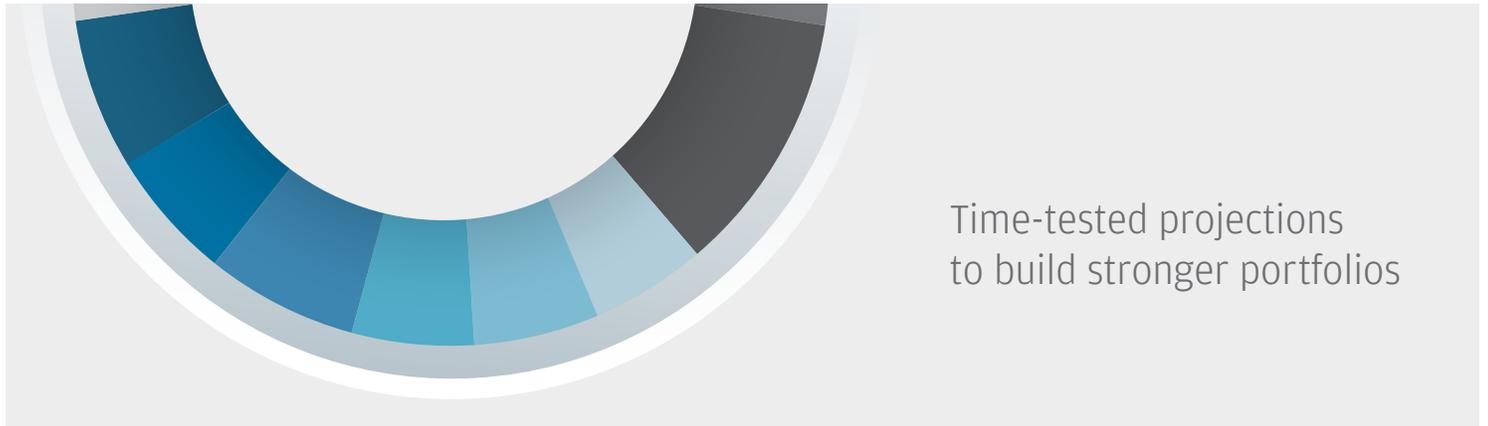


Prescriptions for late-cycle portfolio construction

January 2019



TRANSIENT MARKET VOLATILITY HAS THE POTENTIAL TO BE THRILLING, ESPECIALLY ON THE HEELS OF LOW VOLATILITY SPELLS LIKE THOSE IN THE NOT-TOO-DISTANT PAST. However, sustained periods of market stress can create a positive feedback loop in which excitement quickly turns to fear. It is in these episodes that portfolio resilience is truly tested and the ability to capture market dislocations can have a disproportionate impact on results.

Our 2019 Long-Term Capital Market Assumptions (LTCMAs) offer a message of secular optimism, broadly consistent with our 2018 assumptions. This optimism is tempered by the reality of late-cycle headwinds and an uptick in volatility, as many economies are operating above trend with little slack and asset valuations remain elevated (although after December's sell off, stocks now look cheap relative to their own history, as well as to bonds). These views are incorporated into our 10- to 15-year forward-looking risk and return estimates across asset classes. But how can institutional investors protect their portfolios from near-term stresses so that they can be positioned for long-term success?

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STRESS MANAGEMENT

What investors need to survive elevated market volatility is something akin to a beta-blocker, a class of medication that works to suppress the body's "fight or flight" responses (such as an increased heart rate, flushed face and shaking) and, in the case of a heart attack, can potentially save a life. Analogous tools exist that may enhance institutional portfolios' resiliency in a downturn. Similar to the medication, these tools can help prevent a fight-or-flight response on the part of investment committee members and portfolio managers during periods of heightened market stress and equity drawdowns. We define "portfolio beta-blockers" as any reallocation that reduces the overall public equity beta and dampens expected volatility.

EXHIBIT 1 examines a subset of potential beta-blockers from our LTCMAs with a world equity beta of less than 0.50, making them good candidates for a reallocation away from public equity.

UPSIDE PARTICIPATION VS. DOWNSIDE PROTECTION

Looking across the various options in Exhibit 1, it's clear that there are trade-offs between an asset class's expected return and its ability to offset losses during a public equity drawdown. For example, over the period analyzed (3Q 2006 to 2Q 2018), U.S. long Treasuries had the best performance during equity drawdowns, thanks to the persistent correlation between long interest rates and risk assets during this time frame. However, they also have one of the lowest expected long-term returns, making them more costly to hold over time as an equity replacement. On the other hand, sectors within emerging market debt have higher current yields, limiting the return drag, but don't hold up historically as well as Treasuries during equity drawdowns.

