Energy

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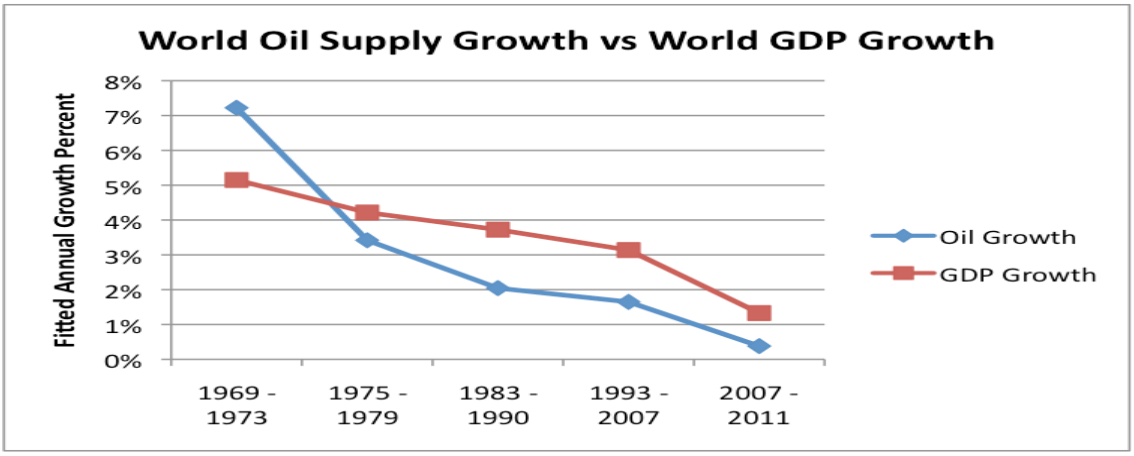
Intro

Abundant and efficient energy is the key to growth.

Without an adequate supply growth of efficient energy, economic activity declines and humanity suffers.



The markets and economies have never appeared so confusing, but when looked at through the lens of energy, it all begins to make sense.

What you are witnessing in the economy today is reminiscent of the 1970s.

In 2022, the world is faced with a lack of supply growth in oil, natural gas, and other important natural resources needed to meet growing *global* demand, and very few *truly* understand the dynamics taking shape in the natural resource markets that are as tight as a drum.

The energy crisis is not because of Russia/Ukraine, although the conflict has certainly sped up some of the looming issues.

Energy markets were headed for a crisis anyway. **Europe was already in a full-blown energy crisis well before the war due to extremely tight markets caused by misguided (political) energy policies**. One is also likely coming to the United States very soon.

It's no surprise that with a lack of surplus energy, Europe's economy was one of the first to begin contracting.

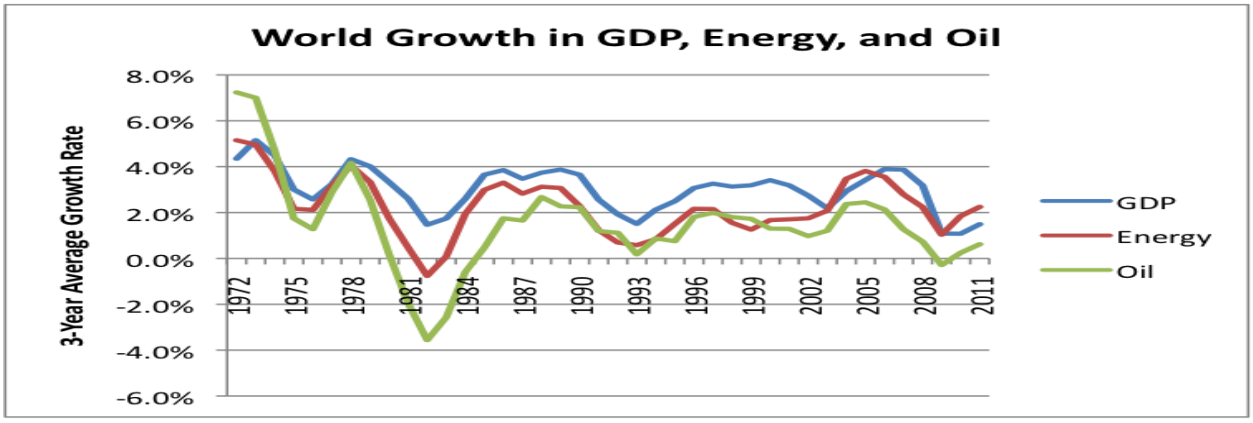
A surplus of energy is arguably mankind's largest innovation, and we are currently squandering away ours with misguided political policies and giant misconceptions about where we are with renewables.

