FOOD AND NUTRITIONAL

Supply Chain Outlook 2024

JUNE | ISSUE 36



Economic Outlook • Vitamins & Minerals Premixes • Microencapsulations

ECONOMY

INFLATION DECELERATES IN THE U.S.POSSIBLE GRADUAL RATE CUT IN EUROZONE

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Pricing Trends Key



Economic Outlook

United States - May 2024 data showed a deceleration in headline and core inflation. If the recent decline follows a pattern through the remainder of the year, it can influence changes in the current monetary policy. Investors expect rates to be cut in September as inflation rates stay consistent going into Q2. However, based on the economy's weakness, there is a strong chance the Fed will keep rates steady. Most inflation in the US comes from services, as retail sales remain unchanged for months. Consumer spending is low, and labor participation still needs to improve as service prices grow. Wage growth is still raising concerns in the tight labor market as supply and demand in the market start to level. Despite a hiring boost, the unemployment rate was up to 4% in May. The influx of immigrants, specifically those seeking work, has contributed to higher wages. Market movement YTD as of 06/11/24:

• DJIA: +2.81%

- S&P 500: +12.69%
- NASDAO: +15.54%

Eurozone

Inflation in the Eurozone has slightly increased this month, with consumer prices accelerating and energy prices rebounding after a fall in April. Food prices have decreased, and the cost of services is on the rise, especially compared to the previous year. It is likely that the European Central Bank is considering a rate cut, provided there are no significant changes in the economy. If this decision is implemented, the rates will be reduced gradually over time to facilitate economic stabilization. While inflation in Europe is lower than in the United States, the US has experienced stronger economic growth than the EU. Similar to the US, the EU is grappling with high service costs. The region is particularly struggling with low labor productivity, and employers are increasing prices to offset the high labor costs.

East Asian Nations

N STVETSIN

Japan - Inflation rates in Japan have been steadily declining and are approaching the Bank of Japan's target rate. Unlike other countries, Japan chose not to implement a tight monetary policy at the onset of the inflation crisis. Instead, the Bank of Japan tightened the monetary policy at the beginning of this year when supply chain disruptions were not identified as the primary cause of inflation. The yen has continued to depreciate due to the unchanged US monetary policy and the difference in interest rates between the US and Japan. This depreciation of the yen could prompt the Bank of Japan to tighten its monetary policy further despite the recent economic recovery and success.

China - In China, inflation is low, but so is consumer spending despite the excess supply. Producer prices are nearing two years of decline as excess capacity remains a critical problem. While the central bank has the option to loosen the monetary policy further, the benefits of introducing a fiscal policy can fuel economic activity. Consumer demand is low, and there are very few residential property investments because many households focus solely on saving rather than spending. Most economic growth is fueled by the government's investments in emerging technology to support infrastructure and manufacturing. Recent data shows growth in both industrial production and manufacturing with the government's support to increase technology production despite the absence of an export target.

Russia

Inflation is rising in Russia as it battles economic issues and high manufacturing costs to fund the current war with Ukraine. The Bank of Russia has decided to keep rates high and expects them to remain steady for an extended period of time. Economists predict the Bank of Russia will raise rates by 1% at the next meeting in July and have no plans to lower rates this year.

CURRENT EVENTS

- NEGOTIATIONS ON GAZA CEASEFIRE
- **RISING TRANSPORTATION COSTS**

China's Currency Push

- China's government is pushing for its renminbicurrency to hold more value globally. Currently, the US dollar is the dominant form of currency internationally. To reduce the exclusive privileges the US receives from the value of its currency, China wants more global transactions to happen through the renminbi and for central banks to be equipped with renminbi assets. To encourage this change, China has conducted exchange programs with partnering countries that require direct transactions with the renminbi and the country's currency, eliminating the US dollar. While the success of this transition is slow, the transaction rate using the renminbi is increasing.
- Capital controls are preventing China from its goal of internationalizing the renminbi via regulatory laws. Where the US dollar can be invested in assets globally, the Chinese renminbi can only be invested in assets in China, where China exclusively enjoys the benefits. China would have to disable international capital control to enable its currency as a competitor to the US dollar, a decision very few outside of China would be interested in considering.

