MARTIN
CAPITAL MANAGEMENT, LLC
Registered Investment Advisor

QUARTERLY
CAPITAL MARKETS REVIEW

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"Central bankers have fostered a casino like atmosphere where savers/investors are presented with a Hobson's Choice, or perhaps a more damaging Sophie's Choice of participating (or not) in markets previously beyond prior imagination. Investors/savers are now scrappin' like mongrel dogs for tidbits of return at the zero bound. This cannot end well."
—Bill Gross, Janus Capital Group, October, 2016

Long Optionality and Other Musings

Our Q2 letter to you closed thusly: "This is a sad story—the mother of all unforced errors—except for the investor who refuses to overpay or overstay. In this refusal to overpay, we value cash as more than an asset that currently yields zero. In fact, it is those very low interest rates and the low expected returns from equities that make the opportunity cost of holding cash incredibly low. Cash effectively becomes a valuable call option on any asset with no expiration date and no strike price."

We have forgone what decades of firsthand experience and time-tested valuation metrics imply will be meager future returns from full exposure[1] to chronically expensive—and concurrently, unacceptably risky[2]—equity and debt markets. In exchange, we retain the optionality to purchase at a presumptively more opportune price in the future whatever companies we have long liked but thought too pricey. These companies may have become both appealingly inexpensive and, logically as well as simultaneously, less risky. Stated another way, artificially depressed interest rates ultimately benefit only those investors who actually cash out at the valuation extremes that

[1] While we don't subscribe to the efficient-market hypothesis in its totality, we do believe that the effect of arbitrage reduces the likelihood of sustainable, significant, pricing anomalies. Thus, as absolute-return value investors, we believe that it would be either a sign of arrogance or naïveté for us to suggest that we could identify enough companies at absolute bargain prices (and thus low market risk) to fully populate a portfolio in a very expensive market.

[2] As value investors, we contend that price and risk are positively correlated: The higher the price vis-à-vis underlying value, the greater the risk of an adverse investment outcome. Thus a company can be an investment at one price and a speculation at another. We also differentiate between investment risk and company-specific risk, which we define as indigenous to a company (e.g., extent of operating or financial leverage, among countless other variables) that factor into the estimation of intrinsic value.

the Fed seems obsessed to promote. The seller effectively receives a transfer of spending power from the buyer, and the buyer is left holding the bag of poor long-term returns.

Every investment decision, including "going long optionality," involves trade-offs. So long as the upward-inching benchmark stays on its trajectory, the large proportion of our portfolio committed to non-earning cash will act as a ball and chain on short-term investment performance. In what seems counterintuitive to an absolute-return-oriented value investor, intolerance for short-term underperformance has only become more acute as the second-longest bull market ever gets longer and longer in the tooth.

Underlying these trade-offs is an existential question: Are we willing to risk a lot to make a little, or are we far more inclined to risk a little to make a lot? Allow me to explain the trade-offs in practical terms.

After enough years of financial repression—of a global, zero-bound, central-bank, interest-rate policy among developed economies—savers are inclined to forget the lessons that financial history teaches. Gradually, and in most cases unwittingly, they have morphed into speculators.[3] Someone who used to make 6% in cash has been tempted further out on the risk curve in search of what once was—first into government bonds, then high-grade corporate credit, then high yield, and now into dividend-paying stocks. And as the demand for these securities has accelerated, so have the prices. The corollary: If prices increase faster than the underlying fundamentals, risks also rise, while expected returns fall.

Today investors who pay par for a 10-year U.S. Treasury government bonds that yields 1.6% (or negative in many foreign markets for sovereign debt) is short optionality. They have invested their capital in a security that earns a little, with potentially huge downside risk. Hypothetically, if the market yield should rise to 6% in a year, the price of the gilt-edged U.S. Treasury security would fall to 69.38 % par. A U.S. Treasury bond, like any other asset, can be investment at one price and speculation at another.

To be sure, we think the yield on the 10-year U.S. Treasury bond rising to 6% in a year is extremely remote. However, as savers have sought higher yields than U.S. Treasuries offer by inching farther and farther out the risk curve, the potential for a similar acutely adverse outcome is much more likely. While the pricing of common stocks is less mechanical and more subjective—with the latter characteristic explaining precisely why bubbles in the equity markets occur—at today's prices they are likely to seriously disappoint unsuspecting savers turned speculators.