As a result, FMT believes *we have* entered a period of stagflation: an economy that is difficult to grow against a lack of production growth in efficient energy.

These problems create huge opportunities because capital investment is severely lagging the required energy supply growth necessary for humanity's upward trajectory. Investors getting in now should be rewarded quite handsomely over the next few years.

Throughout human history, you might be surprised to learn that energy output and economic growth are perfectly joined at the hip.

The illustration below is just a more recent observation of this phenomenon that has existed for centuries.



The global economies over the decade from 1972 to 1982 contracted from annualized growth rates of just over 4% to under 2%. Energy supply growth declined from 5% to slightly negative growth over the same period.

When energy growth stalls, economies fall.

In Vaclav Smil's seminal book, "**Energy and Civilization: A History**," he lays out one of the most fascinating reads on mankind's trajectory that drills down on energy output and economic growth. It is a highly recommended read if one should want to get in the weeds.

Because of the dynamics of tight supply and demand imbalances in global energy markets, ESG mandates and initiatives, and extreme capital discipline in these sectors after a decade-long bear market, FMT believes that markets are severely missing the magnitude of supply-side tightness, thus vastly underappreciating the natural resource sector and its importance for continued economic growth.

For robust economic growth to ensue, we need major capital investments in raw material production. This has been lacking for nearly a decade, which can be witnessed through higher global energy costs that were rising well in advance of Russia/Ukraine, and the chickens have now come home to roost.

For these reasons, FMT believes a commodity super-cycle is in the early stages.

After years of underinvestment and now **undersupplied natural resource markets**, FMT believes exposure to commodities will help protect and grow our principal over the next few years.

The Green Premium is Soaring

In parts of northern Arizona and Nevada, large groups of protestors have signs that read, "Preserve our water and stop lithium-ion mining."

Arizona and Nevada have been in a drought alongside much of the country, and reservoirs are at 20-year record lows, so it's understandable that those living in these areas are against lithium-ion mining production since it requires a vast amount of water (and oil/gas) for extraction like most of the energy industry.

Lithium-ion is used to produce electric vehicle (EVs) batteries along with solar/wind battery buffering, "solutions" for decarbonization.

The high energy and raw material intensity it takes to produce EVs (and other renewables) are staggering, and it is estimated to be 5x to 7x that of combustion vehicles. To put it more plainly, it takes a lot of fossil fuels and other natural resources to make renewable energy.

With many powerful environmental lobbyist groups and protestors fighting for natural resource constraints, rigid government approvals and regulations slowing extraction and development, and poorly coordinated ESG initiatives, our energy surpluses are going in the wrong direction.

This has major consequences, many of which are just starting to be visible.

As an example, Tesla recently had to raise prices because energy and base material input costs have soared. **This isn't out of desire or because of "greedy" corporate policy –it has been out of necessity**.

Years of underinvestment in traditional energy (fossil fuels) and base metal (like copper) production, along with their dwindling supplies, has increased the input costs of EV production and is making them less affordable to produce and buy again (along with everything else).

This is illustrated through the **Green Premium** for EVs that *had seen* the most progress of any renewable technology. **Unfortunately, this is rising dramatically after having consistently fallen when energy input costs were much cheaper and more abundant.** If you are unfamiliar, a **Green Premium** is defined as the higher per-unit dollar cost of going with a renewable resource over a traditional energy resource.

We can see this dynamic play out in a big way with the highest-volume, lowest-cost EV producer that had made the most progress on the Green Premium: Tesla.

Tesla's sticker prices are rising far faster than gas-fueled vehicles as energy surpluses dwindle. Recall that it takes at least 5x the energy and raw material intensity to produce an EV.

In March of 2021, the base Tesla 3 Standard Range+ was around $37,190, while the same one is $48,490 today. Over the same period, a base Toyota Camry LE has risen by less than $500 (to $25,845). You can plug in any comparable ICE car, and the results are the same: a dramatic discrepancy in price increases.

Tesla's entry-level Model 3 has risen close to a mind-numbing $11,000, or near 30%, in less than 18 months.

This transpired while Tesla's volumes have been skyrocketing, which wasn't supposed to be in the cards.

So much for Moore's Law or Wright's Law when it comes to renewables.

