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Strategic Changes Needed in the Egg Industry

High and Volatile Egg Prices Impact Markets and Business Models

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Summary

Eggs and chicken are the world's fastest-growing proteins, as the industry has been highly successful over the past 15 years in offering affordable and healthy products to consumers globally. But significant price volatility is challenging this development. Supply in many markets has been dropping, while prices have risen to historical highs. Many countries still see historically high prices. Consequently, the industry's growth is currently lower or negative in many markets.

There are also significant value chain impacts. While consumers face high prices and availability issues, suppliers struggle with disease, cost inflation, new regulations, government intervention, and changing consumer demand. This has resulted in supply chain disruptions, with considerable price volatility, high price peaks, and, in some cases, empty supermarket shelves.

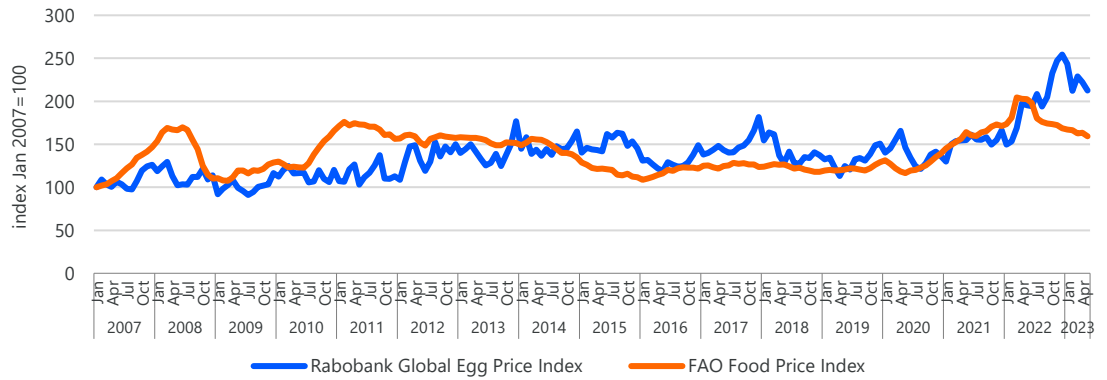
We expect prices to stay relatively high throughout 2023 but lower on average than the levels seen in Q1 2023. Prices will be especially high in markets heavily impacted by avian flu, high costs, and regulatory changes. In other markets, prices will drop but not to pre-2021 levels, as lingering high costs will keep prices elevated.

Market trends can quickly turn, as seen in the US market, revealing how important it is to rethink business models in the value chain. In the longer term, a refocused and measured approach to better balance market supply and demand, pricing, and risks in the value chain is important. Such an approach should include the key tools of more demand-driven value chain cooperation, strategies to reduce the impact of avian influenza and government interventions, and better access to finance for the sector. The egg industry, governments, and other stakeholders will need to join efforts to optimize value chains and link these efforts to industry business models.

Volatility Is Shaking up Global Egg Supply Chains

Egg prices have reached record-high levels in markets across the globe but have started to drop in some markets, like the US. Rabobank's global egg price monitor hit a new record in Q4 2022, peaking above 250. This means prices are 2.5 times higher than the reference year of 2007 and have increased more than 100% since last year (see *Figure 1*). Between Q1 2022 and Q1 2023, prices in the US and EU increased by 155% and 62%, respectively, while egg prices in Japan reached JPY 235 in March, their highest level since 2003. These price increases have greatly impacted players in the egg supply chain – from breeders and producers to customers in retail, foodservice, and food processing.

Figure 1: Rabobank’s global egg price monitor shows the strength of the current price peak



Source: FAO, USDA, Eurostat, regional statistics, Rabobank 2023

Egg Prices Diverge From the Food Price Index

Historically, egg prices have roughly followed the FAO Food Price Index, though there have been periods of divergence. From 2007 to 2013, the industry struggled to pass on high and volatile feed prices. And from 2013 to 2019, egg prices were slightly higher than the index’s movements, as demand for eggs was relatively strong while feed costs normalized.

