

A quant’s eye view

Teza Capital Management is an innovative institutional asset management firm with a heritage in algorithmic trading. Teza seeks out simple, general principles that are easy to understand but difficult to put into practice. The firm views the world through a quant’s eyes, meaning that nothing is a one-off, and if one looks closely enough, there is a system for everything. Each month the team will share discoveries learned through the previous month’s trading, research, and analysis of current investment strategies, as well as those under construction. These discoveries may or may not make it into our algorithms, but in the world of research, failures are often more valuable than successes.

It’s that time of year again. Banks, asset managers, and financial advisors have released their 2021 market outlooks en masse. Some of these outlooks are quite bullish. With a vaccine on the way, many investors are looking to “play the reopening.” Others are more tempered in their optimism, encouraging investors to keep the events of 2020 in mind and to continue to focus on downside protection. A few of these outlooks lean bearish, suggesting that we may be in a bubble that is about to burst. So, what can we make of the wide variety of predictions about what the market will do in 2021?

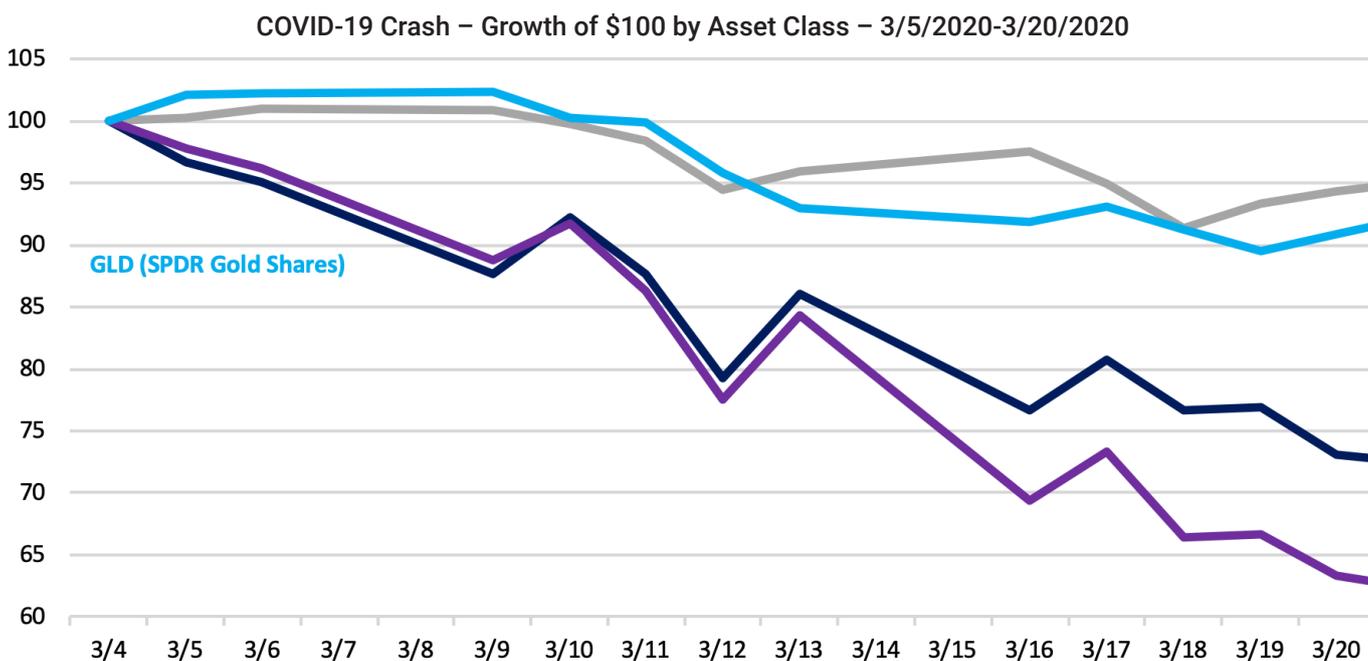
While these outlooks often provide interesting, well-researched insights and predictions, most long-term investors know that markets can be painfully unpredictable. We can dive into economic and market data, forecast the spread of COVID-19, and analyze investor sentiment ad nauseam. However, with geopolitical uncertainties, rapidly evolving technology, and the ever-present possibility of black swan events, the only surefire way to optimize one’s

portfolio is through one of the most foundational, dependable principles of investment management – diversification.

