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Environmental Themes in Commodities Investing: Systematic Macro Perspective on ESG

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Acadian's Director of Client Advisory, Seth Weingram, recently met with Mike Ponikiewicz, our lead commodities PM, to discuss how environmental and other ESG themes are influencing markets and how we invest in our systematic macro strategies. The Q&A below summarizes the conversation.

SW: Can environmental themes be integrated into systematic macro strategies?

MP: Conventional wisdom holds that systematic macro investing is more or less blind to ESG considerations. Not only is that perception incorrect, but we believe that it's increasingly important for systematic macro strategies to adapt naturally to environmental and other ESG themes. Commodities stand out in this regard, because their production and consumption are tightly intertwined with ESG-related considerations, and because in forecasting commodity returns, the balance of supply and demand in the physical market represents a key input. Physical market conditions will react to environmentally related influences, including shifts in consumer preferences, changes in production costs, or supply constraints arising from regulatory action.

Industrial metals provide a helpful illustration. Over the years, their demand profiles have evolved with the shift

in industrial structure from “old economy” metals such as zinc, which is used in rust proofing and steel, towards “new economy” metals like copper, which is used in wiring, and tin, which is used in circuit boards and semiconductors. Environmental considerations have long contributed to demand for aluminum, which has been used for years to improve fuel efficiency by making vehicle components, like engine blocks, lighter. And now we're seeing an environmental influence on demand for nickel, which is used to make batteries for electric vehicles (EVs) and other energy storage applications.

In the investing context, failing to account for these trends could risk a distorted perception of fair value for various industrial metals. In a systematic investing process, that puts a premium on developing signals and other process elements that can naturally adapt to ESG themes as their influence on markets evolves. Doing so requires attentiveness to the unique economic and market features of individual commodities.

Figure 1: Demand for Nickel Attributable to Electric Vehicles and Batteries

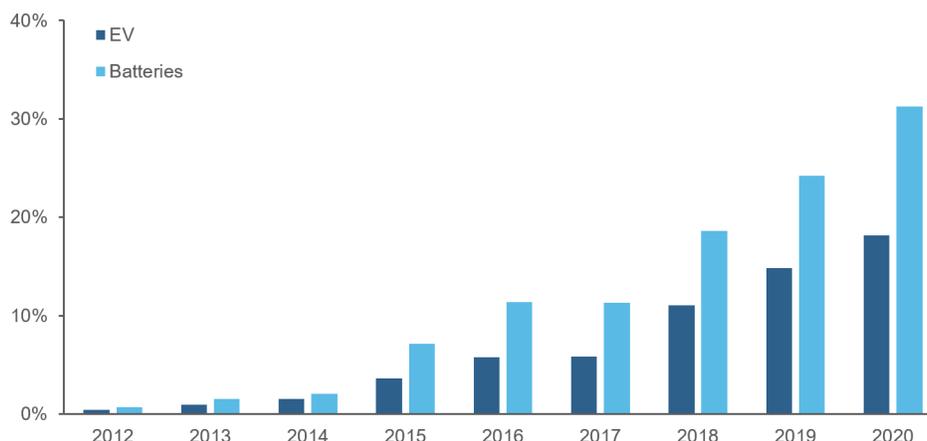


Chart shows global nickel demand for electric vehicles and batteries as a percentage of total refined nickel demand. Data for 2020 represents a forecast. There can be no assurance that the forecasts will be achieved. Source: Acadian based on data from Bloomberg. For illustrative purposes only.

Returning to nickel as an example, while demand associated with EV production is growing (Figure 1), it hasn't yet reached a level that would put the physical market for the metal into persistent deficit. In the meantime, though, nickel prices are prone to speculative rallies on EV news in the context of a market that's still in surplus.

A takeaway from this example is that ESG investors should embrace the sophistication that's required to capture the full complexity of the relationship between environmental themes and commodities prices.

SW: Is an ESG orientation inherently inconsistent with investing in commodities?

MP: Conventional perceptions of commodities investing have been overinfluenced by passive implementations that treat commodities as a monolithic block. For environmentally sensitive investors, passive long-only commodities allocations raise concerns. They contribute to net demand for all commodities, including those associated with environmental harm—through carbon emissions or deforestation—and with potentially adverse social and governmental impact, e.g., by causing upward pressure on food prices. Moreover, popular multicommodity benchmark indexes are weighted by historical share of global production and market liquidity. As a result, they naturally channel particularly large allocations to the petroleum sector, which accounts for the greatest share, by far, of global commodities production and liquidity.

