REDWOOD GROVE CAPITAL

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Food Inflation

If there is a single economic data point that is driving U.S. public equity markets right now it is inflation. More specifically, it is inflation relative to the Federal Reserve Bank target of 2 percent. Even though the United States is currently only slightly more than a percent away from the Federal Reserve's target, a great deal hinges on closing that gap. What is so important about the 2 percent?

It appears that the target did not even come from the Federal Reserve, rather it was derived from an off the cuff remark made by the then Finance Minister of New Zealand, Roger Douglas, in 1988.[1] The country's inflation had just dropped below 10% and a television interviewer asked if Douglas was satisfied with the current rate. Douglas made a now famous (at least in central banking circles) unscripted remark that he would like to see inflation between 0-1%. This led the New Zealand Reserve Bank to set an inflation target of 2% (the higher number was to account for some upward biases in the data and to give themselves a bit of room to maneuver). Over the following years, this target became the global standard, and in 2012 Ben Bernanke and the U.S. Federal Reserve Bank publicly adopted this target. Interestingly, the 2-degree warming target common in climate circles was just as arbitrarily selected, likely coming from a back-of-the-envelope calculation by William Nordhaus in the 1970s.[2] While both numbers were calculated with a bit of art to them, even slight deviations matter quite a bit.

In March 2024, *Nature* published a piece on climate change's inflationary impact on food. The report looked at 27,000 observations of monthly consumer price indices worldwide to quantify the impacts of global warming on inflation. The authors concluded that over the next ten years, food inflation would increase by .92 to 3.23 percent per year, raising overall inflation by .32 to 1.18 percent. Price increases like this are material and will likely change food consumption patterns. As food costs go up, there will be increased pressure to find lower-cost and less carbon intensive substitutes.

Climate change's inflationary impact on food is caused by a variety of underlying long-term forecasted trends, mostly due to warmer weather and less stable temperatures. A warmer planet complicates growing conditions, impacts crop varieties, reduces water supply, increases pest pressure, reduces livestock availability, and disrupts supply chains.

You may have experienced this recently if you are a fan of Sriracha sauce. The formerly ubiquitous "Rooster Sauce" disappeared last year from supermarket shelves due to a three-year drought in Mexico that limited the supply of red jalapenos. Bottles of the hot sauce that historically sold for $5 could be found on eBay for $70.[3] Foods like chocolate and coffee are currently reaching record-high prices due to adverse weather conditions in Ghana, Cote d'Ivoire, and Vietnam. While extreme weather patterns that disrupt food supplies have existed since humans became an agricultural society 12,000 years ago, they are getting more frequent and severe, and will likely change consumption patterns.

[1] https://sites.lsa.umich.edu/mje/2023/09/04/why-the-2-inflation-target/
[2] https://www.nationalgeographic.com/environment/article/paris-climate-agreement-earth-two-degrees-hotter#:~:text=It%20was%2C%20she%20says%2C%20a,the%20limits%20of%20human%20experience.
[3] https://www.cnn.com/2023/06/29/business/sriracha-shortage-resell-prices/index.html#:~:text=Huy%20Fong%20Foods%2C%20which%20makes,ounce%20bottle%20for%20nearly%20%2470.

Climate change also changes the flavor profile of many foods. Foods like wine, coffee, seafood, fruits and vegetables, meat and dairy, herbs and spices are all expected to see their flavor profiles altered by warmer weather. Scientific reports forecast that beef and pork will get tougher, chicken will become stringier, and kale more bitter among many others. In addition, certain foods, like red meat may face decreased demand as there is increased pressure to reduce food manufacturing's carbon footprint.

Food production accounts for 26 percent of human-caused greenhouse gas emissions.[4] About half of that amount comes from meat production.[5] Finding ways to reduce greenhouse gas emissions from food production is as important as reducing emissions from transportation. Reducing red meat consumption is important and has gotten a lot of attention, but the whole ecosystem around food production will have to evolve if we want to slow climate change.

Redwood Grove has researched the impact of climate change on food production, consumer behavior around food, and the necessary technological solutions to reduce emissions. The headline of our findings is tastes will change, food supply will be increasingly volatile, flavors of certain foods will evolve, and addressing carbon emissions from food manufacturing will likely require alternative sources of protein. Companies that offer plant-based alternatives to dairy or meat such as Oatly and Beyond Meat tend to have high valuations and are subject to fickle trends. However, there was one business area in food manufacturing that seemed to be positively impacted by changing consumer behavior, desire for lower emissions, and disrupted food supply chains.

