



3rd Quarter Commentary

October 2025

Table of Contents

What We're Doing Now:	3
The Index Risk Avoidance and Active Management Redux Edition, <i>Part II</i>	3
First Batter Up: Sidestepping the Index by Investing with the House...Securities Exchanges	5
Next Batter Up: Localized Inflation Investing vs. Scarcity Investing	11
<i>Preamble: Is There Inflation? You Gonna Believe the CPI or Your Lying Eyes?</i>	11
<i>What is Localized Inflation? And Why Could It Be Important to Me?</i>	13
<i>A Historical Example of an Important Wealth Preservation Risk and an Effective Hedge ..</i>	13
<i>Gold: Localized Inflation that Everyone Has Noticed</i>	16
<i>Taking the Concept and Running With It: Scarcity Investing, Too</i>	20
Third and Cleanup Hitters: Natural Gas On Deck, Then Water	23
<i>An Excess Supply History</i>	23
<i>That Was Then, This is Now: Demand in the Domestic Market</i>	24
<i>Demand in the Global Market</i>	29
<i>The Localized Nature of Natural Gas Supply</i>	30
<i>The Extraordinarily Localized Nature of Water Supply, Part I</i>	31
<i>Not an Oxymoron: Buying Big Economic Market Power in Small-Cap Companies</i>	33

What We're Doing Now:

The Index Risk Avoidance and Active Management Redux Edition, *Part II*

The 25th anniversary of the modern era of indexation investing coincided with last quarter's *Commentary*. Since their introduction in May 2000, the iShares ETFs have supplied a bounty of data about the performance record of ETFs. It's not what people expected. We'll get to that in a couple of paragraphs.

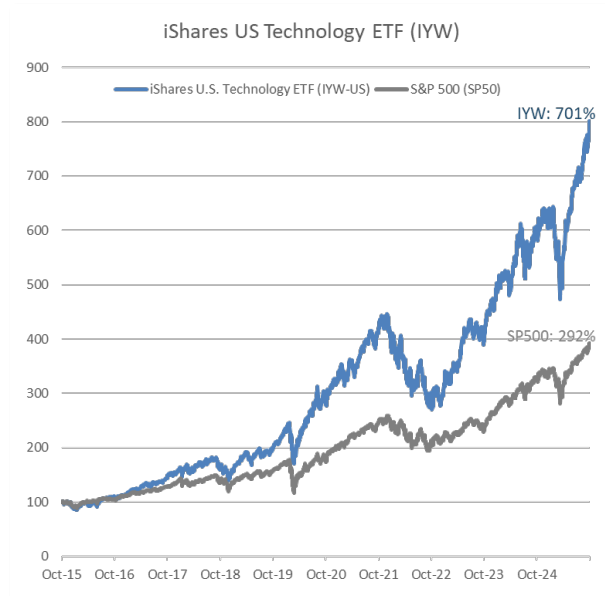
Although the SPDR S&P 500 dates to 1993, in 2000 it was still a rounding error within the equity market. All 80 ETFs that existed that year totaled about \$65 billion,¹ a mere 0.4% of the U.S. stock market.² By year-end 2023 assets in passive funds finally exceeded those in active funds; lately, to pick a single ETF *totally* at random, the iShares Bitcoin Trust ETF alone is close to \$90 billion.³

The ETF era began in earnest that year, with a continuously and massively expanding annual inflow of funds, in particular drawn from active managers. The 2000 to 2025 ETF record is every bit as important as the seminal Ibbotson and Sinquefeld study of asset returns from 1929 to 1975.⁴ It is a question-raising counterpoint to accepted wisdom and asset allocation practices.

Ibbotson and Sinquefeld introduced the expectation that stocks should return 10% or more annually over time. Yet, in the past 25 years—across the spectrum of large and small cap sectors, growth and value, domestic and international—with virtually no exceptions, annualized equity ETF returns were in the **7% to 8% range**. Fixed-income ETFs—across the maturity spectrum and even for inflation-indexed investment grade bonds—**returned 3.5% and below**; adjusted for taxes and inflation, they were *negative*.

That return shortfall is all the more surprising—and should be worrisome—given the massive one-decade lift from the Information Technology sector which, inclusive of Amazon, Meta and Alphabet, now comprises 46.1%⁵ of the S&P 500 market value. One person's worry can differ from someone else's.

Most investors worry, as expressed in the valuations, about the *opportunity* cost of missing outperformance in the IT sector—now synonymous with the AI/datacenter phenomenon. Few worry about the virtually inevitable *capital loss* cost *of* participating: with IT's index dominance, there's nowhere to hide, no saving diversification grace to be had, should IT valuations



Source: Factset

¹ <https://www.icifactbook.org/pdf/2024-factbook.pdf> pgs. xii and 8

² <https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?locations=US>

³ <https://www.morningstar.com/funds/recovery-us-fund-flows-was-weak-2023>

⁴ *Stocks, Bonds, Bills, and Inflation, 1976*

⁵ As of October 20, 2025

MARKET COMMENTARY

3rd Quarter 2025

October 2025

contract if/when any of a range identifiable emerging risks make themselves felt. All such episodes of market concentration and valuation extremes end similarly.

Note: The May 2000 start date of this time series aligns oh so closely with the peak of the technology bubble. Some might argue that this is a selection date convenience that invalidates the conclusions. That argument ignores the extraordinary expansion in revenues and valuation multiples that has fueled the current market. Because now it's a peak to peak measurement. In any case, May 2000 also—and this is the very point—coincides with the inception of the ETF era and its supportive impacts.

It can also be asked, “Is 25 years not ‘long term’ enough that the IT sector, in particular, must still be accorded special deference?” For instance, at the Dot.com Bubble peak, Technology represented almost exactly one-third of the S&P 500 by weight.⁶ The remainder of the index had rather low valuations—it's not clear at all that the year-2000 starting point for long-term stock market performance is unfairly maligned by the Dot.com bubble. On a weighting basis, the IT sector was well exceeded by Health Care, Consumer Staples, Consumer Discretionary, and Financials. At that peak, the Consumer Staples forward P/E was below 15, and Financials were about 12.5.⁷

For a sharper compare-and-contrast, a generous selection of large-capitalization growth companies in late 1999, ranging from the likes of Abbott Labs and The Hershey Company to M&T Bank had an average ROE of 25%, about the same as a selection of Technology companies like Intel, Microsoft, and Oracle.

Yet, while the trailing 12-month stock performance of the Technology stocks averaged 166% (yes, indeed), the aforementioned blue-chip economic super-performers' average return was negative—to be exact, -15%.

The year-forward average P/E of the Technology companies was 122x earnings, while the estimated P/E for these “normal” stocks—not normal, actually, in terms of their extraordinarily high returns on equity—was 15.7x earnings.

Market Concentration Then and Now: The Antediluvian Era of ETF Indexation vs. Today

% of S&P 500 Total Market Capitalization		
Positions	At Sept. 1988	At Oct. 9, 2025
Positions	At Sept. 1988	At Oct. 9, 2025
Top 10	18.0%	38.9%
Top 20	26.8%	48.2%
Top 25	30.5%	51.5%
#25 Constituent	Procter & Gamble	Procter & Gamble
Top 50	45.0%	61.9%

Sources: Salomon Brothers; First Boston; iShares

*For 2025, index weight includes 35.0%, per Standard & Poor's, plus 11.1% for Amazon, Meta, Alphabet. P/E is the index-weight weighted avg. P/E of 34.6 for IT and 61.7 for AMZN, FB, GOOG/L

S&P 500: Some Sector Weight Changes on the 25th Anniversary of the ETF Indexation Era

	% of S&P 500 Total Market Cap Oct 1990		% of S&P 500 Total Market Cap 10/16/2025	
	1990E P/E		2025E P/E	
Energy	14.8%	13.9	2.8%	16.7
Info. Tech*	6.6%	12.2	46.1%	41.1
Financial	7.4%	8.1	13.3%	17.3
Utilities	12.1%	12.0	2.4%	21.0

Clearly, the non-technology portion of the market was not at all disadvantaged, in terms of valuation or profit possibilities, by a starting date of May 2000. That two-sides-of-the-coin result in the stock

⁶ <https://en.macromicro.me/collections/34/us-stock-relative/121244/sp-500-gics-sectors-weightings-monthly>

⁷ <https://yardeni.com/charts/sp-500-sectors-forward-p-e-ratios/>

performance of these two groups was created by the suction pump effect of the bubble market pulling money out of the “blue chips” into the dot.coms. The notion that the stock market can reliably generate 10% annualized returns should not be accorded any special protection from objective evaluation.

In deference to the World Series, now in full swing, this Commentary’s major points will be organized rather like a baseball lineup.

First Batter Up: Sidestepping the Index by Investing with the House...Securities Exchanges

Part I, last quarter, introduced the idea of sidestepping the index entirely, yet with a rational, fact-based expectation of a higher-than-index long-term return. Also the idea that there’s more than one way to do this. The academic literature about efficient markets and modern portfolio theory—and the ever-burgeoning indexation movement—asserts that this scenario shouldn’t exist.

That it *can* exist is in part an effect of the market impact of the index investment vehicles themselves. Originally intended to measure market performance, with the idea of participating in a very modest way that doesn’t alter that which is being measured, indexed investing has *become “the market” and the marginal trade*. When such a great portion of the finite volume of investment funds that is available at any given time flows into one gravitational vortex of the market—in this era, the mega-cap and IT stocks—there must necessarily be an investments funds volume deficit elsewhere, the shallows well away from the deep, crowded pool of the efficient marketplace. Many such areas, in fact, where valuations are distorted downward instead of upward.

Securities Exchanges, as prefaced last quarter, are the most conceptually familiar of these alternative, contra-index equity classes. As the venues where transactions take place, they sit, like a croupier at a casino, atop the market action, ultimately indifferent to the fashions and tempests of the moment. All the while, they collect their spreads and benefit from periodic volatility as well as long-term rising volumes.

Herewith, a review by the manager of our Blockchain Development ETF (actively managed, of course), Brandon Colavita. You should note, in this section, another paradox around scarcity value: although the four major incumbent securities exchanges operationally encompass the totality of the stock market, they themselves comprise only a 0.4% aggregate weight in the S&P 500. As with other strategies we employ that have an implicit inflation hedge character, there is precious little of it available to an index buyer.

The securities exchange model is so powerful that nearly every exchange with a 20-year public track record has outperformed its respective regional stock index, in most cases by a wide margin. It’s a global phenomenon: The U.S., Japan, Hong Kong, the UK, Singapore, you can see the list in the accompanying schedule. The business model pro-

vides global exposure to a wide variety of assets, many of them either absent from—or only marginally available in—the indexes themselves. It allows them to maintain their favorable financial characteristics regardless of where it is implemented, regardless of the economic variables of each specific region.

MARKET COMMENTARY

3rd Quarter 2025

October 2025

As of September 30, 2025 – 20-Year TR (USD)	Cumulative	Annualized
CME Group Inc	692%	10.90%
S&P 500 Total Return Index	702%	10.97%
Excess	-9%	-0.06%
Nasdaq Inc	1208%	13.72%
S&P 500 Total Return Index	702%	10.97%
Excess	506%	2.75%
Japan Exchange Group Inc	2131%	16.79%
Topix Total Return Index JPY	160%	4.90%
Excess	1970%	11.90%
Hong Kong Exchanges & Clearing Ltd	2790%	18.32%
Hang Seng Index	175%	5.19%
Excess	2615%	13.13%
London Stock Exchange Group PLC	1402%	14.51%
FTSE 100 Total Return Index GBP	175%	5.19%
Excess	1227%	9.32%
Deutsche Boerse AG	907%	12.24%
DAX (TR) USD	361%	7.95%
Excess	546%	4.30%
Philippine Stock Exchange Inc/The	1162%	13.52%
Philippines Stock Exchange PSEi Index	397%	8.34%
Excess	766%	5.17%
Singapore Exchange Ltd	1701%	15.55%
FTSE Straits Times Index	430%	8.70%
Excess	1271%	6.86%
ASX Ltd	541%	9.73%
SP ASX 200 Total Return Index	282%	6.93%
Excess	258%	2.80%
Bursa Malaysia Bhd	498%	9.35%
FTSE Bursa Malaysia KLCI Index - Kuala Lumpur Composite Index	176%	5.21%
Excess	321%	4.14%
NZX Ltd	1196%	13.67%
S&P/NZX 50 Total Return Index	222%	6.03%
Excess	974%	7.64%
Hellenic Exchanges - Athens Stock Exchange SA	116%	3.92%
Athens Stock Exchange General Index	-6%	-0.30%
Excess	122%	4.22%

Source: Bloomberg, FactSet, includes securities and derivative exchanges above a \$100 million USD market cap with a 20-year track record, not all securities are constituents of BCDf

Our preference is for portfolios to exhibit conviction-weighted compounding over extended time horizons that are consonant with the longevity of their anticipated business model success. Current exposures of our strategies are not just a function of initial allocations, but of the performance of the individual securities we hold. As long as conviction in a position remains, it is allowed to compound without the impediments—the decision risks, taxes and friction—of trading.

