ANIMAL POLICY INTERNATIONAL

THE COST OF CAGE-FREE EGG IMPORTS

The Impact of Cage-Free Import Requirements on EU Households

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Introduction



In its EU Livestock Strategy, the European Commission committed to introducing legislation to phase out cages for laying hens in the EU, and to establish equivalent requirements for imported eggs. This requirement is intended to ensure that eggs sold in the EU, whatever their origin, come from hens kept to the standards the EU sets.

Animal Policy International modelled the potential effects on EU egg prices of applying an equivalent cage-free requirement to imported eggs and egg products following the EU's domestic cage-free transition.

~3%
of EU egg consumption is imported

~87%
of imported eggs and egg products are from cage systems

€0.21
increase for the average EU consumer each year

Estimated effect on consumer prices

Imports account for only around 3% of EU egg consumption. Therefore, any higher costs associated with bringing imported production in line with EU requirements are heavily diluted across the EU market.

Imported supply is considerably more cage-intensive than EU production. Approximately 87% of imported eggs and egg products are from cage systems. Applying the same cage-free requirement to imports would therefore increase estimated import prices more than domestic prices, improving the relative competitive position of EU producers.

The effect on average consumer prices is negligible. Applying a cage-free requirement to imported eggs and egg products would raise EU egg prices by around 0.3% (or 0.6% under a deliberately high-cost stress test). For the average EU consumer, the expected increase would be €0.21 a year.

1

Egg consumption in the EU: Market context



In 2025, over 100 billion eggs were consumed in the EU, with around 97% produced in EU Member States and 3% imported.

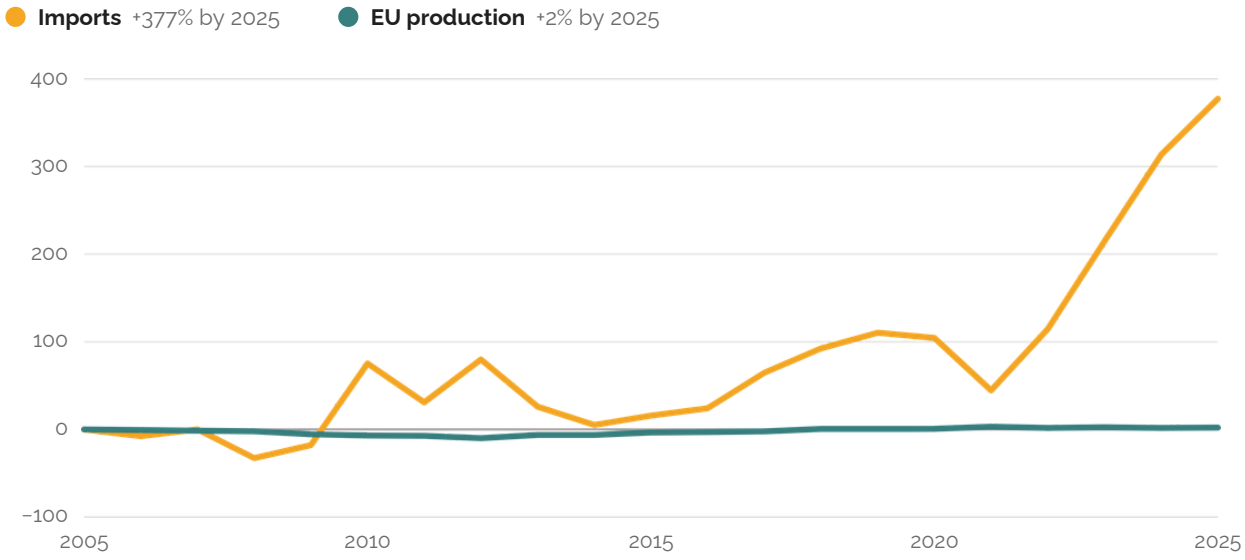
While EU farmers produce the vast majority of eggs consumed in the EU, imports have grown considerably in recent years, far outpacing growth in domestic supply.

Data from the European Commission's **EU Agricultural Outlook 2025-35** suggest that growth in EU egg production has been modest over the past two decades, while imports have more than tripled, with most of that growth occurring in the past four years.