When feed prices rose in 2021 – and that rise accelerated in 2022 after Russia invaded Ukraine – egg prices followed the food price index, but they have since diverged again. While food prices have started to drop, egg prices have kept rising. Some markets, like China and India, have been less affected by this trend (so far), with prices up by only 15% to 20%. In Brazil, potential future avian influenza (AI) outbreaks could heavily impact egg prices, especially if an outbreak were to occur in a commercial operation in the São Paulo region, where Brazil’s egg production is highly concentrated.

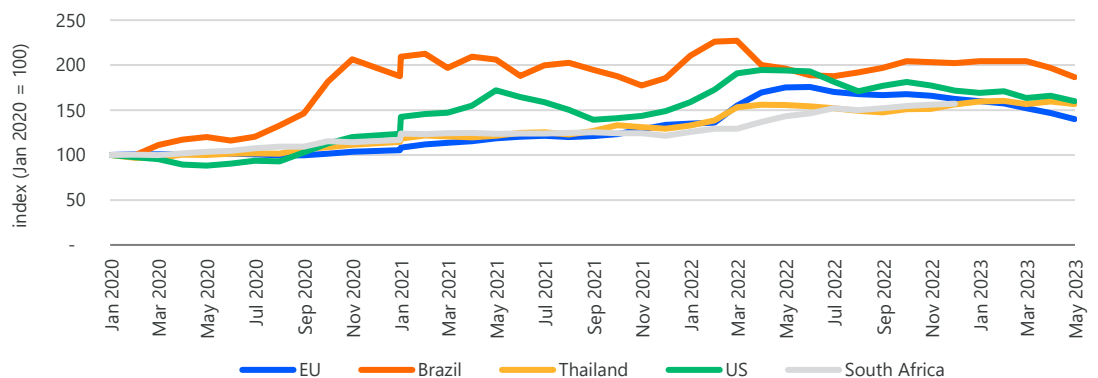
Six Factors Driving Global Egg Price Volatility

High and volatile global egg prices are linked to six disruptive supply and demand factors. The relevance of each factor differs by region. In most markets that now face peaking prices, a combination of these factors is at play.

1. High Feed and Other Input Costs

Feed costs are directly linked to global grain and oilseed prices and represent 60% to 70% of a layer farmer’s costs (see Figure 2). Consequently, any change, upward price movements, and especially any uncertainty about feed costs significantly impacts egg prices.

Figure 2: Feed prices increased between 50% and 100% from 2020 levels*



*Note: Index is based on local currency.

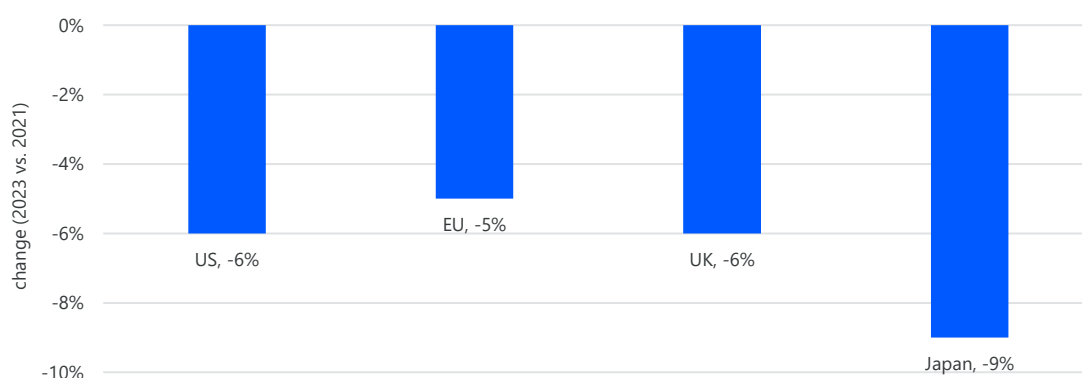
Source: Rabobank analysis based on USDA, Eurostat, Bloomberg, SAPA 2023

From mid-2020 to mid-2022, feed prices nearly doubled in many markets, and producers struggled to pass on those higher costs to customers and final consumers during a time of great uncertainty. The outlook for producers in Q2 2022 was particularly uncertain, as the Russia-Ukraine war unleashed major concerns about global feed ingredients and energy prices. In response, many producers opted not to take big risks on feed prices, which resulted in relatively conservative placements of new hens – a commitment for more than one year of production. Smaller and backyard producers, especially in emerging markets, sharply reduced production or exited the industry, as they could not secure the larger working capital requirement triggered by higher feed costs.

