A Note from the Authors

- This is the **International Demand Analysis** from the Dairy Economics Team at National Milk Producers Federation (NMPF) and the U.S. Dairy Export Council (USDEC). This monthly report outlines the latest global dairy trade trends and data combined with our own commentary analyzing demand in key markets for **cheese**, **NFDM/SMP**, **whey (0404.10)** and **WPC80+**, alongside shorter summaries for **lactose**, **butterfat** and **WMP** – all with a forward-looking lens and US exporter viewpoint.

- **Data Notes**
  - All comparisons are year-over-year unless otherwise noted.
  - 3-Year CAGR is calculated from most recent 12-months and not from calendar year.

- If you have any questions, comments or suggestions on how to improve the report, send us an email at:
  - **wloux@usdec.org**
  - **scain@usdec.org**
Global Dairy Demand Market Commentary

KEY TAKEAWAYS

- Global dairy trade ran sideways again in October, climbing just 1% (+9,830 MT MSE), putting year-to-date volume 0.3% behind 2022 (-29,565 MT MSE). For context, between 2010 and 2020 (predating the post-COVID China boom), global trade grew on average 4% per year.

- The primary hinderance to growing trade of late has been China. As we mentioned last month, after rebounding slightly in the first half of the year, China’s demand has regressed. Total trade to the country dropped 16% in October (-26,255 MT MSE) with declines across most major products. Only cheese, cream and lactose (which we wrote 600+ words on earlier this month) posted notable gains in the country.

- Most importantly, China’s WMP demand dropped in half (-48%, -19,700 MT) even as it was lapping over favorable comparisons. Effectively, October WMP demand in China was a quarter of what it was in October 2021 as we head into China’s traditional buying season. This in turn has freed up a substantial amount of New Zealand milk for other uses and products – even as milk production in the country underwhelms.

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Global Milk Solids Trade

<table>
<thead>
<tr>
<th></th>
<th>October YoY</th>
<th>YTD, Ending October</th>
<th>Last 12-Months, Ending October</th>
<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>+1.1%</td>
<td>-0.3%</td>
<td>-1.1%</td>
<td>-0.5%</td>
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October Standout Markets

- CHINA+HK: -26,255 MT (-16%)
- SOUTHWEST ASIA: +5,478 MT (+24%)
- MENA: +14,899 MT (+10%)
- SOUTHEAST ASIA: +9,569 MT (+6%)

ADDITIONAL NOTES

Gratefully, outside of China, the rest of the market appeared relatively robust even though no single market was decisive. MENA reported the strongest growth (+10%, +14,899 MT) thanks to improved WMP demand as buyers, particularly from Algeria, took advantage of affordable prices from NZ. Additionally, trade to Southeast Asia posted its best month in over a year, both in terms of total volume and year-over-year gains, but the improvement was still relatively modest (+6%, +9,569 MT). Similar to MENA, buyers in the region took advantage of NZ exporters being aggressive on WMP sales with China absent. Gratefully, low-protein whey to the market did increase for a second consecutive month and declines in many other products moderated or even turned slightly positive, suggesting SEA demand may have finally found a floor – ideally portending a recovery in 2024.

Source: NMPF/USDEC, TDM
Global Dairy Demand Market Commentary

LOOKING AHEAD

- The global dairy market remains sluggish as we finish 2023, and we expect below-average growth to continue at least through the first half of 2024. The global economy continues to grapple with high inflation even as rates in the U.S. and Europe ease further. Adding onto this, even as inflation stubbornly persists across most of the world, many economic forecasters are predicting global GDP growth to slow in 2024, especially in developed markets. Effectively, inflation is easing in developed markets, but economic growth is likely to be (at best) lackluster. Whereas in emerging markets, economic growth is expected to be better, but inflation will continue dampening consumer purchasing power.

- Beyond the macroeconomic headwinds, dairy markets must also grapple with an absent China. Positively, China has been growing its cheese and lactose imports, but the rest of the complex remains under pressure. With limited growth from the world’s largest dairy importer, demand improvement must be driven collectively from the other major markets as no one market can make up the volume expansion that had traditionally been allocated to China. While demand from declining markets (SEA, Japan, Korea, SSA) should stabilize and limit the market’s downside, some regression in MENA and slower growth in LATAM is anticipated. Thus, even with improvement expected in several key markets, we expect global demand growth to be limited in H1 2024.