GRAPH 1: GROWTH IN EU EGG PRODUCTION AND IMPORT VOLUMES SINCE 2005

EU egg imports have grown almost fivefold since 2005, while EU production has barely changed

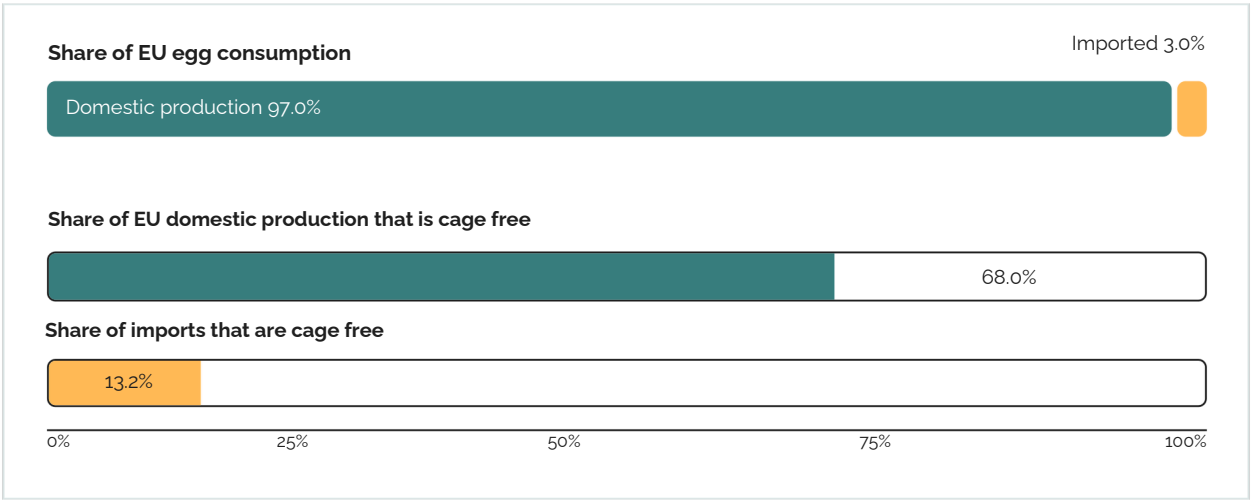
Change in volume compared with 2005 (%)



Source: European Commission, EU Agricultural Outlook 2025-35 dashboard, Agri-food data portal.

Of these imported eggs and egg products, we estimate **87% came from cage systems**, with many likely coming from battery-cage systems which the EU phased out over a decade ago. In contrast, **more than two thirds of eggs produced in the EU already come from cage-free systems**, with that figure continuing to increase.[1]

GRAPH 2: EU-PRODUCED AND IMPORTED EGGS: MARKET SHARES AND PROPORTION PRODUCED CAGE-FREE



Sources: Comext (Eurostat); and API estimates based on public data. Full workings are available in ourpublic model: animalpolicyinternational.org/eu-egg-economics

The difference is particularly pronounced among several of the EU's principal egg suppliers from third countries.

With the exception of the United Kingdom, Norway, and Switzerland, which together accounted for 9% of the EU's 2025 imports, each of the top exporters whose products enter the EU has cage shares higher than the EU.

Ukraine, the EU's largest external supplier in 2025, accounted for over 60% of EU imports and has a commercial cage share in excess of 95%.

Although imports remain a relatively small share of EU consumption, their rapid growth and substantially higher cage share mean that equivalent import requirements could affect the relative position of domestic and imported supply.

To access the full data behind this report, **scan the QR code** or go to **animalpolicyinternational.org/eu-egg-economics**

TABLE 1: ESTIMATED CAGE SHARE OF EGG EXPORTS TO THE EU

Country	Cage share of exports	Country	Cage share of exports
Ukraine	**97%**	Norway	**3%**
Türkiye	**88%**	Moldova	**33%**
United Kingdom	**17%**	India	**99%**
North Macedonia	**90%**	United States of America	**54%**
China	**97%**	Albania	**90%**
Argentina	**89%**	Switzerland	**0%**
Bosnia and Herzegovina	**91%**	Mexico	**99%**

Higher cage share than the EU Lower cage share than the EU

Sources: API estimates based on public information. Sources compiled in the Country tab of our public model: animalpolicyinternational.org/eu-egg-economics

2

Estimated effect on consumer prices

€0.21

increase for the average consumer each year

Requiring imported eggs to meet EU welfare standards raises the question of how much this will impact consumer costs.