In this way many of our portfolios manifest a natural trend towards concentration. With time, the

best performing companies have become some of the most influential positions, while lesser performing securities have self-limited their impact.

Not every idea will have the same level of success. But we are confident in comprehensive fundamental research that incorporates and reconciles the quantitative with the qualitative. That means the business model, not merely the financial metrics; market and index structure, not merely weightings, arbitrary sector designations and volatility stats; the long-term economic and competitive context over short-term index-relative returns. Enough so

to let each thesis play out uninterrupted. While the strategy exhibits low turnover, the underlying holdings are constantly evaluated, since research analysis—not passion—is what dictates changes.

There is no little irony that—as long-term investors who espouse and practice minimal turnover—a central theme and allocation is the securities exchange business model, which depends upon monetizing the financial markets’ ever-increasing turnover and trading. Of course, exchanges are capturing *other* parties’ needs to transact; their own business, while adaptive to new trading instruments and sources of volume, is highly persistent. CME was founded as the Chicago Butter and Egg Board in 1898; today, their largest contracts are interest rate futures, while some of their fastest growing are related to cryptocurrencies.

This inherent adaptability—*growing with*, not despite, the introduction of new, “disruptive” assets and trading methods—has been a feature of the securities exchanges for as long as the available data show, and they have about the greatest

longevity of any publicly traded business in the world. The NYSE dates to May 17, 1792, and the London Stock Exchange’s history goes back to 1698 in the venue of Jonathan’s Coffee House.

Since 1957, when the S&P 500 was established, creative destruction has ravaged, merged or replaced half of the original companies.⁸ By 2003, of the 341 surviving descendants (including products of mergers and spin-offs); 41 were foreign companies; 11 were in the process of bankruptcy proceedings; another 119 are no longer in the S&P 500; 63 were taken private. And that was two decades ago. As to the original Dow Jones members...today they’re hardly recognizable, like Distilling & Cattle Feeding.⁹

While constant trading is the antithesis of our portfolio management practice, that is decidedly not the investment world’s preference. There is no reason to believe that human psychology will change or that markets will cease to innovate, so in this sense our portfolios benefit from the ever-increasing transaction volume and velocity.

⁸ <https://r.jordan.im/download/investing/siegel2006.pdf>

⁹ As of May 1896: American Cotton Oil, American Sugar, American Tobacco, Chicago Gas, Distilling & Cattle Feeding, General Electric, Laclede Gas, National Lead, North

American, Tennessee Coal and Iron, U.S. Leather, and U.S. Rubber. Source: <https://guides.loc.gov/this-month-in-business-history/may/djia-first-published>

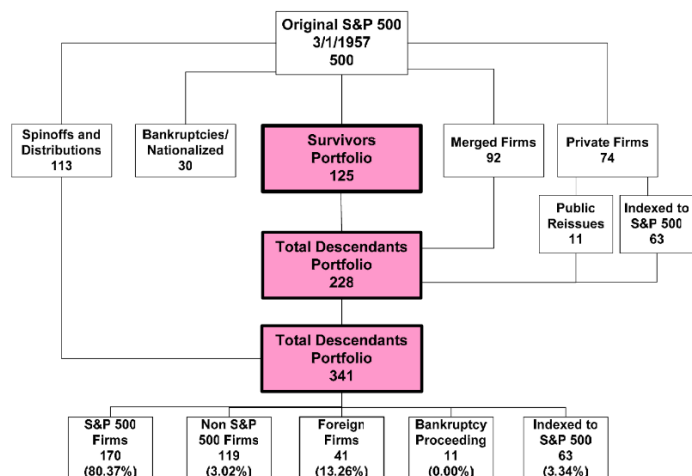


Figure 2: Composition of Original S&P 500 firms on December 31, 2003.

Prior *Commentary* editions have cited reasons for the global outperformance of exchanges.

- Trading technologies have improved, the variety of investment instruments has increased, and markets have been opened up to retail and international liquidity pools for a far larger client base.
- Assets that were formerly difficult or relatively illiquid to trade, or almost exclusively the province of institutional trading—whether bonds or gold or futures like oil and volatility—have become equitized in the form of ETFs, available to any and all, and in the smallest denominations.
- The turnover of “equitized” assets—including, in a sense, equities themselves, like the SPDR S&P 500 ETF—manifest astounding turnover. The SPDR, even with \$600 billion of assets, trades \$44 billion worth of its shares daily, which means 100% turnover every 14 days.
- In some cases, trading hours have increased, markets have gone electronic, platforms have introduced low-latency matching engines (sub-20-millionths-of-a-second transaction speed

The first portfolio we analyze is called the **Survivors’ Portfolio (SP)**. The survivor portfolio consists only of shares of the original S&P 500 firms. Shares of other firms received through mergers are immediately sold and the proceeds invested in the remaining survivor firms in proportion to their market value. For example, when Mobil Oil was merged into Exxon in 1999, shareholders of Mobil are assumed to sell the shares they received from Exxon-Mobil and invest the proceeds in the remaining survivor firms. The surviving firm is identified as the company whose identifier in the CRSP (Center for Research in Security Prices) “PERMNO” remains unchanged. All spinoffs are immediately sold and the proceeds reinvested in the parent firm. Funds received from privatizations are sold and the proceeds re-invested in the original surviving firms in proportion to their market value.

for some platforms). The list of adaptive developments goes on.

But all of these are operational details of adjusting to the moment or an era; they are necessary to any going concern, but don’t really explain why exchanges are so different than other businesses. Exchanges are where businesses go, where the world goes, to lay off risk and hedge, to raise capital, to buy and sell securely and with transparency, where there is the presence and availability of all the other buyers and sellers and the liquidity afforded by their joint presence in the same place. It’s the venue, the (regulated) bazaar, that allows our capital markets to operate.

Another reason for the extraordinary performance of exchanges aligns perfectly with our portfolio management philosophy: it is the incredible ability of these exchange platforms to let their products *compound* without impediment, and without the need for commensurate capital investment to support new levels of volume.

Though not all new products are successful, after the initial offering, whether an ETF or a futures contract, exchange volume is largely the result of market response to the pure utility or function it pro-

MARKET COMMENTARY

3rd Quarter 2025

October 2025

vides to potential participants—as opposed to any marketing initiative or incentive the exchange could offer to induce transactions. Coca-Cola and Philip Morris spent scores of billions of dollars to secure expanding and persistent sales; the securities exchange is simply open for business.

In the case of derivatives, if the product solves some market need for hedging or speculation, then there is a fair chance of success. If the contract grows in popularity, the exchange infrastructure—its fixed cost—is already in place. That infrastructure is, essentially, a trade execution and processing

computer system, so it can typically do so with minimal marginal costs to the exchange itself. Processing a thousand orders is not much different for a computer than processing a million. And the most popular products, as defined by market demand, typically become the highest-volume products on the platform.

Here are the top contracts in the U.S. exchange traded derivatives markets in 2024, along with their annualized trading volume increase in the past 20 years.

Growth of top exchange derivatives over the past 20 years

Asset Group	Subcategory	2024 Volume (mm)	2004 Volume (mm)	20 Year Ann'l Volume % Change	20 Year Ann'l Price % Change
Equity	Individual Security Products	6,519	1,017	9.7%	
Equity	Exchange Traded Products	4,659	51	25.3%	
Equity	Equity Index Products	2,583	417	9.6%	
Interest Rates	Medium Term (2-10 years)	1,752	463	6.9%	
Interest Rates	STIRS	1,417	448	5.9%	
Energy	Natural Gas	403	39	12.4%	-7.1%
Energy	WTI	290	66	7.7%	-0.1%
Interest Rates	Long Term (>10 years)	285	15	15.9%	
Other	Equity	269	0	49.2%	
Agriculture	Corn (Maize)	131	32	7.4%	3.7%
Energy	Electricity Products	122	1	30.5%	
Currencies	USD vs Europe, Middle East & Africa	115	31	6.7%	
Metals	Gold	109	20	8.8% / 12%*	11.0%
Agriculture	Soybeans	94	25	6.8%	2.2%
Currencies	USD vs Asia Pacific	91	11	11.3%	
Other	Bitcoin 6-Year Volume: 2024 vs. 2018	83	2 (2018)	83.13% (2018)	71.6% (2018)
Agriculture	Wheat	61	14	7.7%	1.9%
Currencies	USD vs Americas	52	9	9.1%	
Agriculture	Soy Meal	50	10	8.6%	2.2%
Agriculture	Soy Oil	50	9	9.2%	3.9%

Source: Futures Industry Association, World Bank (for commodity pricing)

* The 12% figure includes all global exchanges covered by the Futures Industry Association, not just U.S. exchange-traded contracts.

Overall, market volume has expanded at more than a 10% annual rate over this 20-year span. Which, as is obvious, exceeds the growth rates of GDP (4.4%) and U.S. corporate profits (6.0%). One will note not only the diverse range of assets absent from the

equity indexes—including the mundane like soy oil and wheat—but that even the volumes of those quotidian agricultural commodities have exceeded corporate profit growth. Moreover, as impressive as the rates of core product offerings of the early

2000s have been, newer products have taken center-stage.

- As ETF growth has exploded, so too have ETF derivatives volumes—futures, options—such as those relating to SPY and QQQ.
- Bitcoin is now a top #20 contract; the asset itself did not even exist until 2009, and futures trading didn't commence until 2017.
- Although electricity demand has been pretty flat in the US for 20 years, the volatile nature of the markets (pricing, weather events, regional dislocations) has led to an increase in contract volume of over 30% annualized over a period of 20 years.

A wheat farmer facing uncertain weather halfway through the growing season might wish to hedge that risk by selling some of the future crop in advance—that is, for future *delivery*. Similarly, a utility company facing possible summer drought conditions for its hydro-electric power plants might purchase some futures—electricity for future *receipt*—to make up for any output shortages.

Note the difference between the return to the exchange itself of electricity contract volume, and the returns to the S&P 500 of electric utility sector.

In practice, it hasn't mattered which contracts succeed, only that capital markets continue to operate in order to accommodate the innumerable changing needs of a working economy. A working economy requires a bridge between the physical world (like commodities—wheat, gold and oil) and the financial world (currency, interest rates, stock indexes), a place where both immediate and future supplies can find buyers, buyers can find sellers,

risks can be hedged, or prospective returns magnified. *Exchanges are the crossroads between the physical world and the financial.*

This is why the securities and derivatives exchanges have always been able to capture new assets, new financial vehicles, and new technologies (indifferent to the winners and losers). And why they have grown in excess of the underlying price of those same assets. How does that happen?

Put simply: trading begets more trading. More activity typically leads to tighter spreads, providing better execution prices for traders, and making platforms more attractive. Each trade or each tick helps reflect new information on assets, and even the smallest price movements can incentivize activity for those looking to capitalize on perceived mispricing. Similarly, new positions can require offsetting positions in other assets, as traders need to efficiently manage margin and collateral to fit their allowed exposures

The prior charts highlighted exchange performance versus local country indexes and exchange-traded derivative volume growth in the US. But how did those individual contract volumes respond to different levels of price appreciation in the underlying assets? We've broken out the prior volume chart by commodities with more discrete pricing to compare.

We have multiple examples of price trajectories, but volume growth has been robust in nearly every instance. Natural gas exhibited a significant price decline in the U.S. over the prior 20 years. Contract volumes were impressive. WTI was pretty flat, but volumes still grew at a robust rate. Bitcoin contract volume was even able to outpace the massive appreciation in underlying market.

Gold was the one outlier, but consider these points. First, this chart only highlights exchange-traded contracts on U.S. exchanges. Including all global exchanges covered by the Futures Industry Association, gold contract growth was actually over 12% annualized over the prior 20 years. This is another reason why we hold so many exchanges across the world. Global exchanges do not exhibit a high level of correlation to one another and we are still able to capture market activity no matter where it occurs. Second, the exchanges were not required to

make binary bets on the asset to capture growth. And finally, the exchanges did not require much in terms of capital expenditures to service these contracts.

