



AlphaGe 

GeoSense

Making sense of the world through the lens of geography

April 2024
Volume 1, Issue 2

Introducing GeoSense from AlphaGeo

Rising geopolitical tension, economic competition and climate volatility collectively demand that investors broaden the aperture when it comes to assessing risk and seeking opportunity.

In particular, the time has come to view geography and climate as primary macroeconomic components which, along with traditional market factors, drive financial performance across all operating sectors. No company, country or economy is immune to the impacts that this systemic complexity exerts – yet a proactive view on how and where these changes are occurring will give investors an edge in identifying market opportunities.

AlphaGeo's investment framework guides the asset identification and selection process using an approach that links geography and environment to financial outcomes. This lens – known as "spatial finance" – examines and constructs portfolios with a focus on physical exposures and linkages.

Indeed, the foundation of global commerce for a significant number of public and private assets, either directly or indirectly, is commodities such as agriculture (food/fiber), materials and energy. While globally distributed supply chains are now the norm, companies and analysts routinely underestimate the impact that supply chain disruption exerts on earnings and overall financial performance.

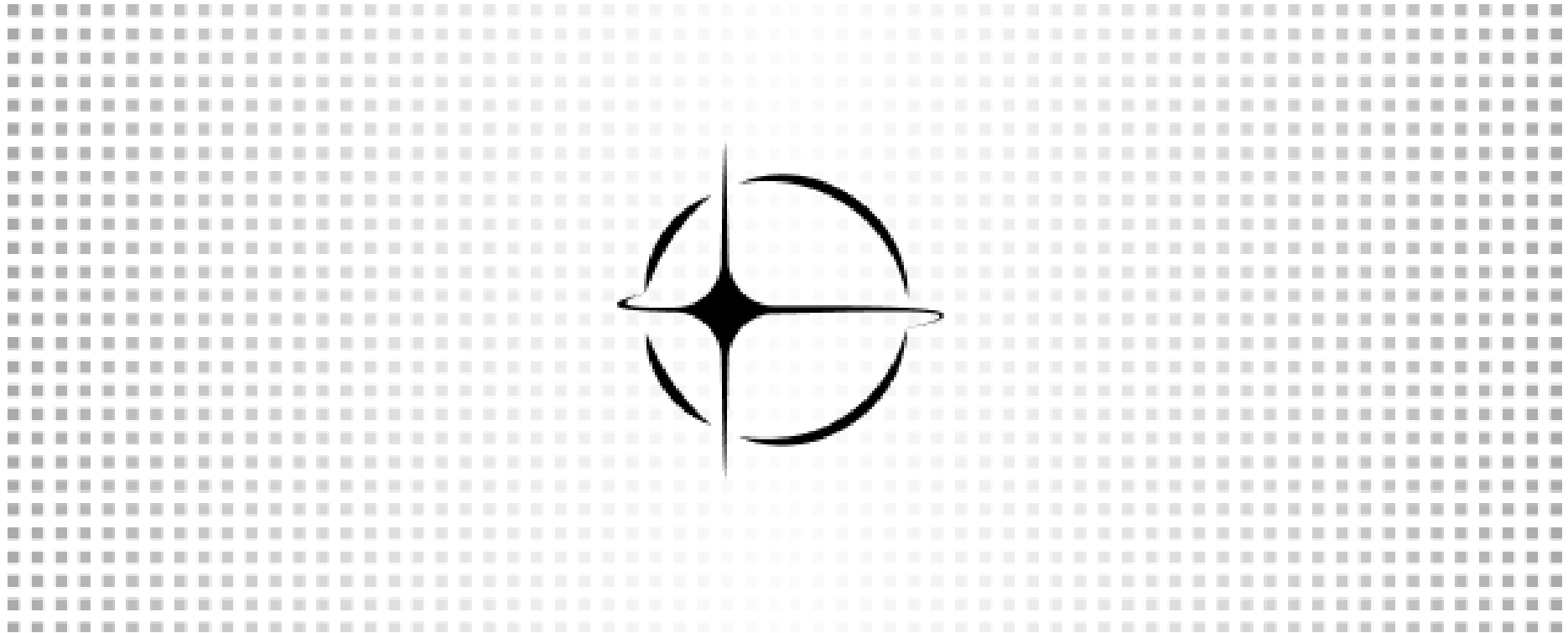
We therefore go beyond balance sheet analysis and financial reporting with a spatially oriented quantitative and fundamental toolkit that enhances current mainstream investment strategies and yields geographically-referenced asset identification and selection in public and private markets.

In addition to access to our core software platform, GeoSense subscribers will receive monthly market intelligence notes, AlphaGeo generated tracking indices and sample portfolios for evaluation and idea generation.