Under the model's central assumptions, applying the proposed cage-free requirement to imported eggs would increase average consumer spending by approximately €0.21 per annum. Under a deliberately high-cost stress test, the estimated increase remains around 0.6% translating to an additional €0.34 per person each year.

The model looks at the extra cost of cage-free farming, estimates how many imported eggs come from cage systems, and scales that to total European consumption.

It draws on four key inputs:

01

The proportion of imports produced in cages
An estimated 87% of imported eggs come from cage systems, with rates of cage production varying significantly across extra-EU suppliers. The model applies the additional production cost to the share produced in cages in each country. For example, in Switzerland, where cages are not used in egg production, no additional cost from changing housing systems is assumed.

02

The additional cost of cage-free production
Van Horne and Bondt (2023) estimate that production costs in barn or aviary systems are 15% higher than in enriched cages and 21% higher than in barren battery cages. Our central calculation uses 15%, reflecting limited information on cage types and transitions away from barren battery cages in several exporting countries.[2] [3] Our higher-cost scenario tests a 25% increase.

03

The share of import costs attributable to production
Drawing again on Van Horne and Bondt (2023), the model distinguishes production costs from other expenses, such as transport. The assumed cost increase applies to the production component rather than the full import price. For simplicity, we ignore tariffs, which vary greatly across countries and products. Price impacts would be lower were tariffs included, as a greater proportion of costs would be non-production.

04

The contribution of each supplier to EU consumption
Each country's estimated price increase is weighted by its share of EU imports. The resulting average increase in import prices is then weighted by imports' share of total EU consumption, which was around 3% in 2025.

From import prices to the average consumer

Assuming production costs are 15% higher in cage-free systems, import prices rise by about 11%. However, since imported eggs make up just 3% of total EU consumption, the effect on overall egg prices is small as it is spread across the entire EU market, working out to an increase of roughly 0.3%.

Even assuming production costs are 25% higher in cage-free versus cage systems, the overall price rise across all eggs would remain at around 0.6%.

To illustrate what this could mean in practice, consumption of 223 eggs per person annually (the EU average for 2025), valued at €3.30 per dozen, is equivalent to about €61 a year. Applying the estimated price increases to this amount gives an additional annual spending equivalent of around €0.21 under the central scenario and €0.34 under the higher-cost scenario.

This calculation uses a retail shell-egg price to illustrate the scale of the estimated effect, including for eggs consumed as ingredients in other foods like baked goods and ready meals.

ESTIMATED EFFECT OF THE IMPORT REQUIREMENT, BY SCENARIO

	LOW-COST SCENARIO	CENTRAL SCENARIO	HIGH-COST SCENARIO
Assumed higher production cost in cage-free systems	10%	15%	25%
Change in overall EU egg prices	~0.2%	~0.3%	~0.6%
Additional annual spend per person	~€0.14	~€0.21	~€0.34

These figures represent an average across EU consumption, rather than an identical increase for every product or purchaser. The actual effect could be lower if exporters absorb some additional costs to remain competitive, or EU buyers shift purchases to suppliers already operating cage-free systems in countries with a higher share of cage-free production.



4

Conclusions and recommendations

The European Commission has committed to pursuing equivalent animal welfare standards for products produced in the EU and those imported from third countries. Applying equivalent requirements to imported eggs and egg products would give effect to this commitment, ensuring that the same welfare standards apply to eggs sold on the EU market, irrespective of where they are produced.

