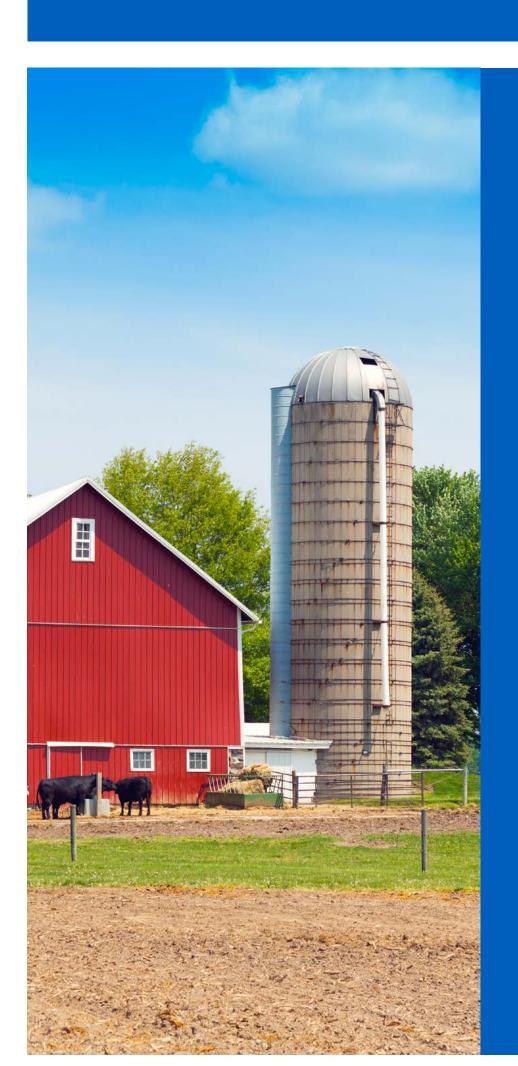


HOMIZONS.

Our insights on Today's Global Dairy Business

August 2023





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US milk production falls back to zero growth

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Salutations!

Welcome to the August 2023 edition of Hoogwegt Horizons. In this issue, we explore the milk production and the potential implications with milk prices arriving at levels which are not as interesting for farmers anymore. What happens next?

We also dedicate our Deep Dive section to Whole Milk Powder (WMP) as we discuss both supply and demand side factors.

John Kramer, Global Head (Whey, Lactose & Permeates) writes a nice piece on the lesser-known Whey Derivatives – Lactose and Permeates. And Derivatives Trader, Bart Whiteley discusses the SGX futures market.

We invite Global Analyst Jurgen Elfrink to pen a few words on his academia and farming background which brought about his experience working at Hoogwegt Group. For those who are subscribed to MyHoogwegt Portal, you'd recognize him as our key speaker in our dairy market vlog, Market Mooo!

Finally, if you are attending the upcoming Food Ingredients Asia (FIA) Bangkok, Thailand 2023, do visit us at our booth!

Enjoy!

