

Unlocking alpha in a differentiated commodities supercycle





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With structural demand rising across energy, digital, and industrial sectors, commodities can offer more than just a diversification and inflation hedge. They may also present a pathway to differentiated returns. This paper outlines how investors can navigate geopolitical complexity, to access scalable, policy-aligned growth through Fidelity's Transition Materials strategy. Our active, fundamental equity strategy aims to give investors access to a range of alpha opportunities across the theme.

Executive summary

Over the next quarter-century, commodity markets are expected to undergo a paradigm shift. Rather than a broad-based cyclical upswing, we anticipate a selective, structural supercycle anchored in three secular megatrends: energy transition, digitalisation, and urbanisation.

Central to this transformation are transition materials, including copper, lithium, nickel, uranium, rare earth elements and a handful of others. They serve as foundational inputs for electrification, renewable energy deployment, electric vehicle (EV) penetration, grid modernisation, and advanced manufacturing.

Our investment rationale is supported by a confluence of structural supply deficits and policy-driven demand acceleration, creating durable pricing support and long-duration return potential. We argue that investing in traditional instruments such as commodity futures and broad-based commodity indexes offer limited efficacy in capturing the upside of transition materials due to issues like market immaturity, illiquidity, and misalignment with thematic growth drivers. Generalist indexes also disproportionately weight legacy commodities, diluting exposure to transition materials. Historical performance data suggests that commodity equities are likely to outperform broad commodity futures and indexes over time.

In addition, we pose that an actively managed approach to investing in listed resource companies provides superior access and scalability, reflecting embedded optionality in reserves, operational leverage, and strategic positioning. Our active Transition Materials strategy benefits from a forward-looking view of the opportunity in the theme, as opposed to indexes, which are heavily skewed to legacy businesses with limited access to the profit pools of the future. Markets can change rapidly, presenting opportunities for active managers in this space to capture alpha, while innovation within the trend itself will also change the opportunity set.

By positioning early and thoughtfully, portfolios can benefit from both the alpha of scarcity and the beta of global decarbonisation.

This theme can also serve as portfolio protection against a more inflationary macroenvironment, as commodity equities have successfully done in the past. It offers investors a strong long-term growth story and useful macro hedge, with active stock picking focusing on companies with the ability to manage pricing most effectively.

Strategic investments in transition materials offer a strong growth path by integrating sustainability goals, geopolitical dynamics, and long-term investment objectives. By positioning early and thoughtfully, portfolios can benefit from both the alpha of scarcity and the beta of global decarbonisation. Fidelity's Transition Materials equity strategy offers a well-suited vehicle for gaining exposure to this theme, bringing together our industry-leading global research and expertise in this space with experienced portfolio managers who aim to channel the best of these research ideas into alpha for the strategy.

As the global economy accelerates toward decarbonisation and digitalisation, a broad spectrum of commodities—including lithium, cobalt, uranium, nickel, copper, and rare earth elements—are being reclassified as strategic. These materials underpin three major transitions: the shift to a low-carbon energy system, the exponential growth of AI and digital infrastructure, and the industrialisation of emerging economies such as India and ASEAN. They enable electrification, battery storage, grid resilience, and advanced technologies, and support structural demand growth from urbanising regions.

Together, we believe these forces are creating a multi-dimensional demand surge that is reshaping global commodity flows suggesting the potential onset of a commodity ‘supercycle’ - a prolonged period of elevated prices driven by sustained, multi-sectoral demand growth.

However, unlike the iron ore supercycle of the early 2000s, largely driven by China’s infrastructure and residential housing boom, the cycle is expected to be more fragmented and complex. Not all commodities or producers will benefit uniformly, and not all exposures will translate into profitable investment opportunities.

Today’s context is defined by concentrated supply chains, particularly in China, heightened geopolitical risk, and increasing resource nationalism. Moreover, emerging trends such as the ‘decommoditisation’ of commodities, opaque pricing mechanisms, and restricted market access are reshaping how investors engage with these assets.

China has been one of the main drivers of demand, as the rapid expansion of grid investments to support its electrification efforts has been the single largest contributor to demand growth over the past two years.

Multi-layered structural demand dynamics

There are multiple drivers starting to converge that are likely to generate strong competition for certain commodities, leading to select value-capturing opportunities.

1. Transition to a low carbon economy with critical minerals

According to the International Energy Agency’s (IEA) Global Critical Mineral Outlook 2025, in 2024 alone, lithium demand rose by nearly 30%. Cobalt, nickel, graphite, and rare earths increased 6–8% while copper consumption surged, largely due to China’s ongoing investment in electricity grids in recent years. Using copper as an example, electric vehicles require three to four times more copper than internal combustion engine vehicles. Similarly, onshore wind generation also demands significantly more copper, aluminium, and steel as compared to conventional energy generation.