GeoSense will be your compass to finding alpha.



The GeoSense Market Tracking Index



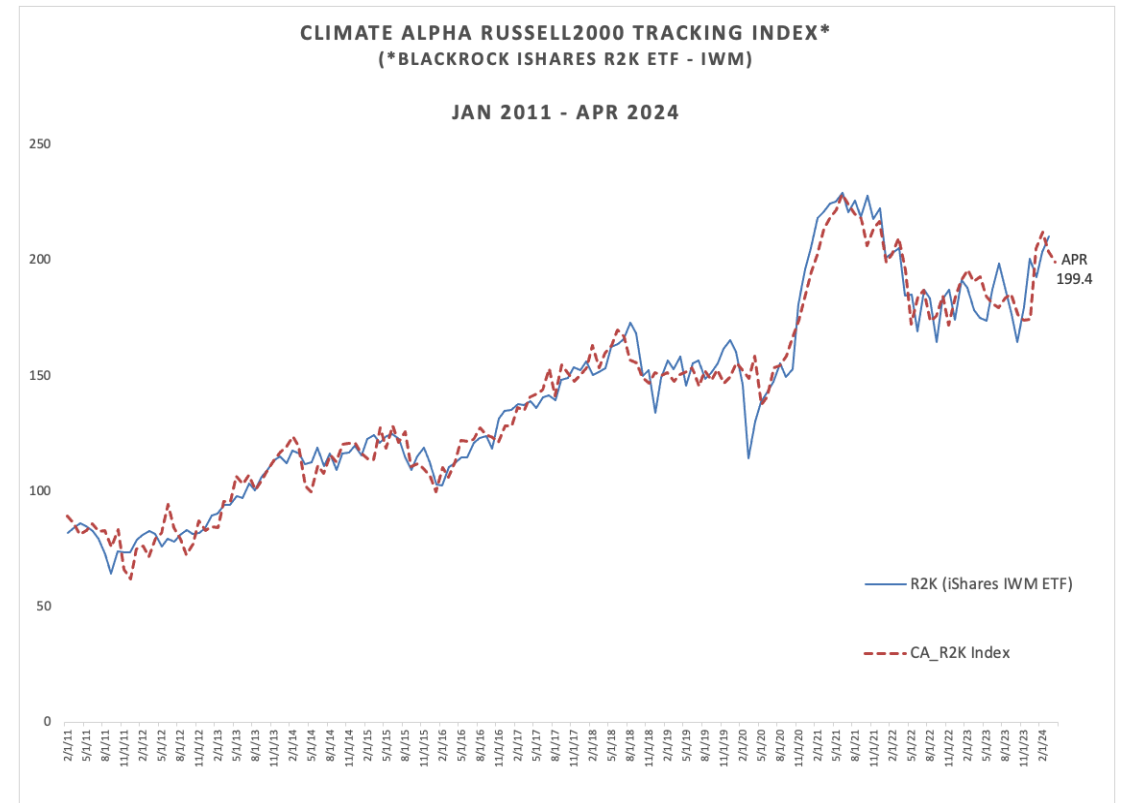
GeoSense's Russell 2000 Market Tracking Index

Last month's market intelligence report introduced one of the AlphaGeo market tracking indices, which is benchmarked to the BlackRock iShares Russell 2000 ETF (ticker: IWM). The updated index below shows our 1-month forward outlook projecting April to trade around 199, down from the previous month.

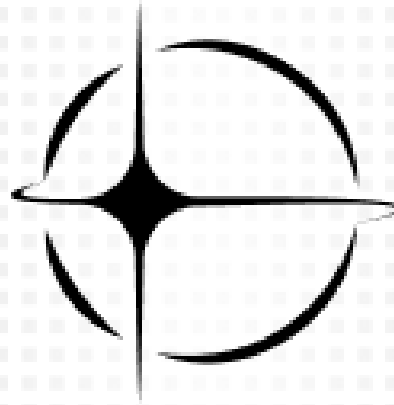
As discussed, the training data for this model shown below includes a broad combination of macroeconomic, environmental and socioeconomic factors, and the index we have created exhibits a statistically significant relationship between these independent variables and the dependent variable (IWM). (Most variables generate p-values below 0.05, indicating that the relationship between the variables and the benchmark can be determined to be non-random.)