2. Avian Influenza Outbreaks

The pressure of AI has been very high for two years in a row, as the current H5 strains are quite aggressive. The virus spread from Asia into Europe and, as of last year, to the Americas. In the past, the virus disappeared in summer months, when birds migrated to other regions. However, it has now emerged among different bird groups, resulting in the virus persisting throughout the year. In the US, more than 40 million layers were depopulated during 2022 and early 2023, with more than 60% of that occurring in 1H 2022. The number of cases in commercial poultry has been significantly lower in 1H 2023, and the industry is repopulating. But both the laying hen flock (down 6%) and egg production are still below 2021 levels (see Figure 3). This led to a 9% decline in eggs in the US in March 2023.

Figure 3: Laying hen flocks in Q1 2023 shrank from Q1 2021 levels



Source: Rabobank estimate based on USDA, ALIC, Eurostat, MEG 2023

We see similar developments in Europe, with ongoing outbreaks across the continent. Although there is no data available on AI-related laying hen depopulation in the EU, it is estimated that AI infections have led to a drop of about 5% in the laying hen population compared to 2021 levels. In the UK, the figure is likely slightly higher. Although AI-related depopulation data is not available for the UK, egg supply at the packing station dropped for the first year in many years (down 8%). The high drop indicates both the significant impact of AI and the squeeze on industry profitability due to elevated costs and uncertainty in 2022.

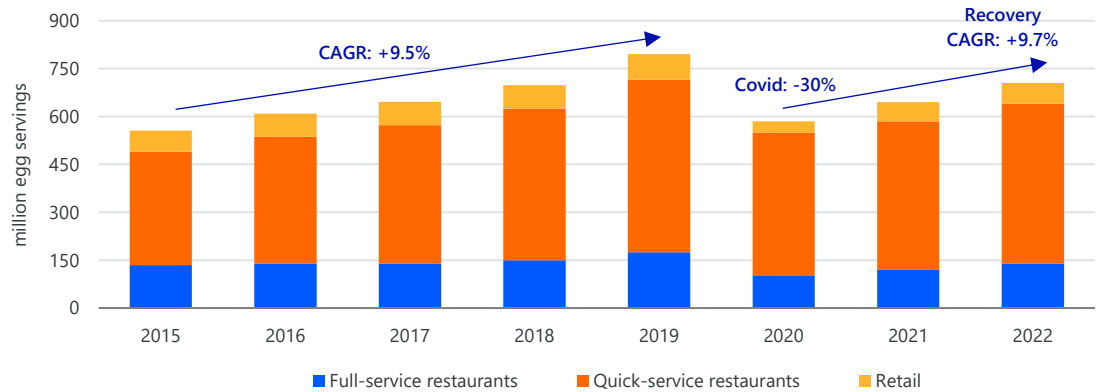
AI has also had a substantial impact in other regions. Japan has reported culling more than 17 million hens (9% of laying hen flocks), most of which were laying hens. Egg prices in Japan have peaked as a result. Another example is South Africa, where AI caused 2.8 million layers to be culled between Q1 2021 and Q4 2022, which caused the laying hen flock to decline by almost 10%.

In many emerging markets, especially in South America, AI spreads fast and impacts egg production. A major worry in many of these markets is that there is no adequate compensation system for farmers hit by AI. This creates a short-term risk of slow or no reporting of AI outbreaks and a longer-term risk of fewer new hen placements. In many cases, laying hen production is concentrated near big cities like Lima (Peru), Guadalajara (Mexico), and São Paulo (Brazil). If these production areas are hit, it could have an even bigger impact on local markets.