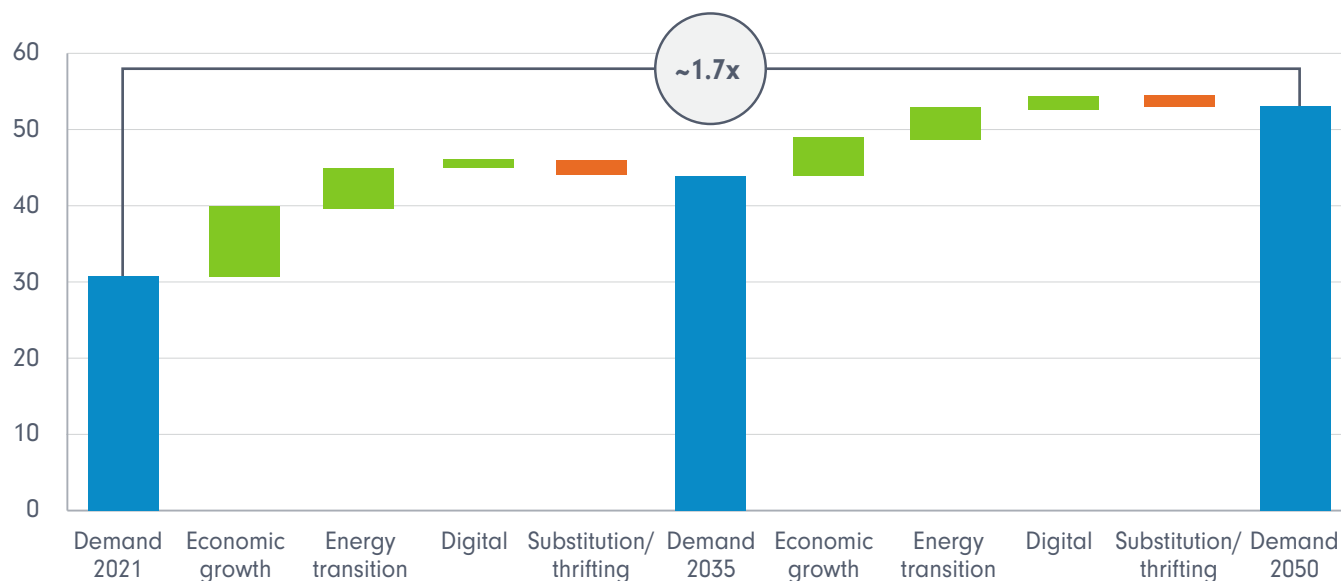
The global supply landscape for copper in 2025 is marked by intensifying constraints and structural imbalances that are reshaping investment dynamics across the commodities sector. China has been one of the main drivers of demand, as the rapid expansion of grid investments to support its electrification efforts has been the single largest contributor to demand growth over the past two years.

It is remarkable that over the past 20 years, the supply of copper has never surpassed the levels anticipated at the start of each year, highlighting the difficulties in supplying this commodity. We believe this will only intensify as weather patterns become more volatile. Chart 1 highlights the projected demand for copper over the next 25 years across key market themes.

Structural headwinds including declining ore grades, extended mine development timelines and slowdown in new discoveries, are compounding the supply challenge. Chart 2, derived using BHP data, shows it can take on average 17 years from discovery to production, often due to delays in permitting. A continued pattern of delays highlights the risks to delivery of forecast greenfield volumes.

Chart 1. Projected copper demand

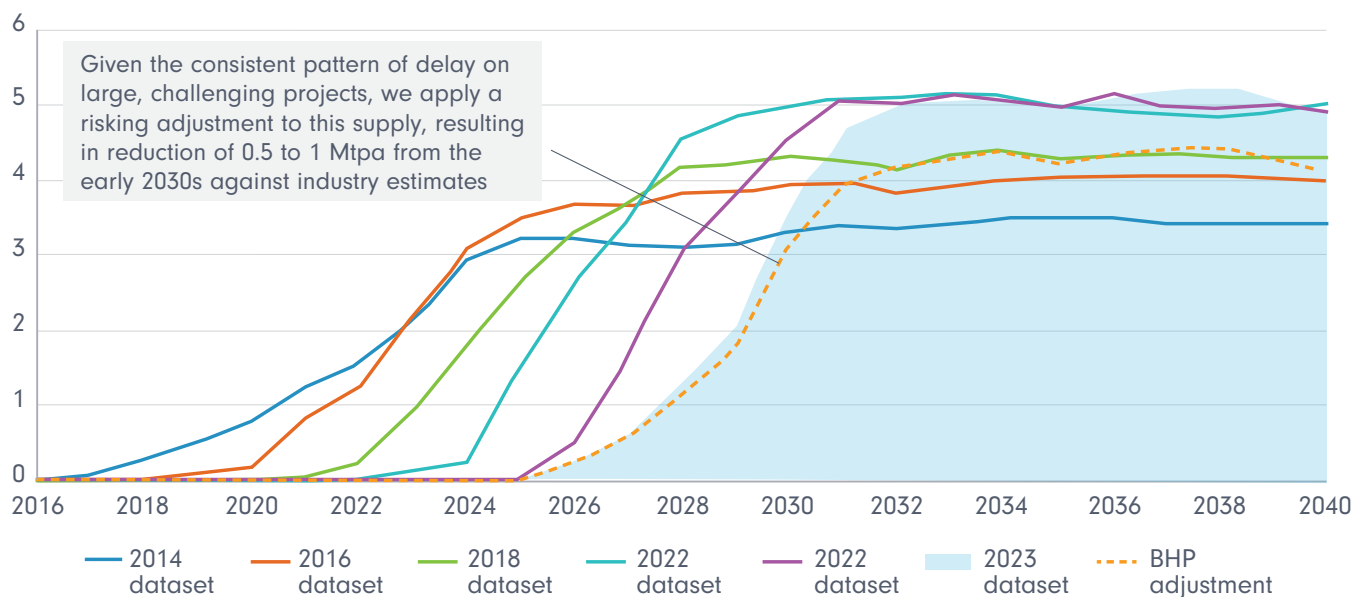
Copper semis end-use demand by key theme (Mt)



