

DOI: <https://doi.org/10.30525/978-9934-26-698-0-2>

GLOBAL DAIRY PRICE SIGNALS IN THE ASSESSMENT OF UKRAINIAN DAIRY PROCESSING ENTERPRISES' COMPETITIVENESS

In today's open economy, assessing the competitiveness of domestic milk processing enterprises requires consideration not only of internal organisational and economic factors, but also of external market indicators. Global and European dairy price signals can be regarded as an important external analytical dimension within the competitiveness management system.

To understand this mechanism, firstly we should focus on the cost structure of dairy products. In the day-to-day operations of dairy processing enterprises, the price of raw milk traditionally stands as one of the most significant factors in determining production costs. Based on practical observations of the operations of Ukrainian dairy processing enterprises, including Kharkiv Dairy Plant LLC, the share of raw milk in the production cost of certain types of finished dairy products can range from approximately 60% to 90%. This figure is flexible and varies significantly depending on a number of factors: the type of product, the type of packaging, the complexity of the recipe, the extent of processing, the presence of additional non-dairy ingredients, as well as the proportion of costs for energy and logistics. Accordingly, this figure should be viewed precisely as a conservative practical observation at the level of individual enterprises and production lines, rather than as universal official statistics for the entire industry. However, such a significant share of raw materials underscores a key point: even minor fluctuations in purchase prices for raw milk can radically alter an enterprise's competitive position in the market.

The high dependence on the raw material base, it is crucial for Ukrainian processors to identify the most relevant external benchmarks that may signal a shift in price trends. For Ukraine, the European dairy market should be considered the primary external benchmark. This is explained not only by geographical proximity, but also by Ukraine's deep institutional and trade integration with the European Union. The gradual

alignment of domestic legislation, sanitary standards, and customs and trade procedures with European norms creates a solid foundation for strengthening mutual trade influence. Furthermore, the European market is the most logistically relevant and operationally accessible external benchmark for a wide range of finished dairy products compared to more distant regions. European prices serve as an indicator of both potential import pressure on the domestic market and potential export opportunities for domestic producers.

At the same time, it is important to clearly distinguish between the objects of cross-border influence. Raw milk, given its physical and chemical properties, is not the main subject of long-distance cross-border trade. Its transport is significantly limited by its short shelf life, strict temperature control requirements, the need for specialised isothermal tankers, and the risks of logistical delays at the border. All this makes the transport of raw milk over long distances economically unviable. Therefore, the influence of the European market on Ukraine is manifested primarily not through the direct physical movement of raw materials, but indirectly – through prices for finished dairy products, dairy commodities, changes in the expectations of Ukrainian processors, and intensified competition for the domestic raw material base.

In addition to the European market, it is also worth considering distant global markets such as New Zealand, Oceania and the USA. However, their role for Ukraine is specific: they serve as important benchmarks primarily for long-life exchange-traded commodities with a high concentration of value per unit of weight, such products as skimmed milk powder, whole milk powder, demineralised whey powder, milk protein concentrates and isolates, butter and anhydrous milk fat (AMF). For these goods, the logistics component in the final cost is less critical, making competition truly global, and price signals from distant markets relevant for export planning by domestic enterprises.

The use of global and regional price signals in competitiveness research is based on a solid scientific foundation, in particular on the theory of price transmission and the spatial integration of markets. In fundamental works, notably the studies by Rapsomanikis, Hallam and Conforti, the transmission of price signals is viewed as a complex phenomenon involving the assessment of the completeness of transmission, the speed of adjustment to new equilibrium states, and possible asymmetry in market response [1]. As well, Newton demonstrates that national prices for dairy commodities are not entirely isolated and are significantly influenced by global markets, particularly those of the US, the EU and Oceania [2]. This

confirms that global prices can act as objective external signals for national economies.

Examining the European context, Bakucs, Benedek and Fertő note that the European dairy market is characterised by partial spatial integration, where the fulfilment of the Law of One Price depends on trade volumes, geographical distance and institutional conditions [6]. The short-term transmission of prices specifically for raw milk between EU countries was studied by Jurkėnaitė and Mikėlionytė, who, using the Granger causality test, confirmed the existence of time lags in the transmission of price impulses even within the single market [8].

An enterprise's ability to respond effectively to price signals from global competitors is becoming an integral part of its competitive advantage. The nature of such a response is often non-linear: Ben Abdallah, Fekete Farkas and Lakner, applying NARDL modelling to the Hungarian market, identified asymmetric price pass-through in the dairy supply chain, largely explained by the market power of processors [3]. An analysis of market adjustment dynamics following price shocks is presented in the work by Rose and Paparas on the UK market, where a return to equilibrium took around seven months [4]. Finally, Jongeneel and Gonzalez-Martinez demonstrate that price reactions directly influence crisis resilience and the sector's long-term competitiveness [5].