3. The Aftermath of Covid-19 Market Disruptions

From 2020 to 2022, government restrictions on people’s movements impacted markets. In many markets, restrictions were placed on restaurants and other out-of-home segments during periods of high Covid-19 pressure. This also had a sizable impact on the egg industry, as out-of-home consumption represents 20% to 40% of the total. In North America, for example, out-of-home breakfast sales are a major outlet for the egg industry. Covid-19-related lockdowns resulted in significant drops in this market, and it has not yet recovered (see Figure 4).

Figure 4: Foodservice egg servings in Canada are recovering after dropping during Covid restrictions



Source: Ipsos Foodservice Monitor 2023

On the flip side, consumers shifted their behavior during the pandemic. Many consumers spent more time preparing breakfast at home, with eggs becoming a central item. This change in consumer behavior still supports stronger demand for table eggs and egg products for the at-home market.

All aspects of the value chain, from breeding to feed, farming, and distribution, reacted by refocusing production (shifting more to retail) and reducing supply slightly. Now that most countries have lifted Covid-19 restrictions, demand has returned, but the supply recovery, especially in breeding, is relatively slow due to the long production/reproduction cycle. It can take over a year to rebalance supply with rising demand due to the industry’s long production cycle. Some markets still face a tight supply of grandparent stock (GPS). This situation has been worsened by restrictions set by some governments on breeding stock imports due to AI in Europe and North America, where some of the biggest GPS exporters are located.

4. Egg Demand Strengthening as Consumers Trade Down

Since the Russia-Ukraine war began in February 2022, the global economy has taken a downturn. Global GDP growth has slowed from 6.1% in 2021 and 3.4% in 2022 to the expectation of only 2.8% growth in 2023, according to IMF April 2023 forecasts. Developed countries are expected to record only 1.3% GDP growth in 2023. This comes together with historically high January 2023 inflation levels of 5% to 10% in the eurozone and countries like the US, Mexico, and South Africa and above 10% in Russia, Ukraine, the UK, Romania, and Hungary. The combination of slower growth and high inflation puts global pressure on consumers’ spending, especially in Europe, Africa, and the Americas. Although Asia is performing better in GDP growth and has, on average, lower inflation rates, there is also pressure on spending power there. Under these economic conditions, consumers are more price-driven in their behavior.

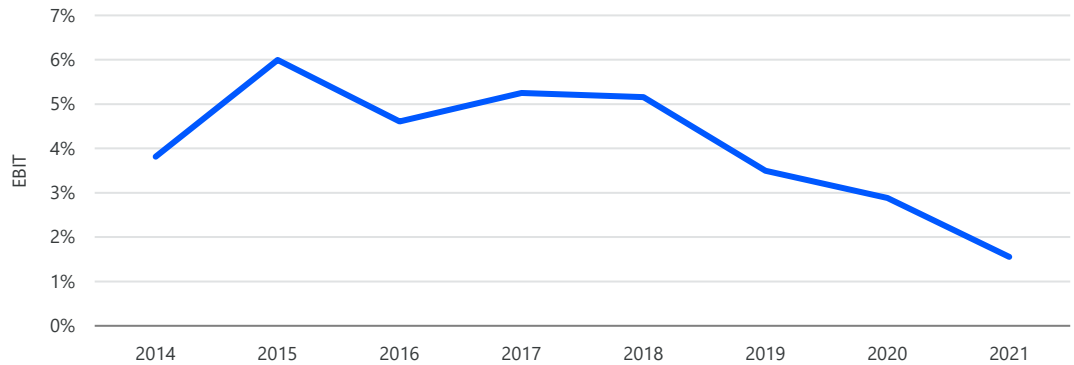
Eggs are usually one of the lowest-cost animal protein sources and, therefore, a major staple food in many markets, especially in emerging markets. Consumers are trading down from expensive animal proteins like beef, to poultry and eggs, and from expensive concepts like organic and free-range, to cheaper concepts. This has led to a strengthening global demand for eggs.