If the renewable industry doesn't have ***abundant and cheap energy, sufficient raw material supplies, and historically low costs of capital***, renewable energy technologies become far less cost-effective on a per-unit dollar basis compared to their CO2-emission counterparts (FMT will save the EROEI arguments for another day).

This is particularly noteworthy and has profound world implications.

Not only is Tesla the lowest-cost EV producer that had made the greatest strides in the **Green Premium** compared to any other company, but Elon Musk has reiterated many times that his goal is to make EVs as affordable as possible. Even so, pricing is now going in the complete opposite direction.

Why is this happening?

Recall that, when fossil fuels and raw materials become scarce and more expensive it drives the price of everything up, **especially renewable energy products due to their extraordinarily high natural resource inputs**. **This erodes their overall per-unit value proposition.**

The truth is that for the "green" industry to thrive and get to where it wants to go, it needs commensurate growth in raw materials and fossil fuels for the foreseeable future.

That growth isn't there today due to the anti-oil movement and ineffective government policies, and this can be measured through the price of Tesla. In Tesla's 2021 Impact Report, this information is non-existent, but it's understandable why.

The developments of what FMT is conveying to you are only becoming visible to us (and to Tesla) now.

Viewed in this light, the deeper meaning behind Musk's recent statements and what he has been alluding to makes perfect sense:

> "Realized what I have in common with environmentalists, but also why they're so annoyingly wrong: They are conservationists of what is, whereas they should be conservationists of our potential over time, our cosmic endowment. (From a friend)"

The truth is that we need far larger raw material supplies (extraction) than we have to meet the growing demands of *global* progress and development. We also need to provide the current surplus of energy we need for human progress and productivity to continue.

In essence, **without enormous fossil fuel and base metal extraction growth going forward**, we will continue falling behind in every regard.

We will fall behind on both, and ironically, the CO2 front because of a lack of fossil fuel growth, which slows the transition to clean energy as raw material costs rise (along with the cost of capital), along with the surplus of energy, which is what has allowed economic growth and human prosperity to prevail.

In other words, we need to "drill, baby, drill" so **we can** get to a clean and abundant energy future.

Back on March 4th, 2022, this information was lost on almost every analyst, commentator, and meme shill when Elon Musk tweeted in what appeared to be a response to the Russian conflict: "**Hate to say it, but we need to increase oil & gas output immediately. Extraordinary times demand extraordinary measures**."

That tweet was hardly just about the Russian war. Two weeks after the post, Tesla jacked up their prices. The Russian conflict had just started.

Russia simply provided the cover of what had been happening internally at Tesla (and every other renewable product) for months regarding rising input costs.

If you are not convinced, Tesla raised prices in March of 2022 by $2,000 after the Russian war, **but they also raised them in 2021 by substantially more (long before the war) as raw material inputs were skyrocketing.**

This should be a wake-up call for politicians and the ESG movement that have been diverting needed investment in natural resources because they are cutting off their nose to spite their face.

Without sufficiently large oil and gas exploration and production ramps, the Green Premium will continue to widen, and society will continue to fall behind.

We need at least a decade of robust oil and natural gas production to have any hope for a global clean energy transition. This isn't lost on Elon Musk — or Warren Buffett and Bill Gates for that matter.

Demand for fossil fuels and raw materials is insatiable, and they will be wholly necessary for quite some time.

We need much more production of these energy resources to have any hope of getting to the other side (clean and abundant energy).

The good news is that it appears the Department of Energy (DOE) is fully realizing the urgency that is required given their impressive report in response to Executive Order 14017.

The United States will find its way, but the road is looking rough.

For now, ESG initiatives, energy and renewable misconceptions, and misguided political energy policies untethered to realities are starting to hold humanity back in a big way, **but this has given investors an enormous opportunity as public perceptions shift.**

FMT is optimistic that the truth of what humanity *needs* will win out as society comes around to facts over rhetoric (we are already seeing signs of this with the DOE response).

The Tightness of Supplies: Demand Side

In one of Vaclav Smil's lectures, he said (paraphrasing) that "it's not like a light switch to get to a clean energy future, it's a multi-decade process."

This appears to be lost on vastly overrated "tech" analysts and the ESG movement, and it has created deeply flawed public perceptions.

If the world tried to convert 100% of all combustion engines to EVs overnight, lithium-ion and nickel production alone are *600+ years behind* production schedules in this hypothetical scenario.

That doesn't even take into consideration the record-low water inventories because we would also have a massive shortage in U.S. oil and natural gas to do such a huge conversion so quickly (plus a shortage of labor and equipment).