US-Israel Ceasefire Talks

- The US is desperately trying to maintain negotiations with Israel regarding a cease-fire in Gaza, but Israel has growing skepticism of Biden's foreign relations plans. Tensions are high as Israel conducted a hostage rescue in Nuseirat on Saturday, leaving almost one hundred killed or wounded. Yahya Sinwar, Hamas leader in Gaza, explained his conditions for accepting Biden's peace deal. Sinwar demands that Israel agree to a permanent cease-fire and withdraw Israeli troops from Gaza.
- Biden's plan also includes the release of hostages held by Hamas and a reconstruction program for Gaza. Israel and Hamas are both hesitant to agree to the terms of Biden's plan unless it can meet the conditions of both groups and guarantee a resolution to the war. The US will continue its humanitarian aid efforts in Gaza as the peace deal is discussed further
- During his visit to France last week, President Biden announced the US and France's aligned support for Ukraine against Russia. A long-term plan for defense was discussed and will be implemented to help Ukraine and prevent Russia from extending its attack on other countries. As of Saturday, Russia has

conducted strikes and armed attacks on Ukraine. The US and France have agreed to continue supplying Ukraine with aircraft and other military aid as Russian aggression continues.

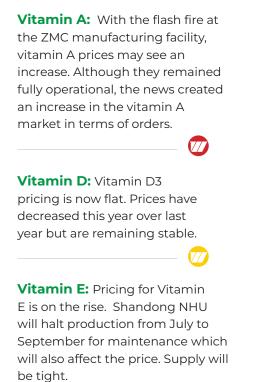
Vitamin Supply

- As we enter the peak transportation season, transportation costs are expected to rise even higher. Adding to these costs are shipping container shortages, longer transit times and weather issues. These costs are expected to no longer be absorbed by the manufacturers and will start to be seen in the cost of goods.
- The vitamin market has seen an increase in activity. Vitamin prices have remained strong and some varieties are continuing to rise.
- There will be factory shutdowns in the near future which means manufacturers have already stopped quoting which will in turn also continue to drive up prices.



FAT SOLUBLE VITAMINS: • VITAMIN K

• VITAMIN B



Vitamin K: Current pricing for vitamin K1 has stabilized.



Vitamin supply faces challenges

with rising transportation costs and shipping container shortages, keeping prices strong, while upcoming factory shutdowns are expected to further impact availability.



WATER SOLUBLE VITAMINS: • VITAMIN K

• VITAMIN B

Vitamin C: Vitamin C prices were at their lowest due to a large supply and decreased demand in 2023. Now in Q2 of 2024, we are seeing those costs continue to rise, and are expected to continue to increase throughout 2024. Chinese manufacturers will manage pricing through adjusting their production of material. Some of the price increases are being implemented to absorb added transportation costs.

Vitamin B1 (Thiamine):

The B1 market pricing has begun to strengthen since 2024 contracts have been established. Look for this increase to continue through 2024. Supply from the main manufacturers is tight.

Vitamin B2 (Riboflavin):

Riboflavin USP and food grade pricing have stabilized. 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 as there is no longer a raw material shortage. Longer term, oversupply is developing. Prices may strengthen in the short term.

Vitamin B5 (Calcium

Pantothenate): B5 pricing has stabilized.

Vitamin B6 (Pyridoxine): B6

pricing has begun to strengthen. The top 3 manufacturers have lost money due to oversupply and are increasing to thwart any more financial losses.

Vitamin B7 (Biotin): B7 pricing has been at historical lows due to weak demand. Pricing at this point remains stable as there is no more room to go any lower.

Vitamin B9 (Folic Acid):

The B9 market has stabilized after seeing historical lows at the end of 2023.

Vitamin B12 (Cyanocobalamin)

The B12 market is on the rise due to manufacturing shutdowns and plant maintenance. Manufacturers are losing money and are looking for opportunities to increase pricing.





MINERALS

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

Trending Minerals

- Chelates
- Zinc Gluconate
- Magnesium Citrate
- Zinc Citrate

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

Copper: Prices have stabilized but demand remains high.

Iron: Iron prices have stabilized, and supply is available. We are seeing some cost increases strictly due to the rise in transportation costs.

Electrolytes

Calcium: Calcium prices have stabilized.

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 have stabilized.

Zinc

Zinc prices and availability have stabilized.

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 showing an increase with longer lead times continuing.



MINERALS

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

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Chelates

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

Zinc Bisglycinate Chelate: Prices for zinc bisglycinate have stabilized.

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.



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

Custom Nutrient Premixes

ANDINERAL

DRINK MIX Net wt o. da. d7. 12

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 multifunctional 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 prequalified 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.



Direct Compressible Granulations

Quality Without Compromise

Dedicated to the health and nutrition market, we are the custom premix, granulation, microencapsulation & beverage products partner you can trust to help deliver high-caliber products to market faster.





Scan to

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