U.S. Milk Solids Exports¹

-8.1%  
October YoY  
YTD, Ending October

-7.1%  
Last 12-Months, Ending October

-4.0%  
3-Year CAGR

EU Milk Solids Exports

+1.9%  
October YoY  
YTD, Ending October

+2.4%  
Last 12-Months, Ending October

+1.0%  
3-Year CAGR

NZ Milk Solids Exports

+12.7%  
October YoY  
YTD, Ending October

+9.1%  
Last 12-Months, Ending October

+4.5%  
3-Year CAGR

ADDITIONAL NOTES

Recognizing the lag in global trade data, the average unit value of nearly all the major dairy ingredients (WMP, SMP, FFMP/Blends, low-protein whey, WPC80+, and lactose) have returned to 2020 levels. These prices should be attractive for buyers, but demand is still quiet for most markets. Perhaps we are seeing some inventory build in select markets where demand is more robust (e.g. MENA milk powders, India whey), but given interest rates and demand uncertainty, buyers’ willingness to hold excess inventory is still diminished. This may have several knock-on effects, including elongating the period of low prices (if low prices fail to incentivize additional buying) or, conversely, increasing the frequency of short squeezes (if supply shrinks and major buyers aren’t sufficiently covered). Regardless, plenty of uncertainty (and volatility) remains in the marketplace.

1U.S. Milk Solids Exports reflect trade data aggregated from 6-digit HS codes (global HS codes are harmonized at the 6-digit level). This number will differ slightly from U.S. Milk Solids Exports reported in our U.S. Trade Data Release which takes a more granular look at U.S. specific, 10-digit HS codes.
Global Dairy Trade

Global Dairy Trade
(Milk Solids Equivalent, Rolling 12 Months)

Source: NMPF/USDEC, TDM

**MENA**
+10%
(+14,899 MT)

**UK**
+2%
(+1,020 MT)

**EU27**
-6%
(-2,440 MT)

**ROW**
+2%
(+3,089 MT)

**Mexico**
+6%
(+3,674 MT)

**S. Am**
+2%
(+708 MT)

**SEA**
+6%
(+9,569 MT)

**Japan**
-3%
(-994 MT)

**China**
-16%
(-26,255 MT)

**SSA**
-1%
(-224 MT)

Note: Size of bubble denotes total imports
Source: USDEC, Trade Data Monitor
Global Dairy Spot Prices

Average US, EU, & NZ Wholesale Prices for Select Dairy Products

Source: NMPF-USDEC, CME, NDPSR, Eurostat, EEX, GDT
Cheese
Cheese Market Commentary

KEY TAKEAWAYS

• Global cheese trade was surprisingly positive in October after several stagnant months in a row. Global exports jumped 12% for the month as volumes from most of the major exporters increased (the U.S. was the lone exception though it only decreased by 4% - also an improvement from prior months).

• Perhaps most positively, nearly every market increased in October; only Japan and Korea continued their decline. Demand in China remains robust (+74%, +7,882 MT), driven by strong pizza sales as Pizza Hut China and Domino’s highlighted pizza’s relative affordability to cost-conscious consumers. Still, LatAm remains the star of 2023. Cheese shipments to Mexico jumped 43% (+4,725 MT) at the same time South America (namely Chile and Brazil) continued to grow (+16%, +1,511 MT). A strong peso and economic growth from Mexico combined with relatively resurgent tourism throughout the region is helping boost demand in the Americas. Perhaps most surprisingly, premium cheese sales to the U.S., the UK and Canada all jumped.