As always, Hoogwegt Horizons Editorial Team

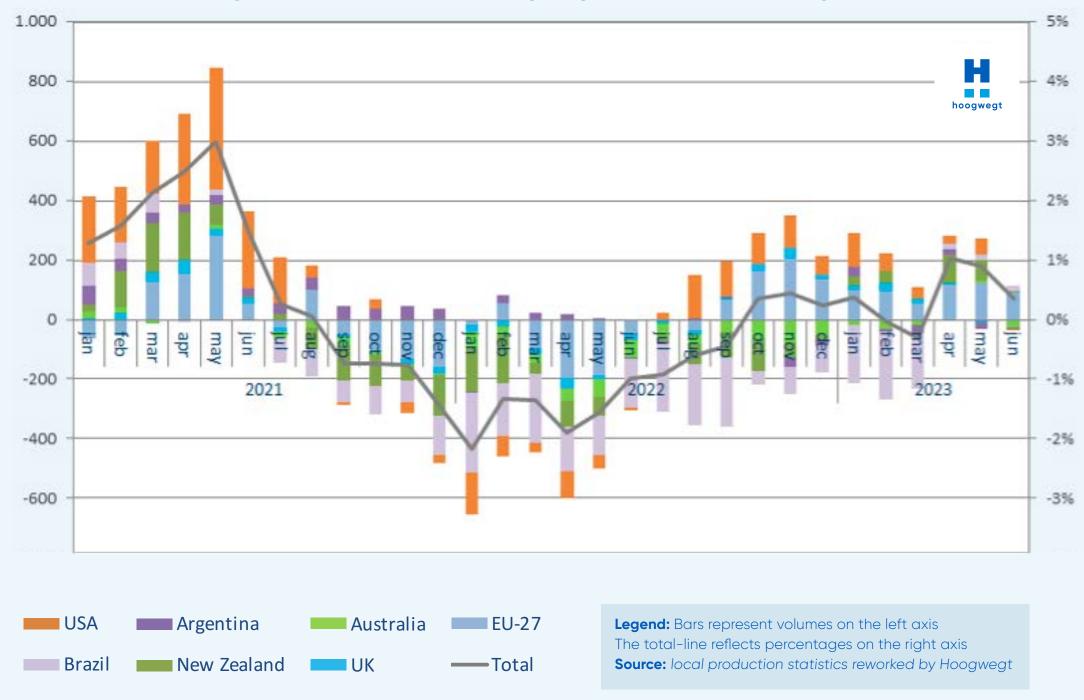
Market Direction

US milk production falls back to zero growth

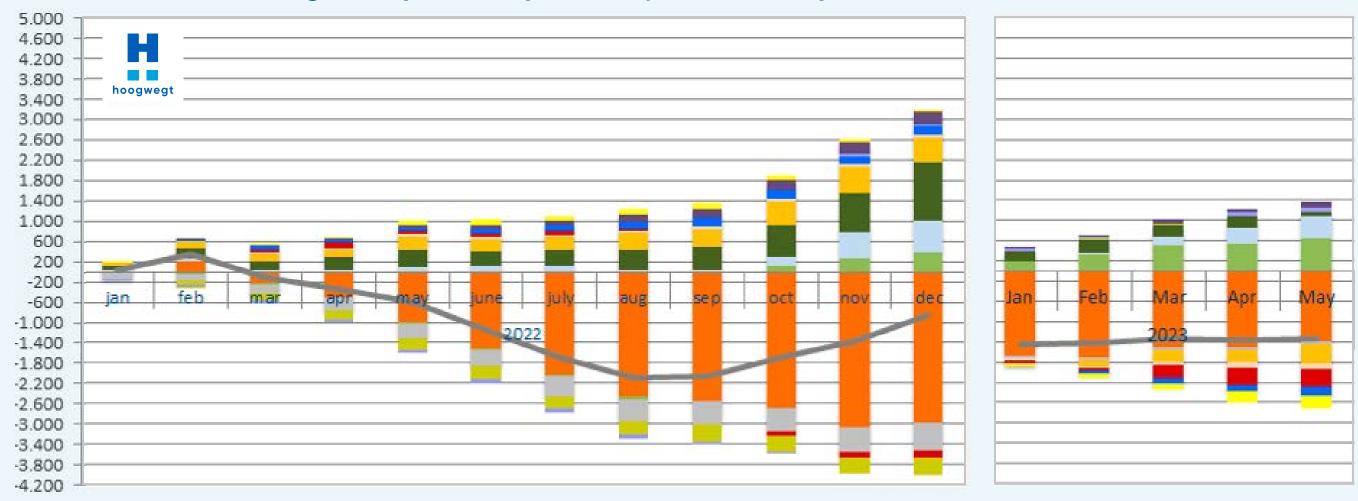
US milk production is slowly losing momentum. US dairy farmers are being squeezed as Class III milk prices have gotten crushed below USD 15 per cwt. Recent slaughter has averaged about 10% higher than last year. Each region performs differently due to drastically different weather and profitability, but growth for the regions as a whole seems to be trending towards 0%.

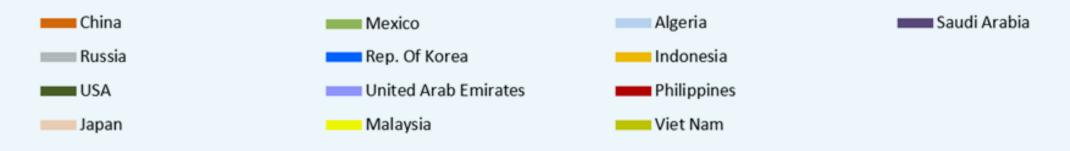
This leaves the EU as the only relevant region during this time of the year that keeps milk supply in the export regions in positive territory. It will be interesting to see how long production growth in the EU will sustain. Especially because for a large number of dairy farmers milk prices are falling to levels around break even. Low cost producers in for instance Poland and Ireland are still OK, but for the average family farm in Western Europe a milk price below €0.40 per kilogram is no longer sufficient to generate a positive cash flow.

Milk supply growth in key exporting regions (Y-o-Y change, 1000t)



Imports by the big-13 importing countries (cumulative change compared to previous year, total imports in 1000t of MEQ)





NB: The graph displays monthly cumulative changes in import volumes compared to last year for each single country. The grey line is the total cumulative change compared to last year for all countries combined **Source:** Dairyntel trade data, reworked by Hoogwegt