We believe that many investors, even those who consider themselves to be conservative, have too much market exposure. Over the past decade, some of these investors have benefitted from the prolonged bull market and enjoyed impressive gains. However, this market exposure is no “free ride” up.

Investors pay with risk exposure and opportunity cost of capital. In the end, investors who are long the market often get a strategy with a Sharpe of 0.3-0.4 (when measured over the history of the market) and high blood pressure when “all of a sudden” the market crashes.

This year, we believe that investors should critically evaluate their market exposure and aim for true diversification. Many investors try to achieve this through exposure to asset classes beyond tradi-



Source: Teza analysis of Yahoo! Finance data.

PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. See disclosures on p. 3.

tional markets. They invest in niche asset classes such as catastrophe bonds, frontier markets, litigation finance, and cryptocurrencies that appear to be uncorrelated to traditional markets. However, this can be a fallacy. While asset classes appear to be uncorrelated when measured over longer time horizons, investors often find that they move in tandem during times of market distress.

Experience corroborates this. The graph above uses returns of some of the largest, most-traded ETFs to show how the S&P 500, the AGG, the US real estate market, and Gold behaved during the early stages of the COVID-19 crisis. Additionally, studies by numerous academics and investment managers show that correlations converge during times of market turmoil, leading to excess drawdowns. When investors experience two-sigma drawdowns in multiple asset classes at the same time, it no longer matters that these assets are minimally correlated in the long term.

Some investors have tried to combat this convergence by investing in “crisis beta,” with the hopes that being long volatility will temper drawdowns during market turmoil. However, there are undeniable flaws to this simplistic strategy, as “crisis beta” strategies tend to underperform and lose money most of the time, and therefore may not be worth the opportunity cost.

So, what should true diversification look like? The traditional 60/40 portfolio has exposed investors to undue market risk. Even more evolved versions of this portfolio that include commodities, real estate, and other alternative asset classes often fail to provide investors with an optimal risk-return ratio. We suggest that investors reframe their thinking to consider their portfolios in terms of not just which asset classes they include, but a) what purpose these asset classes serve, and b) which risk factors they carry.

In this vein, we believe that there are 3 key sources of diversification: 1) risk premia (traditional and alternative); 2) illiquidity premia (e.g. private equity, illiquid bonds); and 3) alpha.

In speaking with investors about their portfolios, we often divide the investment landscape into these three buckets. As a firm, we aim to develop uncor-

PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. See disclosures on p. 3.

Teza's Edge

Teza has built an institutional-strength organization consisting of a highly talented group of world-class researchers and investment professionals driven by success.

- **HERITAGE:** Our endeavors in institutional asset management are based on our 10+ year tenure as a proprietary, algorithmic low-latency trading firm, as we strive to leverage the extensive synergies we've identified between the two models.
- **TEAM:** We have world-class talent with over 60 employees in 4 locations. Our 30+ accomplished researchers and investment professionals hold advanced degrees from renowned universities in science, technology, engineering, and mathematics.
- **APPROACH:** We follow a rigorous, scientific process and have deployed state-of-the-art portfolio construction and optimization.
- **EXECUTION:** We have highly developed futures execution capabilities given our quantitative trading roots.
- **RISK PHILOSOPHY:** We ensure controls and checks and every key step of research and operations.
- **INFRASTRUCTURE:** As a result of significant investments into our operational infrastructure, we have created a scalable, robust platform.

