

FOOD AND NUTRITIONAL

Supply Chain Outlook 2023

MAY - ISSUE 27



ECONOMY

- FED RAISING RATES
- LABOR MARKET SLOWING

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Pricing Trends Key

- Price Increase 
- Price Increase Due to Current Events 
- Price Stable 
- Price Decrease 

Outlook 2023

The U.S. economy grew 1.1% in the first quarter and would have grown 3.4% if business inventories had not fallen so drastically. The economy has been remarkably resilient despite the Federal Reserve's actions to slow it down in order to reduce inflation to desirable levels. Inflation, as measured by the Consumer Price Index (CPI), slowed to 5.0% in April, the seventh monthly decline in a row, and unemployment fell slightly to 3.4%, a 53-year low. 253,000 jobs were added in April, which was above expectations. The March number was revised downward to 165,000 which offsets this positive surprise to a certain extent.

The Fed raised rates by 25 basis points on May 3 to 5.00-5.25%, the highest level in 16 years. It is hoped that they may pause further increases barring unforeseen surprises. The banking crisis continues to be a problem and rising interest rates make it more difficult to manage.

The labor market is slowing down a bit in response to the Fed's actions. There are 9.6 MM job openings available, about 1.6 for every available worker. Wage growth slowed to 5.1% year over year in April, which may give the Fed reason to slow their interest rate hikes a bit if this is sustainable. We are back to pre-pandemic levels for the most part. The labor force participation rate rose to 62.6% overall and 72% among younger workers aged 18-24, which is a good sign that things are returning to a more normal state.

Inflation, as measured by the CPI, increased 5.0% in March, but core inflation was 5.6%. The Fed's preferred gauge of inflation, the Personal Consumption Expenditures (PCE)-deflator increased 4.2%, the lowest number since 5/21. There are definitely some mixed signals here which make the Fed's job that much more difficult. Grocery prices rose 8.4% in March and were perhaps double that in Europe. U.S. food costs overall are up 18.3% from January 2021.

Consumer spending was fairly flat in February and March following a strong 2% increase in January. Savings rates had declined to 3% of income from 9% pre-pandemic. Consumers had been dipping into savings to support spending levels but have now turned more cautious as a possible recession looms. Savings rates are slowly rebuilding as spending eases.

Energy prices have been dropping. Brent crude, the international benchmark, is in the area of \$75/barrel and other less desirable grades such as West Texas Intermediate are trading in the \$70 area. Gasoline prices are averaging \$3.66/gal vs. \$5.02 last spring and wholesale diesel prices recently hit \$2.65/gal, about half its peak of \$5.34 in May 2022. Natural gas prices are down 65% since mid-December and 85% off their peak in August thanks to a slowing economy, a mild winter and supplies from Norway, Algeria, Qatar.

U.S. Healthcare spending increased 2.7% in 2021 to reach \$4.3 TR, about 18.3% of GDP. This follows 2020's hike of 10.3% due to Covid-19. This trend is helping the dietary supplement and functional food industries attract new consumers more than ever. Prevention of chronic disease and focus on healthy aging and immunity will continue to boost our fortunes in the years ahead.

The S&P Global Composite PMI Index rose to 53.5 in April, but there are wide disparities country-to-country in both the manufacturing and services indices. The composite index for other G-7 countries are similar, largely held up to positive levels by the services sector:

Eurozone	54.4
UK	53.9
US	53.5
Japan	52.5

There is tremendous uncertainty in the market which will continue in light of geopolitical problems around the world. It raises questions as to whether or not a recession is in our immediate future. Economists now feel there is about a 30% chance of a U.S. recession

ECONOMY

- GLOBAL MARKETS DOWN
- EUROPE IN RECESSION

sometime in 2023. A breach in the debt ceiling will increase these odds. The Conference Board's Consumer Confidence Index hit 104.2 in March, up slightly from February. The financial markets had been devastated in 2022 with all major averages under water, but there was some improvement to date.

YTD as of 4/30/23:

- S&P 500: **+8.6%**
- DJIA: **+2.9%**
- NASDAQ: **+16.8%**

Global Markets

Global markets lost about \$30 TR in value and cryptocurrencies shed \$1.7 TR, about 50% down from their peak in November 2021. In the meantime, the latest forecasts from the Fed as well as some well-respected private economic consulting firms show U.S. GDP growing only 1.6% in 2023 and 1.1% in 2024. The IMF lowered their global growth outlook to 2.8% for 2023 while the World Bank projects only 2.0% this year. In response to this weakness and uncertainty, gold prices rose 13% year-to-date to \$2,055 per oz., close to its all-time high of \$2,069.40.