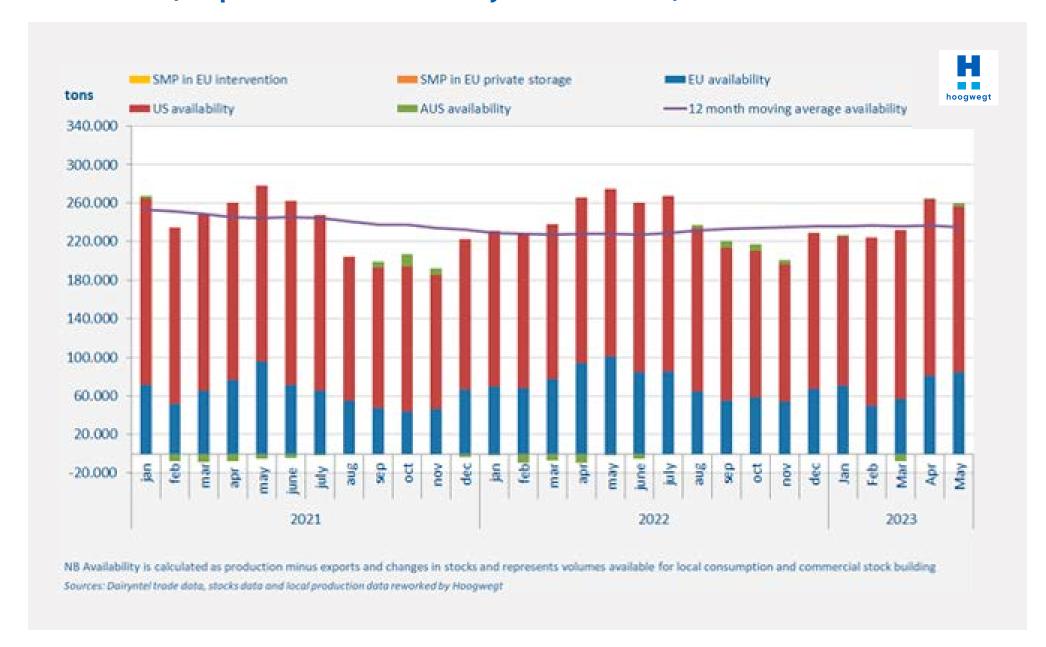
The May trade data reveal an import pattern that remains very consistent across the 13 key dairy import countries in the world. Asian imports are still significantly behind on last year's comparable numbers, although the June Chinese trade data suggest that the gap may start to close in H2 of 2023 because the imports were surprisingly strong. Up until May however purchases in the Asian region were quite weak. Dairy commodity prices can hardly be the cause anymore, so it seems safe to assume that the slowdown compared to last year is a reflection of overall weak end consumption in the Asian region. Another driver of seemingly lackluster buying behavior is that the buyside may have their supply chains organized more efficiently compared to last year. In early 2022 supply chains were still hampered by logistic challenges which caused many buyers to stay on the safe side when it comes to buffer volumes. As logistics are no longer an issue, buyers no longer have a need to maintain costly levels of safety stocks.

SMP/NFDM: Strength of the € aggravates EU surplus pressure

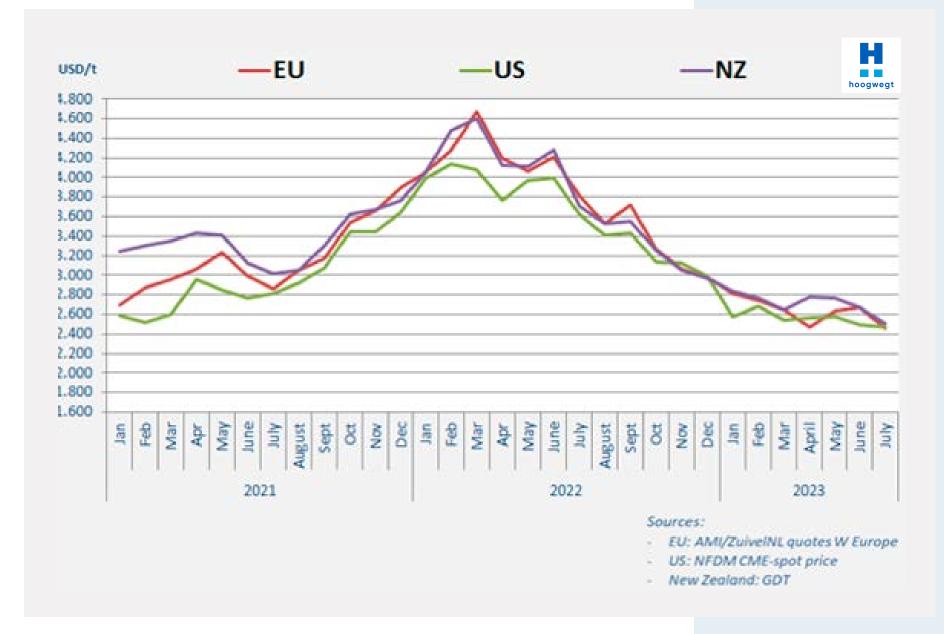
Amidst a situation of weak global import demand, competition is heating up between the 3 main origin regions. Neither of them are currently exposed to particularly strong milk production but all of them need exports to relief the pressure on the local market. Judging by the recent decline in prices, pressure is probably highest in the EU at the moment. Currency headwind caused the EU SMP price to briefly flirt with the €2000 level, but prices bounced back up again in the final days of July. The buyside are starting to do more frequent inquiries after