It's as if spare oil pumping capacity isn't already looking grim.

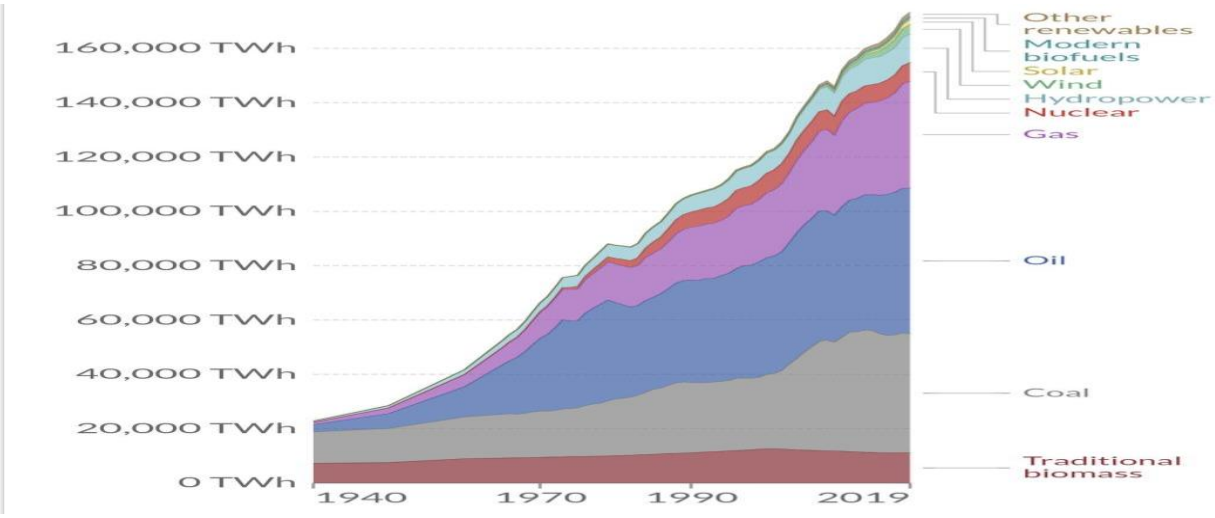
What is simply not on the casual observer's mind or being touted by the ESG virtue signalers is the true extent of global fossil fuel demand going forward.

India is entering their "S" curve of energy consumption as their per-capital incomes rise beyond the low-income tipping point, **the point at which consumption of natural resources explodes.**

The amount of demand for hydrocarbons (oil, natural gas, and coal), copper, steel, cement, and uranium coming out of India has begun its exponential rise (15-20 years of explosive natural resource demand).

China's demand for natural gas, copper, and many other cleaner resources is practically limitless.

Global consumption of fossil fuels is relentlessly increasing and wholly necessary despite the delusion of ESG initiatives and woke policies.



Our society is leaning away from fossil fuels exactly at a time when they should be leaning into them. Inasmuch as FMT is pro-green, the reality is that there is no viable replacement for fossil fuels anytime soon, and replacements are years off.

FMT estimates that global demand for oil, natural gas, and coal will hit *record highs* in 2022 while supplies lag. **We are simply squandering our surplus of energy. Without it, kiss the green movement goodbye and say hello to energy poverty.**

It's also worth pointing out that **the expansion of our own electric grid and that of other developed countries** to support the broad adoption of EVs to meet net-zero greenhouse emission targets will also be enormous. **This will put further pressure on demand for natural resources and requires growing amounts of copper, cement, oil, steel, natural gas, nickel, silver, etc.**.

The sheer amount of raw material demand is absolutely staggering and almost too hard to wrap our heads around. The American Society of Engineers estimates that the price tag just to update and expand our grid is a cool $2 trillion.

Even so, the natural resource industry has been dangerously overlooked and oddly demonized given the human prosperity it has provided and its relevance in moving forward.

Even if we didn't have the enormous expansionary plans for clean energy by developed countries like the U.S. and Europe**, we are already either running supply deficits or have extremely tight supplies in many of the natural resources necessary to run our current system.**

Suffice it to say that there is a near shortage of almost everything at today's production rates.

In fact, a Dutch government-sponsored study recently concluded that the Netherlands' "**green ambitions *alone* would consume a major share of global minerals**" and that "**exponential growth in (global) renewable energy production capacity is not possible with present day technologies and annual metals production**."

Simply put, the global demand for natural resources is voracious, and we need decades of new supplies. Unfortunately, investment in new production is sorely lacking, and much of it is still being diverted to poor use cases largely because of ESG mandates.