Returning to the existential question raised above, in addition to mainstream investors being "short optionality," they are also "short volatility." In the parlance of stock-option traders, they would rather sell puts than buy them, preferring the constant reinforcement of premium income, figuring the rogue wave will never swamp their boat. We have no illusions that client assets in long equities, in the aggregate, will be exempt from a decline in market value if investor sentiment turns tail. If we purchased well, it is possible they will fall less.

[3] It may even be disrespectful to speculators to classify what savers are doing under that moniker. By most definitions, speculators engage in risky endeavors with the expectation of commensurate profits. Savers have gotten the first half right but seem, understandably, clueless as to the second half. Investors seek to profit from the underlying attributes of a security through long-term ownership. Sadly, what savers tend to do defies conventional definitions of either investors or speculators.

Two Unspoken but No Less Insidious Dangers

There is an insidious danger in markets that are increasingly dominated by relative-, rather than absolute-, return investors. Active relative-return investors are understandably ambivalent regarding how fundamentally expensive or cheap stocks in general are. Their incentives and rewards are tied to how well the portfolio of stocks they select performs vis-à-vis a benchmark, regardless of whether the benchmark is up or down. Of course, there is an implicit assumption that, over the long term, if an active manager performs well on a relative basis he or she also will perform well absolutely. More on the efficacy of that assumption in a moment. At the extreme is the low-cost producer, the burgeoning *passive* index funds, the ultimate commoditization of relative-return investing, whose mandate is only to replicate the benchmark. Their profitability depends on scale, not judgment. So what's the danger?

With unprecedented amounts of money flowing into the coffers of active and passive relative-return institutional investors[4] who are indifferent to the absolute prices they pay, we have witnessed alarming valuation creep during this cyclical bull market dating back to the spring of 2009. Based on our methodology,[5] the total return from the S&P from the end of March 2009 to the end of September 2016 is from the following three components: 65% from the increase in the P/E ratio, 15% from dividends, and 20% from earnings growth. The flip side of the indiscriminate herding that has propelled stock prices ever upward since 2008 may well become a crushing systemic risk when the tide turns.

Though it's hard to dispute the contention that superior active relative-return investing will do absolutely well over the long haul, the emerging dominance of the active and passive relative-return imperative may at least legitimately call into question the definition of "long haul." A market that is increasingly untethered from underlying value seemingly has no upside limits as long as the fund flows are net positive. When the party ends, both types of relative-return investing may be as unpopular for as long as absolute-return investing has been in the doghouse.

The second, rarely discussed, insidious danger is analogous to the absurdity of searching for the best deck chairs on the Titanic. The collective *we* is more about fine-tuning our understanding of the ordinary, along with developing models and theories based thereon, that cannot possibly track or measure the possibility of figurative icebergs. Nobody articulates it better than Nassim Taleb:[6]

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[4] Since 2008, investors have sold $600 billion worth of comparatively expensive actively-managed mutual funds and purchased $1 trillion passive index funds. Blackrock, Vanguard and State Street are the three largest. If treated as a single entity, they would now be the largest shareholder in just over 88% of S&P firms and 40% of all listed American firms. ("Hidden power of the Big Three? Passive index funds, re-concentration of corporate ownership, and new financial risk." Jan Fichtner et al, University of Amsterdam, August 25, 2016.)

[5] The contribution of dividends, which includes dividend income and the reinvestment thereof, to the S&P 500's total return was measured by the difference between the annualized rate of change for the S&P 500 Total Return Index and the S&P 500 Index. The contributions from earnings and the change in P/E multiple were measured using the annualized change in cyclically-adjusted earnings and the Shiller PE.

[6] Taleb, Nassim Nicholas, 2013. *Antifragile: Things That Gain from Disorder*. Random House, Inc.

> Black Swans hijack our brains, making us feel we "sort of" or "almost" predicted them, because they are retrospectively explainable. We don't realize the role of these Swans in life because of this illusion of predictability. Life is more, a lot more, labyrinthine than shown in our memory—our minds are in the business of turning history into something smooth and linear, which makes us underestimate randomness. But when we see it, we fear it and overreact. Because of this fear and thirst for order, some human systems, by disrupting the invisible or not so visible logic of things, tend to be exposed to harm from Black Swans and almost never get any benefit. You get pseudo-order when you seek order; you only get a measure of order and control when you embrace randomness.
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> Complex systems are full of interdependencies—hard to detect—and nonlinear responses. … In such an environment, simple causal associations are misplaced; it is hard to see how things work by looking at single parts. Man-made complex systems tend to develop cascades and runaway chains of reactions that decrease, even eliminate, predictability and cause outsized events. So the modern world may be increasing in technological knowledge, but, paradoxically, it is making things a lot more unpredictable.