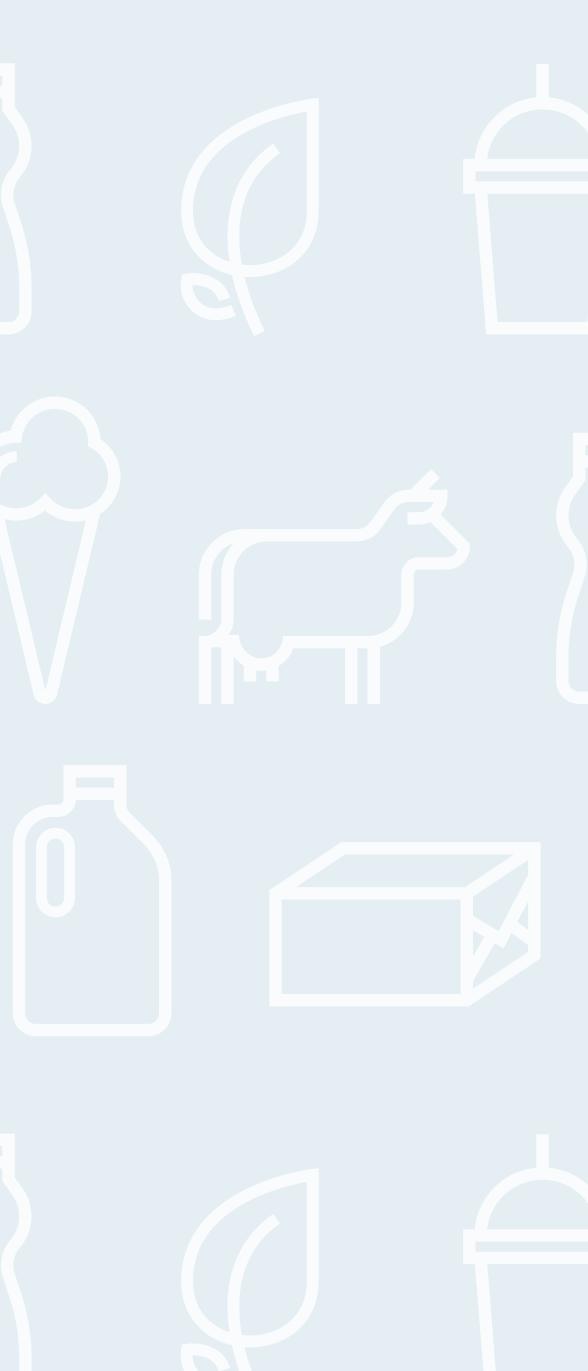
the recent drop in prices but actual transactions remain as yet limited. Historically one could argue that prices have by now dropped to very favorable levels from a buyside point of view. On the other hand however, the chances of the market tightening and prices appreciating again seem limited. So buyers feel very little pressure to spring into action. ONIL is slated to happen soon and the Asian tenders that are currently in the market will provide an interesting indication of where we are in terms of supply side pressure and global import demand.

Production, exports and availability of SMP in EU, US and Australia¹)



Monthly SMP prices in the main export markets



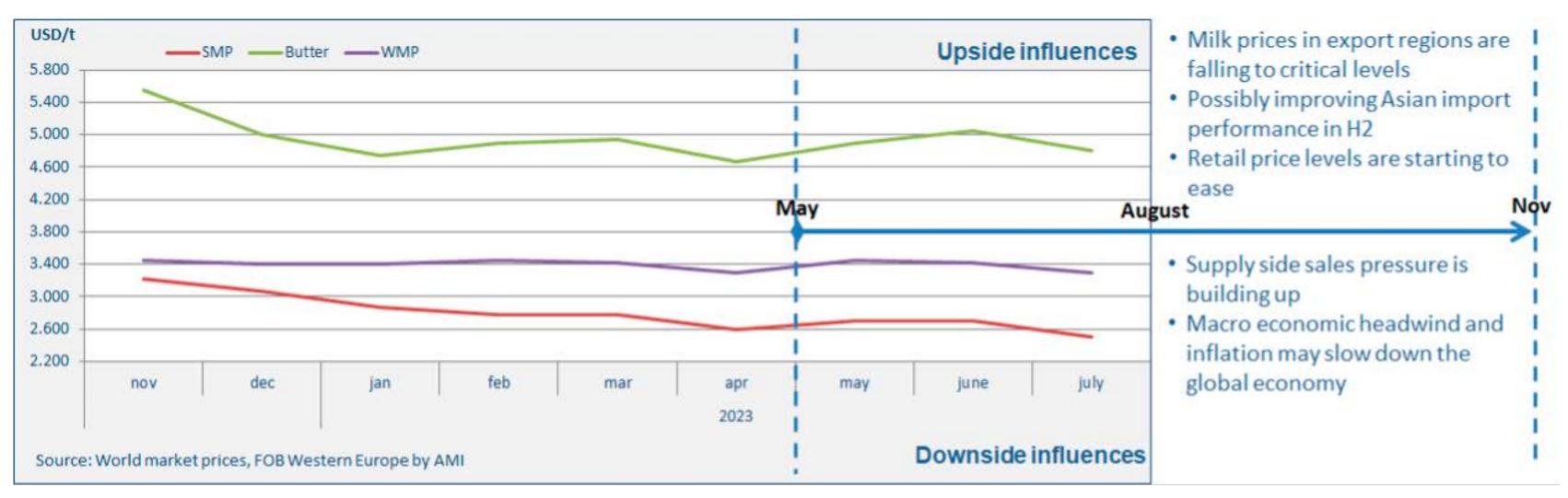


Looking forward

The "looking forward" part of this issue of Hoogwegt Horizons is a challenging one. Both milk production and availability of SMP/NFDM – which tend to be the key building blocks of our outlook – are remarkably stable. Demand developments do not give any reason to expect major upside surprises either. The main question that will be answered in the next couple of months is whether the current favorable price of SMP/NFDM – that has effectively