5. Uncertain Sales Contracts

Producers have been exposed to major challenges on the supply side, with high and volatile input cost increases – in some cases, a 100% increase between 1H 2020 and 1H 2022 – uncertain prices for other input costs like energy and distribution, and high AI risks. This happened in 2022, following two years of low margins in the egg industry that were caused by challenging market conditions due to Covid-19 restrictions and increasing feed prices (see Figure 5).

Egg producers usually replace their laying hens after a year of production, at which time they decide how many hens to place for the following year of production.

Figure 5: Average EBIT for European egg producers was lower in 2020 and 2021



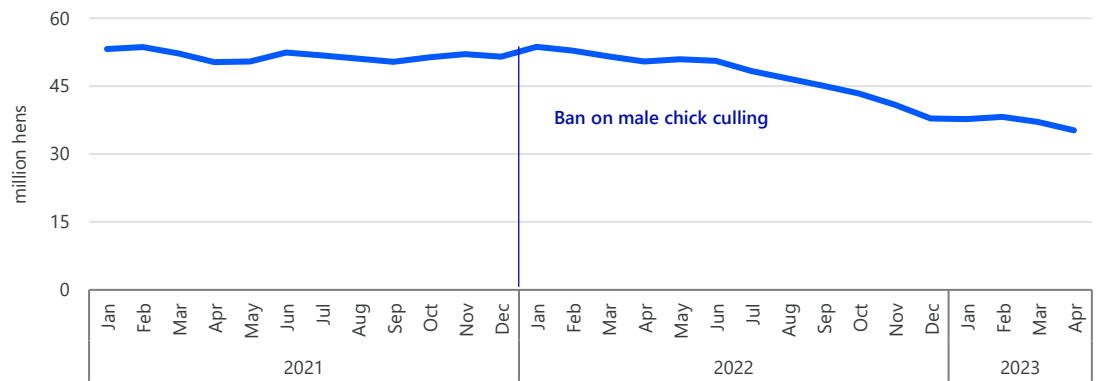
Source: Rabobank analysis based on publicly available financial data 2023

Producers have been looking for more certainty in their sales contracts, considering the uncertainties they face in their operations (feed, AI) and in markets (economy) and the significant working capital required by current inflated costs. In many markets, customers in retail, foodservice, and food processing have been reluctant to take long-term positions, as they also face changing market conditions and expect strong price competition in retail and foodservice channels. The lack of value chain commitment to egg producers, together with the industry's long production cycle, higher risks, and high working capital, means producers in many markets have become cautious with their placements, which has resulted in tight supply situations.

6. Regulations and Government Intervention

Additionally, new regulations are affecting the egg sector. The most relevant has been the introduction of a ban on male chick culling at the hatchery level in Germany in 2022. The main alternatives for producers are to use gender identification technology, grow the males for meat purposes, or import hens from abroad. These local supply options have increased costs compared to other countries in Europe that have not (yet) introduced similar requirements. Germany's laying hen flock has dropped sharply (>20% according to MEG) since 2H 2022 (see Figure 6). France adopted a ban on male chick culling in 2023, but it will have less of an impact on supply due to a later scanning date requirement than Germany (day 12 vs. day 9). This regulatory change has impacted the European market, as Germany is the number one import market, representing 45% of EU egg imports. In 2024, Germany will move to a day-6 gender identification requirement, which will make the production context even more difficult.

Figure 6: Drop in projected laying hen flock since Jan 2022 ban on male chick culling



Source: MEG estimate, including an estimate for hens in the second laying period 2023

Most other regulations – like restrictions on cage-based production and the restrictions on nitrogen emissions in the Netherlands – also affect supply but are less significant than Germany’s chick culling ban. One exception is New Zealand’s ban on cage-based production, which came into effect in 2023 and has already led to a shortage of 10% to 15% of the laying hens needed to meet the demand for eggs. Many smaller farmers, challenged by these changes, have not yet invested in new housing systems.