Global Cheese Trade

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<tr>
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<th>October YoY</th>
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<th>3-Year CAGR</th>
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<tbody>
<tr>
<td></td>
<td>+12.2%</td>
<td>+2.1%</td>
<td>+2.0%</td>
<td>+1.4%</td>
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</table>

October Standout Markets

- **KOREA**
  -4,351 MT (-31%)

- **CHINA+HK**
  +7,882 MT (+74%)

- **UNITED KINGDOM**
  +4,122 MT (+12%)

- **MEXICO**
  +4,725 MT (+43%)

ADDITIONAL NOTES

Digging into the export codes, we identify several key trends across the various cheese varieties. For one, the only U.S. variety growing is the shredded category, which is predominantly mozzarella, thanks to sales to Mexico, China and Central America. Conversely, New Zealand has grown by double digits across the big three varieties of cheddar, cream cheese and mozzarella. However, the growth was almost entirely driven by China though fresh varieties (cream cheese and/or mozz blocks) did improve significantly to Japan. For the EU, the big three varieties performed well though mozz sales were slower in October than past months. Instead, cream cheese, cheddar, gouda and edam provided much of the volume growth in October – with the varieties destined for the UK, MENA and Chile, respectively. Notably, hard Italian varieties, feta, and specialty had their best performance in months.

Source: NMPF/USDEC, TDM
Cheese Market Commentary

LOOKING AHEAD

- Japan and Korea continue to be the primary markets lagging in 2023. Through October, cheese trade to Japan fell by 12% (-27,314 MT) and Korea dropped by 16% (-22,719 MT). Given that Japan and Korea are the U.S.’ second and third largest markets in most years (and arguably the most competitive), a sharp downturn in their demand has significant negative consequences for U.S. exports.

- In both markets, foodservice sales have struggled on the back of broader economic struggles. Both the Yen and Won have weakened versus the dollar, making imports more expensive. Additionally, the consumer price index for dairy in Japan has sharply outpaced the rest of the economy and food in general, making dairy products a more expensive choice (the YOY change in the CPI for dairy peaked at around 20% in September versus 9% for all food and 4% for the general CPI). On top of those negatives, tourism has fallen in both markets (down 41% compared to pre-COVID levels in Korea; -29% in Japan). Gratefully, the long-term future looks brighter as McDonald’s is planning to increase stores in Korea by 25% by the end of the decade and inflation is expected to slow in 2024. Even still, we expect cheese demand to struggle returning to 2022 volumes next year.

U.S. Cheese Exports

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<tr>
<th></th>
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<th>Last 12-Months, Ending October</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>-4.0%</td>
<td>-4.5%</td>
<td>-1.6%</td>
<td>-0.5%</td>
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EU Cheese Exports

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<thead>
<tr>
<th></th>
<th>October YoY</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+14.3%</td>
<td>+2.4%</td>
<td>+1.5%</td>
<td>+0.5%</td>
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NZ Cheese Exports

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<tr>
<th></th>
<th>October YoY</th>
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<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+30.6%</td>
<td>+19.1%</td>
<td>+18.1%</td>
<td>+5.7%</td>
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ADDITIONAL NOTES

One market we haven’t touched on recently is the Middle East-North Africa, which deserves a closer look this month as the region is building momentum heading into 2024. After lagging during the first couple months of 2023 and then leveling out over the summer, the region has returned to modest growth the last three months, which puts year-to-date shipments at effectively flat for the year (-1%). Interestingly, Egypt’s economic challenges and prospect of burdensome halal requirements has sharply reduced demand in the country (though imports improved in the last three months) at the same time Saudi Arabia and UAE are quiet. Instead, stronger demand from some unexpected markets (Turkey, Jordan, Lebanon, Libya) has largely made up for the weakness in the three largest cheese markets in the region.
Global Overview: Cheese

Global Cheese Trade to World

Source: NMPF/USDEC, TDM
Global Overview: Cheese

Global Cheese Trade to World

Source: NMPF/USDEC, TDM
Global Overview: Cheese – Last 12 Months

Source: NMPF/USDEC, TDM

International Demand Analysis
Global Cheese Trade to Mexico

Source: NMPF/USDEC, TDM
Korea

Global Cheese Trade to Korea

Source: NMPF/USDEC, TDM
Global Cheese Trade to Japan

Source: NMPF/USDEC, TDM
Australia

Global Cheese Trade to Australia

Source: NMPF/USDEC, TDM
Global Cheese Trade to MENA

Source: NMPF/USDEC, TDM
Southeast Asia

Global Cheese Trade to SEA

Source: NMPF/USDEC, TDM
Global Cheese Trade to China+HK

Source: NMPF/USDEC, TDM
NFDM/SMP Market Commentary

**KEY TAKEAWAYS**

- NFDM/SMP was one of the few products to see a decline in October, dropping 6% (-11,945 MT) year-over-year. However, it should be noted the decline comes on the heels of a surprisingly robust September (and we always recommend avoiding reading too much into a single month).