Tie in some counter cyclical elements, because exchanges still collect on volume to the downside of asset pricing, and you have a really powerful—and, importantly, almost indefinitely long-lived—business.

— Brandon Colavita

Creative Destruction (Obsolescence) and Concentration in the S&P 500: The One-Generation Change in the Top 10

At Sept. 1988	Sector	At Sept. 2025	Sector
IBM	Information Tech	NVIDIA Corp	Information Tech
Exxon Corp	Energy	Microsoft Corp	Information Tech
General Electric	Electrical Equip.	Apple Inc.	Information Tech
Royal Dutch Pete	Energy	Alphabet Inc	Information Tech*
AT&T	Industrials, Miscell.	Amazon.com Inc	Information Tech*
Ford Motor Co	Autos	Broadcom Inc	Information Tech
General Motors Corp	Autos	Meta Platforms	Information Tech*
Merck & Co	Drugs	Tesla Inc	Consumer Discr.
Philip Morris Cos	Tobacco	Berkshire Hathaway	Financials
BellSouth Corp	Telephones	JPMorgan Chase	Financials

* Standard & Poor's classifies Amazon as Consumer Discretionary, and Meta and Alphabet as Communication
Sources: Salomon Brothers; iShares

Next Batter Up: Localized Inflation Investing vs. Scarcity Investing

Preamble: Is There Inflation? You Gonna Believe the CPI or Your Lying Eyes?

It's almost impossible to read a Horizon Kinetics paper of the past half-decade without a reference to inflation's preeminence as a threat to capital preservation, and its near inexorable approach. It's also almost impossible to see inflation in the reports of official figures like the Consumer Price Index.

One reason is that measuring inflation, at least as practiced by economists, is surprisingly challenging. Partly because consumer behavior shifts in response to price changes: If beef prices rise enough, consumers

will substitute cheaper food items. Therefore, the price of the basket of foods that enters the CPI calculations will not measure the full price impact. Yet price increase certainly does impact that family.

More than that, it is well-nigh impossible to develop a consensus around whether such inflation even exists. That's because different societal constituencies have radically different perceptions of the magnitude of inflation: food and rent price increases might be near-intolerable for low-income consumers, yet almost below the notice of high-income consumers (and of policy makers as consumers, too).

Even the elegant example of the Big Mac Index, which made its first appearance in *The Economist* magazine in 1986, fails to determine a societally internally consistent level of inflation. The engagingly simple idea was that this particular fat/salt/sugar delivery vehicle (yes, protein, too) embodies its own basket of inputs. Not only various food commodities, but also labor, rent and energy costs, among others. Nor does determining the average price of a Big Mac entail any data collection, methodology or policy controversy; the data source is simply the price charged at the digitized restaurant counter.

Yet the Big Mac Index is also problematic: as of April of this year, the average pre-tax price of that commodities-on-a-bun construction ranged from \$4.68 in Texas to \$6.72 in Massachusetts, a 44% differential.¹⁰ The U.S. is large enough that cost pressures can vary greatly by region.

To continue this exercise in inflation indeterminacy:

- For the 12 months through August 2025, the CPI increased by 2.9%.
- For the 12 months through this August, the restaurant industry's Total Food Away From Home category experienced menu price inflation of 3.9% —and, for full-service restaurants, 4.6%.
- The 16-month average Big Mac price, from year-end 2023 to April 2025, is up an annual 9.2%.¹¹

The restaurant sector is a more important factor in GDP than one might think. In addition to food sales, it includes 15% of the entire U.S. workforce, plus real estate rental costs, plus supplies purchases, and so forth. A problem in the restaurant industry is almost by definition a problem for the U.S. economy.

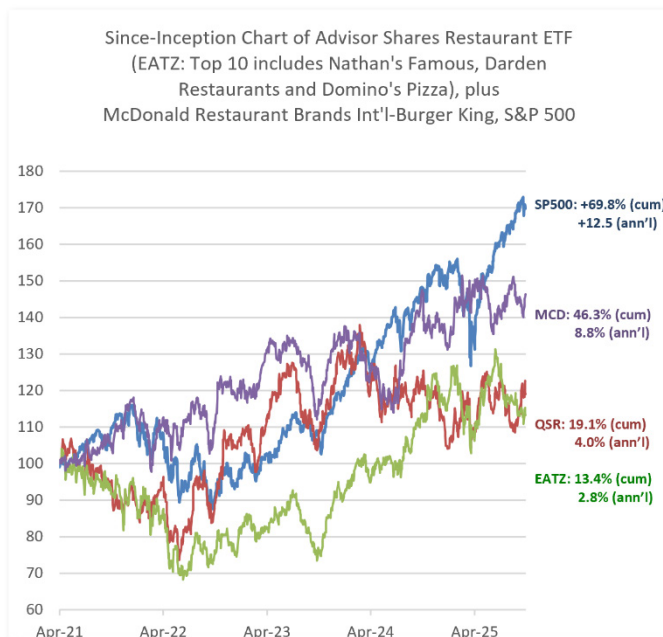
Moreover, the above figures *underreport* inflation. Restaurants have not raised their menu or output prices as much as the input prices they pay. The reason is that limited-service restaurants—fast food restaurants in civilian parlance—assert that their customers resist menu price increases in proportion to the menu inflation rate. Price increases result in diminished traffic. The inability to raise prices will naturally result in compressed profit margins.

¹⁰ Food & Wine, "Every State's Big Mac Price, from the Best Bargains to the Biggest Splurges," May 5, 2025

¹¹ April 2025 U.S. price of \$5.79 versus its year-end 2023 price of \$5.15.

That is seen in the Producer Price Index for Food Wholesaling: The food input costs with which the restaurant companies must contend rose by 10.0% in the 12 months through this August.

That illustrates the problem. Vast sections of the public have been experiencing a troubling increase in inflation for some years now, a phenomenon objectively confirmed by restaurant industry menu prices. And restaurant sector investors apparently perceive the problem, too, as manifested in poor returns since the convenient inception of the Advisor Shares Restaurant ETF (EATZ) almost five years ago. EATZ appreciated by an annual 3.3% during the period, and the McDonald's figure is 8.4%.¹² McDonald's is number 43 in the S&P 500. Nevertheless, neither the perception nor the data is registered in the government's headline inflation statistic, the CPI.



What is Localized Inflation? And Why Could It Be Important to Me?

A Historical Example of an Important Wealth Preservation Risk and an Effective Hedge

If an accepted measure of inflation has yet to be achieved, it follows that there can't be a coherent government policy around it. However, even if there were such a policy, the risk to—or investment opportunity for—any individual is more likely to be **localized inflation**, meaning local to a specific commodity or locale or one very narrow segment of the economy, rather than generalized inflation.

For instance, if the price of oil were to soar, as happened in the 1970s, you might think to mitigate the problem by owning appropriately sized investments in the oil industry. Here's how that would play out:

The Capital Preservation Risk: If you spend 5% of disposable income on petroleum-related products like gasoline, heating oil and natural gas, then, all else constant, a doubling of oil prices would reduce your disposable income by 5%.

Ostensible Solution: Allocate 5% of your investment portfolio to petroleum producers. Then—if the portfolio is at least the size of your annual spending and saving—it would increase enough to offset the energy-based loss of purchasing power.

This might seem like a logical course of action, but in practice, that strategy failed. There is a vast difference between owning a corporation that drills for oil, and owning the cash flow directly connected to the price and production volume of oil. A lot happens in a corporation's income statement between the revenue line

¹² EATZ inception date: April 20, 2021. As of October 16, 2025.

and the net income line. Also on the balance sheet, and between the starting and ending valuation multiples of the corporation's shares. That strategy worked this way...

- Oil averaged \$1.82 per barrel in 1972, and by 1974 increased over five-fold to \$11.
- The price of Exxon at year-end 1972 was \$2.73 per share (adjusted downward to reflect stock splits), but by year-end 1974 had declined by 26% to \$2.02.

While ExxonMobil is a hedge against inflation in theory, in practice any meaningful inflationary trend is likely to be accompanied by higher interest rates. Higher rates reduce the value of most capital assets. This is rational, since the company's reserves replacement costs will increase, perhaps substantially—everything from labor and equipment to new land leases and reserves. Thus, an Exxon investor will never have access to the entirety of the company's putative earnings, the woulda coulda shoulda earnings.

Although the long-term share price of ExxonMobil—one of the best-performing energy companies—is clearly *correlated* with the price of oil, it does not seem to outperform oil. Particularly when it would be most helpful, during an oil price spike. This can be seen in the accompanying chart, spanning 23 years from a then-relative low in oil prices to a recent relative high.

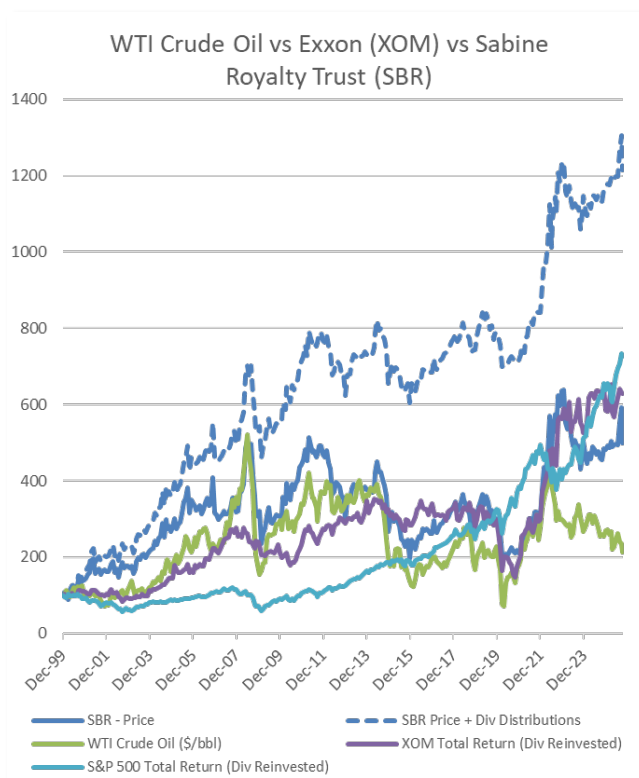
A better way to benefit from localized oil price inflation is through an oil royalty trust. Perhaps the best example, because of the longevity of its record, is Sabine Royalty Trust (SBR).

Between year-end 1999 and October 2025, oil rose from \$26.91 a barrel to \$58.51, or by 2.17x.

- During that period SBR appreciated from \$14.50 per share to \$69.81, nearly a 5.2x increase, exclusive of dividends.
- The dividends received during those 25 years totaled \$96.42, or 7.2x the 1999 SBR share price.
- Summed, over a 12-fold return for SBR unit holders.

Yet, Sabine Royalty has obviously not self-liquidated. Although net royalty acres are fixed at inception, advances in petroleum geology engineering mean that as of 2024, SBR's proved oil and gas reserves are substantially higher than in 1999, despite all the production from those reserves over the course of those 25 years, and despite Sabine Royalty incurring no capital expenditures for 25 years.

Sabine Royalty is an example of a direct beneficiary of localized inflation. Because the cash



MARKET COMMENTARY

3rd Quarter 2025

October 2025

flow is distributed monthly, with no reinvestment requirement, oil or natural gas price increases will automatically be translated in short order to distributable income. Its business model is to just collect royalty checks, pay the 0.7% of revenues (!) it incurs in administrative costs, and send the remaining 99.3% to unit holders.

That makes it a suitable hedge against oil and gas price increases. Nor need one anticipate inflation to make good use of such an instrument—it's not a binary win-or-lose choice. One merely prepares for the possibility of localized inflation and receives a robust cash flow.