Source: BHP – Chilean Site copper Tour, 18 Nov 2024.

Chart 2. Greenfield projects facing multiple challenges

Copper production capacity (Mtpa)



Source: BHP – Chilean Site copper Tour, 18 Nov 2024.

2. Early signals of a nuclear repricing cycle

Uranium is experiencing a structural demand renaissance, driven by the convergence of decarbonisation imperatives and the rapid scaling of digital infrastructure. Nuclear energy is increasingly viewed as a critical enabler of hyperscale data centres, particularly those supporting AI workloads, due to its unmatched reliability, zero-carbon baseload capacity, and long-duration operational stability. Major technology firms including Meta, Google, Amazon, and Microsoft have responded with long-term procurement commitments, signalling a strategic pivot toward nuclear as a foundational energy source.

The emergence of Small Modular Reactors (SMRs) and microreactors enhances this thesis, offering scalable, site-flexible solutions that align with the energy intensity and uptime requirements of next-generation computing. Unlike intermittent renewables, nuclear provides consistent output, supporting both operational resilience and net zero mandates.

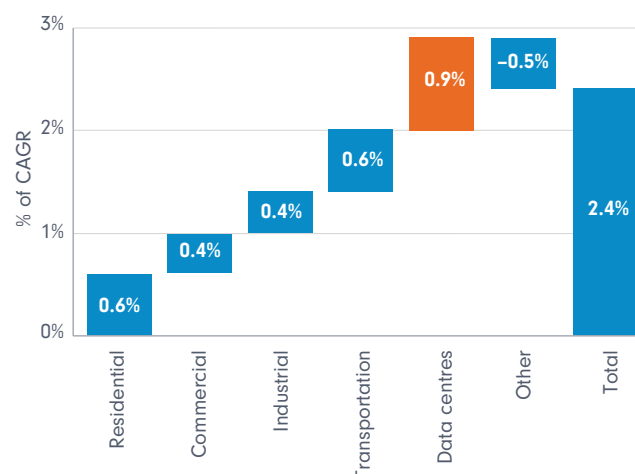
This shift coincides with a broader re-rating of nuclear policy globally, with Japan and South Korea reversing post-Fukushima retrenchments and Germany showing measured openness to next-generation technologies. While demand growth is expected to be steady rather than exponential, the trajectory is meaningful in a market already operating under structural supply constraints.

Our research suggests that the uranium market will remain in deficit until 2029, at the earliest, underpinned by limited new supply, lengthy permitting timelines, and rising demand from both utility and non-utility buyers. Utilities also have substantial long-term requirements, which will need to be met.

Secondary sources are increasingly depleted, and geopolitical and ESG constraints such as social license, continue to limit production response. This sustained imbalance supports a positive pricing outlook and reinforces the investment case for uranium assets.

Major technology firms including Meta, Google, Amazon, and Microsoft have responded with long-term procurement commitments, signalling a strategic pivot toward nuclear as a foundational energy source.