China

China's GDP rose only about 2.8% in 2022 due largely to President Xi's "zero-Covid" policy which effectively shut down the country. It was the second slowest rate of growth in sixty years. Economists predict 5.0% growth in 2023, but a lot depends on Covid's possible disruption of production and supply chains. First quarter GDP came in at +4.5% driven largely by consumer spending and pent-up demand following the lockdowns. China's services PMI rose to 58.2 in March, the highest number in 12 years, but declined to 56.4 in April. Manufacturing PMI fell slightly to 51.9.

Chinese retail sales rose 10.6% in March which was exceptionally strong while industrial production increased 3.0% in the first quarter. Exports were up 14.8% year-to-year in April. China's trade total hit a record of \$6.3TR in 2022. Their population fell by 850,000 and their birth rate also dropped, a harbinger of demographic shifts to come. China's labor force is shrinking, about 20% of its population is 60+ and there

are 34 million more males than females thanks to their long-standing one child policy which they are now scrambling to reverse.

Recession

U.S. private label sales increased 11% in 2022 to \$229B as consumers became more stretched financially. National Brand sales increased 6.1% to \$981B. We are continuing to see trading down to cheaper brands as the large CPG companies raise prices to expand margins. Consumers are showing signs of hitting the wall on what prices they will accept.

The economy in Europe is now in or close to recession despite GDP growth of 3.5% in 2022. Economists now expect only 0.7% growth in 2023, with energy supply becoming a major problem later in the year now that Russian gas and oil is effectively eliminated from their supply chain.

The Bank of England and European Central Bank each raised interest rates by 50 basis points in February and indicated that this will continue in March in an effort to stem inflationary pressure, now down a bit to 6.9% in March from its 10.6% peak in October. The euro has rebounded to \$1.10/\$ from below parity last summer



CURRENT EVENTS

- DEBT LIMIT BATTLE
- US BANKING IN CRISIS

US Banking Crisis

- First Republic Bank was seized by regulators and sold to JPMorgan Chase, the latest casualty of a banking crisis that has seen other troubled lenders collapse in March.
- Silicon Valley Bank, one of the most prominent lenders to technology start-ups and venture capital firms, was the first to implode on March 10. Regulators seized Silicon Valley Bank, and later, Signature Bank, a New York financial institution with a large real estate lending business. The panic also led to Wall Street's biggest banks stepping in to give \$30 billion to First Republic and UBS's takeover of its rival, the Swiss bank Credit Suisse.
- As investors and bank customers have fretted over the stability of the financial system, federal officials have tried to ease concerns, taking steps to protect depositors and reassuring them they could access all their money.

Looming Debt Limit Battle

- House Democrats have taken their first procedural steps to try to force a House vote on a clean debt ceiling increase, multiple Democratic leadership aides tell CBS News, a long-shot effort that is unlikely to come to fruition but allows Democrats to argue that they are taking action to address the looming crisis.
- Democratic Rep. Jim McGovern of Massachusetts, the top Democrat on the House Rules Committee, introduced a special rule that would allow Democrats to attach a clean debt ceiling increase to an unrelated bill introduced by Rep. Mark DeSaulnier, of California, in January. The bill was introduced when Republicans took control of the House and referred to several committees for consideration with the intention of using it as a vehicle for Democrats to try to force a floor vote on anything they believed was necessary.
- The U.S. government could be as little as a month away from being unable to pay its bills if Congress does not act to raise or suspend the debt limit.

Ukraine – Russia Tension

- No ships carrying agricultural products left Ukrainian ports under the Black Sea Grain Initiative as the deal faces expiry. Ukraine's Navy has previously said Russia suspends vessels from moving to and from Ukraine's ports.
- Three ships carrying 119,925 metric tons of agricultural products left Ukraine's ports of Chornomorsk and Odesa. The ships are destined for China, Morocco and The Netherlands.
- Under the Black Sea Grain Initiative, a humanitarian sea corridor, more than 900 ships carrying nearly 29 million metric tons of agricultural products have departed from Ukraine's ports. Russia has previously said that it would not recognize an extension of the deal, which could expire in mid-May.