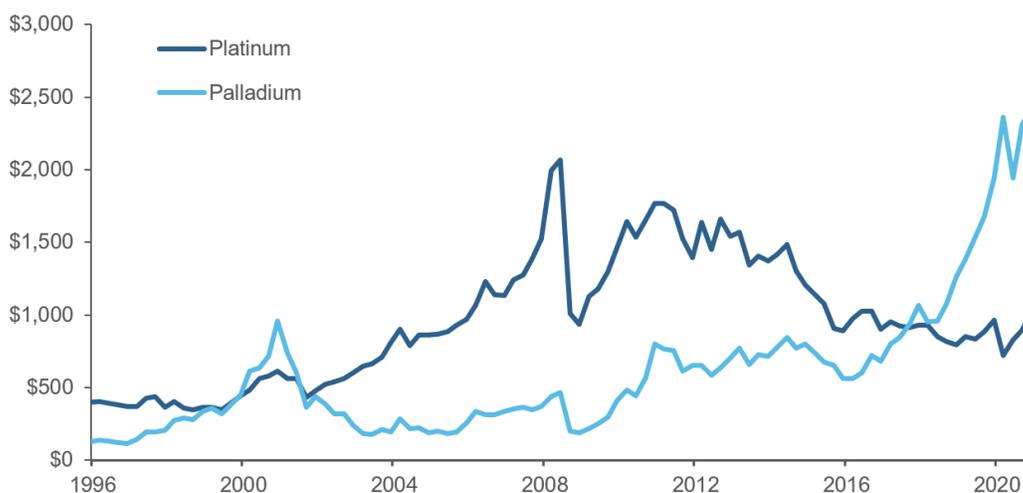
In addition to ESG concerns, we believe that passive long-only commodities investing approaches are also inferior from a financial perspective. They presume that indiscriminately buying commodities provides a long-term returns premium, and they fail to deliver the full investing potential of the asset class in terms of both absolute returns and diversification.

In our view, highly active long-short commodities investing represents a superior approach. Specifically, we advocate 1) embracing the distinctiveness of different groups of commodities—e.g., the petroleum complex, industrial metals, precious metals, etc.—and 2) exploiting mispricings *within* those groups.

Aside from the financial motivations, the diversified long-short positioning generated through this approach also has a natural ESG benefit: It should result in a much smaller environmental footprint, reducing the indiscriminate net contribution to commodity demand relative to passive long-only investing approaches. Moreover, we can adapt systematic portfolio construction around specific ESG objectives and requirements. For example, the process is well-suited to exclude or constrain holdings in certain commodities while methodically rebalancing remaining long and short positions in order to mitigate the impact on the overall portfolio's risk and expected return.

In summary, while investors may think that commodities are antithetical to environmentally sensitive investing, that's not the case.

Figure 2: Palladium and Platinum Spot Prices per Ounce



Source: Bloomberg. For illustrative purposes only. Investors have the opportunity for losses as well as profits. Past results are not necessarily indicative of future results.

SW: What are our commodities models telling us about the impact of current climate change initiatives and related policies?

MP: We see considerable evidence that environmental policies are affecting commodities pricing through their influence on supply and demand. A fascinating example stems from the tightening of global emissions standards, e.g., “Euro 6” and “China 5,” which has driven a shift away from diesel engines in passenger vehicles to smaller displacement gasoline, hybrid, and, to an extent, electric-drivetrain engines. This has contributed to a significant reduction in demand for platinum-based catalytic converters, which are especially effective for diesel engines. It has also led to increasing demand for palladium, since palladium and platinum are similarly effective for gasoline engines. Over the past few years, this has contributed to a supply deficit for palladium that has sent its price soaring and to a surplus for platinum (Figure 2), particularly since the Volkswagen emissions-testing scandal in 2015 accelerated the trend away from diesel.

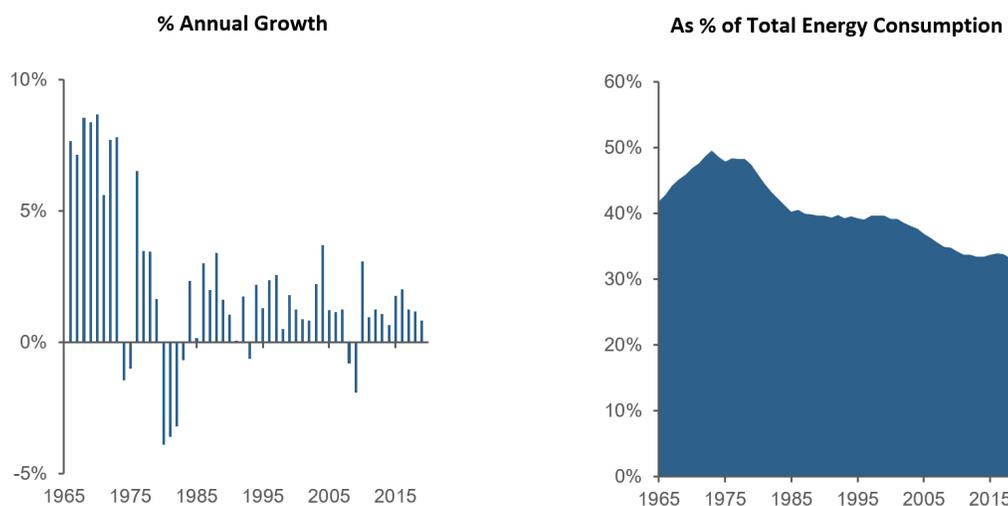
Nevertheless, we should acknowledge the challenge of making such assessments with precision. Many factors affect commodities prices, and it’s not trivial to distinguish evolving expectations for policy change and policies’

