Company Analysis Research Project
BUS 342

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Company Overview

Ingredion (INGR), formerly known as CPC International, has a rich history dating back to 1906 when it emerged from the merger of prominent US corn refiners. The company was originally called Corn Products Refining Co., but was rebranded as "CPC International" and incorporated in New Jersey. Founded in Westchester, Illinois, Ingredion has grown into a global leader in ingredient solutions. As a leading supplier of plant-based starches, sweeteners, and nutrition ingredients, Ingredion serves a wide range of industries, including food and beverage, brewing, pharmaceuticals, and personal care. In over 120 countries worldwide, the company has expanded through mergers, acquisitions, and expansions, cementing its position as a trusted business partner.

With their ability to draw in customers through a value statement of “Innovate Boldly”, Ingredion has been able to take advantage of price mix increases to increase their revenue by 1.3 billion dollars. James P. Zallie leads Ingredion as its CEO, bringing with him extensive experience and a proven track record of success. Zallie previously served as the President and CEO of National Starch, proving his leadership skills and strategic mind. Under his leadership, the company remains dedicated to preserving the Ingredion experience by offering customers unparalleled possibilities at competitive prices. Despite facing fierce competition from industry giants like Archer Daniels Midland Company, Green Plains Inc, and Bunge Global SA, Ingredion continues to thrive in a challenging landscape. Ingredion stock is traded on the NYSE, and its 52-week high/low is between $115.86 and $89.0572. In this dynamic environment. As the industry continues to become more complex, Ingredion remains steadfast in its mission to improve customer experiences. Despite the formidable challenges posed by competitors and market dynamics, Ingredion's journey toward profitability has encountered obstacles, resulting in a modest average return of 0.083% for investors. While the stock doesn't present a high-risk profile, it also falls short of delivering substantial returns. Nevertheless, it remains a stable investment option, although not one known for significant profitability.

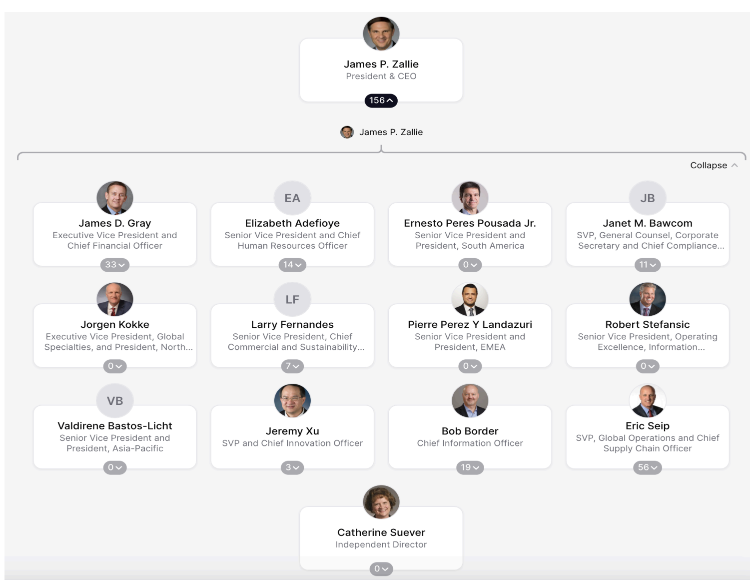

Figure 1: Organizational chart with Ingredion’s Key Officers

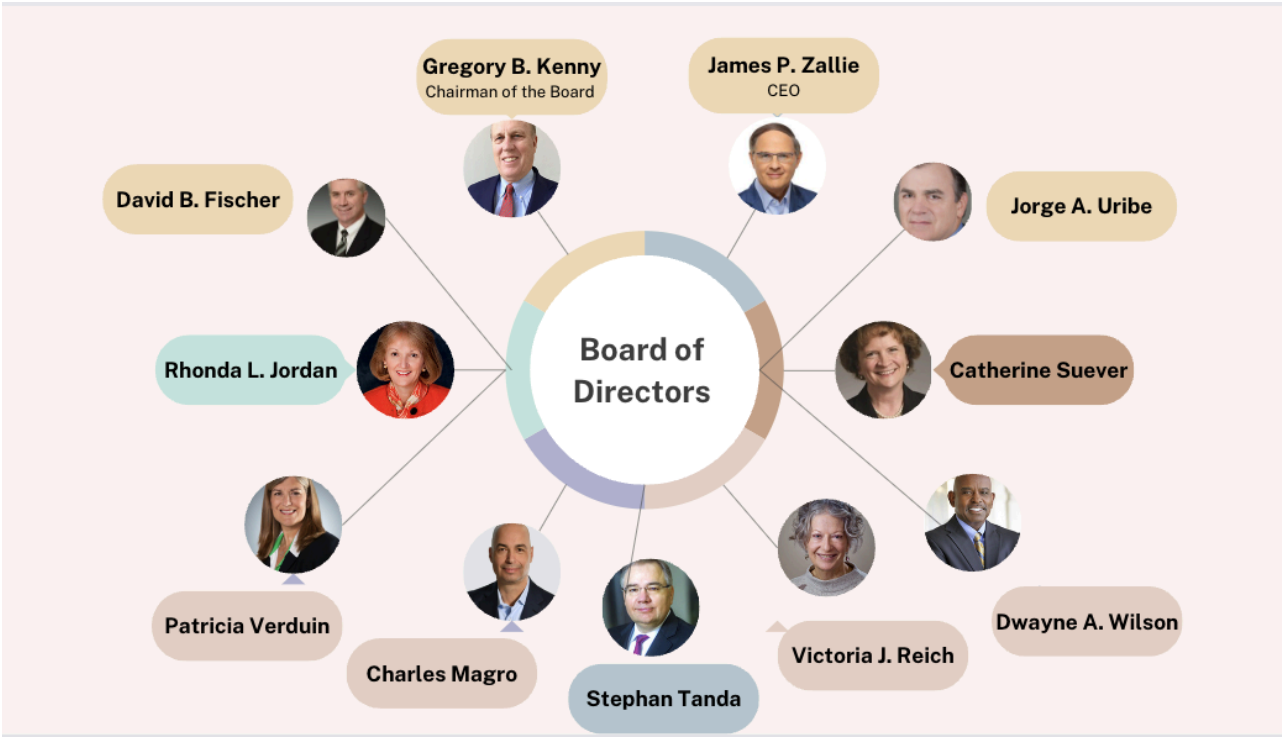

Figure 2: Organizational chart with Ingredion's Board of Directors

Competitive & Industry Analysis

Markets Served

Ingredion Corporation operates in the food ingredients industry. They are a leading global ingredients solutions company that supplies starches, sweeteners, nutrition ingredients, and biomaterial solutions to various industries including food and beverage, brewing, pharmaceuticals, personal care, paper, and corrugating, among others.