One of the most impactful changes to our 2019 LTCMAs is the assumed path and equilibrium level of interest rates. Given a shift up in yields since our prior-year estimates were finalized,¹

¹ As of September 30, 2017.

our 2019 estimates assume a reasonably fairly valued yield curve (as of September 2018). This has helped boost fixed income return assumptions across the board, whereas global equity expectations remain unchanged overall. Thus, compared with 2018, portfolios can hold larger fixed income allocations while still achieving the same long-term return target, and fixed income beta-blockers are relatively more attractive to hold.

THE COST OF ILLIQUIDITY

Whether part of an explicit "diversifying bucket" or scattered throughout the portfolio, another important dimension of a beta-blocker is the ability to generate the liquidity needed to capture market dislocations. It's great to avoid the 20% equity drawdown, but having the option to put more capital to work in the asset class is also desirable. The ability and cost to generate liquidity will depend not just on the asset class profile but also on the market depth in the asset relative to the size of the investor (see "Managing illiquidity risk across public and private markets").²

² 2019 *Long-Term Capital Market Assumptions*, J.P. Morgan Asset Management, 2018.

Asset classes vary in their ability to provide returns vs. limit losses in an equity drawdown

EXHIBIT 1: PORTFOLIO BETA-BLOCKERS

		Arithmetic expected return (%)	World equity beta*	Average return in equity drawdown (%)**
CORE FIXED INCOME	U.S. long-duration government/credit	4.41	-0.11	5.54
	U.S. long corporate	4.97	0.16	1.29
	U.S. aggregate	4.06	-0.01	2.30
	U.S. long Treasuries	3.83	-0.41	10.61
	TIPS	3.38	0.03	1.37
	World government bonds	3.04	0.03	0.74
	Securitized	4.03	0.00	0.02
EXTENDED FIXED INCOME	U.S. leveraged loans	5.27	0.47	-5.30
	EM local	7.44	0.47	-4.89
	EM sovereign debt	6.67	0.31	-1.82
	EM corporate	6.32	0.38	-3.32
	U.S. muni high yield	4.72	0.30	-2.21
	Global credit-sensitive convertible	4.94	0.28	-6.42
REAL ESTATE/ INFRASTRUCTURE	U.S. core	6.45	0.09	-3.48
	U.S. value-added	9.53	0.11	-5.50
	European ex-UK core	7.74	0.42	-8.36
	Asia-Pacific core	6.91	0.20	-3.25
	Global infrastructure equity	6.64	0.34	-7.42
OTHER ALTERNATIVE	Direct lending	8.14	0.23	-0.35
	Diversified hedge funds	4.52	0.33	-5.18
	Macro hedge funds	4.06	0.09	-0.65

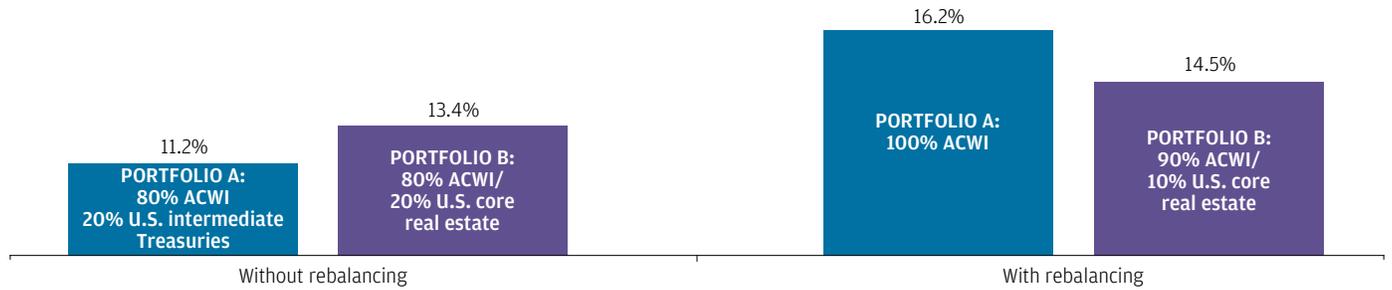
Source: J.P. Morgan Asset Management 2019 Long-Term Capital Market Assumptions and analysis; data as of September 30, 2018.