- In October, Sub-Saharan Africa posted a modest increase (+15%, +1,156 MT) as did the EU27 (112%, +1,525 MT) due to the UK’s SMP trade to the continent increasing. Otherwise, the four major markets that typically drive NFDM/SMP trade (SEA, MENA, Mexico and China) all declined.

- Taking a longer view, it’s clear that after a relatively robust first half (+10%), NFDM/SMP trade has flattened, decreasing 1% since July, even as prices slid. Notably, after building inventory in the first half, trade to MENA has stagnated in the last three months and declined for the first time this year in October. Similarly, shipments to Mexico have flattened, likely due to sufficient inventories, challenges at the U.S. border and a modest weakening in the peso.

- Still, of the four major markets, China’s regression is perhaps the most concerning given the fact that October volumes were comparable to 2017 levels and slid counter-seasonally.

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**Global NFDM/SMP Trade**

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<tr>
<th></th>
<th>October YoY</th>
<th>YTD, Ending October</th>
<th>Last 12-Months, Ending October</th>
<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFDM/SMP Trade</td>
<td>-6.4%</td>
<td>+5.8%</td>
<td>+6.2%</td>
<td>+0.3%</td>
</tr>
</tbody>
</table>

**October Standout Markets**

- **CHINA+HK**: -7,172 MT (-28%)
- **MEXICO**: -1,677 MT (-4%)
- **CARIBBEAN**: -2,967 MT (-64%)
- **SOUTHEAST ASIA**: -2,369 MT (-5%)

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**ADDITIONAL NOTES**

Gratefully, Southeast Asian demand appears to be bottoming out. Even though the market has declined 14 out of the last 15 months, the decline has notably flattened with shipments from the US, New Zealand, the EU and Australia all stabilizing (suggesting it’s not just re-routed NZ product at low prices). Vietnam’s rebound in 2023 has been critical to the recent improvement at the same time Malaysia and Thailand both posted volumes that surpassed not just 2022 levels, but 2021 in fact. Unfortunately, Indonesia recorded an exceptionally weak month, falling 43% year-over-year (-8,757 MT). While it would be premature to declare that Southeast Asia will rebound in 2024, demand has clearly stabilized, which is welcome news for NFDM/SMP markets.

Source: NMPF/USDEC, TDM
LOOKING AHEAD

- Looking ahead to 2024, it’s difficult to imagine substantial growth in NFDM/SMP trade.

- While the U.S. is bringing one major skim milk powder dryer online in the middle part of the year, milk production is forecasted to be weak across the major dairy exporters, which will limit exportable supplies – even with new capacity. While better weather in the spring may boost U.S. production volumes in California, it’s unlikely the world will be flush with NFDM/SMP.

- Unfortunately, it’s unlikely we see a strong demand-pull given MENA is well stocked, Mexico appears sated, and high interest rates will negate the incentive for end-users to carry excess inventory – even if prices are attractive. As mentioned in the executive summary, this creates the possibility of frequent short squeezes if buyers are caught on the back foot, particularly if milk production – and therefore NFDM/SMP production – is lagging, but these factors are unlikely to provide sustainable support to prices.

- As such, underlying weakness in the market is likely to remain until Southeast Asia and China at least stabilize or, ideally, rebound, given the fact that growth from LatAm and MENA is unlikely to drive the market forward in 2024 like they did this past year.