A major concern related to high egg prices is the impact on low-income consumers, especially in emerging markets. For these consumers, eggs are a major staple food and an important source of proteins and nutrients, like Vitamins B6, B12, and D, and they are widely distributed, as no cooling is needed. Eggs are positioned in these markets as one of the most affordable proteins. If eggs become more expensive/less widely available for these consumers, it could raise significant social and health risks.

Some governments have become worried about high food prices (including eggs) and have intervened in markets by imposing price ceilings (especially in Asia) and opening imports of eggs and egg products. This usually makes the operational context more challenging for local producers, who are not able to pass on high costs under these new circumstances, and consequently reduces production (as seen in Malaysia and more recently in Egypt). This worsens availability and creates additional market volatility.

Global Prices Unlikely To Drop to Pre-peak Lows

One rule that usually holds in the egg industry: Peaking prices lead to similar drops in prices one to two years after the peaks. This is usually caused by producers increasing the number of hens to try to tap into higher prices and higher margins, which then creates oversupply. We saw such a price trend after Germany’s 2009 ban on conventional cages, after the EU introduced a conventional cage ban in 2012, after the US industry’s avian flu crisis in 2015, and after the Netherlands’ fipronil crisis in 2017.

Should we expect a similar trend this year? Prices will go down in countries with extreme peaks, like Europe and Japan, but likely not to the same lows we have seen in other years. Most markets are expected to stay in balance, due to support from several factors.

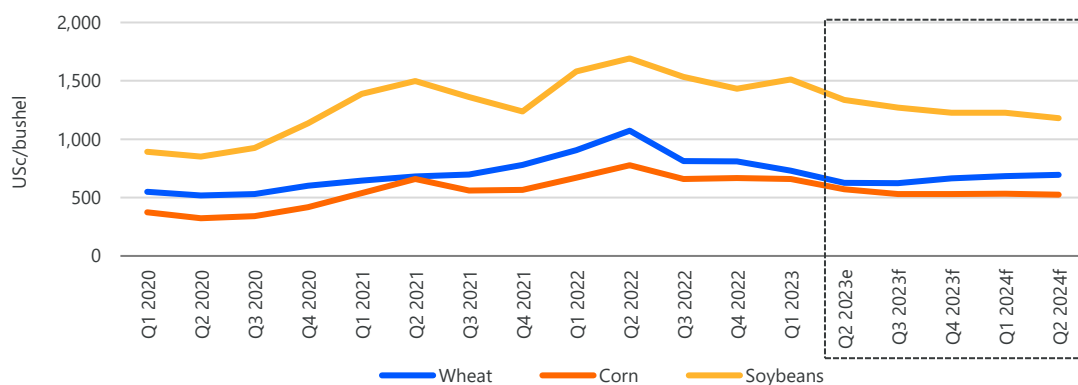
This residual price support reflects a few important differences from previous peak-trough cycle years.

First, in other years, AI’s (or fipronil’s) impact disappeared after some time, whereas we now see ongoing cases of AI throughout the year, even in the summer months. This will keep pressure on supply, as we clearly see in Europe and the Americas, where laying hen flock numbers are still low (see Figure 3).

Second, feed prices are expected to stay elevated this year. Rabobank’s feed price outlook indicates a small decline of 10% from the peaks of 2022 but ongoing high price levels (50% above 2020) (see Figure 7). This will keep production costs relatively high.

Third, interest rates are rising in most markets, which may restrict companies’ access to working capital and the financing of new buildings. So, supply will likely expand less than in other years. Supply will also be restricted by the ongoing impact of regulation. This is especially important for Europe, as the impact of the male chick culling ban on trade remains significant. The Netherlands is the key supplier to Germany, but it cannot expand production (which will likely decline) due to local nitrogen regulations. Alternative suppliers do not really exist, as German retailers prefer to sell German or Dutch eggs, and other suppliers (like Poland or Spain) never get a position on shelves due to confidence and logistical issues. This might change when Dutch and German eggs are less available, but that will take time.