Chart 3. AI data centres' contribution to US Power demand



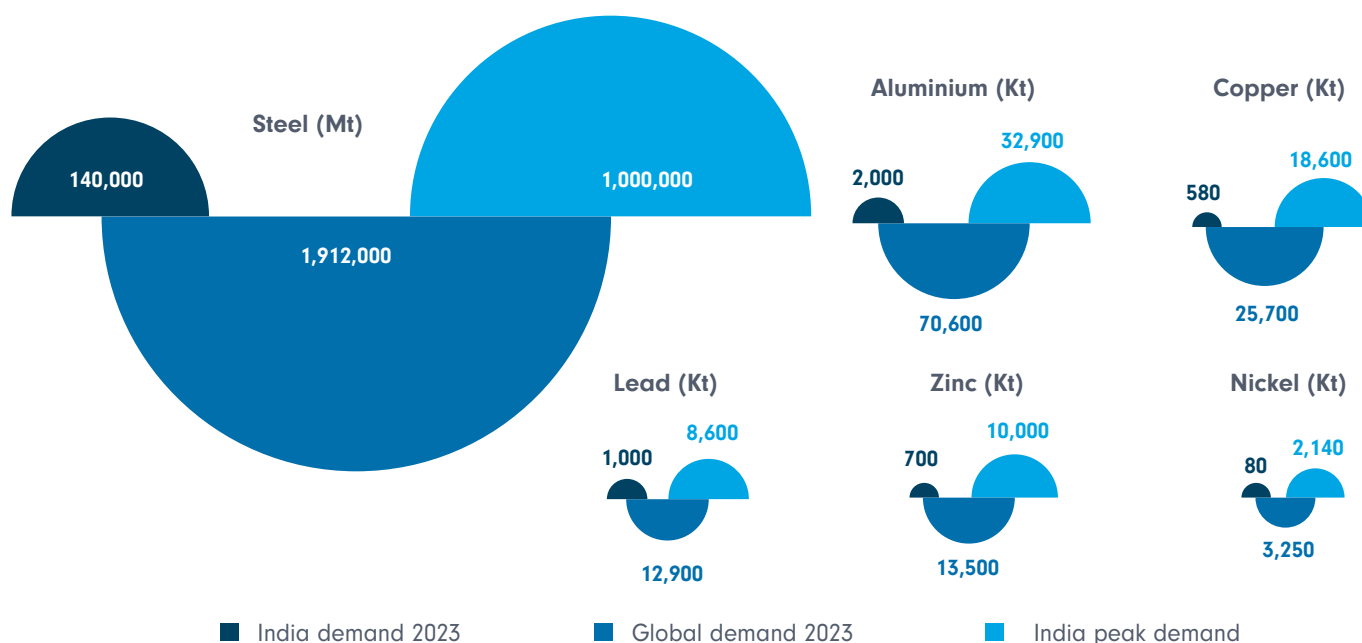
Source: Goldman Sachs, Jan 2024.

3. India's commodities demand: structural growth and global supply implications

India's emergence as a key driver of global commodities demand is supported by its demographic scale and accelerating urbanisation. With a population projected to reach 1.5 billion by 2030 and urbanisation expected to rise from 52% to 66%, the country is entering a phase of structurally higher consumption across industrial and agricultural commodities.

Steel demand in India (Chart 4) is a strong example: current consumption is 140 million tonnes, yet long-term forecasts indicate it could rise to as much as 1 billion tonnes. This represents about half of the projected global steel demand solely for India. Similarly, copper and agricultural inputs are also anticipated to experience sustained growth, fuelled by infrastructure expansion, housing, electrification, and food security initiatives. This trajectory positions India as an important competitor for global commodity supply and should India follow China's urbanisation pattern, the global demand for materials will exponentially increase. Investors should consider monitoring India's policy landscape, infrastructure rollout, and trade behaviour, as these factors are likely to increasingly shape global commodity flows.

Chart 4. India's demand for commodities is likely to grow meaningfully



Source: BHP – Chilean Site copper Tour, 18 Nov 2024.

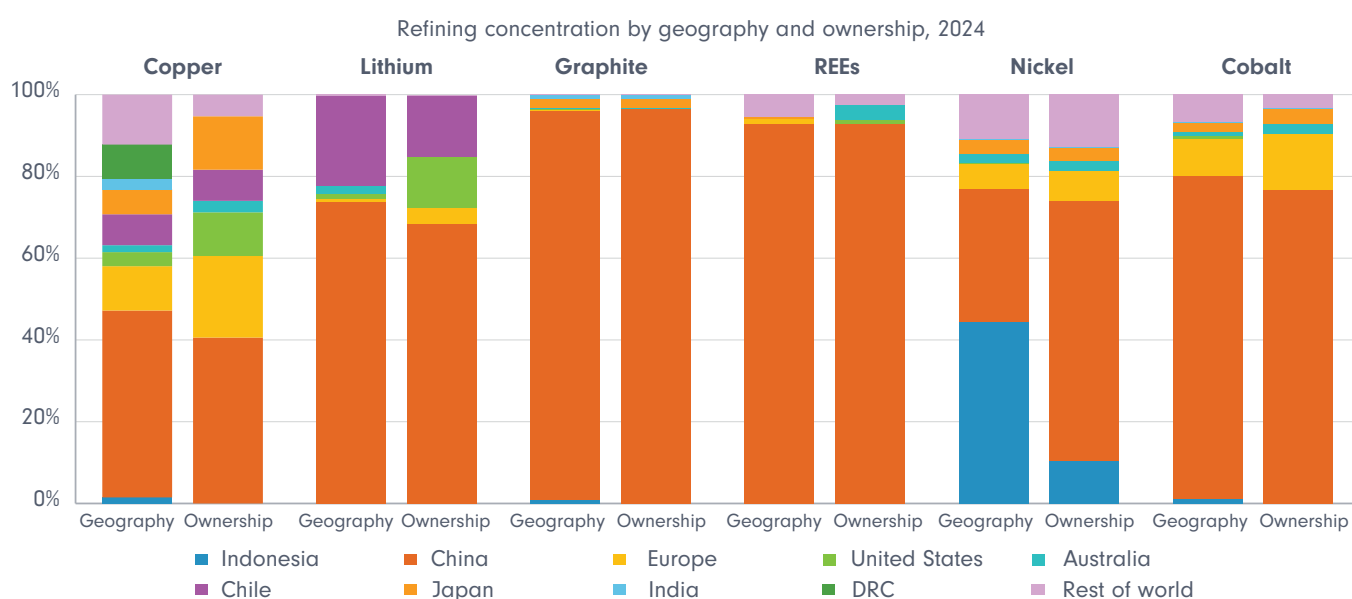
Geopolitics and supply chain bottlenecks

The IEA's Global Critical Minerals Outlook 2025 also highlights China's majority ownership of essential minerals, controlling more than 70% of global refining capacity.