Trade

- The U.S. Dollar has fallen 8.3% from its peak in September 2022, which is the worst start to a year since 2008. Earlier in the year the dollar hit a 32-year high against the yen and was trading near parity with the euro. Those days are gone, at least for now.
- Ocean freight rates had fallen to close to pre-pandemic levels, but trans-Pacific shipping prices rose 34% in April to \$1,659 per 40-foot container, still well below the peak price of \$9,200 last year. Another aggravating factor is the shortage of local truck drivers and warehouse space as inventories swell under the threat of a possible recession. The International Longshoremen and Warehouse Union is still negotiating a potential agreement with West Coast port authorities. UPS is in negotiations with the Teamsters Union, and neither seems close to a settlement.
- The U.S./China relationship in the meantime is worsening. Companies are trying to diversify their supply chains outside of China to the extent possible due to such a high level of geopolitical uncertainty. Taiwan's future, tacit support of Russia in their war with Ukraine, freedom of navigation in the South China Sea and Taiwan Strait are all potential areas of conflict with one of our largest trading partners. China's share of U.S. import container volume to-date dropped to 32% from 42% in the same period of 2022..

Weight Loss Market Set to be Disrupted

- Nutrition Business Journal projects the combined sports nutrition and weight loss market at \$62.54B, up 9.9% in 2022 following a 21.6% increase in 2021. Of this total, \$40.74B (65%) is sports hydration and energy beverages. The weight loss sector is about \$10B, 16% of total sales.
- Taking a broader view, the U.S. weight loss industry is approaching \$80B per year overall. About 42% of the U.S. adult population is obese with big implications for chronic conditions like diabetes, cardiovascular disease, joint problems, etc. In the developing world, weight control has been among the most intractable problems, especially as the population ages.
- A class of drugs, the glucagon-like peptide-1 receptor agonists (GLP-1) products, originally developed to treat type-2 diabetes, have been shown to be highly effective for weight loss in obese individuals. Known under the brand names Ozempic, Wegovy and Mounjaro, it is predicted that they could become a huge category under the right conditions. The annual cost runs \$10,000-16,000 per year and may not be covered by health insurance if weight loss, rather than diabetes, is the rationale for prescribing them.
- One estimate shows that if one-third of severely obese patients begin to take them, it would be a \$80B market globally. It could revolutionize the market and improve the health status of many millions of people. It could also cannibalize more traditional products and approaches to this serious problem. Stay tuned!

FAT SOLUBLE

VITAMINS

Trending Vitamins:

- FOLIC ACID
- VITAMIN C
- CYANOCOBALAMIN
- VITAMIN D

Vitamin A: Prices for Vitamin A have stabilized and supplies are generally good. BASF has announced that they are planning to build a new citral plant at their Chinese “Verbund” facility. They will continue to dominate the market with 118,000 mt of capacity once it is completed in 2025-6.



Vitamin D: Prices on Vitamin D have remained stable and are starting to show some signs of strength. Feed industry demand is especially weak, but any signs of improvement could lead to higher prices.



Vitamin E: Demand is stronger than supply across the market. Price is trending up due to energy and logistical issues stemming from the War in Ukraine. Natural VE is extremely tight and expensive due to dynamics in the soy oil and deodorizer distillate markets, where Argentinian harvests are reported to be the worst in 34 years.



Vitamin K: Current pricing for vitamin K1 is stable. Most users prefer a 1% or 5% trituration. New uses in bone health and other condition-specific formulations, especially with vitamin K2, is

making this formerly minor vitamin a more interesting story. Pricing and demand are stable. Vitamin K3 remains tight and is the only Chinese vitamin to increase in price during 2022.



Vitamin prices have somewhat stabilize, but some have seen increases

Pricing Trends Key

Price Increase

Price Increase Due to Current Events

Price Stable

Price Decrease



WATER SOLUBLE

VITAMINS CONT.

Trending Vitamins:

- FOLIC ACID
- VITAMIN C
- CYANOCOBALAMIN
- VITAMIN D

Vitamin C: Vitamin C prices are continuing to increase due to tight supply and increased shipping costs. Demand has also spiked in China. This is one product to watch closely in the coming weeks and months, especially as some capacities have been taken off-line, including DSM Jiangshan, NCPG Weisheng and Anhui Tiger. Supply is currently adequate, and several new entrants may start to pressure pricing as we enter Q3 & Q4 2023 and into 2024. The current nameplate capacity for ascorbates in China is approaching 300,000 mt, about a 50% over-supply if all plants are producing all out. Extended shutdowns are planned this summer which could tighten the market considerably despite new entrants and chronic overcapacity.