halved since early 2022 – may give the buyside the impetus to increase their forward positions. The market might have lost their sense of what a normal band is for dairy commodity prices to trade within. A current price level of around USD 2400 seems like a favorable price from a buyside perspective, but no one really knows if this is as low as we go in 2023.

Market Outlook for August - October 2023



Dairy Deep Dive

Whole Milk Powder

WMP Supply-side

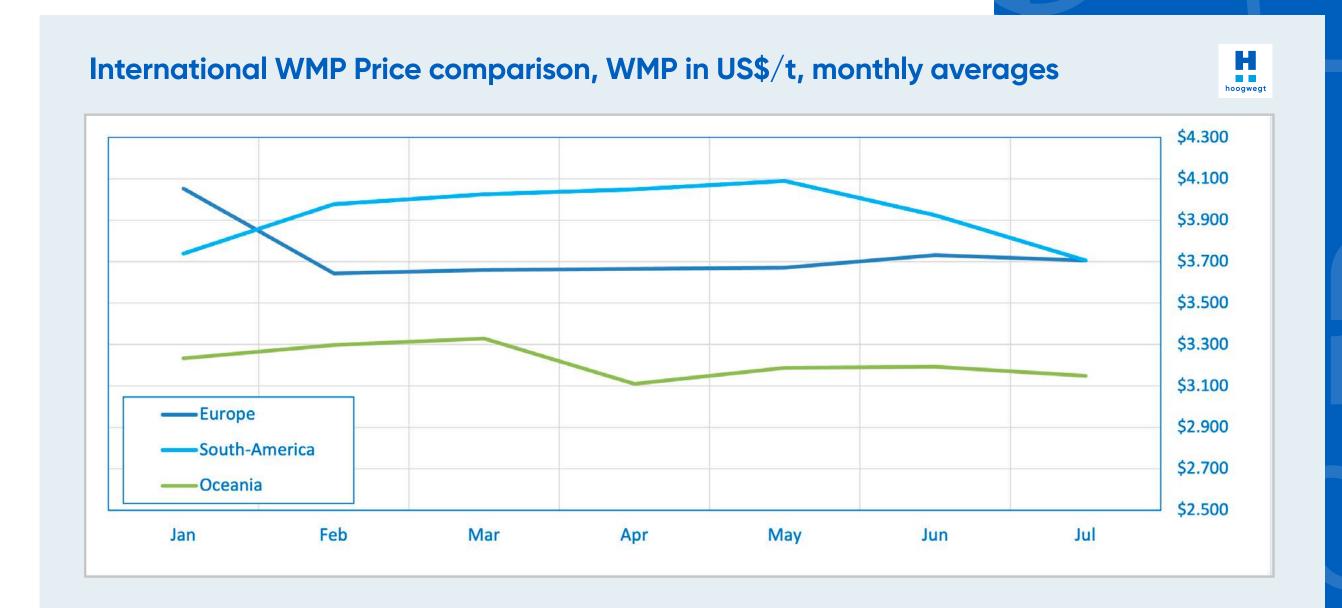
Of course, NZ product mix is on everybody's watchlist at the moment. During the 2022-23 season, it made sense to, and NZ was capable of, producing less WMP and more of better valorizing dairy products (like SMP+Fats), since their main outlet for WMP, China, had no real hunger for WMP.

We think that strategy currently still makes sense, especially on the shorter term, but perhaps later in the 2023-24 season, NZ might shift back to producing more WMP compared to last season 2022-23.

European WMP has been on the lower end of the production bandwidth since the end of H1 2022, but should currently valorize better than SMP+Butter. Also, since Uruguay and Argentina are shipping into Brazil, North-Africa and the Middle-East provide a nice outlet for European WMP until South-American prices become more competitive again. Market balance calculations indicate that stocks in Europe aren't too high and is rather close to last year's level.

Global WMP trade

A strong April and May reduced the 63Kt year-to-date global loss for WMP at the end of Q1 to a 22Kt increase in demand year-to-date, from exporters' perspective.



→ continuation

NZ just published their June exports and exported 26Kt more than June last year. What to watch out for, is of course the Q4 import demand from China. In the context of free trade agreements and tariffs, NZ may have an advantage and it could be rational to see a bit lower demand from China on the shorter term because there's also an advantage to welcome the powder into China in the new calendar year 2024.