As mentioned, the current April index dropped from the March value. The GeoSense tracking model responded by highlighting inflationary pressures including energy prices (primarily oil and natural gas), the Consumer Price Index, the US Dollar/Chinese Yuan rate, and the base metals complex. While most of the mainstream market attention over the last several months has been dominated by activity across the 'Magnificent Seven' stocks, we feel that the Russell 2000 is a more appropriate fundamental barometer for market sentiment as margin impacts to related to commodity and inflationary pressures are more impactful to small and mid-cap names, and financial performance is therefore more connected to broad fundamentals influencing both the supply and demand sides of the equation.

Continued directional activity in this basket of indicators will likely exert additional downward pressure on the index, so our view in mid-April is for broad market headwinds to persist.



The GeoSense Commodity Discussion

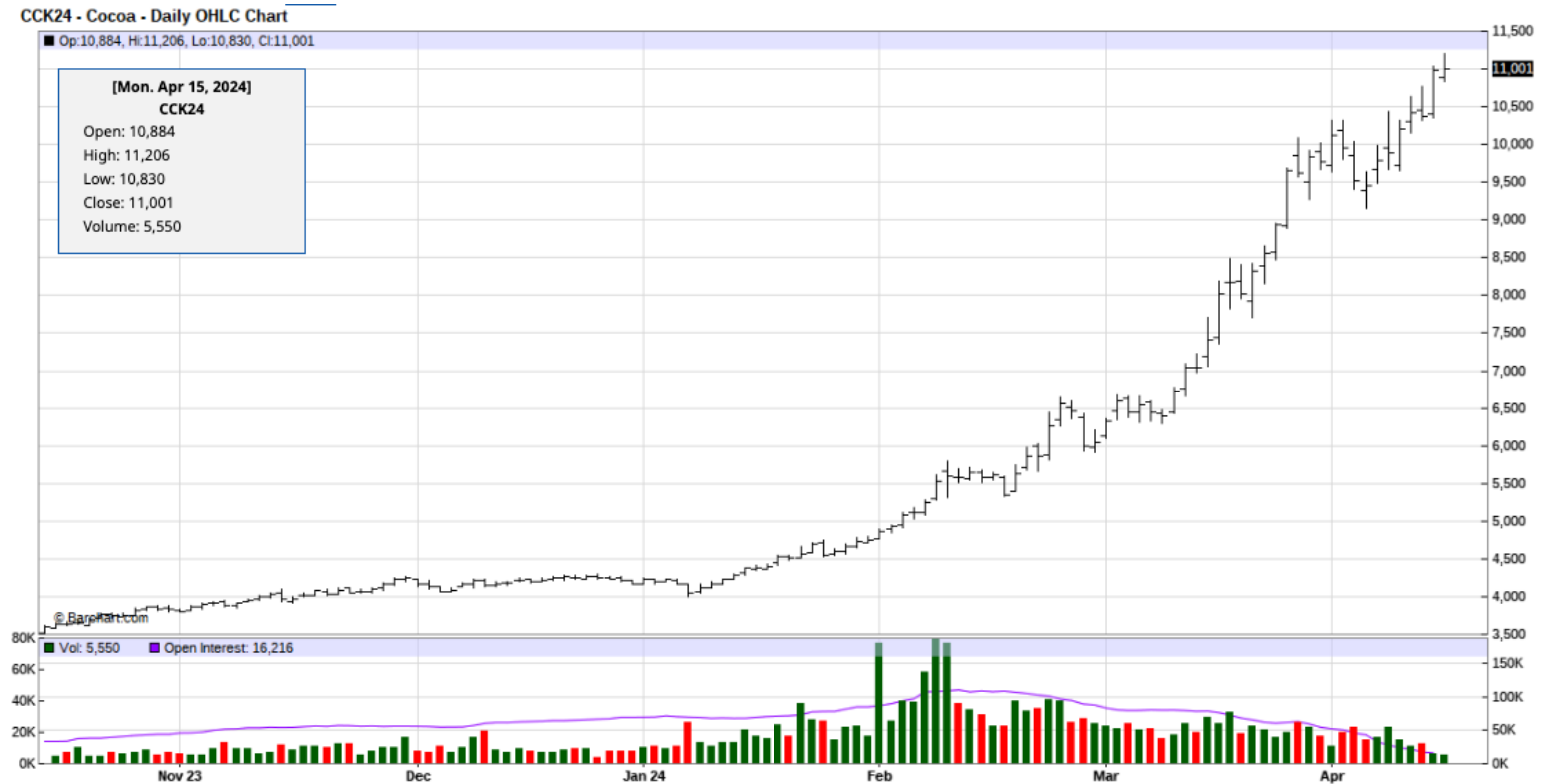


The geoeconomic impacts of cocoa prices

As the market index described on the previous slides discussed broader macroeconomic and geoeconomic market headwinds, here we discuss a concerning situation that has developed for the consumer goods and confectionary sectors around one of their primary ingredients: **cocoa**.