Vitamin B1 (Thiamine):

The B1 market has stabilized at a low price, but some slight strengthening has become apparent. All manufacturers are producing and several new entrants are coming. New supplies of intermediates are also being planned by the major players.



Vitamin B2 (Riboflavin):

Riboflavin USP and food grade pricing are firm and rising slightly. Supplies are adequate. Several new entrants have begun manufacturing and

potential capacity increases can be expected by the majors.



Vitamin B3 (Niacin/ Niacinamide):

Pricing has stabilized in recent months even as pyridines have tightened up. Longer term, oversupply is developing, but in the short term, we are seeing some demand increases and rising prices.



Vitamin B5 (Calcium Pantothenate):

Intermediate shortages have led to significant swings in price, but a wave of new entrants and cleaner production techniques may weaken prices, especially if the feed industry remains in the doldrums. Pricing has been very stable.



Vitamin B6 (Pyridoxine):

B6 pricing has been stable as supplies have improved and demand has decreased. Pricing has strengthened slightly in recent weeks.



Vitamin B7 (Biotin):

After reaching exceptionally soaring prices in 2020, B7 prices began to fall and have now stabilized at a low level. About 85% is used in feed which has been weak this year. Any improvement will lead to rising prices.



Vitamin B9 (Folic Acid):

The market is displaying volatility; prices are currently on the rise due to raw material availability and logistics-related issues. Feed industry demand remains very weak. New entrants could weaken prices later this year.



Vitamin B12 (Cyanocobalamin)

The B12 market is stable but prices are expected to rise due to increased raw materials costs. Any increase in feed demand could also push prices up a bit.



Pricing Trends Key

Price Increase

Price Increase Due to Current Events

Price Stable

Price Decrease

Price Stable to Rising

MINERALS

- SOME MINERALS HAVE SEEN PRICE INCREASES
- PRODUCTION AND TRANSIT ISSUES ARE PART OF ESCALATION

Trending Minerals

- Iron
- Magnesium Sulfate
- Magnesium Oxide
- Magnesium Citrate
- Zinc Gluconate
- Zinc Citrate
- Zinc Oxide

Calcium Carbonate: Visit the Granulations section on page 10 for more information about our directly compressible version of SuperTab® oyster shell calcium carbonate.

- SuperTab® Oyster Shell Granulation (OSG) 2000 AM
- SuperTab® Oyster Shell Granulation 2100 Malto
- SuperTab® Oyster Shell Granulation 2300 Acacia

Pricing Trends Key

- Price Increase 
- Price Increase Due to Current Events 
- Price Stable 
- Price Decrease 

Copper: Prices have stabilized but demand remains high.



Iron: Iron prices have stabilized after volatility and increases were experienced at the beginning of the year. Supply and lead times have normalized since early 2022 as well.



Electrolytes

Calcium: Energy restrictions affected the production of Calcium in a negative way and market prices increased.



Magnesium: Magnesium market price and supply are stable.



Potassium: Potassium prices and availability are stable.



Phosphorus: Global demand and pricing continue to increase.



Sodium: Sodium prices are on the rise due to production and transit issues, limiting availability.



Zinc

Production levels were low in Q4 2021, so supply decreased, and demand continues to rise.



Zinc Gluconate: The price of Zinc Gluconate is stable however, lead times are increasing.



Zinc Oxide: Prices for Zinc Oxide are on the rise and lead times can be longer than average.



Zinc Sulfate: Zinc Sulfate prices remain stable however, lead times are increasing.



Zinc Ascorbate: The price of Zinc Ascorbate is stable; however, lead times are longer than average.



Zinc Citrate: Prices are on the rise with longer lead times continuing.



MINERALS CONT.

- SOME MINERALS HAVE SEEN PRICE INCREASES
- PRODUCTION AND TRANSIT ISSUES ARE PART OF ESCALATION

Chelates

Zinc Amino Acid Chelate: Prices and lead times for zinc amino acid are increasing.



Zinc Bisglycinate Chelate: Prices for zinc bisglycinate are increasing and lead times are longer than average.



Zinc Glycinate Chelate: Zinc Glycinate is experiencing longer than average lead times, but prices remain stable.