Rising geopolitical tensions—particularly between China and Western economies—are accelerating the nationalisation of strategic interest in critical mineral supply chains, transforming them from industrial inputs into strategic assets. Export controls, national stockpiling, and resource nationalism are tightening global supply chains and amplifying uncertainty across production, refining, and distribution nodes.

Chart 5. China dominates critical mineral refining by both geography and ownership

Refining concentration by geography and ownership (2024)



Source: BHP – Chilean Site copper Tour, 18 Nov 2024.

These dynamics are creating regional price bifurcations where buyers will have to pay a premium for securing supply as countries seek to localise or diversify supply chains. This is effectively decommoditising commodities. For instance, U.S. tariffs on Chinese-manufactured goods are reshaping downstream cost structures, compressing margins in the near term while simultaneously incentivising domestic investment in mining, refining, and recycling of materials.

Another example is China's use of rare earth export controls, which has structurally altered the market, catalysing a bifurcation that benefits non-Chinese producers, such as MP Materials (US) and Lynas (Australia). MP Materials' share price has nearly tripled since the beginning of 2025. This has been supported by an investment from the U.S. Department of Defence, guaranteeing a price floor for rare earth production over the next decade, as well as the underwriting of a large increase in their roll-out of domestic magnet production.

Similarly, the Australian Government is exploring avenues for Lynas, a company whose valuation doubled in 2025, indicating strong investor confidence in its strategic positioning. This reflects a broader trend: while rare earths are the most prominent example, similar dynamics are likely to emerge across other critical minerals where China dominates processing or ownership. Chart 5 reinforces the point that China's entrenched control over midstream capacity poses a structural challenge for Western economies, which are now mobilising capital and policy efforts to regain strategic autonomy in key commodity supply chains.

Commodity pricing has minimal forward-looking components

Despite a significant and sustained increase in demand for critical minerals, spot prices tend to reflect short-term rather than long-term fundamentals. For example, lithium prices have declined materially from their 2022 highs. This correction reflects cyclical overproduction and investment timing mismatches rather than the price levels required to meet long-term demand, which indicates the long-term price is meaningfully above spot levels.

This dynamic is particularly evident in commodities where Chinese players dominate the supply side. Historically, China has leveraged excess capacity in various commodities to undercut global competitors with low-priced supply, as seen in markets like polysilicon and lithium. However, a significant policy pivot appears to be underway. The recent focus on "anti-involution" signals a move away from low-margin, hyper-competitive industrial models towards higher value-added, innovation-driven production.

While 'anti-involution' remains primarily a domestic policy framework, its implications for global commodity markets may become increasingly material. China's pivot toward higher-value downstream manufacturing away from low-margin, volume-driven competition, has the potential to reshape supply-demand dynamics, particularly in segments where it has historically exerted deflationary pressure. Although the full impact of this policy evolution remains uncertain, it introduces a new variable into an already complex commodity landscape.

This shift contributes to the confluence of structural forces that merit close monitoring, as they will shape the progression of the current commodity cycle and the emergence of alpha opportunities. It highlights the importance of a nuanced understanding of mining and commodity cycles. Investors need to be selective, concentrating on commodities marked by genuine physical or economic scarcity, and staying alert to those most vulnerable to structural changes influenced by Chinese industrial policy.

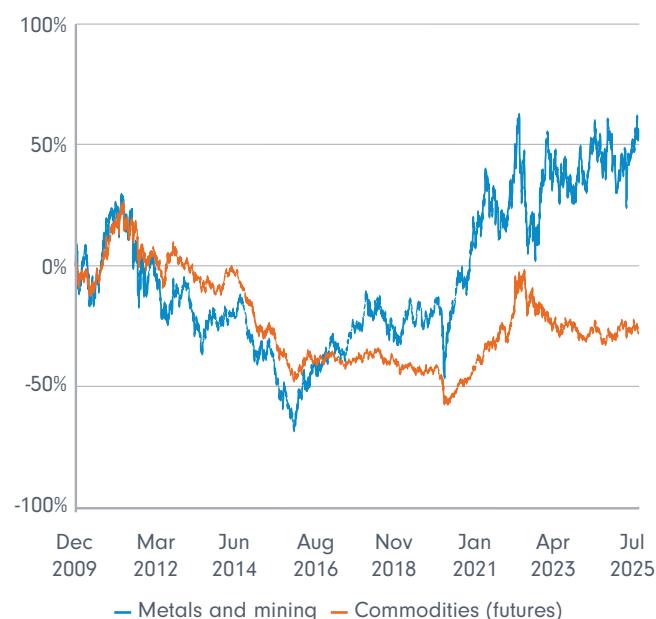
Indexes and futures fall short in transition materials exposure