Business/Customer segments

Food and Beverage Industry: Ingredion provides ingredients such as starches, sweeteners, texturizers, and nutrition solutions for use in food and beverage products. These ingredients help improve the texture, taste, appearance, and nutritional profile of food and beverage items. Ingredion supplies ingredients used in brewing processes, such as maltodextrins and other brewing adjuncts, which contribute to the flavor, body, and texture of beer. Ingredion offers ingredients for use in personal care products and pharmaceuticals, including binders, emulsifiers, and other functional ingredients. Ingredion also provides starch-based solutions for the paper and corrugating industry, including adhesives and coatings used in paper manufacturing processes. The ingredient supplier offers ingredients for animal nutrition, including starches, proteins, and fiber sources used in pet food and animal feed formulations. Ingredion's products find applications in various industrial processes, including textile, adhesive, and construction industries, where ingredients such as starches and adhesives are used.

Top three competitors

1. Archer Daniels Midland Co. (NYS: ADM):(It products include ingredients used in the food and beverage industry including sweeteners, starch, syrup, glucose (dextrose))
2. Green Plains Inc. (NMS: GPRE): “Green Plains is transforming to create sustainable, high-value ingredients for an ever-changing world.”
3. (Bunge Global SA (NYS: BG): We offer a wide range of plant protein ingredients from soy, faba, pea, lentil, and mung to meet your sensory, nutrition, and sustainability needs across many foods, beverages, and supplements.

52-week high/low price of stock (found in Mergent or Yahoo Finance)

$112.50(Aug 1, 23) - $89.70(Oct 23,23)

Economic environment where the Ingredion operates

Ingredion is a large company that operates in multiple markets. As they are a middleman between food brands, farmers, and other ingredient suppliers their revenue and company health is dependent on both sides of their supply chain. Because of this large spread, they are not immune to large economic trends and have to respond to things like supply chain issues and changes in consumer taste. The macroeconomic environment of Ingredion is dependent on GDP, Inflation, Consumer Spending, Supply Chain Disruptions, Commodity Prices, and even the price of the dollar can affect a large multinational company like Ingredion.

Economic Growth: The Real GDP growth rate for the year 2023 (2.5%) was revised upward compared to the same time last year 2022(bea.gov). This increase could lead to increased demand for Ingredients products, as businesses and consumers might feel more comfortable spending. This large macroeconomic event caused large changes in the economic environment ingredient subsisted in.

Consumer Price Index and Inflation: The price index for gross domestic purchases decreased by 3.1% from 2022 to 2023 (bea.gov). However, the personal consumption expenditures (PCE) price index, a key measure of inflation, increased by .3%, with a slight upward revision. This suggests that while inflation remains relatively stable, there is some upward pressure on prices, particularly in consumer spending(whitehouse). For Ingredion, stable inflation may imply relatively stable input costs, but the slight increase in consumer prices could impact demand for its products if consumers adjust their spending patterns. In the year 2023 inflation slowed. Compared to December 2022 CPI inflation fell by 3.1 percentage points, from 6.5 percent in December 2022 to 3.4 in December 2023.

Consumer Spending: Although revised downwards, consumer spending still showed positive growth in the fourth quarter. This could be a positive sign for Ingredion, as it indicates continued consumer demand for food and beverage products that utilize their ingredients. Data on consumer finances shows potential positive growth for Ingredion. Personal income increased $60.0 billion (0.3 percent at a monthly rate) as of December 2022. Consumer spending increased $133.9 billion (0.7 percent). Personal saving was $766.7 billion and the personal saving rate was 3.7 percent. These figures show strength in the economy Ingredion 2022 company report.

Trends/Opportunities

Supply Chain Disruptions: The Ripples of the Supply Chain Disaster in 2020 still affect large multinational corporations like Ingredion. In 2023 there are still problems that have yet to be solved like material scarcity, increased Freight prices, and Port congestion(Rickerby). Ingredion has taken advantage of technology to try to address this problem. They continue to digitally transform supply chains to better leverage existing platforms and introduce new tools to increase visibility. To combat these issues Ingredion has also invested nearly $160 million in 2022 to increase the longevity of its continental supply chains. They have improved Global Supply Chain flexibility for corn, waxy corn, tapioca, potato, and rice-based specialty starches(Ingredion). Most of this investment went to their new state-of-the-art manufacturing facility in Shandong China which has allowed them more expansion into the Asian market while avoiding supply chain issues. The new expansion has allowed them to grow their modified starch consumption by 27% in the Asia (mainly Chinese) market(Ingredion).

Pricing Centers of Excellence: As demand for the ingredients that Ingredion provides increases, they have taken advantage of price mix increases to increase their revenue by 1.3 billion dollars(Ingredion). Ingredients such as oils, starches, grains, and others have greatly increased their revenue and by extension their stock price.

Sustainability: As the developed world starts to value companies that are moving towards sustainability, fortune 500 companies including Ingredion make a hard push to make sure their products don't hurt the earth. Over the last year, they had an 8% decrease in global carbon emissions with 2019 as a base year(Ingredion). More notably they are on a mission to source 100% of their corn, tapioca, potato, stevia, and pulses from sustainable farmers and manufacturers. So far they are 47% of the way there(wikipedia).

Key issues

Consumer Trends and Preferences: Consumer preferences are shifting towards healthier and more sustainable food options. This trend requires Ingredion to innovate and develop ingredients that meet consumer demands for clean labels, natural ingredients, and plant-based alternatives.
Environmental Compliance: The case underscores the importance of compliance with environmental regulations, particularly the Clean Air Act. Violations of emissions standards and failure to operate and monitor equipment properly can lead to significant penalties and enforcement actions(). In 2022 Ingredion paid over $8 Million in Settlement Over Violations Involving Emissions of Particulate Matter at Indianapolis Corn Wet Mill (EPA).

Supply chain: As mentioned above the supply chain can affect the whole ingredient producing industry. There is no worse trouble than having demand and supply and not being able to have them meet. The cost of missing shipments can be astronomical so Ingredion has made significant investments to ensure that potential revenue is not lost.