U.S. NFDM/SMP Exports

<table>
<thead>
<tr>
<th></th>
<th>October YoY</th>
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</tr>
</thead>
<tbody>
<tr>
<td>-11.2%</td>
<td>-3.1%</td>
<td>-1.9%</td>
<td>-0.6%</td>
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EU NFDM/SMP Exports

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<tr>
<th></th>
<th>October YoY</th>
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<tbody>
<tr>
<td>-16.9%</td>
<td>+14.6%</td>
<td>+14.6%</td>
<td>+4.7%</td>
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NZ NFDM/SMP Exports

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<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>+30.0%</td>
<td>+37.3%</td>
<td>+36.7%</td>
<td>+11.0%</td>
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</table>

ADDITIONAL NOTES

Global market share of NFDM/SMP has fluctuated significantly in the past two years. After several years of fairly steady growth, U.S. exports stalled on account of weaker milk production and poor demand in Southeast Asia. Conversely, after declining sharply for several years, the EU experienced a bounceback year as milk production outperformed expectations, especially on a component basis, and FFMP demand in Sub-Saharan Africa regressed. At the same time, New Zealand, which had been slowly but steadily declining for the last five years, jumped sharply in late 2022 and 2023 as China’s WMP demand collapsed. Looking ahead, we anticipate competition in SMP to be fierce so long as China remains absent, but weaker milk production in the US and Europe is likely to tighten the market even if only modestly.
Global Overview: NFDM/SMP

Global NFDM/SMP Trade to World

Source: NMPF/USDEC, TDM
Global Overview: NFDM/SMP – Last 12 Months

Global NFDM/SMP Trade by Destination: Last 12 Months ending Oct

Source: NMPF/USDEC, TDM

International Demand Analysis
Trade Flows: NFDM/SMP

Source: NMPF/USDEC, TDM
Southeast Asia

Source: NMPF/USDEC, TDM
China

Global NFDM/SMP Trade to China+HK

Source: NMPF/USDEC, TDM
Global NFDM/SMP Trade to MENA

Source: NMPF/USDEC, TDM
Whey Products
(0404.10)
Whey Products (0404.10) Market Commentary

KEY TAKEAWAYS

- **Whey exports** (HS code 0404.10, which is primarily sweet whey and permeate) fell 3% in October. Except for January, low-protein whey trade has declined every month this year.

- Chinese imports continued to lag in October, falling 17%, which puts YTD volumes down 12%. The challenge with China remains the pork sector, which after a very modest price rebound in August has since given back those gains as there is ample supply on the market and poor demand, even during the peak holiday season. This, in turn, has led to weak demand for whey products as a feed input.

- Like many other products, the poor pork demand comes down to economics. China’s GDP is still on track for 5% growth this year. But off a weakened 2022 economy, that 5% is much less impressive than past years and will be challenging to sustain in 2024. Consumer confidence in China also remains among the lowest in the world providing little confidence in rebounding demand moving into the new year.

- Outside of China, the rest of the world was largely positive. Southeast Asia (+16%, +5,432 MT), South Asia (+63%, +1,999 MT) and Mexico (+42%, +1,498 MT) all saw strong demand in October, which helped keep the overall decline for the month more modest than it would have otherwise been. Removing China, demand from the rest of the world for low protein whey was actually up 4% in October.

### Global Whey (0404.10) Trade

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Change</th>
<th>Volume Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>October YoY</td>
<td>-3.3%</td>
<td>-7,881 MT</td>
</tr>
<tr>
<td>YTD, Ending October</td>
<td>-8.0%</td>
<td>+5,432 MT</td>
</tr>
<tr>
<td>Last 12-Months, Ending October</td>
<td>-6.8%</td>
<td>+1,996 MT</td>
</tr>
<tr>
<td>3-Year CAGR</td>
<td>-0.7%</td>
<td>-2,804 MT</td>
</tr>
</tbody>
</table>

### October Standout Markets

- **CHINA+HK**: -17%, -7,881 MT
- **SOUTHEAST ASIA**: +16%, +5,432 MT
- **SOUTH ASIA**: +63%, +1,996 MT
- **S. AMERICA**: -55%, -2,804 MT

### ADDITIONAL NOTES

India’s low-protein whey demand has skyrocketed in 2023, in fact tripling through the first ten months of the year with October continuing that trend (+90%, +1,277 MT). Some of the jump is a recovery from a down year in 2022, but the scale of the increase does indicate a substantial increase in real demand. While the unit values are highly volatile, the data would suggest the low-protein whey shipped to India is primarily dry whey with some permeate that fluctuates month-to-month with nearly all of it supplied by the EU or Turkey. Some of the increase is likely an inventory build after drawing down stocks last year and the attractiveness of prices earlier this year. Even so, we’ve seen new products featuring whey double since 2018 in India, suggesting there is organic demand growth within the food sector.