As to how much can happen on an income statement between the revenue and net income line, a side-by-side picture of the ExxonMobil and Sabine Royalty income statements shows you what you need to know. *Importantly, the fact that one of them is very, very large, and the other is very, very small is completely irrelevant to their inherent profitability or value as hedges against higher energy prices.*

ExxonMobil Income Statement			Sabine Royalty Trust Income Statement	
(millions of dollars)	Note Reference Number	2024		2024
Revenues and other income			Royalty income	\$ 82,569,642
Sales and other operating revenue	18	339,247	Interest income	601,454
Income from equity affiliates	7	6,194	Total	83,171,096
Other income		4,144	General and administrative expenses (Note 6)	3,528,402
Total revenues and other income		349,585	Distributable income	\$ 79,642,694
Costs and other deductions			Distributable income per unit (Basic and Assuming Dilution)	
Crude oil and product purchases		199,454	(14,579,345 units) (Notes 1,2)	\$ 5.46
Production and manufacturing expenses		39,609		
Selling, general and administrative expenses		9,976		
Depreciation and depletion (includes impairments)	2, 9	23,442		
Exploration expenses, including dry holes		826		
Non-service pension and postretirement benefit expense	17	121		
Interest expense		996		
Other taxes and duties	19	26,288		
Total costs and other deductions		300,712		
Income (loss) before income taxes		48,873		
Income tax expense (benefit)	19	13,810		
Net income (loss) including noncontrolling interests		35,063		
Net income (loss) attributable to noncontrolling interests		1,383		
Net income (loss) attributable to ExxonMobil		33,680		

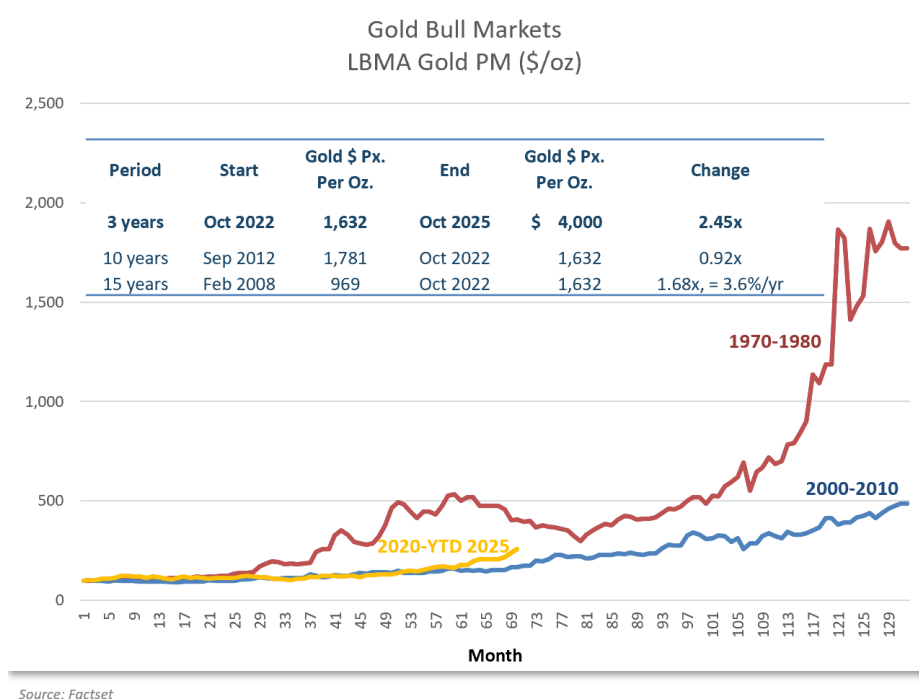
MARKET COMMENTARY

3rd Quarter 2025

October 2025

*Gold: Localized Inflation that Everyone **Has** Noticed*

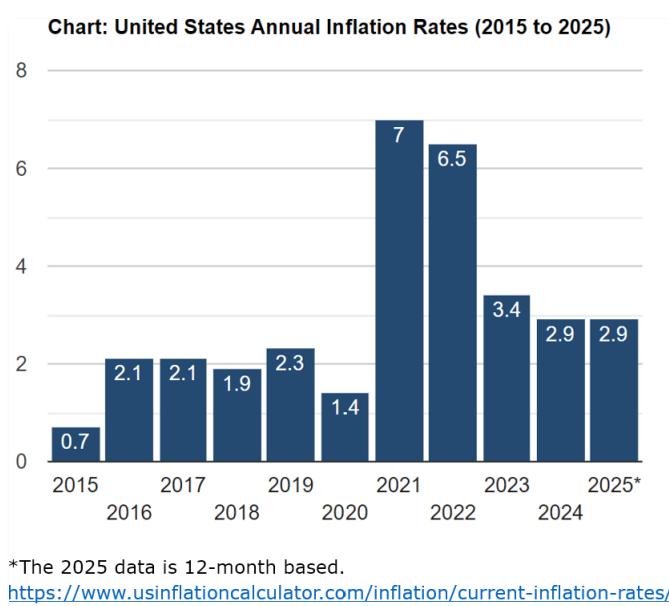
Everyone seems to know that the price of gold has well-more than doubled in the past three years. It was flat for the prior ten. So, why?



The first instinct is to look to inflationary pressures. Yet, the CPI tells us there is no generalized inflation. The Federal Reserve itself continuously projected a 2.5%-to-3% near-term inflation rate during these past three years.

Today's gold price, then, is a clear example of localized inflation. But what explains its three-year 145% price rise?

There are very few historical references to gold price changes of this magnitude. In relatively recent financial history, gold rose an almost-identical 156% in an almost identical three-plus years from 1972 to 1974. That was explained by the U.S. abandonment of the gold standard. But that's not a help today.



MARKET COMMENTARY

3rd Quarter 2025

October 2025

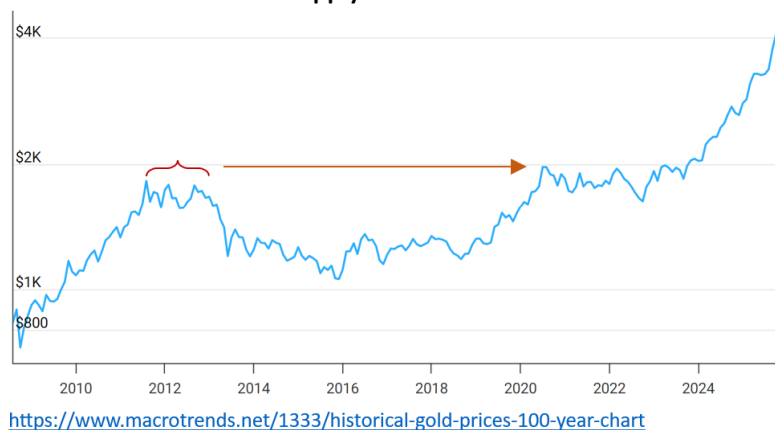
Gold quintupled in the three-plus years between 1976 and mid-1980, and that *was* explained by the intense and sustained inflation, which rose from an annual average of 5.8% in 1976 to 13.5% in 1980. But, again, there is no such inflation today.



Today, there are two proximate reasons, though they ultimately boil down, of course, to a supply-demand imbalance.

The first fundamental reason comes from an overproduction and excess supply position a decade ago, just as for so many other commodity producers. Gold dropped 40-odd percent from its peak price in 2012. The mining companies could no longer get an adequate return on their capital. The rational response, particularly being in such an asset intensive and high-risk business, was to reduce their capital investments.

Gold Price From the Oversupply Position of 2012-2014



By 2016, Newmont Mining—the largest U.S. gold producer—reduced its sustaining capital expenditures (those necessary to maintain current gold production from existing projects) by almost 60%. Total capital expenditures in the five years to 2017 were reduced by over 70%.

This remedy was to simply wait for the oversupply condition to correct itself. This was a high-confidence strategy, since the global population and industrial output expands over time. If total demand increases were to come only from population growth, and if population growth were to produce demand growth on a 1:1 basis, then gold demand should have expanded 13% between 2012 and 2024. A global measure is appropriate, since gold is a global commodity.

Newmont Mining

	Sustaining Cap Ex	Total Cap Ex	Global Population	Global CPI
2012	870	3,152	7.176 bill	1.000
2013	751	1,900		
2014	648	1,039		
2015	578	1,370		
2016	600	1,077		
2017	600	890		
2018	600	1,019		
2019	955	1,454		
2020	933	1,339		
2021	985	1,693		
2022	1,059	2,190		
2023	1,574	2,745		
2024	1,905	3,324	8.119 bill	1.462
Change		5.5%	13.1%	46.2%

Source: Company's reports

Eventually, the miners could restore some of their prior spending. Newmont's capital expenditures have finally recovered to the 2012 level. This is not a useful figure, though. The global price level—which determines how much a unit of currency can buy in terms of labor and other inputs—rose by 46% between 2012 and 2024.¹³ In inflation-adjusted terms, reserve development spending is still 28% below what was being spent a dozen years ago.

Accordingly, the oversupply problem was corrected on the producer side.

As to the demand side, ETFs made their impactful introduction to this asset class, too. Although with the paradoxically unintended consequence of tempering the long-term expansion plans of the gold miners.

For the positive face of it, ETFs were one of the only two meaningful sources of new demand in the past decade, along with central banks. Another positive: A great part of ETF demand is for portfolio asset allocations. As an allocation decision, it will tend to be a permanent feature, unlikely to ever be zero.

On the other hand, ETF holders differ from other gold buyers. They are highly price-sensitive and are undisciplined sellers. Witness, in the accompanying table, their massive selling near the bottom of the cycle in 2015; ETFs were also net sellers on the way down, in 2014. They can also put large portions of their holdings on the market at a moment's notice.

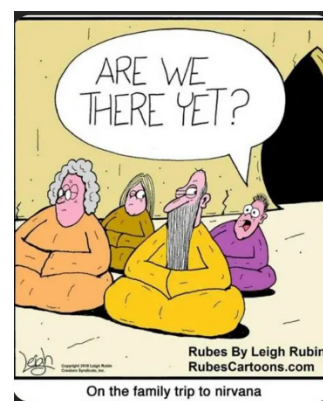
Global Gold Demand: 10 Year Change

Category (figures in tonnes)	2015	June 2025 (trail. 12 Mos.)	Demand Change
Jewelry Fabrication	2,479.3	1,853.0	(626.3)
Total Bar and Coin	1,087.1	1,226.8	139.7
Central Banks	579.6	1,229.7	650.1
ETFs	(123.6)	507.4	631.0
Technology	338.0	324.7	(13.3)
Total	4,360.4	5,141.6	<u>781.2</u>
			+18%

As a vanguard of the financialization of the markets, ETFs might now be the marginal gold buyer and seller, the short-term price setter, just as they are in the stock market. The largest three gold ETFs hold 1,678 metric tonnes of gold. That is twice the increase in global demand over the past decade. It's a third of annual global demand. And contrary to the ordinarily understood laws of supply and demand, the mere existence of ETFs is creating incentives for gold miners to *not* produce gold.

This is because a sober mining company management cannot respond as it once might have to an apparent increase in demand, if that demand is from ETF buyers. The miner must maintain a disciplined production profile to avoid the severe financial repercussions of committing long-term production capital in response to a very fidgety buyer. Fidgety: The \$125 billion SPDR Gold Trust shares turn over every 25 days.

In this circumstance, there is little incentive to consistently increase production. An ETF holder can decide to sell a loss position and reinvest the



¹³ Calculated on a GDP-weighted basis. <https://www.worldbank.org/en/research/brief/inflation-database>

proceeds in something else; it takes a minute. The gold mining company can't just "take a loss" on its real-asset investments and redeploy that capital into another business.

Yet another factor that contributed to suppressing capital investment by the gold mining industry was the introduction of greenhouse gas emissions reduction targets. In 2020, Newmont Mining adopted a stated goal of reducing such emissions by 32% for the ensuing 10 years. But gold mining's carbon footprint is not just a matter of powering the machinery to extract ore. The ore must be smelted in a furnace under intense heat, not so different in that sense than steel production, which necessarily involves an intense use of carbon. There isn't a way a way to reduce CO₂ emissions by 2% to 3% a year without limiting production increases.