For investors seeking exposure to energy transition materials, traditional instruments such as commodity futures and broad-based indexes often prove inadequate. Many critical mineral markets—such as rare earths, uranium, lithium, and cobalt—remain structurally immature, fragmented, and illiquid. Direct access is limited or non-existent for several of these commodities, and where markets do exist, they are small and prone to volatility. For context, while mature commodities like iron ore and gold have total market sizes of approximately US\$350 billion and US\$530 billion, respectively, lithium and cobalt markets are significantly smaller at ~US\$12 billion and ~US\$8 billion, with rare earths like dysprosium under US\$1 billion. In such thin markets, a single institutional trade can materially impact pricing, complicating execution and valuation.

Equities are likely to be the best access point for these commodities as they not only provide access to less mature critical minerals, but they also offer superior upside potential relative to direct commodity exposure. Unlike commodities, which reflect spot or futures pricing with limited scalability, resource equities represent claims on extensive in-ground reserves, operational growth, and strategic optionality. And in many cases, they can generate a yield through shareholder returns.

Chart 6 illustrates that metals and mining equities (blue line) have shown greater return dispersion compared to commodities futures (orange line), particularly in post-2020 market conditions. This pronounced divergence highlights how metals and mining equities can outperform in bullish environments, propelled by asset re-rating, production expansion, and capital inflows. This helps position them as an effective and dynamic means of capturing thematic growth in the energy transition and resource security space.

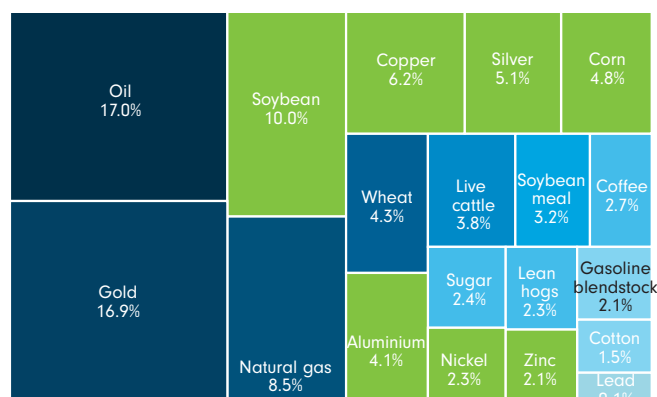
Chart 6. Equities offer broad exposure and have historically outperformed commodities futures



Source: Bloomberg Commodity Index and MSCI Metal and Mining Index as at 31 August 2025.

Moreover, generalist commodity indexes, such as the Bloomberg Commodity Index, allocate over 60% of their weight to non-transition materials or commodities (e.g. oil and livestock in Chart 7), offering limited exposure to the structural growth drivers underpinning the main drivers for a supercycle.

Chart 7. Commodities indexes provide limited exposure to areas of structural growth



Source: Bloomberg, 30 June 2025. Commodities highlighted in green play a role in the energy transition.

These instruments fail to capture the asymmetric upside potential of critical minerals and may dilute portfolio alignment with decarbonisation and digitalisation themes.

Unlocking alpha in transition materials

As outlined earlier, the transition materials and commodity landscape is shaped by a complex interplay of structural demand, geopolitical friction, and supply chain fragility.

In this environment, fundamental analysis of producers and refiners is essential to identifying investable opportunities. Unlike traditional commodity cycles, a potential supercycle is likely marked by the “decommoditisation” of certain materials—where ESG credentials, geopolitical alignment, and processing capabilities can command price premiums. This shift renders passive exposure through futures or broad commodity indexes insufficient, as they fail to capture the differentiated economics and strategic positioning of specific commodities and individual companies.

Understanding the supply-demand dynamic of each commodity is critical. On demand, investors must adopt a forward-looking view of technological adoption. Battery chemistry, for example, is evolving rapidly and the dominance of one formulation over another will determine whether demand for inputs like lithium, cobalt, or nickel is durable or transient. The rise of secondary markets, particularly in recycling, will add another layer of complexity, influencing long-term elasticity and substitution risk.

Finally, and perhaps most importantly, the mining cost curve remains a foundational tool, helping investors assess which producers can remain cash-flow positive through price cycles. For this, understanding asset quality (defined by cost position, mine life, capital intensity, and geological characteristics) is central to the portfolio construction process.

Inflation protection

Transition materials also have the potential to help investors hedge a more inflationary macroeconomic environment. This is top of mind for investors today, as protectionism and deglobalisation inflate import prices and lead to higher priced goods produced in higher-cost locations. Reductions, or potential reductions, in immigration rates are likely to cause meaningful increases in labour costs in certain regions.