The global WMP Trade for the latest May figures was actually quite strong, registering a 205+ Kt, May 2023 came in on a 55Kt increase compared to May 2022, but also a +10Kt increase from April 2023. A chunk of that increase was written in South-America, where Argentina and Uruguay shipped big amounts to Brazil. This also means that +60Kt (YTD) of WMP not being shipped towards other parts of the world like N-Africa for this year, so far.

Chinese demand was stronger than 12 months ago, registering a +23Kt to 52kt in May and 49Kt (+15Kt) in June. SE Asia saw a slight increase from last year, around +5Kt to 45Kt for May. Middle East and N-Africa both grew 3Kt to 22Kt for Middle East and 33Kt for N-Africa. Sub-Saharan Africa struggled and lost 1Kt YoY (all May). Notably, both the US and Europe shipped more than their usual WMP into South-America.

NZ increased exports once more: May registered a fair 147Kt of WMP Exports. In June, NZ exported 125Kt, a 24% increase on June 2022. 7 out of 10 top-destinations saw increase demand. Exports to China increased to 40.5Kt (+39% YoY), Algeria asked for 19Kt (+52%), UAE 7Kt (+14%) but Sri Lanka's increase compared to their very weak demand stands out; 6.5Kt (+593%). Indonesia was flat, Thailand asked for close to 1Kt less, and so did Saudi-Arabia.

WMP (HS:040221, HS:040229) Imports in World per exporting area in 2022 and 2023 (Ktonnes)



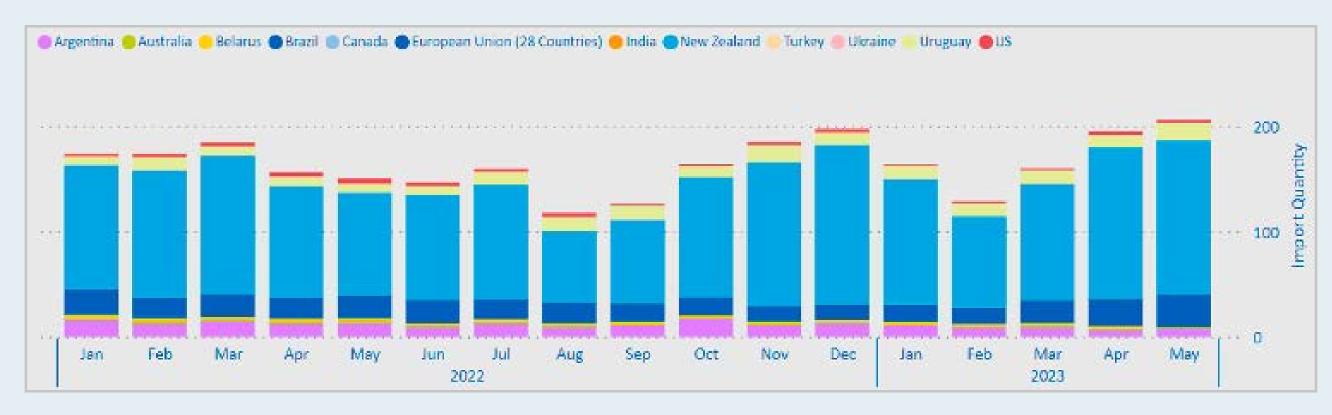


Figure 1; WMP trade (HS040221; 040229), in Kt/m; per exporting region. Data is based on exports.

WMP (HS:040221, HS:040229) Imports in World in 2023 (Ktonnes)



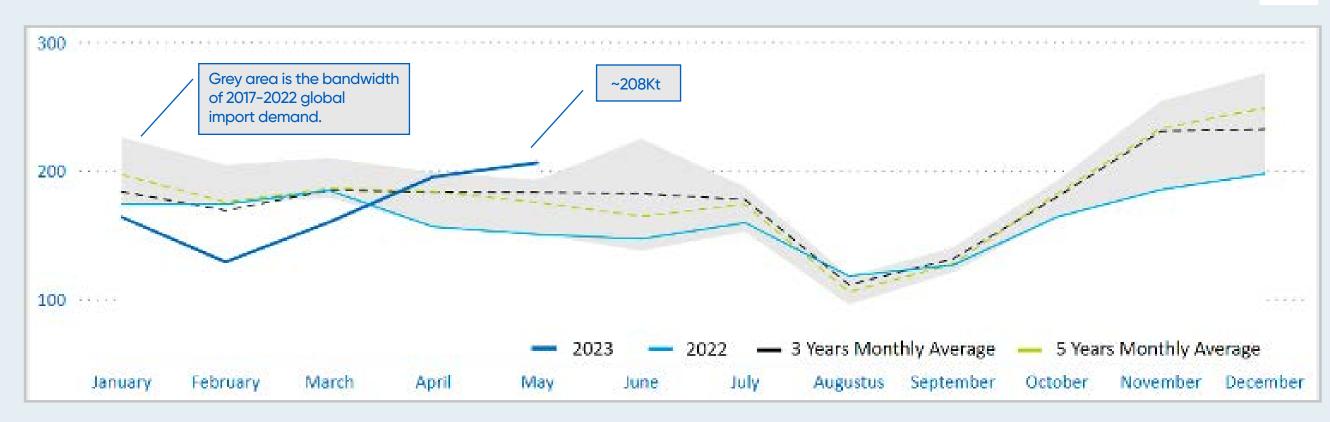


Figure 2; WMP trade (HS040221; 040229), in Kt/m. Data is based on exports.