Founder Biography

Misha Malyshev has led Teza Group as the CEO since the company's founding in 2009. He earned his Ph.D. in Astrophysics from Princeton University in 1998. He also holds an M.S. in Theoretical Physics and a B.S. degree summa cum laude in Physics and Mathematics from Moscow Institute of Physics and Technology. Dr. Malyshev worked for Bell Labs conducting scientific research until 2000. From 2000 through early 2003, he worked as a consultant with McKinsey & Company, where he developed substantial experience working for asset management and investment banking clients. Dr. Malyshev joined Citadel Investment Group, L.L.C. in April 2003 as a member of its strategy group. In 2004, he moved to Citadel's Quantitative Analytics group, where he developed a quantitative trading business. Dr. Malyshev was rapidly promoted to the position of Managing Director and Global Head of High Frequency Trading at Citadel, which he held until he resigned in the winter of 2009. Dr. Malyshev is an avid supporter of education initiatives, and has partnered with organizations that inspire young people, particularly women and minorities, to pursue careers in science, technology, engineering and math. He is currently on the global leadership council of buildOn, an international nonprofit organization that runs youth service after-school programs in United States high schools and builds schools in developing countries.

related, low beta strategies, placing ourselves in the “alpha” bucket. For this sliver of a portfolio, we encourage investors to identify investment options that do not rely on a particular market environment to generate alpha or provide downside protection. We believe that investors can best protect themselves against crisis convergence (and the resulting excess drawdowns) through broad exposure to asset classes beyond traditional markets, including a diverse set of niche alpha strategies and managers. With a diversified portfolio of strategies, market crashes should be painless, and investors’ portfolios should be positioned well for smooth, sustainable long-term growth.

DISCLOSURES

This document does not constitute an offer to sell or the solicitation of an offer to purchase any security or investment product (each, a “Product”) and should not be relied on in making any investment decision. Any such solicitation or offering may only be made by means of delivery of an approved offering document and relevant subscription documents, all of which must be read in their entirety. No offer to purchase shares in a Product will be made or accepted prior to receipt by the offeree of these documents and the completion of all appropriate documentation. No offer to sell (or solicitation of an offer to buy) will be made in any jurisdiction in which such offer or solicitation would be unlawful.

No representation is given that any statements made in this document are correct or that Teza’s objectives will be achieved. This document may contain opinions of Teza, and such opinions are subject to change without notice. Information provided about positions, if any, and attributable performance is intended to provide a balanced commentary, with examples of both profitable and loss-making positions; however, this cannot be guaranteed.

It should not be assumed that investments described herein will be profitable. Nothing described herein is intended to imply that an investment with Teza is safe, conservative, risk free or risk averse. An investment with Teza entails substantial risks, and a prospective investor should carefully consider the summary of risk factors included in Teza’s Form ADV Brochure (and the relevant offering document) in determining whether an investment with

Teza is suitable. The risk of loss in trading futures is substantial. This document does not consider the specific investment objective, financial situation or particular needs of any investor and an investment with Teza is not suitable for all investors. Prospective investors should not rely upon this document for tax, accounting or legal advice. Prospective investors should consult their own tax, legal, accounting or other advisors about the issues discussed herein. Investors are also reminded that past performance should not be seen as indication of future performance and that they may lose the entirety of their investment. No recommendation is made positive or otherwise regarding individual securities, futures or other investment products mentioned herein. There can be no assurance that any Product advised by Teza will implement the strategies or trading signals referred to herein, or that if implemented any such strategies or signals achieve their investment objectives.

Certain information contained in this document constitutes “forward-looking statements,” which can be identified by use of forward-looking terminology such as “may,” “will,” “should,” “expect,” “anticipate,” “project,” “target,” “estimate,” “intend,” “continue,” or “believe” or the negatives thereof or other variations thereon or other comparable terminology. Such statements are based on the current expectations and certain assumptions of Teza, and are, therefore, subject to certain risks and uncertainties. A variety of factors, many of which are beyond Teza’s control, affect the operations, performance, business strategy and results of the accounts that Teza manages and could cause the actual results, performance or achievements of such accounts to be materially different from any future results, performance or achievements that may be expressed or implied by such forward-looking statements or anticipated on the basis of historical trends.

Tables, charts and commentary contained in this document have been prepared on a best efforts basis by Teza using sources it believes to be reliable, although it does not guarantee the accuracy of the information on account of possible errors or omissions in the constituent data or calculations. No part of this document may be divulged to any other person, distributed, resold and/or reproduced without the prior written permission of Teza.

* * *

Teza® is a registered trademark of Teza Technologies LLC.