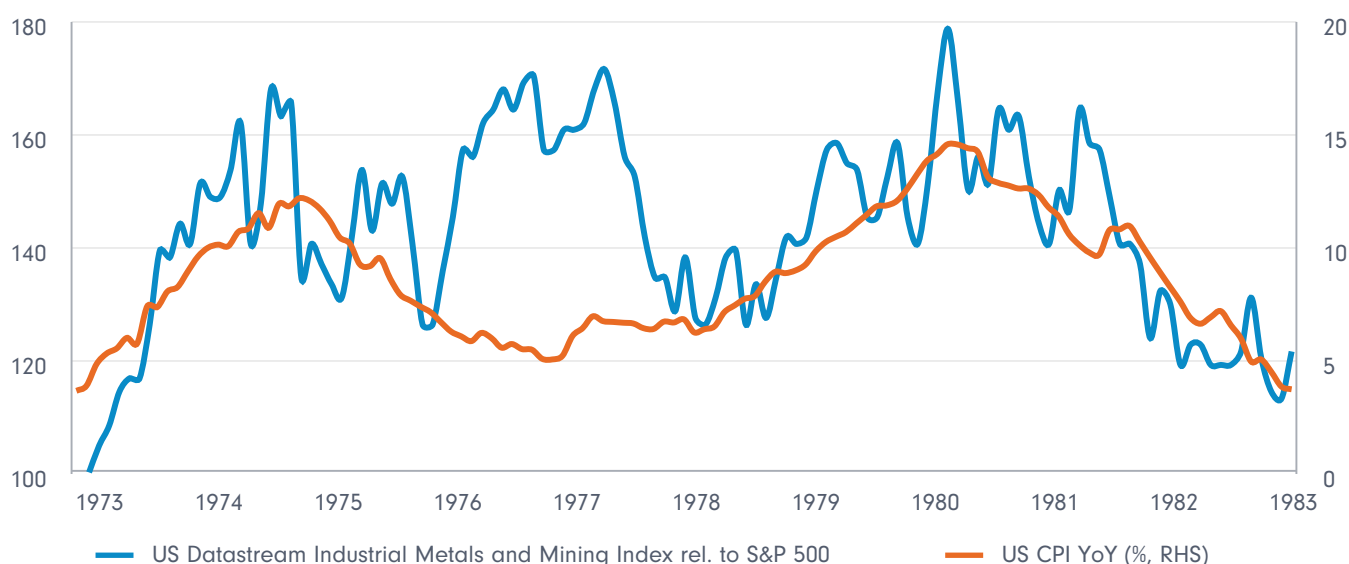
Structural deficits and high public debt around the world, alongside steadily rising interest costs, are likely to put additional pressure on central banks to support strained government financial positions through looser monetary policy or measures such as 'yield curve control'.

Commodities have historically served as effective inflation hedges, with metals and mining stocks notably outperforming broad equity markets during the inflationary 1970s (Chart 8). While some inflationary pressures of that era, such as oil price shocks and wage-price spirals, differ from what we see today, the historical analogy remains instructive.

The inflation-hedging characteristics of commodities, including transition materials, reflect their inherent scarcity amid structurally strong demand. In periods of elevated inflation, this supply-demand imbalance tends to amplify pricing power of producers, making their equities resilient and strategically valuable within inflation-aware portfolios.

More recent data also supports this case, including the performance of the XME (SPDR S&P Metals & Mining ETF) relative to the S&P 500 during periods of high inflation (defined using Core CPI), as shown in Chart 9 on the next page. Although not a pure proxy for the transition materials theme, XME tracks US companies involved in the mining and production of base and precious metals, some of which are transition-related ones.

Chart 8. Metals and mining equity outperformance during the 1970s



Source: LSEG, September 2025. Relative performance rebased to 100 from start of MSCI Metals & Mining index.