The World Meteorological Organization recently issued a “red alert” in their annual *State of the Global Climate* report — highlighting 2023 as the hottest year on record. The impacts felt from the weather over the past year have not been lost on the world of agricultural commodities. Looking ahead, the warm start to 2024 will likely lead to another record-setting year. What does the current state of the climate mean for natural resource-based interests in the year ahead? Specifically, what impacts can we expect as the climate exerts its influence on agricultural productivity?

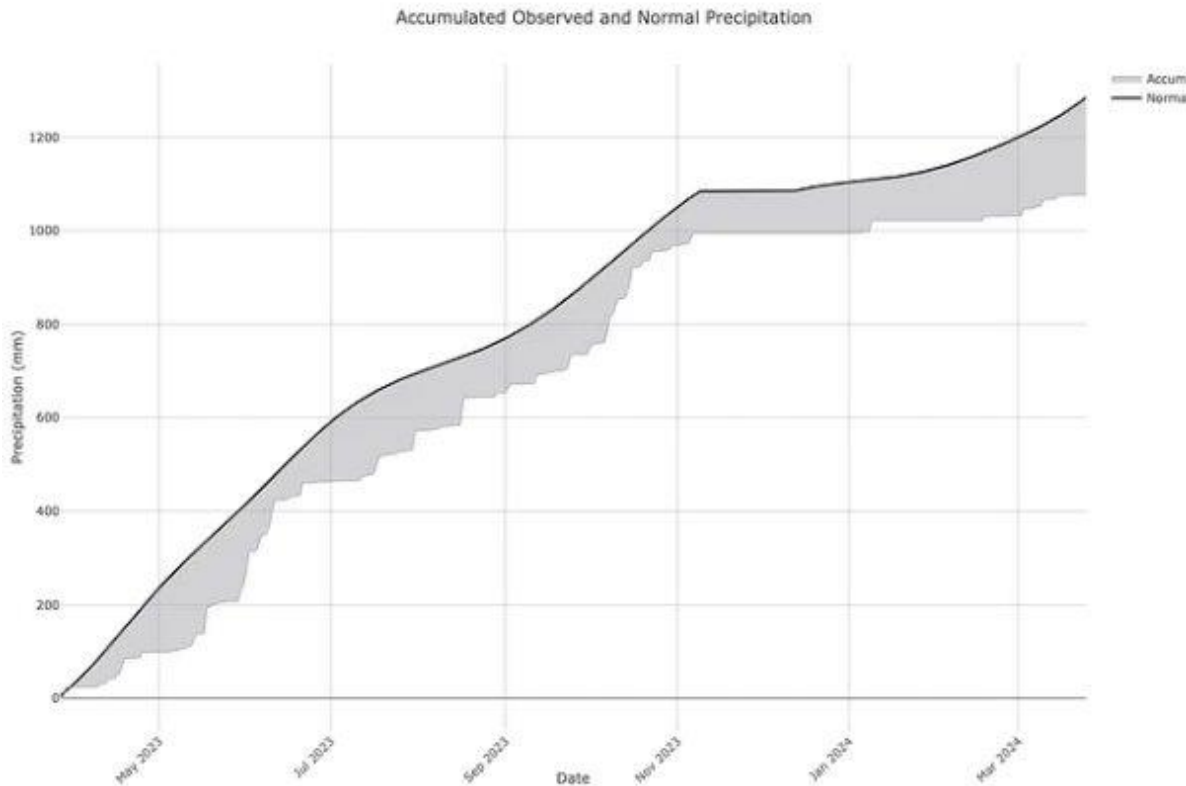
Within the agricultural and livestock commodity space, participants and consumers are typically aware when we see modest regional weather-driven price swings in the headline components. However, when supply-side shocks lead to volatility in the secondary soft commodity arena — think sugar, cocoa or coffee, for example — it usually does not garner the same level of attention until it becomes a global event. Supply and demand usually keep cocoa levels in check and price is not a problem for the market to manage — until it is.



Cocoa has been typically rangebound over the last several years. However, since late 2023, the nearby futures contract for the popular confectionery ingredient has surged from around \$2,500 USD/metric ton to recent levels exceeding \$10,000 USD/mt. Traders thought prices were inexplicably high last month when futures spiked to \$6,000 USD/mt — at \$10,000, it is clear that financial pain lies ahead for speculators and operators who did not adequately hedge their exposures.