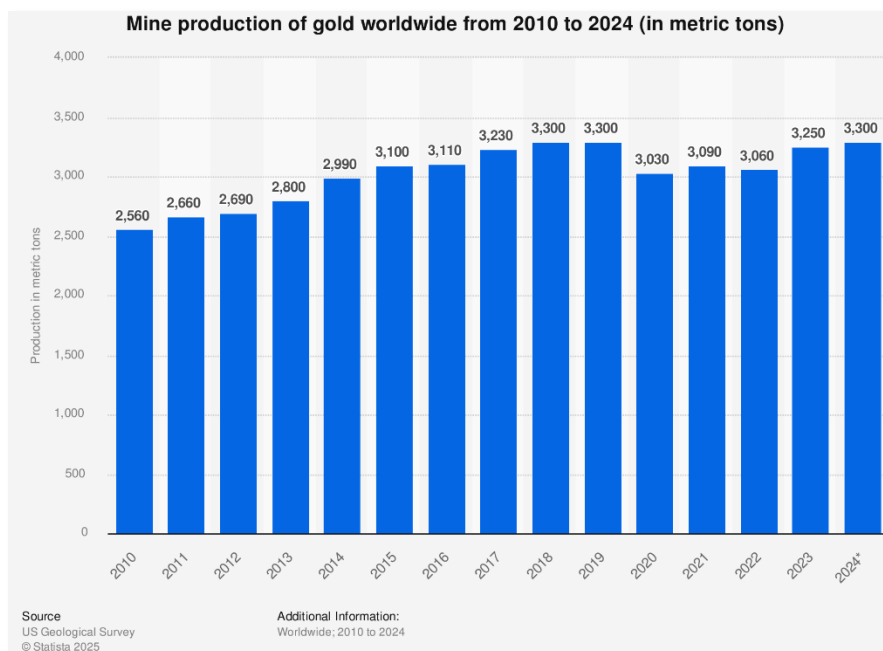
All these factors—the oversupply position a decade ago, introducing climate change goals into production planning, and the demand/supply uncertainty around the financialization of the gold market—has had a clearly observable impact on production. Capital expenditures peaked in 2015, and global mine production has been flat ever since.

There is also the fact that ore grades (the proportion of gold in the rock

extracted in the mining process) are declining materially. The average gold grade was 1.31 g/t Au in 2022, down 13.4% since 2012,¹⁴ and poised to fall further as miners expand into deeper/lower quality mine plans. This not only increases the all-in sustaining cost for mine break-evens, but is considerably more carbon intensive.

This is much of the answer to the "what the heck has happened to gold?" question. Demand has gradually caught up to the level of available supply. But, there won't be sustained new supply from the mining sector. Even if only from a basic engineering and permitting perspective, new mine production of significance can't just be "ramped up" on a dime; not even in a decade. As just discussed, it's unlikely to happen on a corporate policy basis, either.

When supply can't be increased in the face of higher demand, even if the incremental demand is modest, price becomes the balancing factor, and those price changes can be truly disproportionate. We're calling

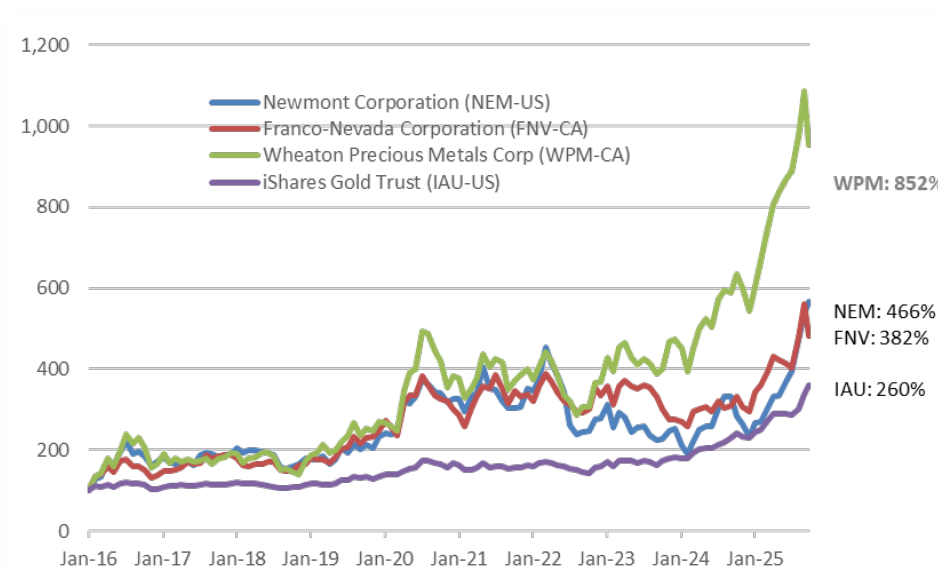


¹⁴ <https://www.spglobal.com/market-intelligence/en/news-insights/research/gold-in-initial-resources-drops-to-4-year-low-in-2023>

that localized inflation, because it's completely uncorrelated with the ordinary systemic factors like national monetary policy or the general inflation rate.

For all of this discussion about mining companies and gold, at Horizon Kinetics we bought neither. We bought gold royalty companies, like Franco Nevada Corp. and Wheaton Precious Metals. The gold royalty company only makes an investment once. Upon recovering its initial investment, its subsequent return on capital is nearly astronomical.

- Unlike the metal, the royalty company has an ongoing high-level ROE, even when the gold price is not rising, so a financial return is always being earned.
- Unlike the miner, there are no capital expenditure requirements and virtually no operating expense. Here, too—to reprise—they have an ongoing high-level ROE, even when the gold price is not rising, so a financial return is always being earned.



Taking the Concept and Running With It: Scarcity Investing, Too

We started with oil and gold, because they should naturally command a bit of patient interest. We spent so much time on them because there's a payoff: In gold, the phenomenon of localized inflation is already apparent, but the other extractive industries will eventually have the same experience.

The financial markets won't help these companies either. Extraction-based commodity production is very capital intensive, but it is exceedingly difficult for producers to attract significant equity capital, because they can't compete with the need to raise fantastic amounts of capital for data centers and artificial intelligence projects. Would you be more likely to answer the phone for a chance to invest in: A) an iron ore mine with a payback period beginning in 10 years; or B) a datacenter developer that's up and running in a few? With little or no equity capital available to them, there's not much chance for mining companies to address a supply deficiency even if they perceive a long-term demand opportunity.

This raises three lines of related thought relative to portfolio positioning.

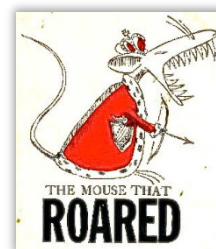
One is that future **localized inflation** can often be anticipated with a high degree of confidence. We've seen to what great effect that understanding can be put, using the appropriate asset-light vehicle. All that's required is patience for the compounding to manifest.

A second thought is that **scarcity value** can magnify the return possibilities of a localized inflation beneficiary. While Sabine Royalty was an astoundingly more successful beneficiary of higher oil prices and inflation than an actual extraction company like Exxon, scarcity value was not one of the attributes of its superior performance.

The additional attribute of scarcity value can apply two ways: to the asset itself; and to the security associated with it, as when a company attracts more buying interest than its stock market capitalization can support—when there aren't enough shares to go around.

A company that embodies both anticipatory localized inflation and scarcity value could be extraordinarily remunerative.

A third thought is that **even a small-cap company** can control or be economically linked to an asset that is critical to—meaning a limiting factor for—a large industry. It is possible for such a small company to be the largest such in its economic sector or geographical area. In the right circumstance, it can achieve terms of trade advantage with an industry's dominant companies. Historically, superior ROE and financial performance are a function of having pricing power.



This might seem like a does-not-compute proposition in a world with an almost monomaniacal focus on the largest, most-owned companies that owe some of their preeminence to sheer scale and the market power that comes with it. But consider one illustrative out-of-the-way example, and then one or two more obvious ones that, like gold, are likely to be top-of-mind in the foreseeable future.

The out-of-the-way example is potash. Potash, you say? This is what provides potassium, one of the three essential crop nutrients, the other two being nitrogen and phosphorus. Global food production at the current scale would collapse without their near-constant application.

The rising future demand curve for crop fertilizers is based on some inexorable factors that are noticeably similar to prior discussions about why demand for oil and gas is not going to fade away any time soon:

- The global population continues to rise, which proportionately requires additional fertilizers.
- Food demand rises faster than population, because rising standards of living in poorer nations come with greater caloric intake.
- Further, a higher share of that new caloric intake is from animal products and other calorie-rich foods like vegetable oils, which require incrementally more crop production than grains and legumes.
- Importantly, the amount of arable land does not increase, which means that, on a per-capita basis, cropland is in constant decline: from 4,000 square meters in the 1960s to about 2,500 sqm in 2000.

2,500 sqm is about half the size of an American football field, including the end zones. Per-capita cropland was last projected by a U.N. study to fall to 1,900 sqm by 2030.

- All of this means higher required crop yields, which will require disproportionately more fertilizer, net of other yield enhancement technologies and process improvements.

This sequential expansion function between population growth, wealth effect and fertilizer demand is shown in the accompanying chart from BHP (which mines not only metals and coal, but potash, too).

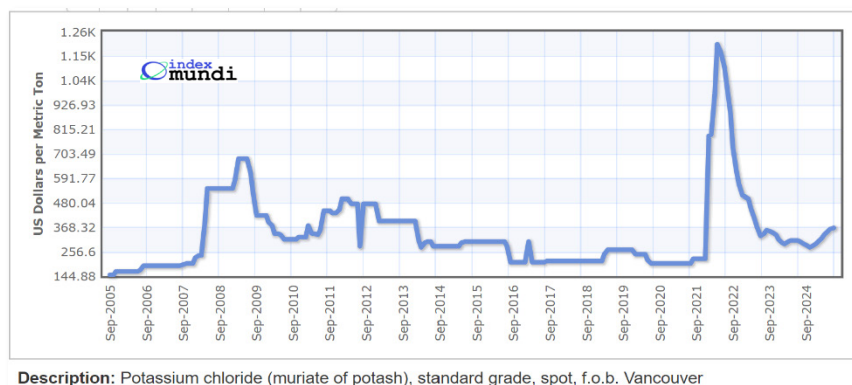
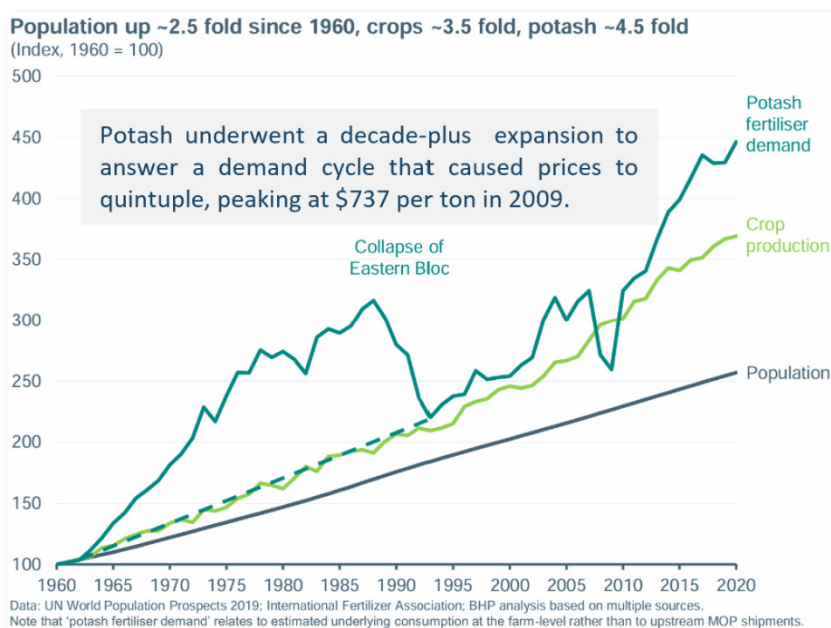
As to demand, 90% of global potash consumption is for agriculture.

As to supply, there was a decade-plus expansion to answer a demand cycle that caused prices to quintuple, peaking at \$682/ton in 2009.

That expansion phase ended around 2015, when potash traded in the \$300 range, but created an oversupply position that then caused prices to gradually decline through 2020, to \$202.

Supply disruptions caused by the Russia sanctions temporarily caused a price spike to \$1,200 in 2022 (whoopsie, demand exceeded supply!), but it quickly returned to 2015's \$360 range.¹⁵

Accordingly, prices are not high enough to induce investment in new supply and reserve replacement, so producers are availing themselves of still-extant surplus capacity. However, that excess capacity is expected to be fully utilized in the next several years...this all sound familiar?



Description: Potassium chloride (muriate of potash), standard grade, spot, f.o.b. Vancouver

¹⁵ Source: <https://www.indexmundi.com/commodities/?commodity=potassium-chloride&months=360>

As to where that supply goes and where it comes from, the U.S. imports 95% of its potash needs. Almost 80% of U.S. potash imports comes from Canada. Canada is the world's largest supplier—at a 30% share—and holds 45% to 60% of global reserves, depending on the calculation method.

Within Canada, three companies produce all the potash, two of which produce more than a quarter of global supply. They are asset intensive mining companies, with a host of their own cyclical and capital risks and limitations, no different than for oil or gold extraction. And, wouldn't you know it, there is actually a potash royalty company, and it gets its royalties from those two largest North American potash producers. This is Altius Minerals.