influence on physical markets from other phenomena. In some contexts, in fact, the multiplicity of environmentally oriented policy changes has had confounding effects. In the context of diesel, for example, International Marine Organization (IMO) 2020 standards aimed at reducing the use of high-sulfur fuels in shipping (“bunker” fuel) actually triggered increased demand for diesel, which is comparatively low sulfur. Moreover, quantifying the impact of policy change in commodities is challenging because we don’t have a large number of underlyings to analyze in contrast, say, to the rich cross section of equities, so the evaluation may involve trying to disentangle coincident long-term trends.

SW: Has decarbonization impacted the petroleum sector, specifically? Is this apparent in supply and demand data?

MP: Yes. There is evidence that decarbonization has reduced demand for petroleum. From the perspective of an environmentally conscious investor, though, the picture is mixed. The bad news is that the world’s total demand for oil has continued to increase. The good news is that the growth rate has stabilized and has lagged behind GDP growth. As a result, oil’s *share* of total energy consumption has been falling steadily for over 20 years. (Figure 3)

Figure 3: Long-term Trends in Global Oil Consumption



Source for both charts: Acadian based on data from bp Statistical Review of World Energy, June 2020. For illustrative purposes only.

Renewables also offer evidence of decarbonization. They remain a small fraction of global energy consumption, less than 5%, compared to roughly 25% or more for each of natural gas, coal, and oil. But as encouraging datapoints, renewables consumption growth is strong, above 10% per year. Moreover, during the COVID crisis global demand for renewables held up and increased slightly, even as oil demand plunged by more than 8%. (Figure 4)

SW: How do you see the commodity investment landscape changing 5 to 10 years from now as the mix of commodities used in the global economy evolves?

MP: Investors should expect that the commodity investment universe will evolve with the global economy. The investment relevance of different commodities will grow or diminish in relation to their economic value. Many factors drive change, including new technologies, changes in consumer taste, and policy. From the ESG perspective, in recent years, we’ve already seen environmental themes emerge as a material driver of change in commodities markets, and we expect that influence to grow given the number of policies in effect and in the pipeline – so to speak – across continents. Among the trends that we expect will be visible in the near term, demand for lower emissions in transportation will add liquidity and hedging demand for commodities that are used in batteries, like cobalt and lithium. We

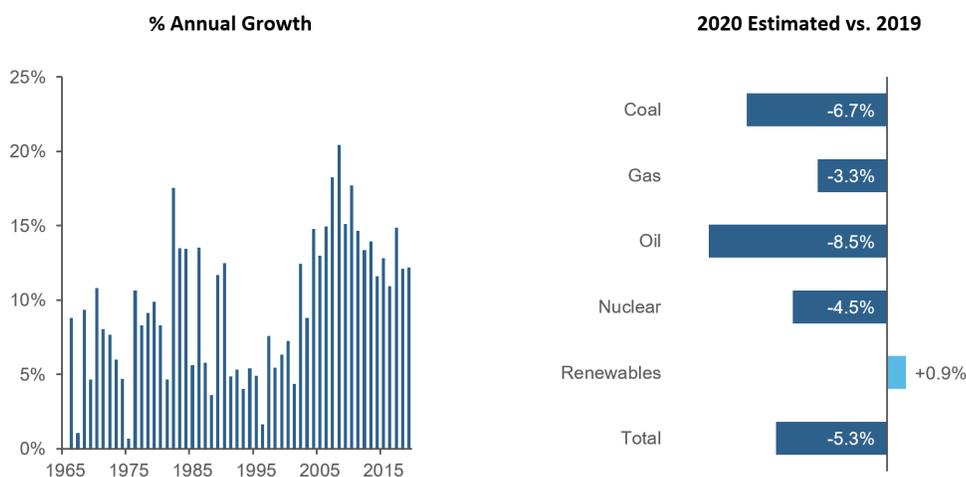
expect tradability of carbon itself to grow further; futures on European Carbon Emission Allowances have become a major market in little more than a decade. (Figure 5) We would also expect further growth in natural gas markets as a so-called “transition fuel” at the expense of oil and, particularly, coal, owing to natural gas’s greater carbon efficiency.