The geoeconomic impacts of cocoa prices (II)

As with most commodity market moving events, we can trace this price spike back to supply issues in the world's major origins. With respect to cocoa, most of the world's physical supply originates from a small region in West Africa that is blessed with the 'goldilocks growing conditions' consisting of the right combination of moisture, temperatures and shade (cocoa is not a cover crop) to allow production to flourish. But last year's El Nino-induced dryness led directly to a decline in production; see the 1-year precipitation graphic from a station in Daloa, Côte d'Ivoire in the chart below.



1 year precipitation chart, Daloa, Côte d'Ivoire. Source: NOAA CPC

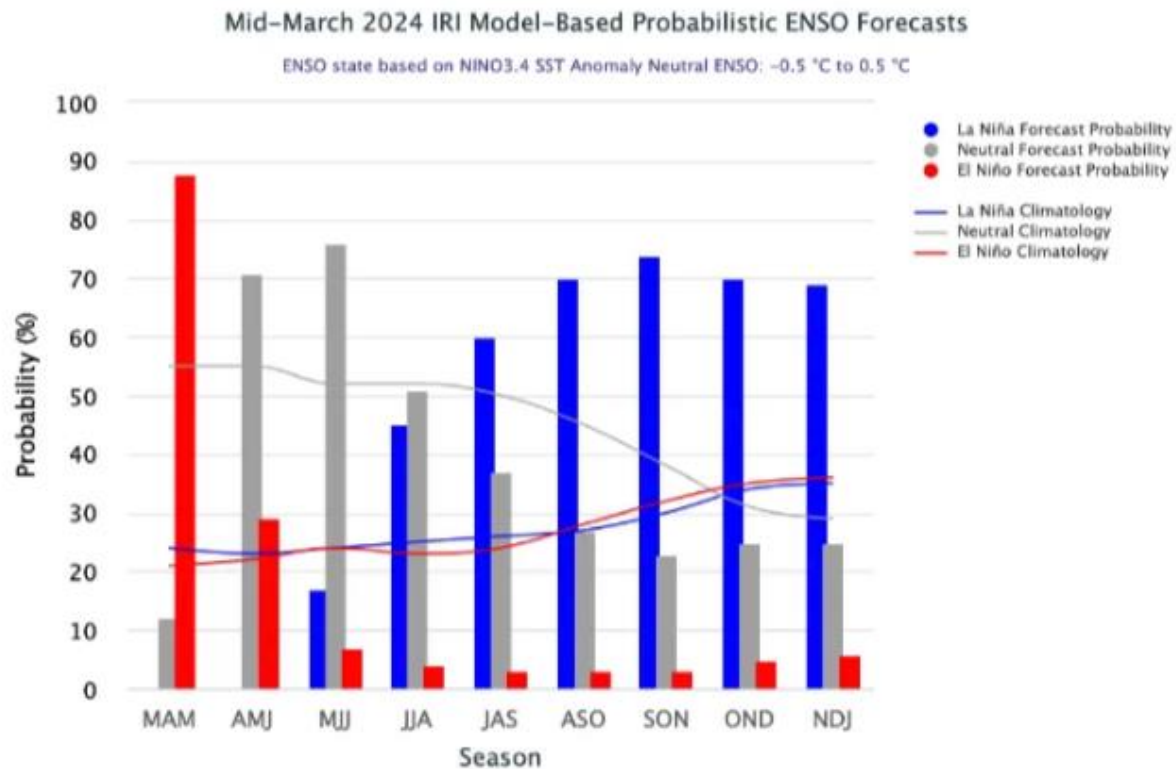
This precipitation summary is taken from one station, but many other inland stations across Côte d'Ivoire and Ghana look very much the same; some even worse. Despite the low reported rainfall, some growing regions closer to the coast have seen the opposite pattern with a similar impact on production — higher episodic rains have triggered outbreaks of black pod disease, further limiting yield potential. In both cases, the weather pattern has contributed to a significant shortfall in supply. Normal short term supply challenges can oftentimes be offset by demand disruptors, namely pricing. When perceived supply shortfalls impact manufacturing prices, producers and consumer goods companies can typically manage this volatility through a combination of properly hedging their supply exposures (the keyword is properly) and passing some of the price increase along to consumers to keep an artificial lid on demand.

However, significant supply deviations like the one the market is currently living through is another story entirely. What makes 2024 different is that the supply-demand balance is expected to be in deficit status for three consecutive crop years, and a fourth is possible given the weather outlook for the coming months. This is a scenario that the market has not seen since the 1960s, and today's market dynamics and complexities are very different from what things looked like over 50 years ago.