Over 60% of the food purchased by Americans has food flavoring additives.[6] When someone bites into an Impossible or Beyond burger, and thinks it tastes a lot like a beef burger, it is likely because one of the flavoring companies has augmented the flavor profile.[7] So while the agricultural landscape, prices, and preferences will change, we expect flavoring to remain a constant and growing component in this massive industry.

The food flavoring market is concentrated, with the top four companies comprising of 50% of the global market.[8] International Flavors and Fragrances (IFF) is one of the top three. Starting in 2021, IFF's share price started to fall following a large acquisition of Dupont's nutrition and bioscience business. A loss of market share, elusive synergies, and several management missteps led the company to replace its CEO in February of 2022 and again two months ago. The company's valuation is now well below that of its peer group, its balance sheet is stretched, and margins are among the lowest in the industry. J. Erik Fyrwald, the recently appointed CEO with experience managing the nutrition arm of DuPont and navigating Syngenta through post-acquisition struggles, seems like a good fit to confront the current challenges. Looking forward, Redwood Grove believes he can return margins to industry standards and

[4] https://ourworldindata.org/environmental-impacts-of-food
[5] https://thebreakthrough.org/issues/food-agriculture-environment/livestock-dont-contribute-14-5-of-global-greenhouse-gas-emissions#:~:text=In%20short%2C%20livestock%20production%20appears,land%2C%20or%20land%2Duse%20change
[6] https://www.eatrightpro.org/about-us/for-media/press-releases/60-percent-of-foods-purchased-by-americans-contain-technical-food-additives
[7] https://www.washingtonpost.com/business/2019/11/04/inside-little-known-world-flavorists-who-are-trying-make-plant-based-meat-taste-like-real-thing/
[8] https://drinkvolley.com/blogs/news/top-10-largest-food-flavor-companies

successfully divest non-core businesses improving the company's balance sheet while benefitting from improved demand related to climate-driven food trends.

IFF is aware of the growth potential associated with climate change and is investing accordingly. The company's R&D spending each year targets "key consumer insight-led growth themes" including "transforming food systems and accelerating climate solutions."[9] In January 2024, IFF invested in high moisture extrusion technology to expand their RE-IMAGINE PROTEIN program for plant-based meat alternatives.[10] IFF is currently trading at a discount to peers due to operational headwinds that we believe can be fixed with the right management, and is investing to lead food manufacturing's response to the impact of climate changes.

Closing Thoughts

In this year's annual report, Amazon expanded its risk disclosures on climate change. Redwood Grove is not invested in Amazon, however we were struck by the company's framing of climate risks. In their legal filing, they cited "increased operating costs due to more **frequent extreme weather events or climate-related changes**, such as rising temperatures and water scarcity; increased investment requirements associated with the **transition to a low-carbon economy**; decreased demand for our products and services as a result of **changes in customer behavior**; increased compliance costs due to **more extensive and global regulations** and third-party requirements; and reputational damage resulting from perceptions of our environmental impact.[11]" These risks line up almost perfectly with the four major climate trends that Redwood Grove uses to evaluate climate risk and opportunities: technological innovations and regulatory, consumer behaviors, and physical changes. While there is still a long way to go, we believe these risks will be increasingly understood by companies and subsequently priced by the market.

Redwood Grove celebrated its seven-year anniversary this quarter. We remain pleased with the fund's performance and believe our strategy will only get more compelling as the markets become increasingly aware of and price in the true financial impacts of climate change. There is still much work ahead, and we are grateful for our growth and your support. Our goal remains to build a differentiated investment firm that incorporates the impacts of climate to generate sustainable outperformance. Thank you for your continued trust in us.

With gratitude,

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[9] https://ir.iff.com/node/38176/html

[10] https://www.iff.com/media/news/iff-advances-plant-based-meat-alternatives-with-high-moisture-extrusion-investment/

[11] https://www.sec.gov/ixviewer/ix.html?doc=/Archives/edgar/data/1018724/000101872424000008/amzn-20231231.htm#i9b49001f922340eeba23291553f14c70_358

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