To get to a new world of abundant and clean energy, **we simply need to ironically extract a lot more and do it quickly**. We should hope governments start executing a *legitimate* long-term energy plan—imminently.

To think otherwise is not falling on the right side of history amply displayed by world energy prices, which will be the real arbiter of truth over time.

While spot prices will be quite volatile, barring a deep and prolonged recession, FMT believes global economies are looking at higher commodity spot prices for longer.

Bottlenecks for Natural Resource Production Create Opportunity: Supply Side

One *would think* that with **dramatically rising spot prices** (which is highlighting these shortages in natural resources) **and low levels of capital expenditures to grow supplies**, **money would be pouring into the natural resource sector given the extreme profitability of some of these companies, but not yet.**

While that would have been true in the past and under normal cycles, ESG mandates have diverted needed investments in natural resource production, which has equated to ever-higher profits for producers and much higher prices for consumers since growth expenditures (new supplies) have been held back.

Along with misguided ESG initiatives, regulations, and an uncertain political backdrop holding back energy supply growth, nearly the entire natural resource sector has gotten extremely disciplined when it comes to economics.

After a decade of poor company economics (especially in the shale patches), a return of cash over the growth of cash in the sector is now a primary focus. Management teams are simply returning most excess cash flows to shareholders in the form of dividends and/or share buybacks instead of trying to grow production.

Put more simply, production spending is coming via a trickle just when world prices and economies need a gusher.

Pouring through oil and natural gas E&P 10-Ks, this is unlikely to change.

The intense pressure put on these companies' management teams for profit over growth really stands out: almost the entire oil and gas sector has changed their salary packages and incentive structures **to incentivize management to keep margins high and operating**

expenses low, with a focus on returning excess free cash flow to shareholders via dividends and share buybacks.

A wise man once said, "show me the incentives and I'll show you the outcome."

This also has implications for future production. With such an extreme focus on profitability, nearly every oil and gas E&P company FMT has analyzed is high-grading (Tier 1 production). Put another way, **they are producing out of their lowest-cost, best-performing wells while leaving the harder and more expensive extractions for later.**

The industry has simply flipped from loose and reckless growth spending a decade ago with poor returns on equity capital to a focus on strong economics now that shareholders have applied intense pressure.

As a result of this, the oil and gas sector is enjoying the pricing power and operational leverage they get from higher prices, and that is making happy shareholders, along with leaving management teams safe at the helm (on top of not risking ESG hostility).

The trickle of production growth will likely continue, but the world truly needs some gushers (pun intended).

Even given all of this, large institutions have barely begun to take notice (or can't) because of ESG mandates and/or a decade of recency bias.

It's really the perfect and unfortunate storm for humanity, but for shareholders and investors coming into these sectors, it's likely to be quite fortuitous.

As we progress through 2022, we are just starting to witness the effects that the lack of new supply growth in raw materials and ESG mandates have had on global economic growth with rising gas, energy, and food costs.

There's little the Federal Reserve can do about these inflationary pressures unless they send us into a very deep recession (which is a very poor outcome for our overindebted government).

Even then, this would merely provide temporary relief in energy inflation only for it to furiously rage back (supply growth gets curtailed more in recessions as companies really batten down the hatches and restarting wells becomes more difficult).

In fact, that is exactly what happened in the 1970s.

Skepticism is Good for Investors

As outlined, FMT believes a multi-year secular bull market is underway and there has been a fundamental and tectonic change in the commodity sector like that at the start of the 1930s, 1970s, and early 2000s when commodities boomed after a very long period of underinvestment.

Revered investor John Templeton once said, "Bull markets are born on pessimism, grow on skepticism, mature on optimism, and die on euphoria."

FMT believes commodities – energy, metals, and mining – are in the earlier stages of an enormous bull market that has entered the "skepticism" stage.

Many casuals and pundits alike believe commodity prices like oil and natural gas, along with other raw materials, will *permanently* come back down in price after the Russia/Ukraine war ends and/or because they think producers can just magically ramp up production on a dime now that the world has reopened.

If only it were that easy.

Analysts need to consider that once the war does end, "**The Great Financial Shift**," which FMT wrote and can be read at **FMTadvisory.com**, is not going to end, **but neither will the great global energy shift.**

This is coupled with today's supply and demand imbalances and insanely low inventories in oil and natural gas (and other commodities like copper, uranium, and silver).