Copper Glycinate Chelate: Copper Glycinate prices are stable and expected to remain so.



Manganese Amino Acid Chelate: Manganese Amino Acid shows an increase due to raw material availability and longer than average lead times.



Trace Minerals

Chromium: Chromium prices remain stable but can be difficult to source due to long lead times.



Molybdenum: The molybdenum market is experiencing longer than normal lead times, but prices are remaining stable.



Selenium: Lead times have increased; however, prices are stable.



Pricing Trends Key

Price Increase

Price Increase Due to Current Events

Price Stable

Price Decrease



PREMIXES

- MANUFACTURERS ARE SWITCHING TO PREMIXES
- PANDEMIC HAS CHANGED THE WAY PROVIDERS OFFER SERVICES

Custom Nutrient Premixes

More and more manufacturers are switching to vitamin and mineral premixes. Premixes consolidate multiple nutrients into a quality-assured, single-step ingredient and deliver economies of scale by simplifying ingredient procurement from a single source.



TWG SuperBlend®

Our value-added SuperBlend® custom nutrient premixes deliver performance and stability in high temperature and shear processes in a variety of food and beverage products, including:

- Extruded bars
- Gummy supplements
- Breakfast cereals
- Ready to drink beverages
- Beverage mixes



MICROENCAPSULATION

- AN EFFECTIVE METHOD OF MASKING UNWANTED FEATURES
- DELIVER A WIDE-RANGE OF FUNCTIONAL INGREDIENTS



Microencapsulation Technology

Vitamins, minerals, and other nutrients possess unique characteristics that can affect the appearance, color, and odor of the final product. Microencapsulation is an effective method of masking unwanted sensory characteristics while maximizing nutrient function.

SuperCoat[®], our most recent innovation using our proprietary SMART[™] process, envelops particles at the microscopic level in a protective shell. This value-added coating technology delivers superior performance and stability of essential nutrients for a wide range of multi-functional ingredients.

Trending Microencapsulated Nutrients:

- Vitamin C
- Vitamin B5 (Calcium Pantothenate)
- Vitamin B9 (Folic Acid)

With a diverse portfolio of products, TWG Health + Nutrition is one of only a select group of manufacturers with the technology and resources to deliver independent manufacturing of custom premixes, microencapsulated nutrients, and granulations.

Our comprehensive supply chain and extensive list of pre-qualified ingredients allows us to react quickly to changing market trends and help you keep up with consumer demand. We also understand that superior service is just as important as technology and expertise. That's why we provide you with prompt quotations, technical assistance, and support documentation to help you efficiently deliver your products on time. Contact us today to talk to one of our experts about your project needs or ask about any ingredients not listed here.



GRANULATIONS

- DELIVER ESSENTIAL NUTRIENTS IN GRANULAR POWDERS IDEAL FOR HIGH SPEED TABLETING
- CAN BE INCORPORATED INTO DRUM-TO-HOPPER TABLET BLENDS



Granulations

Rather than outsource granulations from a third-party manufacturer, TWG Health + Nutrition has committed to developing technologies and processes in-house to effectively and efficiently manufacture **SuperTab® direct compressible granulations**.

SuperTab® granulations deliver essential nutrients in uniform, free-flowing, granular powders ideal for high speed tableting processes. As usual TWG Health + Nutrition combines quality, innovation and superior knowledge to make sure your product is the best it can be. Ask about our granulation capabilities today!

Trending Granulations:

- Glucosamine
- Chondroitin
- Vitamin C

Oyster Shell Granulation

SuperTab® Oyster Shell calcium carbonate is sourced from an above sea level deposit, characterized as fossilized oyster shell beds. These oyster shell beds have been thoroughly vetted over the past ten years with testing of the material both analytically and physically to insure consistency and purity. TWG Health + Nutrition sources the high purity genuine shells exclusively from a domestic supplier.

Contact us today to get started on your next dietary supplement product containing calcium carbonate granulations. Insist on SuperTab® Oyster Shell authenticity in your formulation.



SUPER-TAB®
Direct Compressible Granulations

blending performance & stability

For over 100 years TWG Health + Nutrition has utilized our extensive ingredient knowledge to consistently deliver quality- assured custom nutrient premixes, microencapsulations, and granulations.



Call us: **(800) 201-3096**

Visit us online: twghealthandnutrition.com

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