Change in consumer trends: It is well known that a growing desire to lose weight and get fit is also affecting people's diets. As consumers become increasingly health-conscious, they are paying more attention to the nutritional content and quality of the ingredients in the foods they consume. This shift in consumer behavior has prompted companies like Ingredion to adapt and evolve their product offerings to meet the demand for healthier ingredients. An example is the uptick in protein consumption. As consumers start to value a protein-rich diet, products containing more protein start to gain in popularity. This leads companies that sell these products to have increased revenue and by extension a larger demand for protein as an ingredient. Along with protein, Plant-based alternatives have become immensely popular. Utilized by a diet-restricted group of consumers this trend towards plant-based alternatives has made it to most food markets.

Brief overview of three competitors and their impact on Ingredion

Archer Daniels Midland is a diversified company operating in human and animal nutrition, agriculture origination, and processing sectors. Its Ag Services and Oilseeds segment makes money by sourcing, trading, transporting, and storing agricultural raw materials. This segment also involves the crushing and refining of oilseeds to produce vegetable oils and protein. In the Carbohydrate Solutions segment, the company does wet and dry milling of corn and wheat, along with related operations. Archer Daniels Midland is by far the largest of Ingredon’s competitors. With a market cap 97.4% larger than that of Ingredion. (merchant) Its effect on ingredients Is mostly related to its product lines. As the top competitor archer-daniels products are not the same as ingredion. This allows the companies to coexist in the same industry but take profits respectively. Some direct competition can also be seen between the supply lines between Archer Daniels and Ingredion (Craft.co).

Green Plains operates as a holding company with subsidiaries dedicated to low-carbon fuel production. Its subsidiary, Green Plains Partners LP, specializes in downstream storage and logistics services. The company is organized into three segments: Ethanol Production, responsible for producing ethanol, distillers grains, Ultra-High Protein, and renewable corn oil; Agribusiness and Energy Services, which handles grain procurement and commodity marketing; and Partnership, offering fuel storage and transportation services through ownership and operation of ethanol and fuel storage tanks, terminals, and related assets. For Ingredion Green Plains poses less of a threat because of its varied product line however since they sourced the same ingredients for their products that can create some crossover.

Bunge operates as a holding company with subsidiaries in the agribusiness and food sectors. It handles the purchase, storage, transportation, processing, and sale of agricultural commodities and commodity products. Refined and Specialty Oils focuses on selling vegetable oils and fats, including cooking oils, shortenings, and specialty ingredients. Milling encompasses the sale of wheat flour, bakery mixes, and corn-based products. Ingredion faces little to no interaction with Bunge.

All three companies have a hand in a few different industries, agriculture and its reliance on corn-based products make for great customers. Ingredion does not participate in ag as much and instead focuses on the human side of ingredient production. The three remain competitors to Ingredion as they all have logistics in place that make them more valuable than the products they ship. They all find ways to keep costs down and revenues up so that they can hopefully continue to provide value to their shareholders.

Financial Analysis

Financial Ratios	Ingredion 2021	Ingredion 2022	% Change Ingredion: 2021-2022	Archer 2021	Archer 2022	% Change Archer: 2021-2022
Current Ratio	1.7837	1.7582	-1.43%	1.4538	1.4638	0.68%
Quick Ratio	1.0086	0.9097	-9.81%	0.7941	0.8532	7.44%
Cash Ratio	0.2169	0.1254	-42.19%	0.0430	0.0429	-0.23%
Total Debt	0.5545	0.5817	4.90%	0.5990	0.5932	-0.98%
Debt-Equity	1.2104	1.3592	12.29%	1.4825	1.4458	-2.48%
Equity Multiplier	2.2447	2.3905	6.49%	2.4940	2.4581	-1.44%
Times-Interest Earned	4.1892	7.6970	83.73%	15.6453	10.4697	-33.08%
Cash Coverage	4.1892	7.6970	83.73%	15.6453	10.4697	-33.08%
Inventory Turnover	4.7466	4.0401	-14.88%	0.3842	0.4368	13.70%
Day's Sales in Inventory	76.8974	90.3449	17.49%	950.1285	835.6192	-12.05%
Receivables Turnover	6.1009	5.6315	-7.69%	2.0822	1.6131	-22.53%
Days' Sales in Receivable	59.8274	64.8144	8.34%	175.2995	226.2761	29.08%
Payables Turnover	7.1873	7.3906	2.83%	12.4080	12.0449	-2.93%
Days'Cost in Payables	50.7837	49.3870	-2.75%	29.4166	30.3034	3.01%
Total Asset Turnover	0.9850	1.0509	6.69%	1.5186	1.6990	11.88%
Capital Intensity	1.0152	0.9515	-6.27%	0.6585	0.5886	-10.62%
Profit Margin	0.0181	0.0632	248.43%	0.0318	0.0427	34.48%
Return on Assets	0.0179	0.0664	271.75%	0.0483	0.0726	50.46%
Return on Equity	0.0401	0.1587	295.89%	0.1204	0.1785	48.29%
Price-Earnings	55.5402	13.1803	-76.27%	14.0813	12.0272	-14.59%
Price-Sales	0.9344	0.8096	-13.35%	0.4440	0.5001	12.64%
Market-to-Book	0.0561	0.0572	1.96%	0.0371	0.0370	-0.23%
From Stock Tracker (Price Per Share)	$ 96.64	$ 97.93		$ 67.59	$ 92.85	
Market Capitalization	7566699932					

Figure 3: The figure above displays the financial ratios for Ingredion (INGR) and Archer Daniels Midland Company (ADM) in 2021 and 2022.

Strengths and Weaknesses Between Ingredion and Archer-Daniel-Midland

After conducting our thorough analysis of Ingredion and its competitor, Archer Daniels Midland Company, we are able to determine the strengths and weaknesses. In terms of ratio analysis, Ingredion exhibits superior performance compared to Archer in many areas including profit margin, ROE, and ROA. These findings suggest that a significant portion of Ingredion's company revenue is translating into profits. A high ROE shows that a company is efficiently generating profit from shareholders' investments and this can attract more investors and increase stock value. Additionally, a high-profit margin and ROA signifies strong financial health and efficient management of the company's assets and can lead to growth opportunities for the company. However, it is important to note that Archer also excels in several aspects including, quick ratio and decrease in total debt. A higher quick ratio indicates that a firm has strong liquidity and the ability to meet its immediate financial obligations. The decreasing total debt reduces the firm's financial risk and improves its credibility.