While there is growing momentum to address climate change in both policy and corporate spheres, with numerous initiatives in all major economies, the magnitude and timing of actions and their impact remains uncertain. But physical markets’ supply and demand profiles provide an important gauge of their effects.

SW: What does the evolving landscape mean for systematic commodities investing?

MP: A common misconception about systematic investing approaches, macro and otherwise, is that they’re blindly reliant on historical data to identify predictive signals. Such a perspective would seem at odds with ESG’s inherently forward-looking orientation. After all, ESG is motivated by desire to bring about change. While there are, indeed, simplistic rules-based investing approaches—smart beta and alternative risk premia strategies—that are based on a premise that the future will closely resemble the past, that assumption isn’t the premise of more sophisticated systematic approaches.

Figure 4: Trends in Renewables Consumption



Left chart source: Acadian based on data from bp Statistical Review of World Energy, June 2020. Right chart source: Acadian based on data from IEA, Key estimated energy demand, CO2 emissions and investment indicators, 2020 relative to 2019, IEA, Paris <https://www.iea.org/data-and-statistics/charts/key-estimated-energy-demand-co2-emissions-and-investment-indicators-2020-relative-to-2019>. For illustrative purposes only.

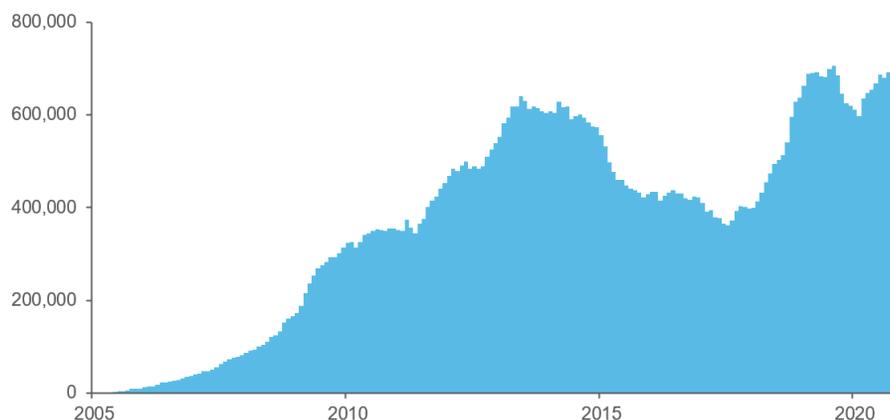
Figure 5: Carbon Emissions Futures Volumes

Chart represents 12M moving average of monthly volume in ICE futures on Carbon Emissions Allowances. Source: Acadian based on futures volumes from Bloomberg. For illustrative purposes only. Investors have the opportunity for losses as well as profits.

Instead, sophisticated managers apply forward-looking analysis and judgment in designing and maintaining their processes. We won't always trade the same assets, and information that was once predictively useful may lose relevance as a result of long-term shifts in economic and market structures.

In managing our process over time, that means we have to make decisions about how to adapt. We certainly make use of historical analysis to evaluate hypotheses and calibrate our approach, but it's of foremost importance to identify and understand trends, environmental and otherwise, that *will* affect commodities markets going forward.

That mindset has put a premium on exploiting alternative data sources to infuse our investment process with highly specialized information relevant to specific markets. In the context of environmental themes, examples would include incorporating information about lower-frequency climate patterns into natural gas forecasts and shorter-term weather fluctuations to forecast agriculture and softs.

In summary, a robust systematic process should incorporate the broadest possible investment universe and the full set of contemporarily relevant information in relation to environmental and other ESG themes.

BIOGRAPHIES

Michael Ponikewicz

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Michael joined Acadian in 2016 and is a member of Acadian's Multi-Asset Class Team. Prior to joining Acadian, he worked at Franklin Alternative Strategies Advisers, where he was responsible for conducting research on multiple asset classes, focusing on commodities in all three sectors: metals, energy, and agriculture. He also used quantitative methods to analyze numerous fundamental factors and asset class behaviors. Michael also previously worked at Pelagos Capital Management, conducting quantitative and fundamental research across asset classes and served as a graduate portfolio manager and analyst for the Boston College Endowment Fund. He received an M.B.A. with a concentration in asset management from Boston College; an M.S. in finance from Boston College; and a B.S. in industrial engineering from Pennsylvania State University.

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Seth heads Acadian's Client Advisory function, working closely with the firm's Investment Team and the Global Client Group. Prior to joining Acadian in 2014, Seth was a managing director in Equity Derivatives Trading at UBS. Previously, he was a researcher at Barclays Global Investors, focusing on options and volatility. He also helped to establish and later ran Deutsche Bank's award-winning Equity Derivatives Strategy Group. Seth holds a Ph.D. in economics from Stanford University and a B.A. in economics from the University of Chicago.

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