Altius doesn't call itself a potash royalty company, because potash is a bit less than one-third of its royalty revenues. On the other hand, its Base & Battery Metals royalty revenues, which are about 40% of the total, are mostly from copper, which is also very difficult to get exposure to. Another nearly 10% came from iron ore. All of these commodities share the supply/demand dynamics that have been discussed thus far. Another nearly 20% of royalties are from solar and wind power projects, almost exclusively in Texas.

To get exposure to these otherwise difficult-to-isolate strategic commodities that are each steadily approaching their localized scarcity expression moments—when the demand/supply balance tips—Altius has a market value of only \$1.2 billion. The combined market cap of the two potash miners, Nutrien and Mosaic, is almost \$40 billion. The market cap of Freeport-McMoRan, the copper miner is nearly \$60 billion.

Another frame of reference for the scarcity value of a \$1.2 billion company like Altius Minerals: the lowest-weight stock in the S&P 500, at less than 1/100th of one percent, is News Corp. It has a stock market value of \$15 billion. Which company has superior portfolio-relevant characteristics? (“Relevant” defined as excluding popular non-fundamental considerations like market cap, daily trading liquidity, industry sector designations, index inclusion, standard deviation, beta, etc.)

Third and Cleanup Hitters: Natural Gas On Deck, Then Water

Three-Part Sandwich: Another Decade-Plus Excess-Supply Commodity; Incipient Demand Development; Gestation of a Localized Inflation Cycle

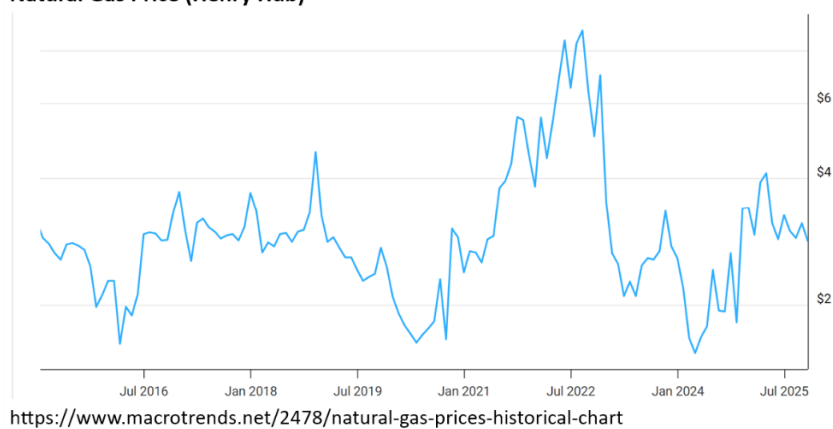
An Excess Supply History

In the 10 years to 2024, domestic natural gas consumption rose at a 2.2% annualized rate, while production volumes rose at 3.7%. For the more recent five years to 2024, gas consumption rose at a 1.25% rate and was again exceeded by production volume growth of 2.2%.

That defines oversupply, and the price reflects it. Since the roughly 2014 peak in hard commodity price, the price of natural gas is about flat. In inflation-adjusted terms, “flat” means about 67% lower.

The anemic demand for natural gas is linked to a near-absence of new electric power demand. For the five years between 2014 and 2019, U.S. electric power supply rose only 0.14% a year. In the next five years to 2024, supply rose at a 0.72% rate. The more recent years' rise in demand, modest though it was, is partly attributable to datacenter growth. Those were the cloud storage datacenters that pre-date the 2023/2024 AI datacenter era.

Natural Gas Price (Henry Hub)



Interestingly, natural gas use for electric power generation category rose by 66% in the 10 years to 2024, or by over 5% per year. This had nothing to do with the datacenter boom. It was as a replacement for coal, which declined from 43% of total to 16%, while natural gas rose from 30% to 47% of U.S. utility-scale power generation. However, it does show that natural gas will be the fuel of choice for the datacenter buildout.

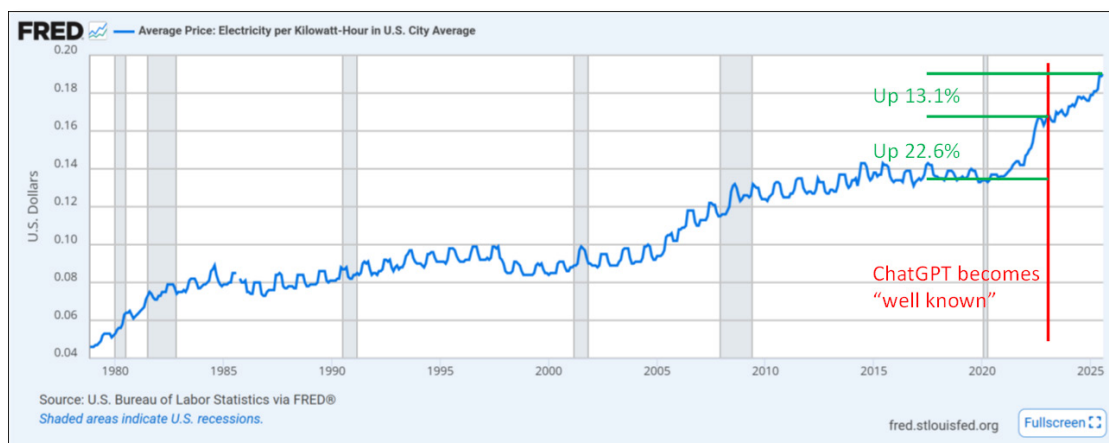
Generation at Utility Scale Facilities, by Largest Sources
(in thousand MWh)

Source	2014	2024	Change	% Change
Natural Gas	1,126,635	1,869,902	743,267	66%
Coal	1,581,718	652,156	-929,562	-59%
Nuclear	797,166	781,865	-15,301	-2%
Photovoltaic	15,520	216,716	201,196	1,296%
Wind	181,655	451,904	270,249	149%
Total	3,702,694	3,972,543	269,849	7%

That Was Then, This is Now: Demand in the Domestic Market

In November 2022, less than a year after Nvidia released the H100 chip that markedly enhanced the training of artificial intelligence models, OpenAI released its first version of ChatGPT. Within two months, in the most rapid mass adoption of any consumer application in history, it acquired 100 million active users.

The investment analytical community failed, for quite some time, to make the association between the scale of demand for those Nvidia chips and the idea that they would require a new form of data center. To organize the requisite volumes of chips, servers, higher-level cooling systems and electric power load. Enough of them that the AI boom might as well be called the datacenter boom.



The analytical community thereafter required more time to discern the relationship between the ever-more-powerful Nvidia chips in those new datacenters and the shocking amount of aggregate electric power they would draw. They hadn't taken account of the holistic nature of logistics sequencing—first introduced to many of us in the childhood song¹⁶—that AI needed: the giga-scale campus to house the racks that house the servers that house the chips *that consume the power* to do the data processing.

Some people did take notice with Microsoft's September 2024 announcement of a 20-year, \$1 billion+ deal to restart the closed Three Mile Island nuclear plant in Pennsylvania in order to acquire its 800+ MW of power. The informational signal about electric power was partly lost in the array of narrative noise in the story, everything from nuclear power politics to local job creation to the its deal-making audacity.

But no one failed to take notice of OpenAI's January 2025 announcement of the \$500 billion Stargate datacenter project. Of more electricity than can be bought off the shelf from the local utility, since any AI-scale datacenter would consume the entirety of the power of well more than 90% of U.S. cities. The population of a 90th percentile city is about 20,000.¹⁷ The reason for choosing that sized city as a benchmark will be clear shortly.

There are almost 19,500 incorporated places in the U.S. A median population town—50th percentile—is East Gull Lake, Minnesota, number 9,740 in the list, with 1,147 residents. At the 90th percentile in terms of population is Hermiston, Oregon, number 17,532, with a population just under 20,000.

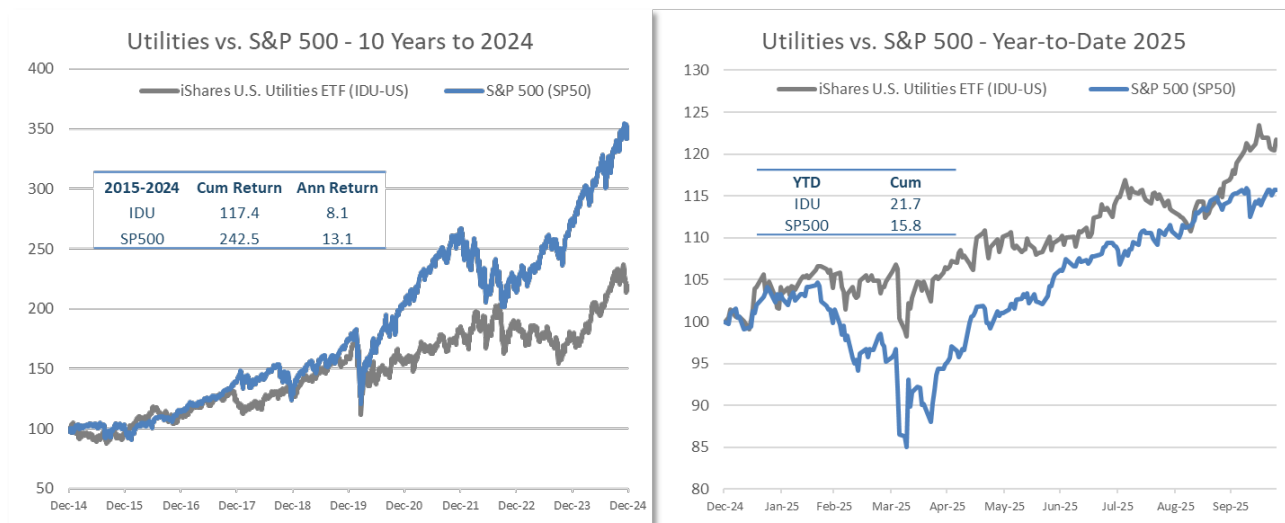
¹⁶ "And the Green Grass Grew All Around," a late 19th century traditional Appalachian folk song.

¹⁷ Source: U.S. Census Bureau, Population Division. Release date: May 2025.

MARKET COMMENTARY

3rd Quarter 2025

October 2025



Source: Factset, As of October 20, 2025

Upon being noticed, investors immediately revalued electric utilities upward. The share price of NRG Energy, which has placed itself at the forefront of capturing datacenter demand for access to the electric grid power, expanded from *12x trailing* 2024 earnings to *20x year-forward* estimated earnings.¹⁸ Utility company shares, somnolent for a decade, outperformed the S&P 500 in this bull market year.

Electricity demand is now rising on a heretofore unknown scale. Rather than reprise another lengthy exercise in deriving those figures, here's a shorthand sketch from someone who knows a lot about datacenters. Unknown to us except through a six-week-old transcript, this gentleman caught our attention as an outcome-agnostic third party without a particular angle to work. He's not an investment banker, a data center owner or developer, or even an electric utility CEO. He's just, to do him a oversimplifying injustice, a builder for hire who knows certain datacenter essentials from the inside, the nuts and bolts, out.

He elucidates many of the same concepts with which our clients have become familiar. Among them: the mind boggling scale of the demand; the area-density limitations of solar and wind power—separate from the intermittency problem—and the impracticality of the land resources they require for other than supplemental use. The same for the storage limitations of batteries and the requirement, in turn, for backup natural gas generators even when renewables are being used.

Other than saying this is EMCOR Group (EME) Chairman and CEO Anthony Guzzi, he'll introduce himself through selected excerpts from a recent presentation, with which many condensing liberties were taken.¹⁹

If you just take it at the top level, EMCOR is a company where we actually do the work, right? We're a company of plumbers, pipefitters, electricians, sprinkler fitters, HVAC technicians, and operating engineers. So, said simply,

¹⁸ NRG is primarily an unregulated or "independent power producer," (IPP) meaning that their power is sold on a merchant basis to regulated utilities (the grid), which must maintain reserve requirements to provide power. IPPs act as a form of insurance on the U.S. power grid, serving as reserve power when the grid is in a deficit. *It's debatable if regulators will stand idly as they contract this "excess" power to hyperscalers.*

¹⁹ Transcript Morgan Stanley Latin America Conference, September 12, 2025

we're a skilled trades company. If you look at trades, we're up here at the top of the food chain. We're looking to either build something, fix something, retrofit it, and then do ongoing maintenance.

Now, if you think about overall, at our heart, we're contractors. So that by definition, we're flexible, we adapt, and we don't really create demand. And we have to have our company positioned to be able to execute for our customers.