Financial Ratios Analysis

Looking through Ingredion's Ratios there are some positives and negatives for a potential investor. First, we will be discussing the positive ratios. Looking at ratios is a quick way to examine the health of a company and help make an informed decision about investing or not. One of the biggest standouts among Ingredion's financial ratios is the 248.43% increase in profit margin from 2021-2022. One of the easiest financial numbers to compare is the profit margin of the two companies. Seeing such a drastic increase, a whopping 248.43% increase, indicates that Ingredion must've cut costs or found a more efficient way of producing. This staggering increase has now put Ingredion's profit margin above Archer-Daniel-Midland's profit margin. Even though Archer-Daniel Midland also saw an increase in profit margin from 2021-2022. Looking at return on equity there was just as big a percent increase in the ratio as in profit margin. Ingredion had a 295.89% increase in return on equity bringing it from 4.01% in 2021 to 15.87% in 2022. This increase in return on equity could attract more investors. Investors historically have looked to the S&P 500 to establish an "acceptable" ratio that other companies should aim for. The S&P 500 at the end of 2022 had a return on equity of 13.29%(Fernando, J). In 2021 Ingredion had a return on equity of 4.01% which would be considered as poor when compared to the S&P 500's return on Equity. Seeing such a positive increase, in addition to now having a return on equity higher than the S&P 500's, is a very positive sign for investors. Lastly, we will look at times interest earned. Ingredion's time's interest earned ratio increased by 83.73%, from 4.189 in 2021 to 7.697 in 2022. This is an extremely promising sign for the future of Ingredion as it means that they can pay off their debt charges 7.697 times with their earnings. To see such an increase Ingredion could, "increase earnings, reduce expenses, pay off debt, and refinance current debt at lower rates." (Chen, J). All of these ratios paint Ingredion in a positive light and could contribute to a positive outlook on Ingredion's future.

As we just discovered Ingredion has positive ratios that will increase investors' confidence, however, there are also negative ratios that must be examined. To start, Ingredion's Cash ratio decreased by -42.19% from .2169 in 2021 to .1254 in 2022. The cash ratio compares how much cash or cash equivalents a company has on hand versus its current liabilities. A number under 1 would indicate that a company has less cash or cash equivalents than current liabilities. Ingredion would see a large shift if they changed the amount of debt they had or wanted to change the capital structure. While a decrease could indicate that Ingredion wants to have more debt as part of its capital structure, it is still concerning to see that big of a decrease. Moving on to the quick ratio, Ingredion saw a decrease of -9.81% from 2021 to 2022. Most notably its quick ratio dropped below 1 with this decrease. The quick ratio is important in examining short-term financial health as it focuses on short-term liabilities and liquid assets. Since the quick ratio is now below 1 Ingredion needs to be careful about running out of cash to cover its current liabilities. If the quick ratio continues to drop it will be a worrying sign for the future of Ingredion. The last Ingredion ratio to look at is the inventory turnover ratio. From 2021 - 2022 Ingredion saw a -14.88% decrease. A lower inventory turnover ratio could be indicative of lower sales or overstocking. If a company has too much product on hand that is not being sold quickly then a low inventory turnover ratio is likely to be a result. This is worrying as Ingredion would hope to have just enough product on hand to fulfill orders and not waste money or time with overstocking. These three ratios show the negative side of Ingredion and the problems that could be coming if they are not handled.

Archer-Daniel-Midlands showed significant positive changes in financial ratios from 2021 to 2022. The return on equity increased by a dramatic 48.29%. In 2021 it started at .120 and increased to .179 by 2022. Return on equity can be looked at as a gauge of a corporation's profitability and how efficient they are at generating profits. The higher the return on equity, the better a company is at converting its equity into profits. Additionally, the return on assets increased by 50.46% from 2021 to 2022. In 2021 Archer-Daniel-Midlands return on assets was .048 and increased to .073 in 2022. A return on asset gives a quick indication of whether the business is continuing to earn an increasing profit on each dollar of investment. Another meaningful ratio is the price-sales ratio which increased by 12.64%. It was .444 in 2021 and increased to .5001 in 2022. The price-sales ratio describes how much someone must pay to buy one share of a company relative to how much that share generates in revenue for the company. This can indicate future revenue growth and a positive market sentiment. Another positive ratio is the inventory turnover ratio improving by 13.70%. It increased from .384 to .436 from 2021 to 2022. This ratio tells how often a company replaces inventory relative to its cost of sales, in this case from 2021 to 2022. A higher turnover ratio means that goods are sold faster. This reduces the risk of excess inventory and suggests that the company can sell and replenish its inventory.

There were also several key ratios for the company that were negative and offered insights into its operational efficiency and financial health. The times-interest earned ratio is a crucial metric that indicates the company's ability to cover interest expenses with operating income. Archer-Daniel-Midland's times-interest earned a substantial decrease of -33.08%. This decline from 15.65 to 10.47 raises concerns about the company's ability to service its debt obligations and could potentially signal increased financial risk. The day's sales receivables ratios showed a significant increase of 29.08% as it went from 175.30 to 226.28. This measures the average number of days it takes for a company to collect payments from its customers. This increase indicates that it took longer for the company to convert its sales into cash from 2021 to 2022. This can be due to many factors, but it can impact the company's cash flow and liquidity position. Another ratio that stood out is the concerning decrease in cash coverage for Archer-Daniel-Midlands. The ratio dropped by 33.08% from 15.645 in 2021 to 10.470 in 2022. A negative cash coverage ratio indicates that Archer relied a lot on external financing to cover interest payments. This could lead to increased debt levels or cash flow constraints and will potentially not allow them to comfortably cover their interest expenses in the future.

Qualitative Factors Impacting Ingredion's Financial Performance

Based on CSI Market Ingredion's revenues seem to be very distributed throughout different markets. Ingredion is involved with industries like chemical manufacturing and the legal cannabis industry. This is a great thing for investors as they are not going to be hurt too much if a certain industry goes through a downturn. It is also impressive that Ingredion has such a wide range of products. On their website, their breakdown is 54% food industry, 11% animal nutrition, 8% beverage industry, and 8% brewing industry. While food does account for a lot of their portfolio they didn't go into the finer details of exactly which industries within the food sector they serve. Since the food sector is such a big industry it isn't too dangerous to have a large portion of their industry be food. The great variety of industries that Ingredion supplies products to help reduce the risk of industry downturns. To supply these various industries Ingredion has 18 product families although some are pretty broad. Ingredion doesn't seem to have a singular product to which all its revenue is tied. However, there is a very popular product "Stevia", that Ingredion has, that is extremely popular within the market. As mentioned earlier their biggest industry is the food industry, with 54% of Ingredion's 2022 total net sales coming from that industry. On the flip side, only 2 suppliers were on Ingredion's financial sheet, Amyris and Innovopro. There could be more suppliers that aren't listed but weren't available online. If these are the only two suppliers that Ingredion works with this could be a little risky for an investor. The reliance on only two suppliers opens Ingredion up to risk if a supplier were to encounter a downturn. If there was a downturn or supply chain issues with one of Ingredion's suppliers Ingredion would be negatively impacted and could have a lasting impact. Ingredion should diversify the number of suppliers to match how they diversified the amount of product industries that they serve.