The geoeconomic impacts of cocoa prices (III)

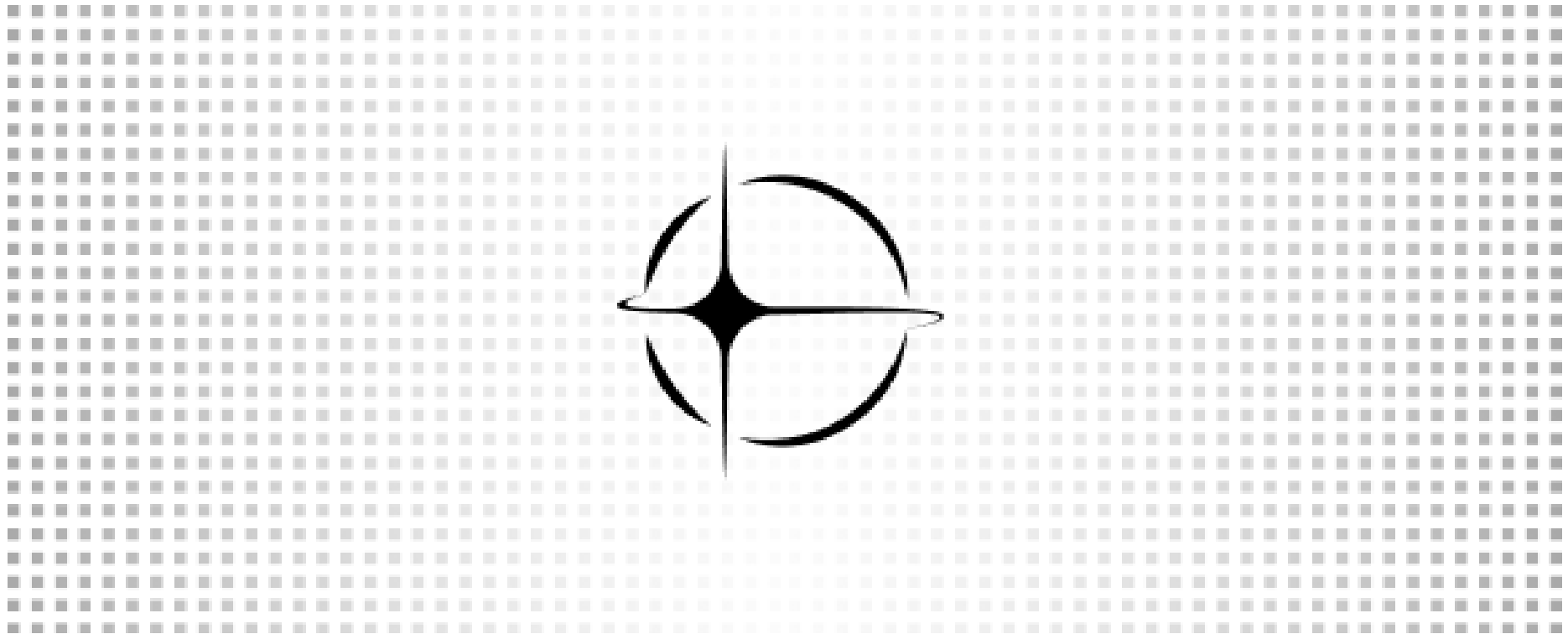
So where do we go from here? In commodities, we often hear the adage that nothing cures high prices like high prices. Taken another way, at some point supply shortages and associated prices impacting the demand side will limit consumer pull, while also stimulating growers to increase activities for supply. We also need to remember that cocoa is not like other commodities, where a farmer can, for example, substitute corn with soybeans as a result of market conditions. In addition to the capital expenditure associated with both removing non-producing trees and/or planting new ones, cocoa trees take a few years to even start to begin to contribute commercially viable production quantities.

Most seasonal forecasting agencies are expecting a transition from the El Niño pattern that has been dominant to a neutral phase followed by a shift to La Niña conditions later in 2024. As of this writing, the maximum potential yield for the current cocoa marketing year, which runs from 30-Sep to 01-Oct, is essentially locked in. It should be noted that further weather and/or disease disruptions may actually serve to shave percentages off the expected yield in 2024, so there could be even more upside risk to price in the short term.



The International Research Institute for Climate & Society (IRI) summarized the current state of model expectations for the Sea Surface Temperature anomalies in the Niño 3.4 region, which is a signal for the phase of the El Niño Southern Oscillation (ENSO). Most models are in agreement that we will be transitioning into a neutral phase through June, with La Niña conditions starting to dominate the pattern in July into the start of 2025. We can generally associate this outlook to be accompanied by expectations for wetter conditions to materialize in the second half of the year for West Africa, helping to stimulate yield potential for the forthcoming crop year. But these transitions take a lot of energy and in some cases, a lot of time. So a quick transition may be a benefit to cocoa growers, but a slow one will only delay the rebound to better growing conditions. The months ahead will be very important to the entire cocoa value chain.