What's favorable now? A lot of people want to build gas pipelines right now, so we're going through some compressor stations. The power sector is more thoughtful, I would say, right now. The engineers are back in charge, the people that actually understand the energy industry and what it takes to baseload a grid, what latent power really means in a grid to keep it running, what it takes to power data.

So, think about a data center, think about regulation. Data centers went from being 10 megawatts, 20 megawatts when we were building for people like Morgan Stanley or JPMorgan, 2005, 2006. Then we started building these cloud storage data centers, which are still growing high single digits. And they were 50 megawatts. Folks, that's a lot of power.

And now, cloud storage is sort of getting up to 100 megawatts. AI is about 200 megawatts to 300 megawatts. So let's put that in perspective for you. 200 megawatts? There's about, let's say, four people in a household. **200 megawatts is probably the power needed for 15,000 to 20,000 people, so a midsized town, small town.**



Let's talk about a data center cluster like they're building down in Georgia. It'll be a mix of AI and cloud storage. I don't understand how that works. We just build them, service them. That campus will be somewhere between 2,200 megawatts and 3,000 megawatts. Or if you're a power guy, they'd say 2 gigs to 3 gigs. Think about that. The nuclear plant they put in Georgia, I think that's somewhere around 3,200 megawatts to 3,500 megawatts. **So that one data center site is going to take the output of that entire nuclear plant that took 10 years to build.**

So why are we servicing 14 or 15 data center markets now? Because they're looking for stranded power. That's why we're in South Bend, Indiana. That's why we're in Fort Wayne, Indiana on the Indiana side of Lake Michigan where the steel plants used to be. That's why Columbus, Ohio can boom. Why? Because they got the best connectivity outside of D.C., **coupled with Ohio River Valley coal and gas.**

Stranded power, like last year's Microsoft deal to buy and re-start the Three Mile Island nuclear plant in Pennsylvania, is an opportunistic early-mover tactic. It's low hanging fruit that gets picked through fairly quickly. It can't be an industry-wide strategy.

To get that same 200-megawatt solar, which is intermittent power, have you ever been to an industrial solar field? I'd urge you to go. Anybody have a guess how many acres it takes? Guess? 1,500 acres. To get the power to power that one data-center site in Georgia [the full 2,200 to 3,000 MW] and to do it with solar, by the way, **you have to build gas backup. But to do it with solar, just do the math, 15,000 acres to 25,000 acres.** So that's why you can't book a gas turbine right now through 2031.

The low-end 15,000-acre estimate for a 200-MW solar installation may be ill-compared to New York City's Central Park, which is 843 acres. It's well compared to the entire island of Manhattan, which is 14,545 acres. At 22.8 square miles, that's a strip roughly 2 miles wide by 11 miles long.

And, yes, even if a datacenter were to draw a plan for a solar-powered energy plant, it would need a back-up natural gas plant. That plant would need to constantly run in the background (spinning reserve), so that it could be immediately available to account for sunlight intermittency.

When you go to electrification, it's interesting when you talk to utility executives, which we do. I do think it's **back to a density of power argument, which sort of favors—and I think it's going to be—gas and then nuclear some.** And that's the electrification that's going to take place.

Yup, natural gas.

A data center dedicates about 15% to 20% of its square footage to the battery room or the UPS.²⁰ **How long does that UPS typically run that data center till the diesel generators kick on? Anywhere from 7 to 15 minutes. That's about where battery technology really is as far as density.**

And when we talk to our customers and you think about demand, whether it be a chip manufacturer, a reshoring person, and especially the data center people, what they have planned for the next three to five years to **just keep up with demand, both cloud and AI, is stunning as far as the power draw that's going to have to happen.**

Yup, natural gas.

Nevertheless, the analyst community at large still sees no connection between the Nvidia chip-associated demand for ever more *electric power* and the necessity of bounteous volumes of *natural gas*. That is clearly expressed in the Nvidia share price, at 28x next-year earnings, versus ExxonMobil at 15x estimated earnings. As quickly as the valuation view of electric power producers was altered, so can it be altered for natural gas producers.

²⁰ Uninterruptible Power Supply

Demand in the Global Market

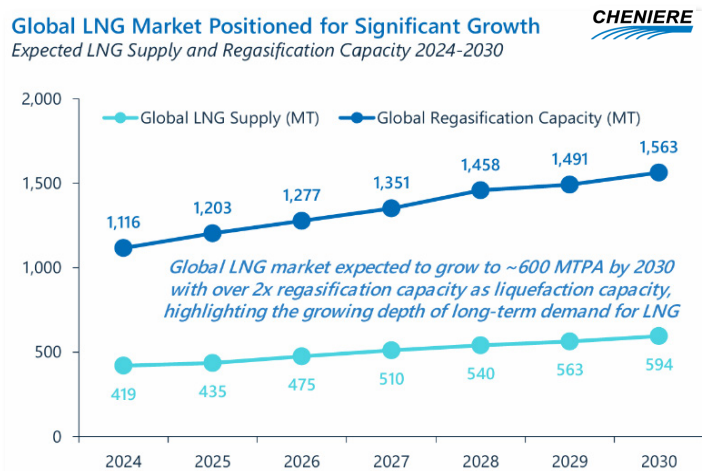
The U.S. is not the only market for natural gas, of course. In 2016, Cheniere was the first company in 40 years approved to export liquefied natural gas overseas. Between 2015 and 2024, LNG exports from the U.S. rose from 28 billion cubic feet to 4,367 bcf. Cheniere, which exports more than the next three largest companies combined and accounts for near 40% of total U.S. exports,²¹ estimates that the global LNG market in the next five years will expand at a 6% rate. U.S. natural gas, upon delivery, is far cheaper than in Europe and Asia.

To date, the great majority of LNG shipments has been to Europe, but the amount of regasification facilities under construction in China means it is preparing to import a great deal more.

China's and India's natural gas consumption is exceedingly low relative to their populations and industrial capacity, because they still rely heavily on coal. They should be anticipated to purchase much greater quantities in the future. No small portion of this need—aside from rising per-capita income—will be to enable their own AI datacenter expansions. AI buildout has rapidly taken on a national security and global competitive character.

These five countries—China, the U.S., India, Russia, and Japan—dwarf all others in electricity generation. For example, Germany's total is 5% that of China, and one-quarter of India's.

If China's per-capita electric power production were to equal the U.S. figure, its total production would more than double. If Indian per-capita electricity generation were to equal that of the U.S., its production would increase more than tenfold.



²¹ <https://www.statista.com/statistics/1263943/largest-operational-lng-terminals-by-capacity-us/>
<https://www.statista.com/statistics/274528/major-exporting-countries-of-lng/>

The implications for natural gas demand are clear. AI datacenter demand for natural gas, inclusive of the socioeconomic dynamics of the world's two most populous nations, should eventually intersect with gas supply.

Which brings us to the particularly localized form of inflation that applies to natural gas.

The Localized Nature of Natural Gas Supply

Simultaneous with being a global commodity like oil, coal or gold, natural gas is unlike them in that it is also distinctly localized. The others can—variously—be driven, trucked, pipelined, or trained; gold can be flown. They effectively have 100% domestic distribution reach.

But natural gas can't always be brought to where it's needed. There are 3 million miles of gas pipeline in the U.S., but there do arise new areas of demand or new sources of supply that have insufficient or no pipeline access. Gas is too diffuse to transport except via pipeline; it won't get in a truck. It is exceedingly difficult to build a new pipeline, though. The many local interests that oppose such construction can keep a proposed project in court for a very long time. There's a long list of abandoned projects, even of the billion-dollar scale.

This can lead to highly localized supply/demand distortions. There can be a surfeit of natural gas at the well head, but a shortage where it's needed: the electricity generation plant. Those who require large quantities of new electric power might have to migrate—power plant and all—to where the gas can be had.

Another unique limitation of natural gas as a commodity is storage: It takes a lot of room unless liquefied, which is too expensive for this purpose, and the storage capacity of U.S. gas tanks is finite. Even the most minor supply/demand imbalance can have a dramatic impact. On June 9, 2022, U.S. natural gas futures plummeted \$1.27/million btu, roughly 15%, when a fire at a Texas LNG producer caused a loss of about 2 billion cubic feet of export capacity for a few months. That volume, which would have been liquefied, had to be stored. This was not even 1/10th of 1% of national storage capacity.²² But it occurred during the peak summer season for filling gas storage tanks. So, inelastic demand for limited supply: price regulates.

That understanding is now making its way into a few publications. The accompanying extraordinarily condensed excerpts from an article in the *Wall Street Journal*—sent our way by a Managing Director at a large and storied global private wealth manager who happens to know that not all of us read it—about a newly announced giga-scale datacenter notes the risk to datacenters that were built without considering the availability of sufficient sustained power supply.

Largest Natural Gas Consumers (2024)

	(in billion cubic meters)
United States	902.2
Russia	477.0
China	434.4
Iran	245.4
Saudi Arabia	121.5
India	70.3

Source: 2025 Energy Institute Statistical Review of World Energy

²² <https://www.statista.com/statistics/665806/us-natural-gas-storage-by-region/>

The article also hints that the requisite supply of gas should be had on a sufficiently large tract of land that is definitely not proximate to any population center. One area that can supply both needs is West Texas, where this project is being built.

THE WALL STREET JOURNAL

A Giant New AI Data Center Is Coming to the Epicenter of America's Fracking Boom

By Bradley Olson [Follow](#)

Oct. 15, 2025 9:06 am ET

An Nvidia-backed AI startup is planning to build a massive datacenter complex that is *capable of generating its own power* on a site that is two-thirds the size of Central Park...on a sprawling ranch in West Texas...*located near natural-gas production and processing sites* and already has long-haul fiber routes.

Many planned facilities across the U.S. have been built without power generation capabilities. [Uh, oh.]

In the near term, [it] will gain access to a cluster of Nvidia AI computing resources provided by CoreWeave beginning in December. It plans to work with the company longer term on the broader *buildout of a data center with two gigawatts of computing firepower, the electric-generation capacity of the Hoover Dam.*

It is also *far from certain whether many data centers will have sufficient power and water* to operate without becoming a significant strain on local resources.

The Extraordinarily Localized Nature of Water Supply, Part I

The *Journal* article doesn't go far enough, though, because this is really a multi-resource staging problem. The more limiting factors that a datacenter planner must simultaneously solve for, the fewer the choices of location. For instance, the article does mention water sufficiency, but within the scope of the full article only as a tangential reference. It is anything but tangential. In fact, water is likely to be the ultimate limiting factor in the AI electric power demand era.

Supply, again, is the reason. Water is the world's scarcest critical commodity. In a survival priority list, air is the most critical commodity. Everyone knows that. We can tolerate an "air shortage" for a matter of a few minutes. But air is both free and freely available everywhere around us. Water comes next on the survival list; that's a matter of a few days. We do pay for water, though so little in this nation that it's often experienced as if it's as plentiful as air, so most of us hardly think about it.

The reality is that over 97% of the world's water is in the oceans or other saline bodies of water. Of the 3% that's fresh water, 2.5% points are unavailable, being fixed in ice, or in the ground or atmosphere. That leaves 0.5%.²³ In the U.S., the largest user of that 0.5%—more than for crop

Where Water is Found

Oceans	97.2%
Ice Caps/Glaciers	2.0%
Groundwater*	0.62%
Freshwater Lakes	0.009%
Inland seas/salt lakes	0.008%
Atmosphere	0.001%
Rivers	0.0001%
TOTAL	99.8381%

*Some of this lies too far under the earth's surface to be extracted at an affordable cost

²³ <https://www.usbr.gov/mp/arwec/water-facts-ww-water-sup.html>

irrigation—are electric power plants.²⁴ And those figures are 10 years old, well before even the cloud data-center power demand era.

Power plant water use is on a scale as mindbogglingly great as the amount of electricity that Nvidia chips draw. The reason is that they are all thermal plants—whether powered by coal, nuclear or natural gas—boiling the water to produce the steam to rotate the turbine to turn the generator that makes the electricity. An AI datacenter’s natural gas power plant will need the same water an electric utility plant does.

Finding remote land proximate to natural gas is a necessary but insufficient resource package for an AI datacenter. Water is required, too. Farm country might seem a good idea, but ground water for irrigation is already problematic throughout much of the country due to chronic excessive withdrawals that have begun to damage aquifers.