Ingredion is a global company that generates a lot of revenue overseas. According to Mergent Ingredion had $111,000 in income (loss) before income taxes in the United States (in 2022) and they also had $557,000 in income (loss) before foreign income taxes (outside of the US) (in 2022). The disparity between the two numbers comes from Ingredion making a considerable amount of revenue from outside of the United States. This is a good sign for investors because it shows that Ingredion is diversified in terms of geographical region. Seeing that Ingredion has a substantial income before income taxes foreign shows that there is an increased focus on both the global market and the US market. This global footprint and presence allow Ingredion to be stable even when there are market fluctuations in one part of the world. One problem however is that both Archer-Daniel-Midlands and Bunge are also global brands that have enjoyed success around the world. Based on financial analysis Ingredion faces a lot of stiff competition. Mainly from companies like Archer-Daniels-Midland (Which has more employees and greater retained earnings, assets, liabilities, and equity increases) and Bunge, who seem ahead of Ingredion in almost every aspect analyzed. While Ingredion does have stiff competition from other brands, the market is extremely competitive, in our financial analysis we focused on those two companies. Looking at their total assets alone shows just how much bigger both Archer-Daniel-Midlands and Bunge are when compared to Ingredion. We also looked at Green Plains in our financial analysis however they are a much smaller company that is trying to gain popularity. We choose to analyze Green Plains because they are a perfect example of a smaller company in the market that is trying to grow, there are a lot of companies similar to this within the market.

Research and development is very important for companies to grow in their market. Introducing innovations or revolutionary ways to save money could be just the thing to see a company become successful overnight. Within Ingredion's market, however, there is not much money to be spent on research and development. For products, there are specialty, specific for certain customers, and normal, something anyone within the market can use, products. A majority of research and development will be spent on specialty products since those need to be client-specific. Normal products would have little to no research and development as once those products can be produced the formulation doesn't need to change. In addition, as mentioned above the market is very competitive as there are a lot of little companies that are on the rise.

This keeps research and development costs low because if a client is unhappy with the price they can find another company that will help them. They also can't charge more money for their exclusive products due to the market's competitive nature. (Kindreich, A.). A majority of the research and development budget would be spent trying to make current processes more efficient and preparing for future regulatory changes. Since Ingredion does operate in the food industry they need to keep an eye on the FDA(Food and Drug Administration) and the USDA(United States Department of Agriculture). Being proactive and staying on top of future regulation changes is a necessity in the food industry. Regulation changes could have both a positive impact and a negative impact on Ingredion's future. So it is extremely important to Ingredion's future success to be up to date if not ahead of the curve when it comes to regulations.

Stock Performance Quarterly Analysis

We anticipate that Ingredion's beta will likely be the smallest among its competitors due to the stable demand for food and beverage ingredients. In comparison, Green Plains Inc. may have a beta closer to Ingredion, because they have similar products in the agriculture industry. However, Ingredion's specific focus on food and beverage ingredients may result in a slightly lower beta. On the other hand, we expect Archer Daniels Midland Company to have a higher beta due to its diversified agricultural products and global presence, while Bunge Global SA's beta is expected to be the highest because of its significant exposure to global markets, as well as agricultural trading.

After analyzing real-time statistics it appears Ingredion's beta is 0.81, indicating a lower volatility compared to the overall market. Secondly, Archer Daniels Midland Company exhibits a beta of 0.63, lower than Ingredion, which means less volatility in stock price. Thirdly, Green Plains Inc. has a higher beta of 1.27, which means it has more volatility compared to Ingredion. Lastly, Bunge Global SA has the highest beta of 1.6, indicating the highest volatility. Not to mention, Green Plains Inc. has a higher beta than predicted, suggesting more volatility and risk in its stock price. Additionally, Bunge Global SA has greater market sensitivity and risk than anticipated, because a higher beta indicates

Now looking at the 52-week percentage return, it is clear that Ingredion saw a slight change of 0.083%, reflecting stability during a fluctuating market. In comparison, Archer Daniels Midland Company experienced growth with a 36.77% change. Not to mention, Green Plains Inc. declined by 16.54%, due to challenges in the ethanol market and broader industry turmoil. Lastly, Bunge Global SA grew with a 6.47% change, which can be attributed to exposure to global commodity markets and other company initiatives.

Ingredion's stable stock performance is due to its steady demand in the food and beverage ingredient industry. However, Green Plains Inc.'s decline reflects turmoil in its specific market, while Archer Daniels Midland Company's highlights the pros of diversification. Moreover, Bunge Global SA's growth can be attributed to its strategic positioning in global commodity markets.

Ingredion uses a combination of financial instruments, such as senior unsecured term loans and commercial paper programs, in addition to common equity to finance its activities. This strategy gives the business significant liquidity and financial flexibility, allowing it to efficiently fund its expansion plans. It makes sense for Ingredion to use a range of financing techniques, such as debt, preferred stock, ordinary equity, and borrowing, to fund its activities efficiently given its current situation without disclosing the precise strategy employed.

Conclusion

In summary, Ingredion has remained stable, as seen in its consistent growth in sales and stock value over the past few years. This company targets a wide demographic, meeting the needs of food manufacturers with a wide range of essential ingredients. Ingredion's market positioning consists of a portfolio of products, including ingredients for food, animal nutrition, beverages, and brewing, appealing to various industries. Since Ingredion offers high-quality products at competitive prices, it can be seen as a prominent choice for consumers, enabling Ingredion to capture market share across different sectors.

When evaluating the current and future stock prices, we believe Ingredion should either issue bonds or issue shares of stock to purchase more assets or invest in capital structure products, which can secure economic stability for the future. This would allow them to expand even further than they currently are.

Ingredion operates in a complex economic landscape influenced by factors like GDP growth, inflation, and consumer spending. Despite facing challenges such as supply chain disruptions, the company invests in technology and sustainability initiatives to maintain competitiveness. Competitors like Archer Daniels Midland, Green Plains, and Bunge offer diverse product lines but also pose logistical and market challenges. Ingredion's resilience lies in its ability to adapt to changing consumer trends while focusing on long-term growth and sustainability.