Figure 7: Rabobank’s price outlook forecasts ongoing high feed prices



Source: Rabobank projections (May 2023) based on CBOT, Bloomberg 2023

In other markets, especially emerging markets, smallholders are expected to go out of business, while small and mid-sized operations will be challenged by working capital finance requirements. We expect more local consolidation as larger players – who are also challenged by higher interest rates and costs for new operations – try to expand.

In general, we expect egg prices to stay relatively high heading into 2024, with differences between countries. The main exception is the US, where prices have started to drop significantly. The key issue there is that consumers have reduced egg consumption at a time when farms are transitioning toward cage-free production while old capacity is still operational, leading to high production.

Relatively high prices will be seen in most other countries with ongoing AI pressure and outbreaks, restrictions on GPS or breeding stock imports, financial challenges (like a high number of farms with limited access to finance or US dollars), and major regulatory changes (like in Germany).

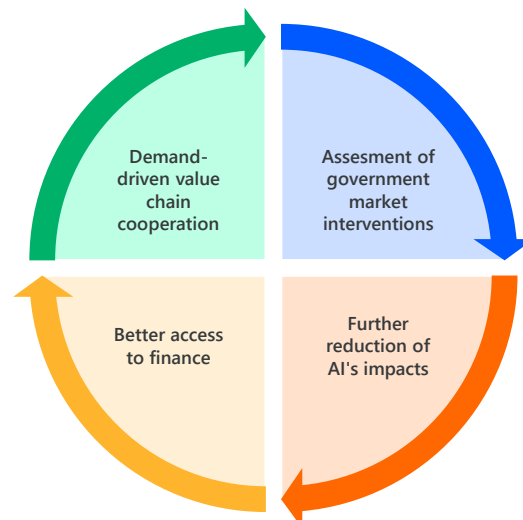
Other countries will likely see a return to historical volatility after these price peaks. Still, ongoing high costs, as forecast in Rabobank’s latest outlook, will restrict a return to the lower price levels we saw before 2021. In the longer term, supply balance will return, and we will see price volatility toward a new market balance in the interim.

How To Reduce Volatility and Balance Markets

The current context of high global prices and possible future egg price volatility is a wake-up call for the whole value chain, from producers to customers and consumers. With ongoing high input prices, disease challenges, government interventions, and limited value chain commitments, market conditions have been highly volatile, leading now to historically high price levels and pressure on consumer demand for a food that is an important staple for many consumers.

As some factors have a long-term impact on future egg supply, it is important to rethink how market volatility can be more “normalized”. We think four things need to happen to bring markets more into balance: more value chain cooperation with a stronger role for customers; adoption of measures that further reduce the impact of AI; a more balanced approach to governmental market interventions; and better accessibility to finance, especially in emerging markets but also in cases of government-driven changes (see Figure 8).

Figure 8: Four key elements to reducing price volatility in value chains



Source: Rabobank analysis 2023

Build More Demand-driven Value Chain Cooperation

A major lesson from the current price peaks is that the value chain needs a more balanced mechanism for future supply and fair pricing, with better cooperation between customers and suppliers. By coordinating the value chain more from a customer-demand perspective, customers can play an important role by taking more responsibility and working with producers to ensure risks and margins are shared fairly between all parties in the value chain. A lack of customer commitment in times of high market uncertainty has contributed significantly to current market disruptions. It is especially important that such a mechanism, in terms of pricing and volume, links better with the industry’s long (i.e. more than one year) production cycle for laying hens.

In many markets, customers hold a lot of power in the value chain and can set relatively attractive conditions for producers. A challenge for producers will be to counteract that power to balance value chain positions better. More consolidation or leadership via unique approaches to branding or differentiated product supply could provide important opportunities there.

A long period of high prices bears a serious risk that food manufacturers will adjust recipes, use fewer yolks or whites in their products, and replace them with other ingredients. We saw this to some extent after the 2015 price rally in the US and the 2017 fipronil price rally in Europe. It usually takes quite a long period of lower prices to recapture the industry’s position in these segments. From this perspective, improving value chain cooperation and directly related pricing models benefits both producers and consumers.