The GeoSense Industrial Renaissance Tracker



The Industrial Renaissance Tracker (IRT)

As we discussed last month, the Net Zero transition will transform all sectors of the economy – but emissions indicators alone are insufficient as a foundation for successful investment strategies.

AlphaGeo's strategy is to tie decarbonization and other sustainability metrics to financial performance. We employ a multivariate approach that maps interactions between material factors and minimizes biases. The initial focus targets hard-to-abate sectors including energy, mobility, materials and real estate, mapping them to regions with strong policy support for transitional investments. We also cover upstream and downstream firms in manufacturing and components, commodities and materials, enabling technologies and carbon offset strategies.

Geography matters immensely for the success of long-term capital commitments. AlphaGeo employs the methods of spatial finance in which geographic signals have material economic impact. Our location-based analytics integrate socio-economic, market, and climate factors into comprehensive forecasts.

Last month we introduced the Industrial Renaissance Tracker (IRT), a tool for investors to capitalize on these emerging and interconnected themes. The IRT was developed to point investors to the future geography of economic growth in America. The Inflation Reduction Act (IRA) and the CHIPS and Science Act are the first wave in an ongoing stream of legislation that will steer capital deployment to industries and population centers at the heart of the energy transition. This 'climate tailwind' will benefit certain geographies and companies most rapidly shifting towards cleaner and sustainable energy sources. The IRT guides investors by:

(a) following announcements and capital flows resulting from legislation or innovation tied to the energy transition,

(b) identifying the locations that are poised to benefit and appreciate from these emerging economic opportunities,

(c) correlating these geographies to AlphaGeo's proprietary spatial index of risk and resilience indicators, and

(d) mapping assets and companies that are most likely to be the winners from this confluence of sustainability drivers.

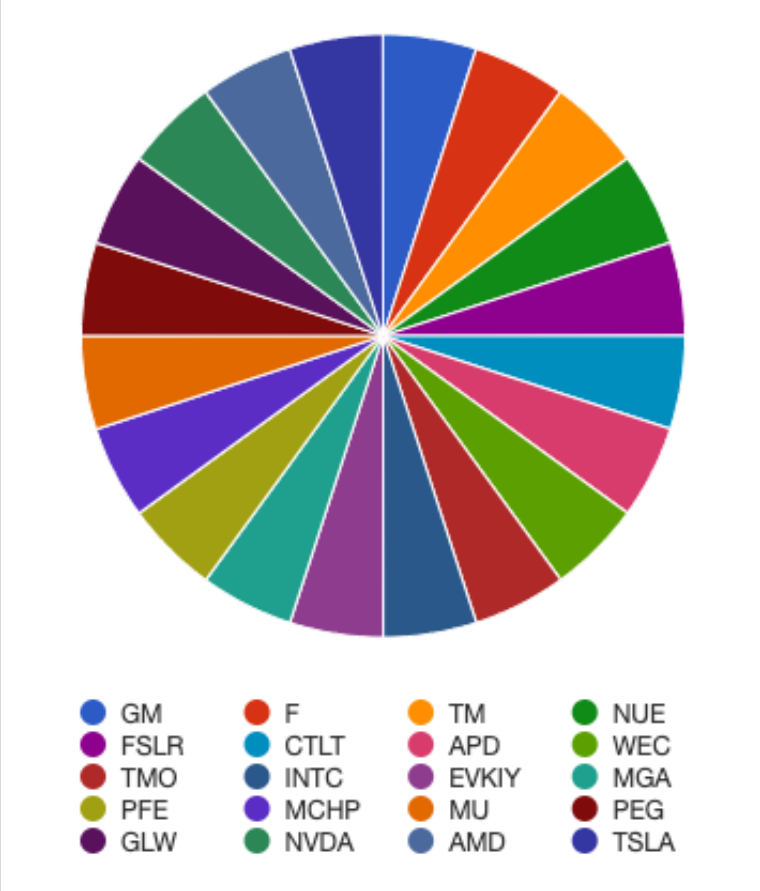
The Industrial Renaissance Tracker (IRT)

There are limited studies published that evaluate how a company's financial performance is affected by a combination of socioeconomic and climate factors. Moreover, there are multiple ways to define financial. Using our approach to construct a sample hypothetical portfolio of names who will benefit from the IRA and the Chips Act. The first phase of these two acts alone will be responsible for the deployment of three quarters of a trillion dollars to stimulate this economic transformation, and there will be much more to come regardless of which administration is in control after the 2024 election.