This has been a result of at least *8 years* of *underinvestment* and counting (according to the EIA, E&P companies are roughly $1 trillion below their trend in cumulative CapEx spending since 2014).

Even with much higher oil and natural gas prices and higher demand, the energy industry is still 50-60% below the capital spending levels they were at almost a decade ago, **and new discoveries are at their lowest levels in 20+ years,** yet demand is likely to hit record highs in 2022.

Just as it took years to create supply and demand imbalances, it will take a herculean effort to balance global supply and demand again in critical raw materials. It is also going to take copious amounts of new investment capital that will be slow to come with poorly misguided ESG mandates and intense capital discipline in the commodity sector.

Without new growth-focused CapEx investment in the natural resource space, **humanity will see price inflation in energy and food like we have never seen before** –and producers will simply see their profits go more parabolic.

The greatest opportunities come from solving the largest problems, and energy and raw material deficits fit the bill.

There will be plenty of ebbs and flows along the way (commodities tend to be volatile), but the overall direction is likely going to be much higher over the next few years.

Market Observations

It'd be easy to believe that for a secular commodity bull market to ensue, you'd need a strong economy. However, during one of the most devasting economic decades in our

history – 1930 to 1940 – a general portfolio of commodities produced real returns over the decade of +190% while the general stock market crashed over the same period.

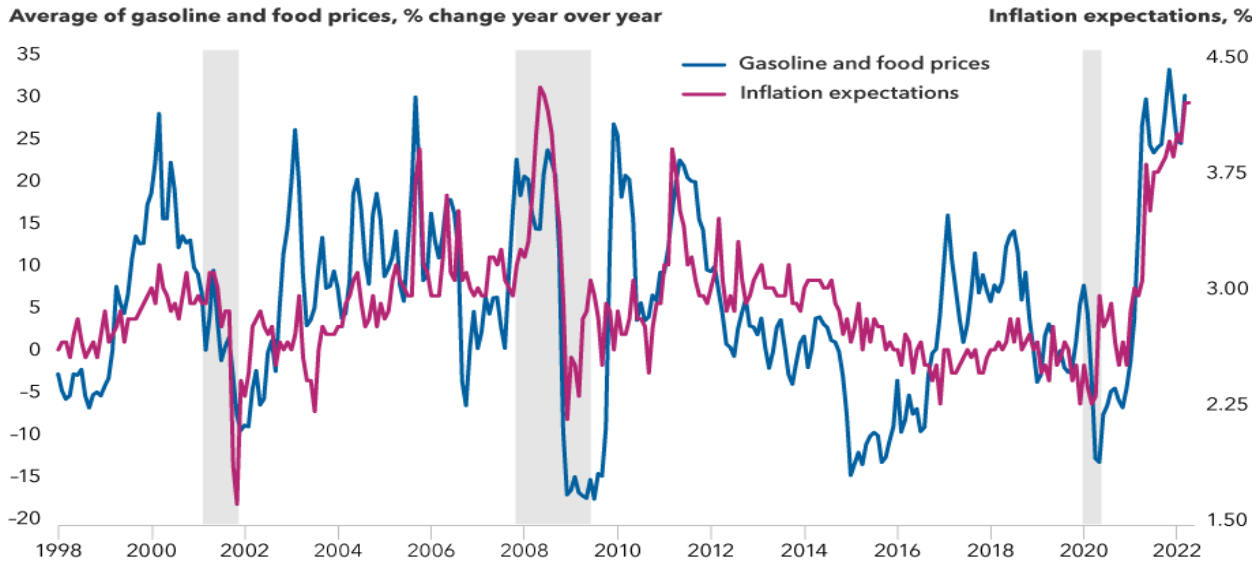
Keep those thoughts in mind because the sector will remain volatile, but the outcome looks bright.

In closing, FMT believes the next few years will be very similar to that of the 1970s with rolling waves of inflation to disinflation and back again but with inflation winning the overall tug-of-war because of natural resource scarcity.

Monetary inflation is far more entrenched with spiraling wage inflation, a hard to rectify energy and material shortage (especially with the net-zero carbon emission targets), and a decade of easy fiscal prolificacy *that will require* more inflation than many believe.

While many might point to core CPI as their inflation measuring stick, it is headline inflation that matters most to Americans, which includes energy and food prices.

As such, it's not a surprise that inflation expectations are built on headline inflation since they should be.



As we move to a cleaner and more abundant energy future, FMT is helping pave the way to the New Economy (and our pockets should get heavier).

Nicholas Green

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