Most market participants reconcile the existential Black Swan risk by using the coping mechanism we call "disaster myopia": If an event is too uncertain and unpredictable as to its timing or magnitude—if it can never be part of the quantitative model you use to evaluate risk—you simply put it out of your mind to avoid cognitive dissonance. That's also what ostriches do.

The Real Power of Cash

Given the generally outsized performance of our equities, we've been asked why we don't commit more of our assets to them.

Our overarching commitment to avoid deep and often protracted bear markets is sacrosanct. We are confident of our time-tested reasoning. In terms of the uncompromising mathematics of compounded returns, bear markets can be devastating—and in two additive ways: A 50% loss necessitates a 100% gain just to recover the ground lost and, more subtly, the time squandered digging out of the hole amplifies the harmful consequences. More importantly, though, is the fact that large losses, though initially only on paper, often derail an otherwise rational investor. An illogical fear of loss insidiously exerts an undue influence on portfolio decision making. (Rationally, the lower prices go, *ceteris paribus*, the less the likelihood of further loss—a truism that falls on deaf ears when fear has the upper hand.)

On the flipside, long bull markets often foment complacency, and worse, hubris. Actually backing away from markets that are known to be expensive appears nearly impossible for most investors. The late 1990s and 2007 are recent and largely forgotten precedents. *Today's environment is every bit as threatening a snare for the less than vigilant*. Valuation virtually always takes a back seat to human nature, even today.

Consistent with everything else written above, we think of cash as a trump card that can be played any time. Holding a card in your hand that ranks above all others is a secret weapon in the competitive game for the best ideas at the best price, allowing us to gain an advantage. There, however, the analogy breaks down since cash, as an investment trump card, does not depend on the luck of the draw. We actually believe that our equity performance is much greater precisely because we hold cash in reserve. We get enthused—and have the wherewithal to take action—when prices of existing or prospective holdings fall because cash allows us to buy more of a good idea, like the two-for-the-price-of-one bargains that entice consumers at the mall or online.

We'll leave you with a brief series of observations upon which you might wish to reflect. According to the Wilshire 5000 Index,[7] the value of all U.S. equities is $23.3 trillion, compared with $6.9 trillion at the lows in 2009. What we don't know is what the value of all U.S. equities might be at the next trough. What we also don't know is just how fragile the U.S. domestic economic recovery is, particularly given the backdrop of an even more pervasive global malaise. Nor do we know how the massive overhang of U.S. debt will be expunged. We also know little about the eventual price the economic and financial (and perhaps political and social) systems must pay when they are forced to make the transition from systemic distortions precipitated by desperate and prolonged monetary-policy regimes to ones that are, more or less, normal and sustainable.

What we *do* know is that all stocks must be owned by somebody all the time but, just as a final thought, there is no law that says we have to own our proportionate share. We are not in the least comforted by the adage, "Misery loves company." On the other hand, we willingly accept the loneliness of the road less traveled, encouraged to plod on by the irrefutable assurance that one must act unconventionally to achieve unconventional results.

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[7] The Wilshire 5000 Total Market Index is widely accepted as the definitive benchmark for the U.S. equity market. Parenthetically, from nearly 5,000 stocks at its launch in 1980, it grew to 7,562 by July 31, 1998, near the top of the tech bubble. Primarily because of consolidations, the "5000" had shrunk nearly 50% to 3,691 as of June 30, 2015.

Following is insight we've gathered on one of the industries which has garnered our attention in recent months. We hope you find it as informative as we find it interesting. There was no portfolio activity in equities to report for the third quarter 2016.

Overview of the Agriculture Industry

We believe the agriculture sector is an interesting space at the moment. Agriculture is prone to boom-bust cycles, and we are currently in the midst of a downturn. While near-term pessimism abounds, we believe that long-term growth in food demand provides favorable tailwinds for companies that can effectively help farmers maximize yields.