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→ continuation



Bulls vs Bears...

On the bullish side:

- While margins are dropping, the US turned negative in milk production and negative in their herd. Will Europe see negative milk production growth as well end of Q3 and Q4?
- → Although it's winter but NZ turned negative in June, slaughter has been high and the herd in NZ should be smaller, signs for the 2023-24 season?
- → Middle East + N-Africa and Mexican demand still feels fair.
- Prices dropped; this should attract some buyers. SE Asia is probably on low stock levels for powders.
- Money isn't free anymore and stricter loans could limit farmers in their investments leading to scarcity.

On the bearish side:

- → Domestic consumption in Europe is still struggling.
- > Recessions, inflation, leading to drops in demand.
- Fresh consumption in Europe closer to pre-pandemic levels leading to better availability of the milk flowing into commodities.
- While Asian demand was low in the past months, the rest of the world bought quite a lot and we might see some easing from those regions, on top of seasonally calm weeks.

Things we watch:

- Geopolitical turmoil shifting away from free trade.
- → European slaughter numbers post-flush. NZ next season; Cows, slaughter, payout prices and product mixes as analyst's projections are pretty broad on both the positive and negative side of milk production for next season.
- → NZ Product mix dynamics ; Valorisation, strategies
- High cocoa and sugar prices are also giving issues for multinationals' sales volumes. This would in turn affect their need for SMP.

A Quick Note on...

Whey

By John Kramer, Global Head – Whey, Lactose & Permeates

This version, we zoom in bit more on the whey derivatives - lactose and permeate.

- Lactose is traditionally a bit of a stand-alone ingredient in the dairy segment. It has a broad variation of applications: filler in capsules, standardization of milk, carbohydrate source in food items etc. Next to that, it's still used as carbohydrate in Feed, mainly for piglets where the protein component usually comes from vegetable. Lactose is part of the sugar family but of all sugars, it is the one with the least strong sweet taste.
- Milk Permeate from Milk Protein Concentrates is an alternative for lactose and also allowed for standardization.
- This is not the case with Whey Permeate, in volume multifold against Milk, derived from Whey Protein Concentrates. With the massive investments in WPC production over the last decade, the available streams of Whey permeate have grown impressively.
- Whey permeate functions as a cheaper replacement ingredient for Lactose (partly sweet whey powder as well) and is used in many retail articles (confectionary, bakery, chocolate, ice cream etc.).
- For whey permeate, the usage in Feed is even more dominant and over the years, it has been incorporated in many Piglet feed formulas, replacing either lactose or sweet whey powder). Whey permeate is available in many variations and qualities where in general, the salty taste (high mineral content) and free flowing properties are the most critical factors.

- The USA and EU are the main producing regions for both Lactose and Permeate. On the demand side, it's fair to say that Feed usage in SEA is the dominant factory especially for whey permeate.
- Lactose and Permeate were holding relatively well from a price point of view when Sweet Whey Powder crashed from its record high levels starting Q4 2022. But by now, they followed the bearish environment and have reached levels close or below production costs.
- Main reason is of course continuous high production meeting lackluster demand (thanks to global food inflation, plus a limited appetite from China feed production).
- For lactose, another factor is that probably less milk powders have been standardized since capacity was needed to absorb the healthy (large) milk output in the first part of 2023.
- At the same time, stocks have been built up with producers (in vain) counting on China sweeping the market clean after opening up again. This isn't the case.
- So right now, we see a lot of product available at very low levels. It's clear the buffer stocks need to vanish first before any new balance in the market place will reappear. We estimate this can start as early as Q4, but perhaps even bit later if demand takes more time to recover.



Futures

By Bart Whiteley, Derivatives and Export Trader, HTM/APAC

As we step into the new season in Oceania, all eyes are on the SGX as farmers, suppliers and customers try to gauge the direction of the market for the coming 6-8 months. The market is currently pricing in a decent contango, pointing to a recovery of pricing come the start of 2024.