A negligible impact on household budgets

The analysis indicates that extending cage-free requirements to imported eggs and egg products would have a very limited impact on household budgets. Because imports account for a relatively small share of EU egg consumption, the estimated increase in overall egg prices is just 0.3% under the central scenario, rising to 0.6% under a deliberately high-cost scenario. This equates to an estimated additional €0.21 per person per year in the central scenario.
These findings demonstrate that equivalent welfare requirements can help ensure higher standards across the EU market without imposing a significant financial burden on the public.

Recommendations

The Commission should ensure that its forthcoming animal welfare proposals deliver on its commitment to equivalent standards for domestic and imported products. In particular, we recommend that the Commission:

1. Extend equivalent welfare requirements to imported eggs and egg products, explicitly covering both shell eggs and processed egg products, so that the requirements cannot be circumvented by breaking eggs before export.
2. Introduce a cage-free requirement for imported poultry meat, ensuring that imported products are subject to equivalent welfare standards to those required of EU producers.
3. Design and implement import requirements in a non-discriminatory manner, applying equivalent standards and transition periods to EU and third-country producers, while providing all trading partners with the same opportunity to demonstrate equivalence.

Together, these measures would ensure that the EU's animal welfare ambitions apply consistently to products sold on its market, while respecting its international trade obligations.



Appendix

Understanding market dynamics and the Armington elasticity

Changes in relative prices can directly affect purchasing decisions and overall market share. To model how buyers switch between domestic and imported eggs, and translate those shifts into revenue, the model uses the Armington elasticity. This economic parameter measures how consumers respond to price changes between domestic and imported products.

- **High elasticity:** Consumers easily switch between domestic and imported goods
- **Low elasticity:** Consumers less readily switch between domestic and imported goods

A meta-analysis of thousands of estimates across economic papers implied that, generally, elasticities lie in a range of 2.5-5.1, with a median of 3.8.[5] The European Union's Common Agricultural Policy Regional Impact Analysis (CAPRI) model uses Armington elasticities of 2.0 for cheese and fresh milk products, and 8.0 for all other products.[6]

We utilise a central estimate for our modelling of 3.8, reflecting the broader economic literature, and adopt CAPRI's agricultural product estimates as high and low values for our sensitivity analysis.

References

1.API estimate based on public data. Full workings are available in the Production tab of our public model. Available at: http://animalpolicyinternational.org/eu-egg-economics

2. Van Horne, P.L.M. and Bondt, N. (2023) Competitiveness of the EU egg sector, base year 2021: international comparison of production costs of eggs and egg products [Wageningen Economic Research Report 2023- 006], Table 1.1, p. 11 and p. 41. Available at: https://doi.org/10.18174/583668.

3. Given that data on specific cage systems utilised across non-EU countries are limited, and that many countries (especially major exporters) are transitioning away from, or have banned, battery-cage systems, we opted to utilise the 15% production-cost-increase estimate.

4. Estimated as the production value of the EU egg sector less net exports of eggs and egg products. Eurostat (2026) Economic accounts for agriculture – values at current prices [aact_eaa01], production value of eggs, EU27, 2025, extracted 13 September 2026. Available at: https://ec.europa.eu/eurostat/databrowser/view/aact_eaa01/default/table. European Commission (2026) Agri-food data portal: Eggs trade dashboard, extracted 13 September 2026. Available at: https://agridata.ec.europa.eu/extensions/DashboardEggs/EggsTrade.html.

5. Bajzik, J., Havranek, T., Irsova, Z. and Schwarz, J. (2020) Estimating the Armington elasticity: The importance of study design and publication bias, Journal of International Economics, 127, 103383, abstract. Available at: https://doi.org/10.1016/j.jinteco.2020.103383.

6. European Commission, Joint Research Centre (2026) CAPRI – Common Agricultural Policy Regional Impact Analysis, Modelling Inventory and Knowledge Management System (MIDAS). Available at: https://web.jrc.ec.europa.eu/policy-model-inventory/explore/models/model-capri/. CAPRI Network (2022) CAPRI Online Manual: Market module for agricultural outputs, section "Trade flows and the Armington assumption", Table 28 (page last modified 7 November 2022). Available at: https://www.capri-model.org/dokuwiki_help/doku.php? id=market_module_for_agricultural_outputs.