The Agriculture Cycle:

In the United States, corn and soybeans are the most widely grown crops and comprise over 70% of crop acreage. Over half of the production is used as feed for livestock (from chickens to cattle). The price of corn is typically used as the principal benchmark for crop prices and cycles.

The agriculture cycle, like any cycle, is driven by demand and supply. Demand for crops is mainly driven by food demand and is generally stable and subject to few shocks. Supply, on the other hand, is highly susceptible to periodic but unpredictable changes in weather. For example, a 1-degree Celsius rise in temperature above average leads to a 10% decline in yields, whereas 1 inch of rainfall increases yield by 4–5%.

Since demand tends to be stable and inelastic, weather disruptions can cause significant changes in supply that lead to volatile crop prices. As such, agriculture cycles are more heavily influenced by weather than by economic cycles.

While a year of weather shocks may cause a temporary spike or dip in prices, longer periods of atypical weather can cause sustained supply shortages or surpluses that amplify changes in crop prices and their effect on farmer income. A prolonged period of poor weather, for example, will result in a sustained supply shortage, raising crop prices and farmer income. Higher farmer income in turn leads to higher farmer expenditure on capital equipment, farmland, and other investments in farm inputs.

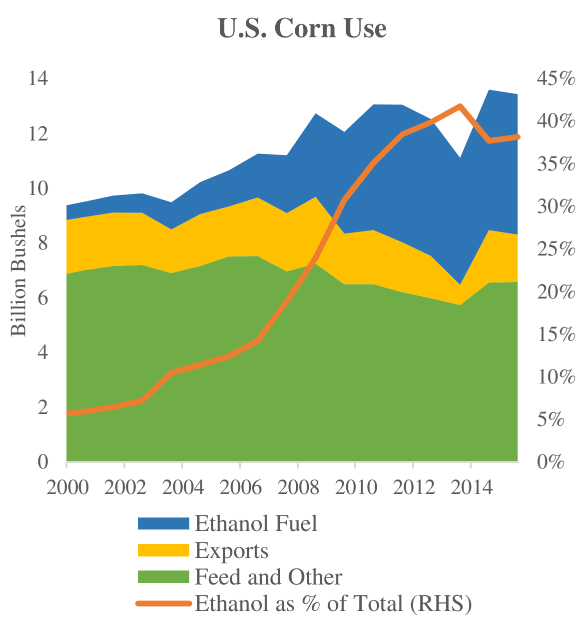
The Current Cycle:

From 2006 to 2013, corn prices experienced an historic increase from $3 to over $7 per bushel, due to a confluence of factors.

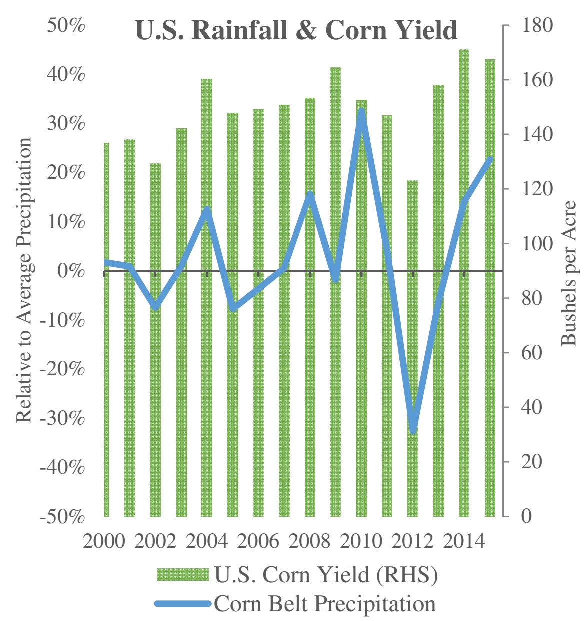
The demand side saw an unusual and significant boost, as U.S. government mandates to increase production of ethanol from corn bolstered growing global demand and accounted for nearly half of the 30% increase in demand from 2004 to 2012. On the supply side, adverse weather conditions—rainfall in the U.S. Corn Belt was the lowest in more than 20 years—led to declining yields and depressed supply. Inventories (as indicated by stocks-to-use ratios), which typically act as a buffer against supply shocks, were also at their lowest levels in nearly 20 years. As a result, corn prices more than doubled and farm income increased 60%.

