

A quant's eye view

Teza Capital Management is a global quantitative asset management firm. We pride ourselves on attracting and retaining top talent, developing strategies with a data-driven and science-backed methodology, and continuously innovating in pursuit of alpha for our clients. Our Manager Insights pieces provide delve into our “quant's eye view” on markets, investment strategies, and industry developments.

This month's Manager Insights come from Teza's Directional Futures research team. The Directional Futures strategy seeks out real-time supply/demand imbalances in 59 different commodities and financial futures with the objective of determining whether these instruments' prices will rise or fall over the coming few days. Starting in August, the Directional Futures team noticed an unusual phenomenon in the corn market that warrants a deeper dive.

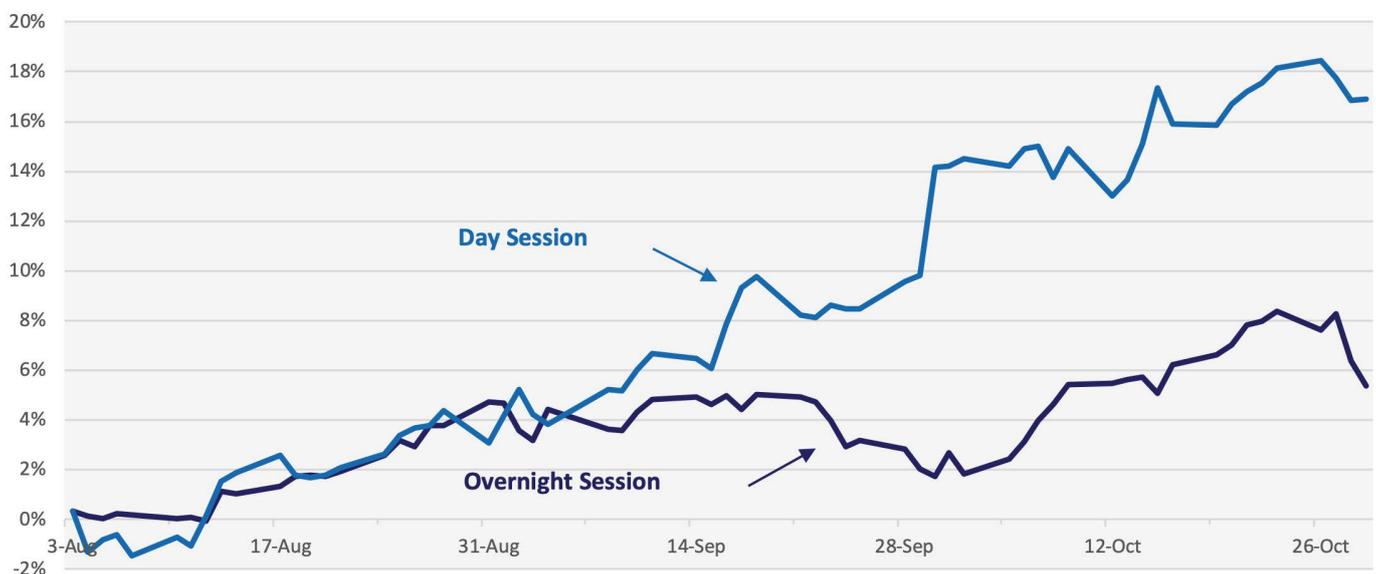
Corn futures are globally traded on multiple exchanges, including the CME in the U.S., Euronext in Europe, and TOCOM in Japan. Teza trades corn on the CME. Corn is consumed across many industries and geographies, and for a wide swath of purposes. The “sweet corn” variety that you enjoy in your salad or on the cob represents only one percent of corn planted in the U.S. “Field corn” is utilized for multiple purposes in the U.S.: 35% animal feed; 35% ethanol production; 13% exports; 3% high-fructose corn syrup; and the remainder is used in the production of other alcohols and sweeteners. The U.S. produces over 31% of the world's corn crop. China, despite being the second largest producer of corn with 23% market share, is also an importer of the commodity. Even before the volatility of 2020, China

was struggling with a substantial decrease in pork production due to the African Swine Fever. As the country attempts to regrow decimated hog herds, feed consumption has increased, directly impacting the price of corn. Another important dynamic was at play in the U.S. this summer. The Derecho storm of late August decimated over 8 million acres of corn crop in Iowa, resulting in a 1.2% drop in production and creating significant volatility in corn prices as the U.S. harvest period approached.

Teza does not trade on this type of macro data as a discretionary manager might. However, we do aim to capitalize on the impact of large trades placed by other market participants, which our proprietary microstructures signals are designed to detect. In looking at grains and other agricultural commodities, our team discovered that there are effectively two concurrent markets trading and uncovered two key indicators that are valuable from a microstructure perspective:

- **There are distinct overnight and day sessions, separated by a 45-minute break.**
- **Deep understanding of the matching algorithm at the CME and its impact on the behavior of sophisticated traders enables Teza to differentiate between participants.**

Cumulative Corn Futures Returns by Session



These phenomena are especially evident in the corn market. Corn rallied in August and September, but while the rally took place in both sessions, there was a wide divergence between the overnight and day-time trading periods in September. This scenario reveals that there could be valuable information in overnight trading, and Teza is actively exploring new ways to capitalize on exactly this type of information.

DISCLOSURES

Source of data: Teza Capital Management LLC (“Teza”).

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

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.

or other advisors about the issues discussed herein. Investors are also reminded that past performance should not be seen as an 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 the 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.