consider broader diversification across their equity and fixed income allocations including international developed, emerging markets, high yield bonds, real estate, commodities, and certain types of alternative investments. The broader diversification can assist in increasing the return, reducing the risk, and providing non-correlating returns.

In recent years, many advisors have become enamored with the growth of U.S. large-company growth and some have questioned the merits of allocating abroad (see figure 3). Of course, making decisions based on short-term results can be short-sighted. Recency bias is a common problem for investors because they extrapolate short-term results and assume those results will persist in the future.

How quickly we forget the lessons of the first decade of the 21st century, sometimes called “The Lost Decade,” which was bookended by stock market crashes. From January 2000 to December 2009, U.S. large-cap equity was the only major asset class that delivered negative annualized returns (see figure 4). Emerging markets equity and debt performed very well during this period. After this period, investors were tempted to dismiss the U.S. markets and focus more attention abroad (see figure 5). Of course, making decisions based on short-term results can be short-sighted. Recency bias is a common problem for investors because they extrapolate short-term results and assume those results will persist in the future.

In addition to broadening exposure outside our borders, advisors also should consider including alternative investments. With the strong U.S. large-cap returns during the bull run, advisors have been slow to incorporate alternative investments in a meaningful way. Some of it is due to the generally lackluster results of many of these strategies—and some is due to the lack of education and conformity in describing what these strategies are designed to do in a diversified portfolio (Davidow 2018).

Most alternatives are not designed to outperform the S&P 500 in a rising market. Strategies such as long-short bank intervention that has led to artificially low global interest rates, among other issues.

Figure 1 shows that more asset classes exhibited low to negative correlation to one another (dark blue and green boxes) during 1999–2008 than during 2009–2018. Over the past decade, correlations have increased dramatically across the board. In fact, during periods of shocks such as 2008 or the fourth quarter of 2018, correlations rose among most major asset classes. When we need the benefits of correlations the most, they fail to retain their diversification benefits. This supports the argument for spreading the risk to more and new asset classes.

It’s worth noting that markets react very differently over normal periods and turbulent periods. Correlations are much more stable over market cycles. However, when we experience shocks to the market such as the second half of 2008 or the fourth quarter of 2018, correlations rise significantly. It may be prudent to employ some form of tactical approach during turbulent times when markets don’t act rationally.

Evolving Asset Allocation

The 60/40 allocation is a popular benchmark portfolio, with investors gaining

most of their returns from stock allocations and income coming primarily from bond allocations. The long-term historical annual average of the S&P 500 has been 10.3 percent, and the long-term annual yield on bonds has been 4–5 percent. Stocks and bonds have provided some degree of diversification. Therefore, the naïve 60/40 portfolio has provided attractive returns and income, and investors easily could shift allocations to generate higher returns or higher income to accommodate needs over time.

But what if equity returns and bond yields are lower during the next 10–20 years? What if the correlations among asset classes remain elevated? Does the 60/40 portfolio still work for our clients (see figure 2)? In fact, many are questioning the merits of the 60/40 portfolio (Davidow 2017).
and relative value provide hedged equity exposure. Managed futures and global macro are defensive strategies that earn their stripes in difficult market conditions, and alternative credit strategies exploit illiquidity and the ability to be long and short sectors of the credit market.

Private equity, private debt, and private real estate are garnering a lot of attention. These once-elusive asset classes are now available to more investors, at lower minimums, with better liquidity (Davidow 2019). If, in the future, traditional returns and income are likely to be well below historical averages, advisors will be forced to identify alternative sources of returns and income for their clients. They’ll need to evaluate different strategies and structures to meet clients’ needs and objectives.

Figure 5 shows that private equity historically has delivered strong absolute and relative returns compared to traditional asset classes. Today, there are substantially more private companies than public companies—and many will stay private longer. Note, however, private equity standard deviation is likely understated due to the nature and frequency of valuing securities.

**ASSET ALLOCATION CONSIDERATIONS**

There are a number of asset allocation and portfolio construction considerations in building better portfolios. The following represent a few key issues:

- Strategic versus tactical allocation
- Asset allocation and asset location
- Active versus passive investing
- The role and use of alternatives
- Liquidity and cash-flow needs

Given some of the limitations noted above, and the dynamic nature of today’s market cycle, advisors may want to incorporate a tactical overlay to respond to changing market conditions. We don’t recommend making big swings in and out of the market.
Advisors often spend a lot of time thinking about client asset allocation strategy, but they spend little time thinking about which investments belong in which type of account (e.g., personal account, individual retirement account, trust, etc.). Asset location is an important consideration for high-net-worth investors because the tax consequences of bad decisions may erode any benefit gained from asset allocation. Consequently, advisors may want to consider exchange-traded funds (ETFs) to gain broad market exposure. ETFs typically are more tax-efficient than separately managed accounts (SMAs) and mutual funds. Passive management also has a significant cost-advantage. Active managers may be best equipped to play defense and navigate through a challenging market environment such as the one we’re currently experiencing. Active managers also may be suitable in less-efficient asset classes and niche strategies.

The role and use of alternatives are important considerations with multiple implications. What specifically are you solving for? Does your client meet the accreditation standards? Does the structure provide adequate liquidity? Based on the answers to these questions, advisors can then determine the most appropriate solutions.