Chart 9. XME vs the S&P 500 during high and low inflation periods

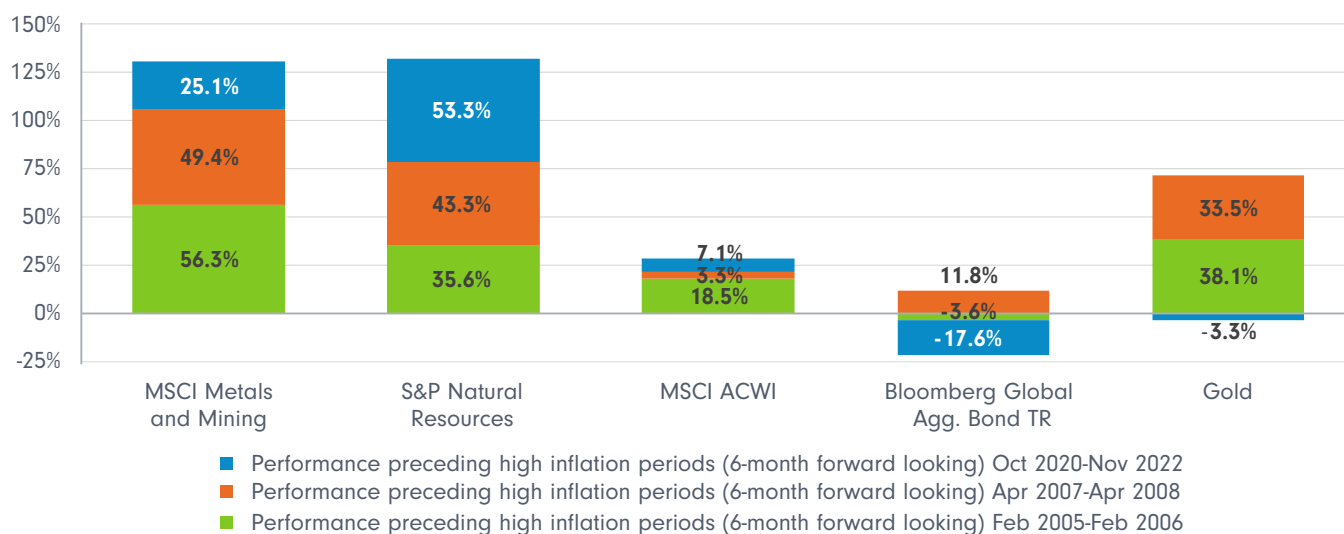
	XME	S&P	CPI (Core)	Metals vs S&P
31-Aug-06				
31-Aug-07	31%	13%	2%	
29-Aug-08	24%	-13%	2%	
31-Aug-09	-43%	-20%	1%	-23%
31-Aug-10	19%	3%	1%	16%
31-Aug-11	21%	16%	2%	
31-Aug-12	-30%	15%	2%	
30-Aug-13	-12%	16%	2%	
29-Aug-14	22%	23%	2%	
31-Aug-15	-53%	-2%	2%	
31-Aug-16	25%	10%	2%	
31-Aug-17	26%	14%	2%	
31-Aug-18	5%	17%	2%	
30-Aug-19	-25%	1%	2%	
31-Aug-20	-3%	20%	2%	
31-Aug-21	79%	29%	4%	49%
31-Aug-22	11%	-13%	7%	23%
31-Aug-23	6%	14%	4%	-8%
30-Aug-24	15%	25%	3%	-10%
29-Aug-25	38%	14%	3%	23%
Performance of metals vs the S&P in high inflation periods				16%
Performance of metals vs the S&P in low inflation periods				-3%

Source: Goldman Sachs & Co, Global Equity Research, September 2025

Furthermore, our analysis shown in Chart 10, supports the inflation-hedging potential of materials equities with a notable caveat: metals and mining equities tend to outperform more consistently during the build-up phase of inflation (as defined by headline CPI) rather

than during periods of sustained high inflation. This pattern reflects the forward-looking nature of markets, which typically price inflation expectations ahead of realised peaks.

Chart 10. Metals and mining equities outperform in the six months preceding high inflation episodes



Source: Fidelity International, August 2025. 'High inflation' threshold is the 75th percentile of US CPI values over the period since 2000 (3.6%).

Across both historical and more recent inflationary periods, there is compelling evidence to support the role of metals and mining equities as effective inflation hedges. During the 1970s, a decade marked by sustained inflation, these equities consistently outperformed broader markets, reflecting their sensitivity to commodity price cycles and their linkage to real assets. More recent data also reinforces this dynamic, particularly during periods of transition to high inflation.

The inflation-hedging characteristics of these equities are underpinned by the scarcity and essential nature of the underlying commodities, which as outlined above, tend to exhibit strong pricing power when demand is robust, and supply remains constrained. This is especially relevant in the context of transition materials, where structural demand growth intersects with limited supply capacity. Additionally, many companies in the sector are benefiting from these decommodification trends, enabling differentiated pricing and margin resilience, further enhancing their defensive attributes in inflationary environments.

Transition materials: a strategic allocation, not a tactical trade

The nexus of geopolitics and transition materials presents strategic opportunities for investors to meaningfully complement their core equity exposures.

As governments intensify efforts to secure supply chains and assert greater control over transition materials, investors can unlock value in the commodity supercycle we foresee by understanding its evolving demand, constrained supply and technological innovation dynamics.

Commodities have long served as tools for inflation protection and portfolio diversification. Similarly, targeted exposure to transition materials can offer access to structural growth driven by the energy transition, digitalisation, and urbanisation, particularly in markets such as India.

Equities with upstream exposure to the energy transition provide scalable, liquid, and differentiated access to these themes. Investors' appetite is evolving, from niche allocations to a strategic entry point for capturing upside in a reconfiguring global economy. Investing through listed markets enables participation in innovation-led growth and exposure to assets that would otherwise be difficult to access.

Given the accelerating policy momentum, supply fragility, longer-duration tailwinds and inflationary forces outlined throughout this paper, the current environment reflects a confluence of factors that appear to be laying the groundwork for a differentiated commodity supercycle.

For investors seeking to align portfolios with global economic realignment and sustainability-linked growth, this backdrop presents a timely opportunity to reassess their exposure to transition materials, not as a short-term trade, but as a long-term strategic allocation.

Fidelity's Transition Materials strategy provides investors access to this theme, benefitting from Fidelity's global research across relevant industries and a portfolio management team with deep, theme-relevant experience to help 'join the dots' across our research. Ultimately, with the aim of turning ideas into alpha.

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