Minimize the Impact of Government Interventions on Egg Supply and Prices

Government interventions can have a big impact on value chains. Many are set with well-intentioned efforts to address concerns about social issues, like pricing and affordability, animal welfare, or environmental issues. It is important to minimize any potential price volatility that may result from such interventions.

Some governments have intervened in markets to reduce the price inflation of local food. This usually has been done by combining price ceilings for local producers and allowing import volumes. Such interventions are understandable but should be handled with care. Malaysia's and Egypt's experiences show that implementing a price ceiling without adequately supporting producers facing cost increases can make things worse.

Government interventions in emerging markets should emphasize improving egg production by creating a more stable supply of layer farm inputs like feed ingredients, genetics, and equipment and by optimizing the efficiency of farms and the value chain. Furthermore, interventions should focus on enhancing smallholder production efficiency – for example, by using dual-purpose breeds, training, strengthening value chain cooperation and distribution, and offering microfinance options.

Government interventions in developed markets, such as the ban on male chick culling in Germany and bans on conventional cage farming in several countries, can significantly impact supply and indirectly impact markets, like we see now in Europe and New Zealand and have seen in other places in the past. In the case of bans on conventional cages, production usually recovers after some time, as producers are triggered to transition to cage-free production. In the case of the ban on male chick culling, neither the current technology for gender identification nor raising male chicks is cost-effective enough, which pushes down supply. As long as this issue remains unsolved, it will keep impacting local supply and markets.

A well-balanced analysis of the potential market impacts of government interventions is needed. Only by such analysis can governments determine the right instruments and timing to prevent any significant price volatility that could follow.

Reduce the Impact of AI

Outbreaks of AI are a major factor behind price volatility, so reducing the global impact of AI on the egg industry is important. The most important step for the industry is to improve biosecurity further to reduce the risk of outbreaks. Adequate monitoring of AI, stamping out cases, and compensation programs, together with the use of new technology like lasers, could help to further reduce AI's impact on the industry.

In the longer term, vaccination could become a tool to reduce AI cases. However, vaccination raises risks for global egg trade. At present, importing countries tend to ban imports from vaccinating countries to reduce the risks of AI being introduced to their country, in line with the WOA standard. This view is under discussion and might change in the near future.

In the short term, non-exporting countries such as Peru, Ecuador, and Bolivia are expected to use vaccination to reduce AI's impact, as Mexico, Egypt, and Bangladesh are already doing. This is also related to the fact that, in most countries, no adequate compensation program exists for farmers facing an AI outbreak.

In the medium term, exporting countries like France and the Netherlands are considering using vaccination as a tool to reduce AI cases, but this has not yet been decided for the layer industry. If it happens, and if vaccination is accepted by importing countries, it could lead to more use of vaccination in exporting countries.

In this context, the global supply of grandparent and parent stock is important. Supply usually originates from only a few countries, like Brazil, the US, the UK, and the EU. As commercial operations in most of these countries – except Brazil – have been hit by AI, exporting breeding stock supply to importing countries has been challenging. This has especially impacted the Middle East, Africa, and Latin America. Further acceptance of compartmentalization or regionalization in the case of AI outbreaks will be important to keep the egg supply chains that depend on these imports running.

Better Access to Finance

Access to finance is an important factor behind supply volatility. Due to high feed and energy prices, working capital requirements have become a big issue, especially for small and mid-sized players. More access to finance will be important, especially in emerging markets. This can be achieved through demand-driven value chains or via dedicated finance programs, such as microfinance.

Better access to finance will mean better availability of working capital and more options to finance imports of breeding stock and equipment, especially in countries with limited access to the US dollar.

For the longer term, it is important to expand access to finance to fast-growing industries in emerging markets and industries pushed to transform production systems based on social drivers like animal welfare or the environment. This has become more difficult in a context of higher risks, weaker economies, and, in some countries, high inflation, high interest rates, and limited US dollar availability. Better value chain cooperation, together with joint government and industry programs to overcome some of these hurdles, will also facilitate financing that works better in the long term.

Imprint

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