The practical mechanism by which these external price signals affect domestic milk processing enterprises should be considered through the prism of potential import pressure. The logic of this process is as follows: if there is a decline in the purchase price of raw milk on the EU market, this creates the conditions for a reduction in the production cost of finished dairy products at European plants. With a certain time lag, this may lead to a general reduction in the selling prices of finished European products. As a result, cheaper imported products (cheese, butter, desserts) are capable of intensifying competitive pressure on the shelves of Ukrainian supermarkets. Ukrainian processors are forced to take this threat into account when planning their own margins, developing pricing policies and negotiating with raw material suppliers.

At the same time, external price signals are distinctly two-sided in nature. While a fall in external prices generates risks of import pressure, their rise on global or European markets may stimulate positive export expectations among domestic processors. Seeing the prospects of more profitable exports, Ukrainian enterprises may intensify competition for the available raw material base within the country. The drive to increase production volumes for export often leads to higher purchase prices for

domestic dairy farms. Thus, the external signal is transformed into an internal impulse, affecting not only the market for finished products but also the conditions of access to raw materials.

An important practical aspect that must be taken into account in the assessment methodology is contracting with dairy farms and the existence of a management lag. In Ukrainian contractual practice, the purchase price of raw milk is traditionally reviewed no more than once a month, that is objectively creates a certain time lag between the emergence of an external signal and the actual change in the internal price. This is precisely why the use of lag-based econometric tools in future research is underpinned not only by purely statistical considerations but also by a profound contractual and managerial rationale.

Also separate methodological caveat is necessary, because the existence of close trade links does not mean that scientific conclusions obtained for the US, EU, Irish or UK markets can be automatically transferred to the realities of Ukraine. The Ukrainian dairy market is characterised by its own specific production structure, significant geopolitical risks, currency fluctuations, logistical constraints and unique contracting features. In this context, global and European prices are considered within this framework solely as analytical signals for managing competitiveness, rather than as definitive determinants of Ukrainian prices.

To systematise the proposed approach, a methodological framework has been developed in the form of a table that integrates key external and internal indicators (Table 1).

Table 1

Elements of the methodology for using external dairy price signals in assessing the competitiveness of Ukrainian dairy processing enterprises

Element of the methodology	Research content	Practical significance for the enterprise
European dairy price signals	Benchmark for regional price trends	May signal future import or export pressure
Global commodity signals	New Zealand, Oceania, USA, GDT, FAO Dairy Price Index	Relevant for long-life products and those with high value concentration
Purchase price of raw milk in Ukraine	Key raw material indicator for processors	Directly affects production costs, margins and pricing policy
Contract lag and raw milk competition	Purchase price reviews generally occur no more than once a month	Justifies the need for lag analysis

In summary, we should note that Ukrainian dairy processors would be well advised to monitor European price signals as the most timely external benchmark. This is due to geographical proximity, institutional integration and potential import-export implications. At the same time, global commodity indicators remain critically important for long-life goods with high added value, for which competition with distant regions is economically justified. Taking external price signals into account, given the significant share of raw milk in production costs and the existence of contractual management lags, can serve as an effective tool for optimising procurement policy, contracting with dairy farms, and comprehensively managing the competitiveness of enterprises in an unstable market environment.

References:

1. Rapsomanikis G., Hallam D., Conforti P. Market Integration and Price Transmission in Selected Food and Cash Crop Markets of Developing Countries: Review and Applications. FAO.
2. Newton J. (2016). Price Transmission in Global Dairy Markets. International Food and Agribusiness Management Review, Special Issue, vol. 19, Issue B, pp. 57–72.
3. Ben Abdallah M., Fekete Farkas M., Lakner Z. (2020). Analysis of Dairy Product Price Transmission in Hungary: A Nonlinear ARDL Model. *Agriculture*, vol. 10 (6), p. 217. DOI: <https://doi.org/10.3390/agriculture10060217>
4. Rose R., Paparas D. (2023). Price Transmission: The Case of the UK Dairy Market. *Commodities*, vol. 2 (1), pp. 73–93. DOI: <https://doi.org/10.3390/commodities2010004>
5. Jongeneel R., Gonzalez-Martinez A. (2022). EU Dairy after the Quota Abolition: Inelastic Asymmetric Price Responsiveness and Adverse Milk Supply during Crisis Time. *Agriculture*, vol. 12 (12), 1985. DOI: <https://doi.org/10.3390/agriculture12121985>
6. Bakucs Z., Benedek Z., Fertő I. (2019). Spatial Price Transmission and Trade in the European Dairy Sector. *AGRIS on-line Papers in Economics and Informatics*, vol. 11 (2), pp. 13–20. DOI: <https://doi.org/10.7160/aol.2019.110202>
7. Jurkėnaitė N., Mikėlionytė D. (2021). Raw milk price transmission in the selected EU countries. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, vol. 21 (3), pp. 477–482.