**ENVIRONMENTAL, SOCIAL, AND GOVERNANCE**

In recent years, there has been a lot of interest in environmental, social, and governance (ESG) investing. Women and men, young and old, have indicated a desire to align their interests and their portfolios. There has been some confusion about how best to do that and whether all strategies screen securities in the same fashion (see table 3). There’s also a great deal of confusion surrounding the terminology used (i.e., socially responsible investing [SRI], ESG, sustainable, and impact investing).³

In the 1990s, SRI became popular primarily with institutions. SRI is negative screening, eliminating companies with harmful practices. SRI typically came at a cost. By eliminating certain companies, or industries, these strategies typically lagged the market. Consequently, many investors chose to reflect their views and preferences in a different fashion.
Over the past several years, ESG has garnered a lot of attention, and a proliferation of new products have come to the market. ESG is a relative screening approach, and based on data from a number of reputable sources, it appears to outperform the market. Intuitively this makes sense—good companies, with sound practices, should do well over time.

This topic warrants a more comprehensive discussion than we have space for in this article, but let us consider a few asset allocation issues. As advisors have begun to embrace ESG, the challenge for many is how to incorporate it into diversified portfolios. Does it need to be an all or none solution? In other words, do all investments need to incorporate ESG to validate the approach? Are there enough strategies across all asset classes? How can one distinguish among myriad strategies?

The answers to these questions are evolving. Advisors can align clients’ values and preferences with a broad array of U.S. and international strategies. There are limitations in certain asset classes, but the number of strategies and asset classes accessible is expanding rapidly. Advisors need to evaluate the various screening methodologies and the corresponding tilts and biases.

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Multiple studies have shown that investors want more education about ESG, and they want their advisors to provide it to them (Dixson 2019). Embracing ESG with clients moves the quarterly review discussion beyond focusing solely on whether or not the portfolio outperformed the market.

**GOALS-BASED INVESTING**

We’ve highlighted some of the limitations of MPT and the methodologies that build on MPT. Goals-based investing relies on underlying CMA’s, but it moves the discussion from optimizing portfolios to solving for investor needs. GBI needs to be part of the profiling process and incorporated in the investment policy statement. It should influence the investments used and the amount allocated to each asset class.

And it should be reinforced and revisited in quarterly reviews.

As an industry, we need to move investors away from chasing returns and keep them focused on long-term goals and objectives—not because managers have a difficult time outperforming, but because we all have seen the data showing how investors experience substantial underperformance relative to their benchmarks.

Advisors should start the goals-based discussion by identifying why they would recommend certain investments (see figure 6). Obviously, much of the growth will come from the equity allocation—U.S. and international, developed, and emerging markets. And depending on the investor’s wealth, risk appetite, and sophistication, an advisor may want to consider relative value, long-short, or private equity.

Income will come primarily from fixed income—corporate, high yield, and emerging market debt, among others. Defensive assets include assets such as cash, Treasuries, and gold. Managed futures and global macro may be appropriate for certain investors.

The value of framing the discussion in this manner is that an advisor can focus on how each investment is performing relative to the client goal. Gold isn’t in...
the portfolio to outperform the S&P 500 but rather to buffer market volatility in uncertain times. High yield and real estate investment trusts (REITs) are in the portfolio to generate additional income.

Based on goals and objectives, each client will own different amounts of the underlying strategies. A young married couple may be willing and able to take on more risk due to their time horizon. The couple may have a healthy allocation to growth-oriented strategies and more aggressive income strategies such as high yield and REITs. A family nearing retirement may have a larger allocation to income-generating strategies and more defensive assets to protect against big losses.

**THE RISE OF THE MODELS**

One trend we’re seeing across the marketplace is the rise of third-party models. With the extraordinary growth of ETFs providing abundant raw materials to build portfolios, and the challenges of asset allocation, a lot of focus has been on developing and introducing model portfolios, many of which are manufactured by third-party asset managers. These models can be total return or goals-based, or they can reflect client preferences such as ESG.

How should advisors think about these models? Do they lessen the value of the advisor? Does one model solve for all your client needs, or should you use multiple models?

The growth of these models is a good thing—and a natural evolution for the industry. In fact, we could see a similar thing—and a natural evolution for the third-party models. Advisors now have a multi-faceted toolbox leveraging the resources and expertise of a broad set of proprietary and third-party partner firms. Consequently, the value of the advisor is determining how best to use these models to satisfy clients’ goals, dreams, and aspirations.

**CONCLUSION**

In the age of robo, advisors should embrace asset allocation and portfolio construction as a way of demonstrating value. Advisors should recognize some of the inherent limitations with MPT and other asset allocation approaches. For asset allocation and financial planning purposes, advisors should ensure that the CMAs used in the models are current and make sense. Otherwise, you’ll likely fall short of reaching clients’ long-term goals and objectives. We may need to adjust clients’ expectations for lower returns and income in their portfolios. It’s always better to temper expectations and overdeliver—rather than set your clients up to fail.

A goals-based approach keeps investors focused on attaining goals rather than chasing performance. Advisors need to consistently reinforce this goals-based approach to be effective; they cannot focus on performance when it’s strong, then refocus on goals when performance lags. Also, it’s important to periodically revisit client goals and objectives—they often change over time.

Regardless of whether you build the model or utilize models manufactured by a third party, you should understand the underlying methodology. There may be a need to use more than one model per household to solve for client needs. An advisor’s value proposition shouldn’t be devalued by employing third–party models; rather, it shifts the focus to evaluating, selecting, and assembling models to achieve the desired outcomes.

The value of the advisor is putting the pieces of the puzzle together in the appropriate fashion. This is more than asking a series of generic questions and turning the portfolio over to a robot. It’s understanding your client’s unique wants, needs, and desires—and assembling the right building blocks to achieve those goals. Sound asset allocation advice is both art and science.

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**ENDNOTES**

1. This is the technical definition of MPT; however, it uses some flawed assumptions.

**REFERENCES**