The cycle turned in 2013. On the supply side, a period of optimal weather led to strong corn production. At the same time, demand stabilized as the one-time increase in demand from U.S. ethanol mandates plateaued. Although corn demand has grown 14% since 2013, supplies have increased over 36%. As of the beginning of 2016, prices for corn, soybeans, and wheat were all down over 35% since 2013, pushing farm income in the U.S. down 40%.

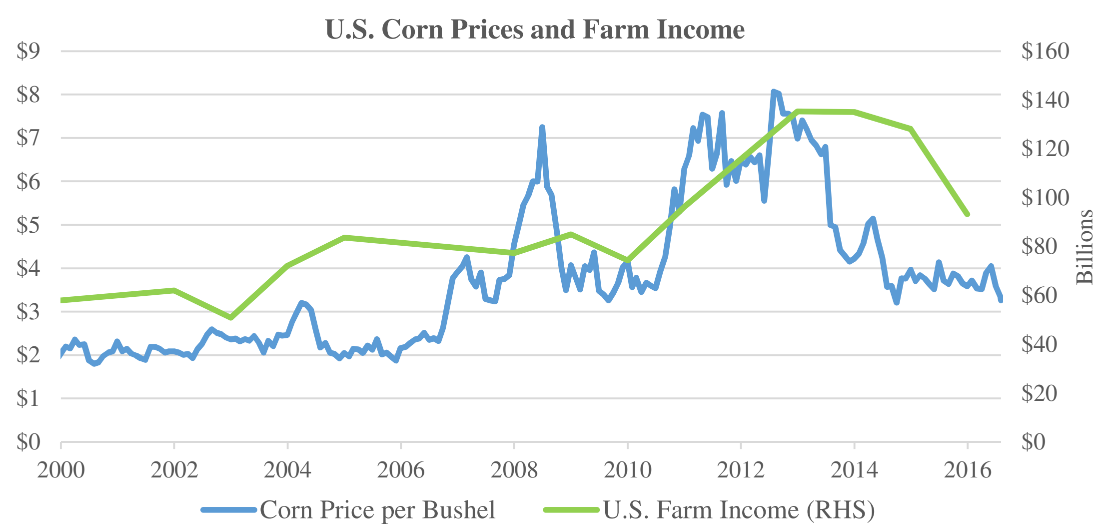
The ethanol mandate drove corn demand from 2006-2012 before leveling…



…at the same time, record low rainfall in 2012 caused yields to plunge. Three years of good weather and a yield rebound followed.



As a result, corn prices and farm income rose from 2006-2012 before collapsing.



Sources: U.S. Department of Agriculture, National Oceanic and Atmospheric Administration

Long-term Secular Trends:

Despite near-term over-supply, long-term secular trends paint a different picture.

The United Nations projects that the world population will grow by a third to 9.7 billion by 2050. Nearly all of the increase will come from developing countries, where income levels are growing rapidly. Not only does this mean more mouths to feed, but higher income has historically been accompanied by diets richer in meat, which requires even more feed, i.e., crops to produce. Crop production will have to grow by at least 60% from current levels to meet estimated demand by 2050.

There are only two ways to increase crop production: (1) farm more land or (2) increase output per acre of land, i.e., increase yield.

Regarding the former method—according to the U.N., global arable land has increased by a mere 15% (cumulatively, not annually) since 1960, with growth slowing since 2000 and expected to slow even further over the next 35 years. Of the total 37 billion acres of land on Earth, the majority is either unsuitable for raising crops, forested, or in protected areas. Only 7 billion acres are deemed to be quality cropland. Over half is already being farmed, with the rest primarily used as pastures for livestock. Given the growing demand for housing and the need to protect forested areas, further expansion of farmed acres is extremely limited.

As such, the latter method—increasing yield—is necessary for continued growth in food production.

What Determines Yield:

Farming is a science, and *realized yield* is determined by *maximizing potential yield* while *minimizing adverse environmental factors*. Potential yield is largely determined by seed quality assuming prime growing conditions: plentiful amounts of water, sunlight, and nutrients. On the other hand, adverse environmental factors such as extreme weather, weeds, and insects will reduce yield.

Great gains in yields have been achieved since farmers gained a better understanding of the interrelatedness of these factors and devised methods to maximize potential yield. Since 1930, corn yields in the U.S. have increased eightfold.