Source: NMPF/USDEC, TDM
LOOKING AHEAD

• More signals point to weakness in China's whey demand in 2024 than strength. The weak economy and low consumer confidence suggest demand for pork and packaged foods featuring whey as an ingredient will remain challenged. However, 2024 will start lapping over weak numbers in 2023, and while YOY growth rates may look less negative in the new year, overall whey volumes are unlikely to return to the peaks of 2021.

• Conversely, and much more optimistically, low-protein whey exports to Southeast Asia improved the last two months with October volumes climbing 16% suggesting demand has started to show signs of recovering after roughly a year of lower import volumes. Stocks are likely tighter in the region after a prolonged period of weaker imports and while inflation is still a challenge in the region, there seems to be support for growing import demand as purchases are stabilizing across multiple dairy products.

U.S. Whey (0404.10) Exports

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<tr>
<th></th>
<th>October YoY</th>
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<tbody>
<tr>
<td>U.S. Whey</td>
<td>-14.5%</td>
<td>-21.5%</td>
<td>-15.9%</td>
<td>-5.6%</td>
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<tr>
<td>(0404.10) Exports</td>
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EU Whey (0404.10) Exports

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<tr>
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<tbody>
<tr>
<td>EU Whey</td>
<td>+1.0%</td>
<td>+3.9%</td>
<td>+2.5%</td>
<td>+0.8%</td>
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<td>(0404.10) Exports</td>
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NZ Whey (0404.10) Exports

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<tr>
<td>NZ Whey</td>
<td>-1.7%</td>
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<td>-1.8%</td>
</tr>
<tr>
<td>(0404.10) Exports</td>
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ADDITIONAL NOTES

China’s economy continues to struggle with a looming debt crisis. Local government debt reached 92 trillion yuan – roughly 76% of China’s economic output in 2022 and up from 62% in 2019. Much of China’s economic growth is supported by investment. A typical share of GDP supported by investment is roughly 18-20%. China averages over 40%. As companies reevaluate Chinese investment, economic growth will be harder to sustain.

Government investment can help support growth, but with Chinese leaders recently agreeing to run a typical 3% deficit in 2024, additional government stimulus seems less likely. Off-budget stimulus is still an option (like issuing special treasury bonds) and has been done before, but only in dire situations. 2024 may prove to be one of those years for China, but regardless, 2024 will see challenged demand out of China.

Source: NMPF/USDEC, TDM
Global Overview: Whey (0404.10)

Global Whey (0404.10) Trade to World

Source: NMPF/USDEC, TDM
Global Overview: Whey (0404.10)

Global Whey (0404.10) Trade to World

MT

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Source: NMPF/USDEC, TDM
Global Overview: Whey (0404.10) – Last 12 Months

Global Whey (0404.10) Trade by Destination: Last 12 Months ending Oct

Source: NMPF/USDEC, TDM
Global Whey (0404.10) Trade to China+HK

Source: NMPF/USDEC, TDM
Southeast Asia

Global Whey (0404.10) Trade to SEA

Source: NMPF/USDEC, TDM
India

Global Whey (0404.10) Trade to India

Source: NMPF/USDEC, TDM
WPC80+
(3502.20)
WPC80+ (3502.20) Market Commentary

KEY TAKEAWAYS

• Global exports of WPC80+ climbed 18% (+2,237 MT) in October marking six straight months of increased trade.

• Whey protein demand has proven robust despite the global economic challenges faced in many countries around the world. More attractive prices for procurement managers and protein-fortified products often targeting wealthier consumers are likely helping demand maintain its strength even as challenges persist in the global economy.

• Through October, WPC80+ trade grew to South Asia (primarily India) more than any other market (+62%, +5,556 MT). Just as we mentioned in our whey (0404.10) write-up, India’s WPC80+ demand tends to follow a boom-and-bust cycle as buyers build and deplete inventory. As such, we may expect demand to cool given the recent rally in prices.