Both Ingredion and Archer-Daniel-Midlands displayed improvements and decrements in the profitability ratios that were calculated. Ingredion had positive ratios in times interest earned, profit margin and return on equity. However, challenges were seen in cash ratio, quick ratio and inventory turnover. On the other hand, Archer-Daniel-Midlands had positive profits of return on equity, return of assets and price-sales. Their negative ratios include time-interest earned, days sales in receivables and inventory turnover.

Looking at Ingredion's financial statements the size difference between itself and Archer-Daniel-Midlands and Bunge became apparent. Although Ingredion does operate on a global scale and does supply a lot of different industries there is extremely fierce competition in the market. Staying on top of future regulations and trying their best to create a niche that they can fill in the market would positively impact the future health of Ingredion.

Over the last 52 weeks, Ingredion has outperformed the S&P 500 with a positive return of 0.083%, outperforming the volatile market circumstances. But Ingredion's performance isn't as good as that of rivals like Archer Daniels Midland, Green Plains Inc., and Bunge Global, which experienced returns of 36.77%, -16.54%, and 6.47%. This is because Ingredion has lower volatility, but its low beta of 0.81 emphasizes that this is a risky investment.

As portfolio managers, we recommend divesting Ingredion stock for many reasons. One being, that there are potential risks for investors because of Ingredion's 52-week percent return compared to competitors, and its lower beta. But given Ingredion's poor record in comparison to rivals and the volatile S&P 500 market, investors should proceed with caution if they want to invest in the business. Second, given the uncertainty and possibility of additional drops, stocks are a less desirable investment. Thirdly, Ingredion may face difficulties as a result of heightened regulatory scrutiny in the food sector, which could result in problems with legality and compliance. Environmental factors, including disruptions caused by the pandemic, have significantly affected Ingredion, particularly considering the downturn experienced by the food industry during this period. Although we recommend bearish investors maintain their stock because it can be part of their agricultural portfolio, we recommend that bullish investors not purchase Ingredion stock as it is not likely to provide a percent return satisfactory in comparison to its competitors.

Stock Tracker Graph

Ingredion Daily Closing Price/Close vs. Ingredion Daily Closing Price/Date

Appendix A

Ingredion Balance Sheet

As Reported Annual Balance Sheet			
Report Date	**12/31/2022**	**12/31/2021**	**12/31/2020**
Currency	**USD**	**USD**	**USD**
Audit Status	**Not Qualified**	**Not Qualified**	**Not Qualified**
Consolidated	**Yes**	**Yes**	**Yes**
Scale	**Thousands**	**Thousands**	**Thousands**
Cash & cash equivalents	236000	328000	665000
Short-term investments	3000	4000	-
Accounts receivable - trade	1200000	950000	855000
Accounts receivable - other	228000	193000	170000
Allowance for credit losses	17000	13000	14000
Accounts receivable, net	1411000	1130000	1011000
Finished & in process	962000	688000	584000
Raw materials	539000	380000	236000
Manufacturing supplies	96000	104000	97000
Inventories	1597000	1172000	917000
Prepaid expenses	62000	63000	54000
Total current assets	3309000	2697000	2647000
Land	199000	206000	207000
Buildings	854000	812000	802000
Machinery & equipment	4680000	4637000	4621000
Property, plant & equipment, at cost	5733000	5655000	5630000
Accumulated depreciation	3326000	3232000	3175000
Property, plant & equipment, net	2407000	2423000	2455000
Goodwill, net	-	-	902000
Intangible assets	1301000	1348000	-
Other intangible assets, gross	-	-	673000
Less: accumulated amortization - other intangibles	-	-	229000
Other intangible assets, net	-	-	444000
Operating lease assets	-	-	173000
Deferred income tax assets	-	-	23000
Other assets	544000	531000	214000
Total assets	7561000	6999000	6858000
Short-term borrowings	543000	308000	438000
Accounts payable	873000	774000	599000
Accrued compensation - related costs	112000	105000	96000
Current lease liabilities	48000	47000	-
Dividends payable	47000	44000	43000
Accrued taxes payable other than income taxes	45000	44000	44000
Other accrued liabilities	214000	190000	155000
Accrued income taxes payable	-	-	26000
Accrued current lease liabilities	-	-	46000
Accrued interest	-	-	11000
Accrued liabilities	466000	430000	421000
Total current liabilities	1882000	1512000	1458000

Total current liabilities	1882000	1512000	1458000
Senior notes	1736000	1736000	1734000
Term loan	200000	-	-
Other long-term borrowings	4000	2000	14000
Long-term debt	1940000	1738000	1748000
Employees' pension, indemnity & postretirement	-	-	139000
Deferred tax liabilities	145000	165000	-
Non-current operating lease liabilities	146000	154000	-
Pension & postretirement liabilities	101000	123000	-
Other non-current liabilities	85000	82000	88000
Other non-current liabilities	477000	524000	227000
Non-current operating lease liabilities	-	-	136000
Deferred income tax liabilities	-	-	217000
Total liabilities	4299000	3774000	3786000
Share-based payments subject to redemption	48000	36000	30000
Redeemable non-controlling interests	51000	71000	70000
Common stock	1000	1000	1000
Additional paid-in capital	1132000	1158000	1150000
Less: treasury stock at cost	1148000	1061000	1024000
Cumulative translation adjustment	-1008000	-903000	-1114000
Hedging activities	6000	48000	42000
Pension & postretirement adjustment	-46000	-42000	-61000
Accumulated other comprehensive income (loss)	-1048000	-897000	-1133000
Retained earnings	4210000	3899000	3957000
Total Ingredion Incorporated stockholders' equity	3147000	3100000	2951000
Non-redeemable non-controlling interests	16000	18000	21000
Total equity	3163000	3118000	2972000

Appendix B

Ingredion Consolidated Statements of Income USD $ (Thousands)