* World equity beta is computed based on quarterly returns relative to the MSCI All Country World Index (ACWI) from 3Q 2006 through 4Q 2018.

**Average return in an equity drawdown is the average of returns for quarters, from 3Q 2006 to 2Q 2018, in which ACWI returns were -10% or lower. There are five such distinct periods in the sample.

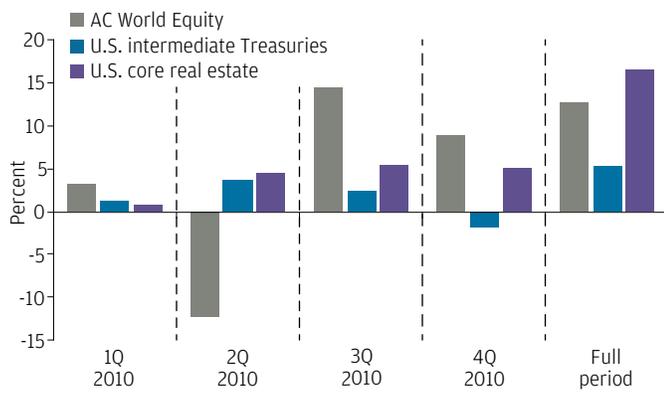
Illiquidity can limit the ability to take advantage of market dislocations

EXHIBIT 2A: PORTFOLIO RETURNS, 1Q 2010-4Q 2010 WITHOUT AND WITH REBALANCING AFTER 2Q 2010 DRAWDOWN



Source: Bloomberg Barclays, MSCI, NCREIF-ODCE, J.P. Morgan Asset Management analysis; data for 1Q 2010-4Q 2010.

EXHIBIT 2B: ANNUALIZED RETURNS FOR 3 ASSET CLASSES, 1Q 2010-4Q 2010



Source: Bloomberg Barclays, MSCI, NCREIF-ODCE; data for 1Q 2010-4Q 2010.

EXHIBITS 2A and 2B illustrate a simple example of the cost of illiquidity. We create two portfolios (Exhibit 2A):

- Portfolio A, with 80% in the equity All Country World Index (ACWI) and 20% in liquid intermediate Treasuries
- Portfolio B, also with 80% in ACWI, but diversified with 20% in less liquid U.S. core real estate

Both portfolios are backtested over the one-year period ended in 4Q 2010, which contained a 12% global equity drawdown in 2Q 2010 and a subsequent recovery in the following two quarters (Exhibit 2B). If we assume no rebalancing back into equity after the drawdown, then Portfolio B, diversified with core real estate, outperforms Portfolio A. However, if we assume rebalancing (and make some simplifying assumptions about the ability to rebalance),³ the superior liquidity profile of Treasuries allows the full impact of the recovery to be captured (i.e., by rebalancing to 100% equity), while real estate allows only a

³ We make some simplifying assumptions based on historical data regarding the ability to raise liquidity from U.S. Treasury and open-ended U.S. core real estate funds following an equity drawdown.

partial rebalancing (to 90% equity/10% real estate) over the subsequent two quarters. In this scenario, Portfolio A outperforms (Exhibit 2A). In practice, an efficient beta-blocker will often be a portfolio of multiple asset classes rather than a single asset class, with liquidity profiles across the spectrum.

ADDITIONAL PRINCIPLES FOR UTILIZING BETA-BLOCKERS

Investors should also consider the following when using beta-blockers in portfolio construction:

- Portfolios with a longer time horizon and an ability to absorb mark-to-market volatility may require a smaller total allocation to beta-blockers, but with a greater share of that allocation in more liquid assets to facilitate opportunistic reallocations.
- Investors with asset pools that are expected to be cash flow negative are likely to suffer greater damage from large portfolio drawdowns and may need to rely more heavily on diversifying assets (see “Building investor resilience in a downturn”).⁴
- The ability to use derivatives to facilitate rebalancing can enhance illiquidity tolerance relative to a physicals-only portfolio.

As cyclical headwinds rise and potential tail risks grow, investors navigating late-cycle dynamics are shifting their focus toward down-side protection. Rather than avoid risk, beta-blockers offer a tool kit that can tailor portfolios to an investor’s unique needs, from minimizing drawdown to sourcing opportunistic liquidity. But much like medications, each has its own side effects, which must be carefully examined.

⁴ 2019 *Long-Term Capital Market Assumptions*, J.P. Morgan Asset Management, 2018.

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