The names we identified for this simulated portfolio consist of 20 public companies, and we assigned an equal weighting for simplicity. If we compare this portfolio to the IWM benchmark, we could view this as a 'hypothetical ETF'. The figures on the following slides highlight the one and three year performance charts as compared to the Russell 2000 benchmark.

We can see that the recent and longer term performance of the Climate Alpha/GeoSense portfolio continues to outperform the IWM benchmark, but as our thesis is focusing on the IRA and the Chips Act as catalysts, we advise readers to pay more attention to recent performance, starting in 2023.

Future reports will continue to monitor the evolution of the IRT, and while we expect that this fund would display low turnover, any additions, deletions or rebalancing decisions will be highlighted as part of this ongoing discussion with readers.



The Industrial Renaissance Tracker (IRT)

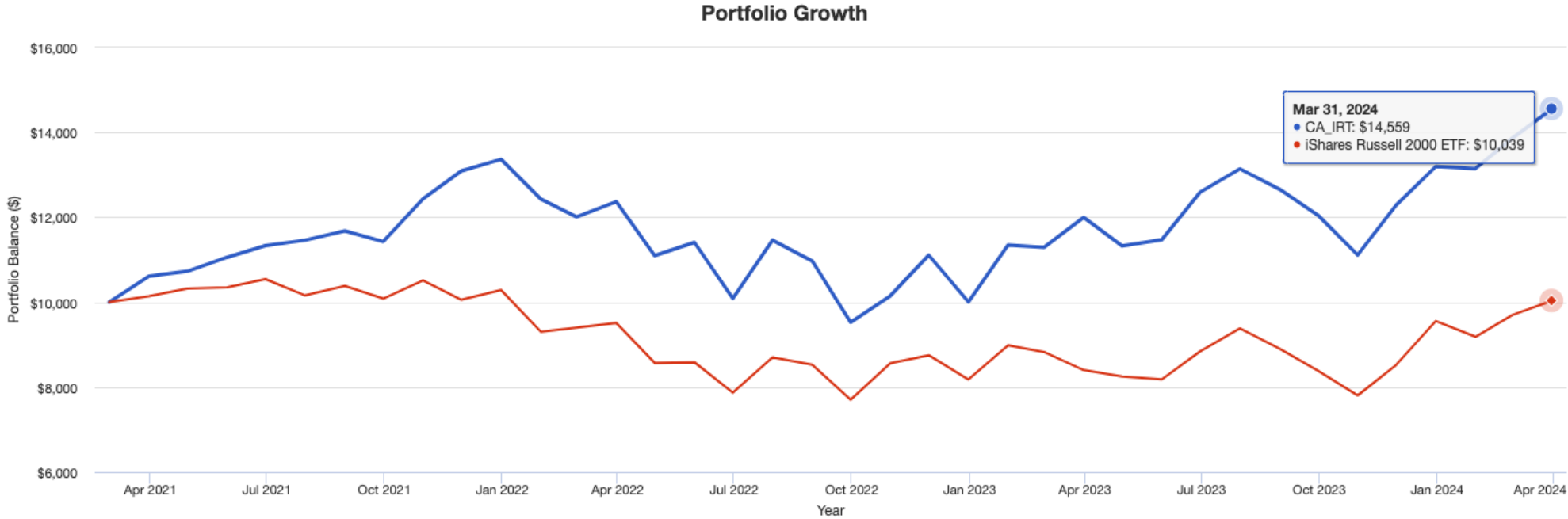
Hypothetical Portfolio 15-month performance vs benchmark



Name	Total Return		
	3 Month	Year To Date	1 year
CA_IRT	10.33%	10.33%	21.35%
iShares Russell 2000 ETF	5.04%	5.04%	19.51%

Trailing returns are as of last calendar month ending March 2024

The Industrial Renaissance Tracker (IRT) Hypothetical Portfolio 3-year performance vs benchmark



Name	Total Return			Annualized Return	
	3 Month	Year To Date	1 year	3 year	Full
CA_IRT	10.33%	10.33%	21.35%	11.13%	12.96%
iShares Russell 2000 ETF	5.04%	5.04%	19.51%	-0.33%	0.13%

Trailing return and volatility are as of last calendar month ending March 2024

Our Team



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Scenario-planning and strategy advisor to major financial institutions and governments. Bestselling author of *Connectography* and *Financial Times* Book of the Year *MOVE* on human geography and climate migration. Young Global Leader of the World Economic Forum. PhD from the London School of Economics.



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Our global team of 15 seasoned professionals spans the US and Asia – and we plan to hire more data scientists, product managers and sales executives.

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