As Reported Annual Income Statement			
Report Date	**12/31/2022**	**12/31/2021**	**12/31/2020**
Currency	**USD**	**USD**	**USD**
Audit Status	**Not Qualified**	**Not Qualified**	**Not Qualified**
Consolidated	**Yes**	**Yes**	**Yes**
Scale	**Thousands**	**Thousands**	**Thousands**
Net sales	7946000	6894000	5987000
Cost of sales	6452000	5563000	4715000
Gross profit	1494000	1331000	1272000
Operating expenses	715000	668000	628000
Other operating expense (income)	13000	-	-
Brazil tax matter	-	-	36000
Other income (expense)	-	-	-5000
Other income (expense)	-	34000	31000
Restructuring & impairment charges	-	-	93000
Restructuring or impairment charges & related adjustments	4000	387000	-
Operating income (loss)	762000	310000	582000
Interest expense, net of amounts capitalized	-	-	68000
Debt extinguishment costs	-	-	-5000
Interest income	-	-	6000
Foreign currency transaction gains (losses)	-	-	-14000
Financing costs	99000	74000	81000
Other non-operating income (expense)	5000	12000	5000
Income (loss) before income taxes - U.S.	111000	39000	-15000
Income (loss) before income taxes - foreign	557000	209000	521000
Income (loss) before income taxes	668000	248000	506000
Current tax expense (benefit) - U.S. federal	8000	2000	1000
Current tax expense (benefit) - state & local	2000	2000	2000
Current tax expense (benefit) - foreign	159000	180000	156000
Total current tax expense (benefit)	169000	184000	159000
Deferred tax expense (benefit) - U.S. federal	5000	-57000	-18000
Deferred tax expense (benefit) - state & local	-1000	-2000	-1000
Deferred tax expense (benefit) - foreign	-7000	-2000	12000
Total deferred tax expense (benefit)	-3000	-61000	-7000
Provision for (benefit from) income taxes	166000	123000	152000
Net income (loss)	502000	125000	354000
Less: net income attributable to non-controlling interests	-10000	-8000	-6000
Net income attributable to Ingredion Incorporated	492000	117000	348000
Weighted average shares outstanding - basic	66200	67100	67200
Weighted average shares outstanding - diluted	67000	67800	67600
Year end shares outstanding	65693.955	66656.672	67015.529
Net earnings (loss) per share - basic	7.43	1.74	5.18
Net earnings (loss) per share - diluted	7.34	1.73	5.15
Total number of employees	11700	12000	12000
Number of common stockholders	3143	3295	3491
Foreign currency translation adjustments	-105000	211000	-25000

Appendix C

Ingredion Consolidated Statements of Cash Flows USD $ (Thousands)

Ingredion Cash Flow's

As Reported Annual Cash Flow					
Report Date	**12/31/2022**		**12/31/2021**		**12/31/2020**
Currency	**USD**		**USD**		**USD**
Audit Status	**Not Qualified**		**Not Qualified**		**Not Qualified**
Consolidated	**Yes**		**Yes**		**Yes**
Scale	**Thousands**		**Thousands**		**Thousands**
Net income (loss)	502000		125000		354000
Depreciation & amortization	215000		220000		213000
Mechanical stores expense	55000		55000		54000
Impairment on disposition of assets	-		340000		-
Charge for fair value mark-up of acquired inventory	-		-		6000
Deferred income taxes	-3000		-61000		-7000
Other non-cash charges	57000		8000		99000
Accounts receivable & prepaid expenses	-310000		-162000		-3000
Inventories	-468000		-312000		-14000
Accounts payable & accrued liabilities	158000		226000		124000
Margin accounts	-44000		-32000		43000
Other operating activities	-10000		-15000		-40000
Net cash flows from operating activities	152000		392000		829000
Capital expenditures & mechanical stores purchases	-300000		-300000		-340000
Proceeds from disposal of manufacturing facilities & properties	7000		18000		7000
Payments for acquisitions, net of cash acquired	-29000		-40000		-236000
Investment in non-consolidated affiliates	-		-		-6000
Short-term investments	-		-		4000
Other investing activities	2000		-13000		-
Net cash flows from investing activities	-320000		-335000		-571000
Proceeds from borrowings	825000		1300000		1550000
Payments on debt	-532000		-1690000		-1224000
Debt issuance cost	-		-		-9000
Commercial paper borrowings, net	140000		250000		-
Issuances of common stock for share-based compensation, net of s	-		-		4000
Issuances (repurchases) of common stock, net	-103000		-49000		-
Purchases of non-controlling interests	-46000		-		-
Dividends paid, including to non-controlling interests	-181000		-184000		-178000
Net cash flows from financing activities	103000		-373000		143000
Effects of foreign exchange rate changes on cash	-27000		-21000		-
Increase (decrease) in cash & cash equivalents	-92000		-337000		401000
Cash & cash equivalents, beginning of period	328000		665000		264000
Cash & cash equivalents, end of period	236000		328000		665000
Interest paid	82000		72000		78000
Income taxes paid	187000		168000		120000

Appendix D

Ingredion Retained Earnings USD $ (Thousands)

As Reported Annual Retained Earnings			
Report Date	**12/31/2022**	**12/31/2021**	**12/31/2020**
Currency	**USD**	**USD**	**USD**
Audit Status	**Not Qualified**	**Not Qualified**	**Not Qualified**
Consolidated	**Yes**	**Yes**	**Yes**
Scale	**Thousands**	**Thousands**	**Thousands**
Previous retained earnings	3899000	3957000	3780000
Dividends declared	181000	175000	171000
Retained earnings	4210000	3899000	3957000

Appendix E

Ingredion Financial Ratio Data

Financial Ratios	Ingredion 2021	Ingredion 2022	% Change Ingredion: 2021-2022	Archer 2021	Archer 2022	% Change Archer: 2021-2022
Current Ratio	1.7837	1.7582	-1.43%	1.4538	1.4638	0.68%
Quick Ratio	1.0086	0.9097	-9.81%	0.7941	0.8532	7.44%
Cash Ratio	0.2169	0.1254	-42.19%	0.0430	0.0429	-0.23%
Total Debt	0.5545	0.5817	4.90%	0.5990	0.5932	-0.98%
Debt-Equity	1.2104	1.3592	12.29%	1.4825	1.4458	-2.48%
Equity Multiplier	2.2447	2.3905	6.49%	2.4940	2.4581	-1.44%
Times-Interest Earned	4.1892	7.6970	83.73%	15.6453	10.4697	-33.08%
Cash Coverage	4.1892	7.6970	83.73%	15.6453	10.4697	-33.08%
Inventory Turnover	4.7466	4.0401	-14.88%	0.3842	0.4368	13.70%
Day's Sales in Inventory	76.8974	90.3449	17.49%	950.1285	835.6192	-12.05%
Receivables Turnover	6.1009	5.6315	-7.69%	2.0822	1.6131	-22.53%
Days' Sales in Receivable	59.8274	64.8144	8.34%	175.2995	226.2761	29.08%
Payables Turnover	7.1873	7.3906	2.83%	12.4080	12.0449	-2.93%
Days'Cost in Payables	50.7837	49.3870	-2.75%	29.4166	30.3034	3.01%
Total Asset Turnover	0.9850	1.0509	6.69%	1.5186	1.6990	11.88%
Capital Intensity	1.0152	0.9515	-6.27%	0.6585	0.5886	-10.62%
Profit Margin	0.0181	0.0632	248.43%	0.0318	0.0427	34.48%
Return on Assets	0.0179	0.0664	271.75%	0.0483	0.0726	50.46%
Return on Equity	0.0401	0.1587	295.89%	0.1204	0.1785	48.29%
Price-Earnings	55.5402	13.1803	-76.27%	14.0813	12.0272	-14.59%
Price-Sales	0.9344	0.8096	-13.35%	0.4440	0.5001	12.64%
Market-to-Book	0.0561	0.0572	1.96%	0.0371	0.0370	-0.23%
From Stock Tracker (Price Per Share)	$ 96.64	$ 97.93		$ 67.59	$ 92.85	
Market Capitalization	7566699932					