Different inputs are utilized to improve each of the factors that determine yield:

Yield-controlling Factors	Corresponding Inputs
Seeds	*Seeds*
+ Soil & Nutrition	*Fertilizers*
± Climate (Temperature + Rainfall)	*Irrigation*
- Pests (Insects + Weeds + Disease)	*Chemicals*
+ Cultivation	*Machinery*
= Yield	

1) *Seeds*: Seeds contain the genetic material that determines the basic characteristics of plants. These inherent characteristics can be magnified or reduced to some extent by other inputs and environmental factors. In simplified terms, seeds determine the "nature" of the plant, while all other inputs determine its "nurture." Farmers choose seed varieties with genes that are best suited for their needs and environment.

   Selective breeding throughout the history of agriculture—and more recently hybrid breeding and genetic engineering—have produced seeds with much greater yield potential and resistance to environmental factors. Over the 30 years following the introduction of hybrid corn in the 1930s, average yields in the U.S. tripled. Furthermore, since the introduction of GMO seeds in the mid-'90s, corn yields have increased by ~35%.

2) *Irrigation*: While it is impractical to control temperature on an open field, it is possible to compensate for inadequate rainfall. Farmers can supplement the amount of water their crops receive by pumping water onto their fields, whether in dry climates or when rainfall is inadequate. Irrigation systems apply the optimal amount and frequency of water to enhance yields, thereby reducing uncertainties caused by weather disruptions.

3) *Fertilizers*: Plants extract nutrients from the soil as they grow, and fertilizers must be consistently applied to maintain the fertility of the soil. Fertilizers provide nutrients that plants need to grow and thrive. Nitrogen, phosphorus, and potassium are the primary nutrients for plant growth. Fertilizers that contain these elements are produced from natural gas or minerals extracted from the ground and, as such, fertilizer prices are subject to commodity cycles.

4) *Chemicals*: Insecticides, herbicides, and fungicides are applied to combat insects, weeds, and diseases that cause harm to crops and reduce yield. In effect, they protect crops from being decimated by pests. As insects and weeds build resistance over time, new chemicals have to be developed to remain effective.

5) *Machinery*: Modern equipment has increasingly replaced the use of human and animal labor in farming. For crop farmers, widely used equipment includes tractors, planters, and harvesters. These machines replace manual labor and enable more land to be farmed more quickly, thus maximizing the length of the short growing season.

   Advancements in technology have allowed farmers to exert even more control and complete farm tasks more efficiently. Precision technology, such as sensors and variable-rate applicators, allow farmers to optimize the application of various inputs at precise and optimal levels to maximize yield. Additionally, advancements in data collection and analytics give farmers accurate weather and crop data to make better yield-maximizing decisions.

Investing in Agriculture:

Agriculture is undeniably a cyclical industry. While many people associate cyclical businesses with bad businesses as they are not stable or "bond-like," we disagree. Our focus is on identifying good businesses by assessing their long-term earnings power and buying them at attractive prices. We judge the earnings power of a business over a full cycle, not over a quarter or even a year. During cyclical downturns, however, the market often projects pessimism indefinitely into the future and prices a business based on temporarily depressed earnings. This creates attractive opportunities for us to identify good but cyclical businesses that are priced at a significant discount relative to our assessment of their long-term earnings power.

Agriculture is currently in a cyclical downturn, but we know that weather fluctuates and cycles turn. On the demand side, demand is inelastic and highly unlikely to fall by any significant magnitude or duration. On the supply side, the recent streak of good weather will not last indefinitely. The U.S. Corn Belt has just experienced three consecutive years of above-average rainfall amid average temperatures. In the last 50 years, there have only been two periods that experienced more than three consecutive years of above-average rainfall. Therefore, crop prices can rise significantly if a change in weather causes a supply shock.

Most important, the growth of long-term demand is inevitable. Given that crop production must increase by at least 60% by 2050 to feed nearly 10 billion people, if arable land continues its growth trajectory of the last decade (an optimistic assumption), crop yields must increase by 50%.

Increasing yield is thus a necessity, and inputs and equipment that increase yields are necessary products. Agricultural companies that can reliably facilitate yield growth will do well throughout agriculture cycles. Given the market's depressed sentiments, we believe the agricultural sector is a ripe area to look for attractively priced companies that possess competitive advantages and high barriers to entry.

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