The western Permian Basin (Delaware Basin) has a dramatic excess supply of natural gas. This is primarily due to a large amount of “associated gas” that is produced as a byproduct in oil wells, and exacerbated by inadequate pipeline takeaway capacity. The price of gas at the local (Permian) Waha Hub is not infrequently negative (producers *pay* someone to take their gas). The western Permian also sits atop an enormous underground aquifer of non-potable brackish water. Distinct from the brackish water, there is water mixed with the hydrocarbons in the rock formations, such that drilling activity brings up about four times as much water as oil.

Logic dictates that datacenter buildout will migrate to where the essential multi-resource package is readily available. The size of the profit opportunity in water for incumbent providers and handlers in that region is very surprising to the uninitiated. It’s a discussion that won’t be done justice in these last few pages, so Part III next quarter will review that phenomenon, both in water and for companies that control or have royalty interests in land and water provision (since these are inextricably linked).



²⁴ <https://www.usgs.gov/mission-areas/water-resources/science/total-water-use>

Not an Oxymoron: Buying Big Economic Market Power in Small-Cap Companies



Speaking of which, these companies are of a size that excludes them from the indexes (go ahead, take a look). By that measure, they already embody financial scarcity value separate from physical resource scarcity. A sampling of some in the Permian Basin, as well as others, will give a sense of the diversity of opportunities to pre-position portfolios in non-correlated, localized inflation beneficiaries. It's a group that constructively lends itself to fund-based participation, since in conventional market terms it is a motley, trading-illiquid crew with virtually no analytical coverage or index inclusion. Which is why we've endeavored to create a number of funds around these resource, inflation hedge, and return vectors.

WaterBridge Infrastructure (WBI), with a stock market value of \$3.0 billion,²⁵—although only about \$1 billion is traded—is the largest water-handling company in the U.S. This all but requires a dominant position in the Delaware Basin, the nation's most important and profitable oil-and-gas basin. A demonstration of the economic significance of this business, as de minimis as it might seem, is that if water takeaway activity is curtailed or stopped, then drilling must be curtailed or stopped, since about four barrels of water come up from the well with every oil-equivalent barrel. There must be a place to put it.

A virtually identical company operating in the same area, Aris Water Solutions, was acquired two weeks ago by a natural gas pipeline company for \$1.5 billion. WaterBridge's 2,500 miles of pipeline have produced water handling volumes of about 2.4 million barrels/day; Aris's water handling volume was 1.2 million barrels/day. These volumes will continue to expand, even if oil-and-gas volumes weren't to, because as wells either age or go deeper, the proportion of water produced rises. Of course, pricing can rise, too.

If only a single inference-rich metric of this business were to be offered, a good one would be this: the revenue and operating margin in this business, per barrel of water, are about \$0.85 and \$0.45. This translates into a 51% operating margin—for a business that has yet to reach operating scale efficiencies.

Thinking about the extravagant scale of AI datacenter demand, and about the necessary localized electric power demand, and the necessary localized natural gas demand, and in turn about the required localized water demand...and then thinking about somehow getting exposure to this limiting factor at the end of that trillion-dollar chain of demand:

If WaterBridge were somehow included in the S&P 500, its index weight, if proportional to News Corp.'s \$15 billion market cap and sub-one-basis point weight at the very bottom of the S&P 500, then WaterBridge would have a weight of less than $0.0001 \div 15 = 0.0000067$, or $7/10,000^{\text{ths}}$ of one percent.

Tejon Ranch is the largest contiguous private property, at 270,000 acres, in California. Located 60 miles north of Los Angeles, its largely undeveloped land includes 16 miles of frontage on either side of I-5, California's primary north-south roadway. The I-5 is the busiest in the nation.²⁶

Among other operating assets, the property includes 7 million sq. ft. of fully leased logistics terminals economically proximate to the Port of Los Angeles, and which is readily expandable. This year, residents moved into the first of three Tejon Ranch master-planned communities to be entitled. The company's

²⁵ As of September 30, 2025. Calculation includes non-traded Cl. B shares

²⁶ <https://www.fhwa.dot.gov/policyinformation/tables/02.cfm>

strategy is to invest in getting land entitled for commercial and residential development, enhancing the land value with each step in that process.

Land is *not* real estate, though it can become real estate. It certainly isn't a REIT, which is a debt-leveraged, financialized investment that can't compound adequately versus inflation, since it must issue more debt and/or equity in order to fund property acquisitions. If Tejon Ranch is a strategic type of asset, the price for it, in market cap, is \$430 million.

LandBridge Company controls a portfolio of 277,000 acres in the “core” of drilling activity in the Permian (Delaware) Basin. It was created in October of 2021 to procure land that is requisite for managing water infrastructure in that unique locale. Water infrastructure, unlike oil and gas, is not subject to eminent domain protections, despite water egress and disposal being an essential aspect of hydrocarbon extraction. This is to say, Texas landowners must provide easements (at reasonable rates) to oil and gas infrastructure providers to facilitate energy extraction; no such protection is granted to water infrastructure. The result is surface land being a highly strategic but still underappreciated asset in the energy industry.

The company operates similar to a “triple-net” lessor. It incurs minimal expenses (operating and capital) related to the development of the land; it is the lessee—oh, say Chevron's field operations team and potentially Microsoft's contracted datacenter builder/manager—that bears that burden. In this way, consonant with a royalty business, higher water volumes, market capture and pricing all flow through to the shareholders in a capital efficient manner. The land position also facilitates exceptional returns on invested capital investment opportunities for water infrastructure developers, adding another growth vector.

It should be noted that this land is also proximate to various high-profile data center campus developments and is thus well-positioned to benefit from this development—at no incremental cost to the company. Optionality is so prized in the financial markets, and so many sophisticated and often probabilistically improbable strategies are pursued in its name—options, futures, leverage, *any* kind of technology, growth stock investing, IPO investing, venture capital—that it one almost hears resonant echoes of that old 1980 favorite by Johnny Lee [unfairly butchered to suit *this* venue]:

Lookin' For Optionality

Well, I spent a lifetime lookin' for you
...
Playin' a fool's game, hopin' to win
And tellin' those sweet lies and losin' again

I was lookin' for optionality in all the wrong places
Lookin' in too many faces
Searchin' their eyes and lookin' for traces (ooh-ooh)
Of what I'm dreamin' of...

San Juan Basin Royalty Trust is a natural gas royalty trust with 119,000 net acres in northwest New Mexico. It is relatively unusual as being a pureplay on natural gas, of which there are few. This one, at this time, also presents another predictive attribute, a transitory “problem” that provides an equity yield curve opportunity.

Unlike a pure royalty, this trust is a “net profit interest” that receives payment net of the operator (Hilcorp) operating and capital costs. The trust is not obligated to provide capital for these costs, but they are deducted from distributions, and in the event of a deficit, accumulated until covered by net cash flows. In practice, there is an interest-free capital contribution arrangement.

Hilcorp increased the capital investment budget to \$34 million in 2024, compared to \$4.4 million in 2023, likely in response to a high realized gas price of \$4.69/mcf in 2023. This did in fact result in a roughly 50% production increase, which was confounded by realized gas prices thereafter falling 56%. Accordingly, the Trust had amassed a capital deficit of over \$20 million by the end of 2024. This resulted in the suspension of dividends, and an exodus of yield-oriented investors.

There are various scenarios based on projected production volumes, capital spending levels and gas prices where the distributions will be reinstated and grow to material amounts. The gas reserves and production haven't gone anywhere and, if anything, run-rate production will be higher, meaning the essential value of the assets is intact. It's just a matter of waiting for the capital deficit to be erased by ongoing royalties, which is—and this is wonderful investment tool in such instances—just a matter of waiting.

Altius Minerals Corp. receives royalties from two miners that supply one-quarter of global potash and three-quarters of U.S. potash needs. Also copper and wind and solar project royalties. It's stock market value is \$1.1 billion.

To repeat an earlier compare-and-contrast observation about pure size vs. undiluted economic participation in resource scarcity value: The combined market cap of those two miners (The Mosaic Company and Nutrien Ltd.), sometimes more profitable, sometimes less, is just under \$40 billion.

Mesabi Trust holds a royalty interest on the Northshore (iron ore) Mine in the Mesabi Range in northern Minnesota. The mine operator is Cleveland-Cliffs Inc., an integrated iron and steelmaking company. The mine produces a specific type of high-grade iron ore that is a critical input material for electric arc furnace steelmaking. Cliffs has oriented its domestic growth strategy around electric arc furnaces and is thus highly sensitive to producing the requisite feedstock.

The royalty agreement dates to 1961. The terms have never been in question until recently. Cliffs decided that it did not want to pay a royalty related to the “premium” for the high-grade ore. An arbitration panel resoundingly agreed with the Trust and awarded \$72 million in residual payments in late 2024. However, the parties are now back in front of an arbitration panel for a related issue subsequent to the ruling.

The Cliffs attempt to circumvent the royalty agreement obscures a highly valuable iron royalty stream with decades of remaining—and low cost—reserve life. It's not difficult to calculate the current cash flow yield assuming historical mine production levels, current iron prices and the contracted premium. Fortunately, few other investors appear to take the time.

Important Disclosures

Past performance is not indicative of future results. The information contained herein is subject to explanation during a presentation.

Any index returns or performance provided in this presentation is provided for illustrative purposes only and does not demonstrate actual performance.

Note that indices are unmanaged and the figures shown herein do not reflect any investment management fee or transaction costs. Investors cannot directly invest in an index. References to market or composite indices or other measures of relative market performance (a “Benchmark”) over a specific period are provided for your information only. Reference to a Benchmark may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, correlation, concentrations, volatility or tracking error targets, all of which are subject to change over time.

This material references cryptocurrencies, including bitcoin. Horizon Kinetics’ subsidiaries manage products that seek to provide exposure to bitcoin and other cryptocurrencies. The value of bitcoins is determined by the supply of and demand for bitcoins in the global market for the trading of bitcoins, which consists of transactions on electronic bitcoin exchanges (“Bitcoin Exchanges”). Pricing on Bitcoin Exchanges and other venues can be volatile and can adversely affect the value of the bitcoin. Currently, there is relatively small use of bitcoins in the retail and commercial marketplace in comparison to the relatively large use of bitcoins by speculators, thus contributing to price volatility that could adversely affect a portfolio’s direct or indirect investments in bitcoin. Bitcoin transactions are irrevocable, and stolen or incorrectly transferred bitcoins may be irretrievable. As a result, any incorrectly executed bitcoin transactions could adversely affect the value of a portfolio’s direct or indirect investment in bitcoin. Only investors who can appreciate the risks associated with an investment should invest in cryptocurrencies or products that offer cryptocurrency exposure. As with all investments, investors should consult with their investment, legal and tax professionals before investing, as you may lose money.

This is not an offer to sell or a solicitation to invest. Opinions and estimates offered constitute the judgment of Horizon Kinetics LLC (“Horizon Kinetics”) and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. Under no circumstances does the information contained within represent a recommendation to buy, hold or sell any security, and it should not be assumed that the securities transactions or holdings discussed were or will prove to be profitable.

The Adviser and its management persons have relationships or arrangements that may be material to the Adviser’s advisory business or to investors in the products and accounts managed by the Adviser and that present potential or actual conflicts of interest. Murray Stahl is a member of the Board of Directors of Texas Pacific Land Corporation (“TPL”) and Miami International Holdings (“MIAX”), both of which are holdings in certain client accounts and funds managed by Horizon Kinetics Asset Management LLC (“HKAM”). Officers, directors and employees may also hold substantial amounts of TPL and MIAX, both directly and indirectly, in their personal accounts. HKAM seeks to address potential conflicts of interest through the adoption of various policies and procedures, which include both electronic and physical safeguards. Additionally, Mr. Stahl does not exercise investment discretion over either TPL or MIAX. All personal and proprietary trading is subject to HKAM’s Code of Ethics and is monitored by the firm’s Legal and Compliance Department.

Subsidiaries of Horizon Kinetics LLC manage separate accounts and pooled products that may hold certain of the individual securities mentioned herein. For more information on Horizon Kinetics, you may visit our website at www.horizonkinetics.com. The Core Value and Small Cap separate account strategies are managed by Horizon Asset Management LLC.

Not all investors will experience the same holdings, returns or weightings as the corresponding composite. No part of the research analysts’ compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the research analysts in this report.

No part of this material may be copied, photocopied, or duplicated in any form, by any means, or redistributed without Horizon Kinetics’ prior written consent.

©2025 Horizon Kinetics LLC ® All rights reserved.