Appendix F

Stock Tracker Spreadsheet:

https://docs.google.com/spreadsheets/d/1bvdWTvnvyR4MEQah61tnMVvFqZVPoefjSctHNjiu-60/edit#gid=0

References

Cavallo, A., & Kryvtsov, O. (2021, November 10). How the Pandemic Has Affected the Economy, from Empty Shelves to Higher Prices. PBS. Retrieved February 19, 2022, from https://www.pbs.org/newshour/economy/how-the-pandemic-has-affected-the-economy-from-empty-shelves-to-higher-prices

Chen, J. (2024, February 13). *Times interest earned ratio: What it is and how to calculate*. Investopedia. https://www.investopedia.com/terms/t/tie.asp#:~:text=The%20times%20interest%20earned%20%28TIE%29%20ratio%20is%20a,its%20debt%20obligations%20based%20on%20its%20current%20income.

Fernando, J. (2024, January 26). *Return on equity (ROE) calculation and what it means*. Investopedia. https://www.investopedia.com/terms/r/returnonequity.asp

Ingredion net sales worldwide 2022 | Statista. (2022). Statista. https://www.statista.com/statistics/521457/net-sales-of-ingredion-incorporated-worldwide/

Ingredion Incorporated (INGR) Statistics & Valuation Metrics - Stock Analysis. (2024). Stock Analysis. https://stockanalysis.com/stocks/ingr/statistics/

Ingredion Incorporated (INGR) Stock Price, News, Quote & History - Yahoo Finance. (2024). Yahoo.com. https://finance.yahoo.com/quote/INGR

Ingredion Investors. (2023). Ingredion Incorporated. https://ir.ingredionincorporated.com/

Ingredion Pharma Solutions. (2024). Ingredion Pharma Solutions. https://ingredionpharma.com/

Ingredion (INGR) Stock Price, Quote, News & Analysis - TipRanks.com. (2024). TipRanks. https://www.tipranks.com/stocks/ingr

INGR Stock Price | Ingredion Inc. Stock Quote (U.S.: NYSE) | MarketWatch. (2024). MarketWatch. https://www.marketwatch.com/investing/stock/ingr

Kindreich, A. (2017, February 10). *Ingredion has the recipe for Growth*. Morningstar, Inc. https://www.morningstar.com/stocks/ingredion-has-recipe-growth

Market, C. (2024, March 14). *Ingredion Incorporated's customer performance*. CSIMarket. https://csimarket.com/stocks/markets_glance.php?code=INGR

United States - English. (2023). Ingredion.com. https://www.ingredion.com/na/en-us.html?utm_source=google&utm_medium=cpc&utm_campaign=23-sem-100&utm_content=brand&gad_source=1&gclid=Cj0KCQjwwMqvBhCtARIsAIXsZpZh2hC_ztTUqYDKaKpQCXbOb86-9UVMhFBW010CgjaCQ4Dl6UVF5NAaArutEALw_wcB

Annual reports. Ingredion Incorporated. (n.d.). https://ir.ingredionincorporated.com/financial-information/annual-reports

Consumer spending. Consumer Spending | U.S. Bureau of Economic Analysis (BEA). (n.d.). https://www.bea.gov/taxonomy/term/706

EPA Press Office. (n.d.). Ingredion to Spend $8 Million in Settlement Over Violations Involving Emissions of Particulate Matter at Indianapolis Corn Wet Mill. EPA. https://www.epa.gov/newsreleases/ingredion-spend-8-million-settlement-over-violations-involving-emissions-particulate

gov, bea. (2024). Gross Domestic Product, Fourth Quarter and Year 2023 (Second Estimate). Bea.
Ingredion makes progress toward capacity expansion. United States - English. (n.d.). https://www.ingredion.com/na/en-us/news-events/news/ingredion-makes-progress-toward-capacity-expansion.html

The United States Government. (2024, January 11). December 2023 CPI report. The White House. https://www.whitehouse.gov/cea/written-materials/2024/01/11/december-2023-cpi-report/#:~:text=Inflation%20as%20measured%20by%20the,more%20analysis%20of%20today%27s%20report

Rickerby, M. (2024, March 6). The 8 biggest supply chain challenges in 2023. Extensiv. https://www.extensiv.com/blog/supply-chain-management/challenges

Wikimedia Foundation. (2024, March 6). Ingredion. Wikipedia. https://en.wikipedia.org/wiki/Ingredion#:~:text=In%202012%2C%20the%20company%20was,list%20and%20was%20renamed%20Ingredion.

Wpengine, K. (2020, June 4). What's your why? the top reasons why Americans want to Lose Weight. Calorie Control Council. https://caloriecontrol.org/whats-your-why-the-top-reasons-why-americans-want-to-lose-weight/

juice, better. (2024, January 17). Ingredion partners with better juice to offer Sugar Reduction Solutions. PR Newswire: news distribution, targeting and monitoring. https://www.prnewswire.com/il/news-releases/ingredion-partners-with-better-juice-to-offer-sugar-reduction-solutions-302036848.html

Ingredients trends take the spotlight in 2024. Innova Market Insights Your Insights Partner for Growth. (n.d.). https://www.innovamarketinsights.com/trends/ingredients-trends/#:~:text=Consumers%20look%20for%20energy%2C%20stamina,5.5%25%20in%202019%2D2020.

Ingredion Competitors and Similar Companies. CRAFT. (n.d.). https://craft.co/ingredion/competitors
U.S. Bureau of Labor Statistics. (n.d.). CPI Home. U.S. Bureau of Labor Statistics. https://www.bls.gov/cpi/