  However, additional uses, as highlighted by new product launches featuring whey proteins, should support long-term demand growth even as it ebbs and flows.

• The two largest WPC80+ markets, China and Japan, both took a step back in October, declining 9% (-245 MT) and 12% (-280 MT), respectively.

  Given the attractiveness of whey protein prices until recently, it is surprising to see both markets largely hold steady as other buyers aggressively build inventory. Japan’s October contraction was likely a reflection of normal month-to-month fluctuation given that September volumes were unusually strong. However, China’s contraction appears to reflect broader market weakness. Even with a small improvement in demand from May-July, China’s imports still lag their 2021 peak by more than a quarter and are even trailing last year’s reduced purchasing by 3%. Still, neither market’s decline was severe, so we should be measured in our concern regarding a minor regression.

October Standout Markets

<table>
<thead>
<tr>
<th>MENA</th>
<th>S. ASIA</th>
<th>JAPAN</th>
<th>CHINA</th>
</tr>
</thead>
<tbody>
<tr>
<td>+668 MT</td>
<td>+1,787 MT</td>
<td>-280 MT</td>
<td>-245 MT</td>
</tr>
</tbody>
</table>

October YoY  YTD, Ending October  Last 12-Months, Ending October  3-Year CAGR

+18.1%  +7.6%  +5.0%  +4.9%

ADDITIONAL NOTES

The two largest WPC80+ markets, China and Japan, both took a step back in October, declining 9% (-245 MT) and 12% (-280 MT), respectively. Given the attractiveness of whey protein prices until recently, it is surprising to see both markets largely hold steady as other buyers aggressively build inventory. Japan’s October contraction was likely a reflection of normal month-to-month fluctuation given that September volumes were unusually strong. However, China’s contraction appears to reflect broader market weakness. Even with a small improvement in demand from May-July, China’s imports still lag their 2021 peak by more than a quarter and are even trailing last year’s reduced purchasing by 3%. Still, neither market’s decline was severe, so we should be measured in our concern regarding a minor regression.

Source: NMPF/USDEC, TDM
WPC80+ (3502.20) Market Commentary

LOOKING AHEAD

- WPC80 and WPI prices have risen rapidly over the past 4 months with instantized WPC80 topping $10,000/MT in the US and even higher in Europe. In contrast, given the lag trade data, the average unit values in October are roughly half today’s spot price. Given that prices are approaching the highs we saw in 2022 (albeit still 20% below the peak), we anticipate global trade is likely to slow in 2024 – at least to those buyers that are well-covered.

- The WPC80+ market remains in search of equilibrium as we move into 2024. Demand appears to be the primary driver with end-users in the U.S., Europe and importing markets all active. Concerns around a tighter milk supply environment is likely supporting the price rally but given that U.S. WPC80 production is running well ahead of last year, strong demand is critical to maintain current prices let alone continue the rally. Given today’s prices, we will once again test the upper-limits of what importers are willing pay.

U.S.
WPC80+ Exports

<table>
<thead>
<tr>
<th>Metric</th>
<th>October YoY</th>
<th>YTD, Ending October</th>
<th>Last 12-Months, Ending October</th>
<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>+6.9%</td>
<td>+16.6%</td>
<td>+18.8%</td>
<td>+5.9%</td>
<td></td>
</tr>
</tbody>
</table>

EU
WPC80+ Exports

<table>
<thead>
<tr>
<th>Metric</th>
<th>October YoY</th>
<th>YTD, Ending October</th>
<th>Last 12-Months, Ending October</th>
<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>+28.6%</td>
<td>+3.5%</td>
<td>-0.8%</td>
<td>-0.3%</td>
<td></td>
</tr>
</tbody>
</table>

NZ
WPC80+ Exports

<table>
<thead>
<tr>
<th>Metric</th>
<th>October YoY</th>
<th>YTD, Ending October</th>
<th>Last 12-Months, Ending October</th>
<th>3-Year CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>+42.1%</td>
<td>+9.1%</td>
<td>+1.7%</td>
<td>+0.6%</td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL NOTES