There are many factors that could be attributed to this contango:

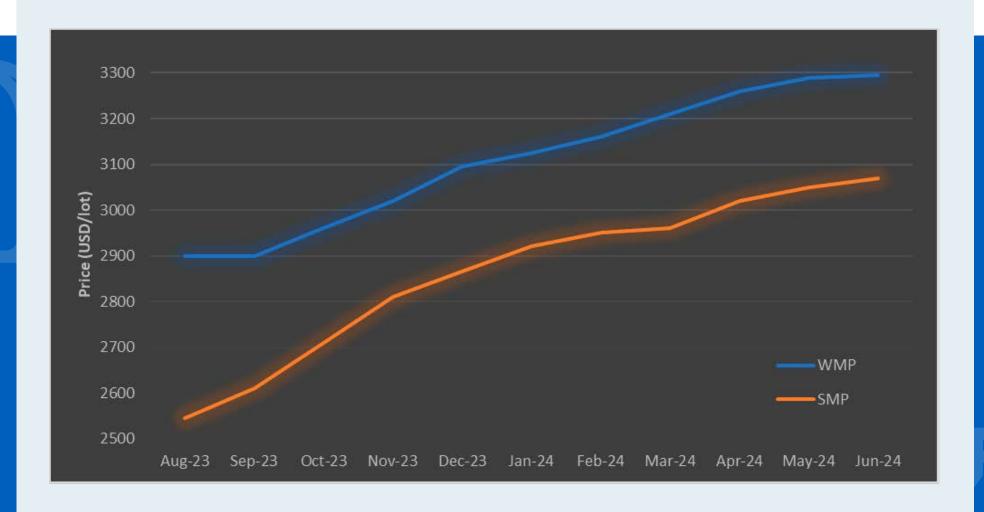
- expected recovery of demand in China
- → the possibility of lower global milk production going forward, or
- the fact that carrying stock is no longer cheap these days (customers buying hand to mouth instead of stock building) pushing spot prices lower.

For WMP, we are seeing an obvious split in the season and the activity over prompt months and the deferred:

Prompt (Q3 and early Q4) is seeing strong sell side interest, with very limited buyers standing in front of them. An increase in supply (with the upcoming flush) and a persistent lack of demand (mainly from China, the biggest WMP customer) has resulted in prices dropping significantly, and

- more importantly \$100-120/MT below the C2 GDT results from July.
- For the deferred, late Q4 and into the 2024 contract months, the narrative is quite different, with buyers being the aggressor (although this aggression starts to get limited when prices are \$100-150/mt above GDT).
- Looking across to the SMP market, we can see a more aggressive contango, more in line with the international indices EEX and CME. A spread of almost \$400/MT from the prompt month (August) to Q1 2024 seems high and will provide value for sellers, but when comparing to EEX, one could argue that SGX is undervalued at only a \$40-50 premium for Q1-24.
- The SGX 2024 Milk Contract (MKP) continues its downward trend to start the season, touching NZ\$7.50/kgMS last week. However with a low Relative Strength Index (RSI), there is upside risk with it currently sitting in oversold territory. Fonterra's midpoint forecast of NZ\$8.00/kgMS is still achievable but we would need to see improvement on WMP/SMP markets in line with current SGX Q1-24 levels.

SGX: WMP & SMP Contango



World Comment.



Jurgen Elfrink
Global Analyst
Hoogwegt



Prior to joining Hoogwegt, I held a managerial position and taught statistics at HAN - University of Applied Sciences while serving in various civic roles at the Arnhem City Council. Three years ago, I started my journey with Hoogwegt and never looked back. My academic background includes studying Quantitative Empirical Sociology and International Relations in Nijmegen and at the Clingendael Institute.



As the grandson of a Dutch dairy farmer, working in the dairy industry for Hoogwegt in my home region has been an immensely joyful experience, as many aspects seem to align perfectly for me. My grandfather's small dairy farm in Zevenaar, close to Arnhem, unfortunately, fell victim to expropriation after the Second World War to facilitate the town's expansion. Despite this, traces of our dairy heritage remained evident in milk cans and other dairy paraphernalia around our house, which have always made me feel at home and connected to the industry.

Initially uncertain about working at a trading house, I found comfort in the company's values which resonated with my own principles. Having the opportunity to collaborate with colleagues worldwide, who validate and discuss ideas, has been a significant advantage of working for Hoogwegt, greatly contributing to my understanding of the market dynamics. My primary role at Hoogwegt involves providing a comprehensive global and regional perspective on the supply and demand of milk and dairy products. To achieve this, I rely on historical

data and qualitative insights and statistical methodology to forecast future supply, demand, and price trends based on analysis and scenarios. My background in international relations and economics enables me to approach these analyses from a multifaceted perspective, combining both quantitative and qualitative methodologies.

I produce weekly outlooks on various dairy products and the general milk market, which I enthusiastically present to our esteemed customers. I believe that transparency is key to fostering mutual understanding and productive discussions.

From an international relations perspective, I sometimes harbor concerns about the world shifting away from the principles of free trade. Such a shift could potentially have adverse effects on all of us. Currently, we observe stagnation in milk production growth in both Europe and NZ, primarily due to certain policies, while other regions experience an increased demand for dairy products. This delicate equilibrium might lead to higher prices compared to pre-2020 levels, unless a region successfully enhances its dairy production and either increases trade share or self-sufficiency. In the short term, relatively low margins for farmers are likely to limit milk production growth, and I am curious about the potential impact of seasonal lower production in the Northern Hemisphere on supplies in Q4 and Q1. While it may not be as tight as we witnessed in Q1 2022, European SMP Stock levels still pose challenges.

In conclusion, I cherish my role at Hoogwegt and the dairy industry. I aim to provide valuable insights and foster strong relationships with customers and colleagues worldwide.