Among the major exporters of WPC80+, the U.S. has been the primary supplier of the increased global demand this year – supplying roughly 90% of the global volume growth YTD. Through October, U.S. exports jumped 17% (+8,845 MT) while the EU is up just 4% (+1,446 MT) and New Zealand improved 9% (+1,581 MT). Of the top three markets that saw the most growth (India, South America and Canada), the U.S. remains the primary supplier to two of them with India as the obvious exception given non-tariff barriers to the U.S. suppliers. Positively though, with strong demand from India, European and New Zealand exporters naturally pull back from other markets to satisfy that demand. As such, even though the U.S. may not directly benefit from strong Indian imports, this dynamic opens the door for the U.S. to build sustainable business in other key markets, like Japan, China and Brazil.

Source: NMPF/USDEC, TDM
Global Overview: WPC80+

Global WPC80+ Trade to World

Source: NMPF/USDEC, TDM
Global Overview: WPC80+ – Last 12 Months

Source: NMPF/USDEC, TDM
China

Global WPC80+ Trade to China+HK

Source: NMPF/USDEC, TDM
Japan

Source: NMPF/USDEC, TDM
Korea

Global WPC80+ Trade to Korea

Source: NMPF/USDEC, TDM
Southeast Asia

Global WPC80+ Trade to SEA

Source: NMPF/USDEC, TDM
Brazil

Global WPC80+ Trade to Brazil

Source: NMPF/USDEC, TDM
Other Dairy Products
Global Overview: Lactose

• Lactose trade started Q4 off on a positive note, rising well above prior year levels as demand in several key regions improved significantly. Exports to China continued to outpace 2022 levels (+49%, +4,951 MT). This dramatic rise may be linked to China stocking their inventories or needing lactose for standardization. The latest U.S. Dairy Exporter Blog goes more in-depth into China’s lactose surge.

• Lactose shipments to Southeast Asia (+28%, +2,448 MT) and New Zealand (+38%, +2,276 MT) also contributed to the strong growth in global trade after being lackluster since April. Unfortunately, Japan’s demand of lactose fell in October (-23%, -1,772 MT).

Source: NMPF/USDEC, TDM
Lactose – China

Source: NMPF/USDEC, TDM
Lactose – Southeast Asia

Global Lactose Trade to SEA

Source: NMPF/USDEC, TDM
Global Overview: Butter

- Butter trade, though up seasonally (+19% versus September), remains below prior year levels. The decline was led by a dramatic fall in exports to the EU27 (-61%,-2,619 MT) and Canada (-44%,-1,839 MT) at the same time demand in China (-17%,-1,239 MT) and Korea (-38%,-1,180 MT) was lackluster.

- In contrast, butter supplies have been tight in the U.S., with the lack of supply being filled with imports (+69%,+2,537 MT in October), but weaker retail sales at Thanksgiving may portend the surge in imports could be short lived as we move beyond the holiday season.

Source: NMPF/USDEC, TDM
Butter – China

Global Butter Trade to China+HK

MT


Argentina | Australia | Canada | EU27 | New Zealand | Turkey | UK | USA | Uruguay

Global Butter Trade to China+HK

MT

2021 2022 2023

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Global Butter Trade to China+HK

MT


Source: NMPF/USDEC, TDM
Butter – USA

Source: NMPF/USDEC, TDM
Global Overview: Whole Milk Powder

As New Zealand’s milk production started to ramp up, global whole milk powder trade grew. Unfortunately, China’s demand went in the opposite direction with China posting the weakest October since 2011. Gratefully, NZ’s November export data suggests next month’s data will look better but still not great.

Naturally, without an active China, New Zealand had to focus its sales elsewhere. In particular, global WMP shipments to MENA (+26%, +12,479 MT) and Southeast Asia (+23%, +6,200 MT) grew substantially in October. South American (+15%, +2,290 MT) and Sub-Saharan African (+27%, +2,172 MT) demand also grew by sizeable volumes, contributing to the uptick in global trade even as China regressed.

Source: NMPF/USDEC, TDM
Whole Milk Powder – China

Global WMP Trade to China+HK

Source: NMPF/USDEC, TDM
Whole Milk Powder – MENA

Source: NMPF/USDEC, TDM