

UTP Directive prohibiting the purchase of milk below producers' production costs:

An economic analysis of the effects on the EU dairy value chain

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UTP Directive prohibiting the purchase of milk below producers' production costs: An economic analysis of the effects on the EU dairy value chain

Brief economic study conducted in cooperation with the ife Institute of Food and Food Economics Kiel and the Faculty of Agriculture at Kiel University of Applied Sciences

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Executive Summary

In order to strengthen farmers' position in the supply chain and improve their income situation in volatile markets across EU Member States, the revision of the UTP Directive is calling for a ban on purchasing below production costs to be extended to the dairy value chain as well. Against the backdrop of these proposals and discussions, this brief study by the ife Institute in Kiel and Kiel University of Applied Sciences (HAW Kiel) compiles the scientific arguments regarding the potential policy implications from a micro- and macroeconomic perspective.

Effect 1: A ban on purchasing below production costs exacerbates supply surpluses and weakens the position of farmers and dairies in the dairy value chain

The results of the analysis by the ife Institute show that, should a ban on purchasing below production costs be introduced, the producer price signal will in future be determined by the level of production costs, irrespective of supply and demand volumes. Consequence: whilst price signals normally ensure that farmers reduce their supply volumes when supply is too high, this is no longer the case when prices are determined by production costs. In such situations, the market supply from farmers will actually increase further, leading to a worsening of the surplus situation and thus to an intensification of milk price crises. Dairies will then have to reduce their obligations to purchase raw milk. The food retail sector will also reduce its purchase obligations. As a result, the position of farmers and dairies throughout the entire supply chain will be weakened.

Effect 2: A ban on purchasing below production costs increases administrative costs and the proportion of these costs that farmers and dairies must bear

The analysis shows that a ban on purchasing below production costs requires detailed knowledge of the production costs incurred by farmers and dairies. At the same time, there is an extremely wide range in the production costs of raw milk production across EU countries. In Germany, the lowest production costs (full costs) currently stand at 34 cents per kg of standard milk, whilst the highest production costs are 55 cents per kg of milk. These costs must be recorded and documented, and it is to be expected that there will be numerous legal proceedings concerning the correct calculation and the allocation of production costs within pricing models. These costs, together with the costs of documentation, will result in additional administrative burdens within the dairy value chain, which will have to be borne by the stakeholders in the value chain. It is unlikely that these costs will be borne by the sales side. It is more likely that the additional administrative and legal costs will ultimately drive down EU producer prices and dairy prices.

Effect 3: A ban on purchasing below production costs reduces the resilience of farms

Dairy farms with high production costs will not benefit from a ban on purchasing below production costs, as in countries that apply production cost indices – such as France – only a)

average, rather than high, production costs are factored into price setting, and b) production costs account for only 25 to 50 per cent of the price formulae. This reduces the resilience of smaller dairy farms with higher production costs and accelerates structural change.

Effect 4: Undesirable side effects of the ban on purchasing below production costs reduce the EU's competitiveness and jeopardise the EU's food security with regard to dairy products

Price formation on the dairy market that takes less account of supply and demand conditions on international dairy markets in future will reduce the competitiveness of EU dairy markets on the international stage. A ban on purchasing below production costs means that, despite high milk volumes, prices are higher than they would otherwise be under identical conditions. At times of high global milk production, the incentives for imports into the EU increase during these phases, whilst the EU's export opportunities decline. The ban on purchasing below production costs also means that, when milk volumes are low, prices per unit are lower than necessary to produce the additional milk volumes. Overall, this results in a reduction in food security with regard to dairy products across the entire EU as an undesirable side-effect of the ban on purchasing below production costs.

1 Introduction

This brief study focuses on the potential economic and sectoral effects of a government ban on the purchase of agricultural products and foodstuffs below production cost, using the dairy sector as an example. In the context of discussions on the UTP Directive at EU level, as well as in various EU Member States, there have been significant and controversial views on this issue for several years. Time and again, for example in discussions in Germany, it is pointed out that such a ban on sales already exists in several European countries. Indeed, in recent years, the EU Member States of Spain, France and Italy have adopted legal provisions to set producer prices on the basis of production costs. The aim of these provisions is to strengthen the position of the production sector vis-à-vis the processing industry and the retail sector, and to improve farmers' incomes.

Research by the Thünen Institute (2023 and 2024) showed that the legal frameworks and specific provisions vary considerably. Whilst Spain and Italy impose a genuine ban on purchases below production costs, the regulations in France merely stipulate an obligation to take production costs into account when setting prices. What the three countries have in common is a general obligation to conclude a contract prior to the delivery of goods. It should also be emphasised, however, that significant product sectors and distribution channels are already exempt from the regulations by law or by decree.

From the perspective of the academic experts consulted by the Thünen Institute in 2023, a state-imposed cost-based pricing system is not a suitable measure for improving farmers' incomes. Intra-sectoral competition would persist due to the large differences in costs between individual farms, even with a stronger cost-orientation; and without volume controls and EU-wide regulation, this would result in serious distortions of competition and shifts in production.

The following section summarises the fundamental scientific arguments regarding the potential policy implications from a micro and macro economic perspective, as presented by the ife Institute Kiel and University of Applied Sciences in Kiel (HAW Kiel).

2 Ban on purchasing below production costs: Effects on supply surpluses and the competitive position of farmers and dairies

Setting milk prices on the basis of the production costs of dairy farms takes place independently of other supply and demand factors in the milk markets. As emphasised in the fundamental economic literature, milk prices serve as an important signal for market participants. As demand volumes rise, milk prices increase, which in turn prompts dairy farms to produce more milk. This leads to an expansion in milk production volumes, and milk prices correct themselves downwards again, finding a new equilibrium between the production costs of the marginal producers and the willingness to pay

of consumers of dairy products. This regulatory mechanism applies not only within the EU but also globally.

A ban on purchasing below production costs, regardless of supply and demand levels, undermines the important signalling function of milk prices for the milk markets. In that case, the producer price signal is no longer determined by international and national market forces but by the level of milk producers' production costs. This has the following effects, as shown in Figure 1.

Figure 1 illustrates how setting producer prices at the level of production costs can hinder the market's ability to adjust to changes in demand and supply, thereby exacerbating existing surpluses on the EU milk market. In the initial situation, the demand curve D_0 intersects with the supply curve S_0 . The equilibrium price P_{m0} is established at the equilibrium quantity Q_{e0} . At this price, the quantity of milk supplied by milk producers corresponds to the quantity demanded in the market. For the purposes of further analysis, it is assumed that P_{m0} also corresponds to the price required to cover the milk producers' production costs.

If, for example, demand falls as a result of falling incomes, the demand curve shifts from D_0 to D_1 . Without cost-based price setting, a new market equilibrium is established whilst supply S_0 remains unchanged. The producer price falls from P_{m0} to P_{m1} and the quantity of milk traded from Q_{e0} to Q_{e1} . The lower price P_{m1} serves as a key market signal: it indicates to milk producers that, at current production levels, there is an excess of supply and a reduction in production is necessary. This price mechanism thus creates incentives to adjust supply to the reduced demand.

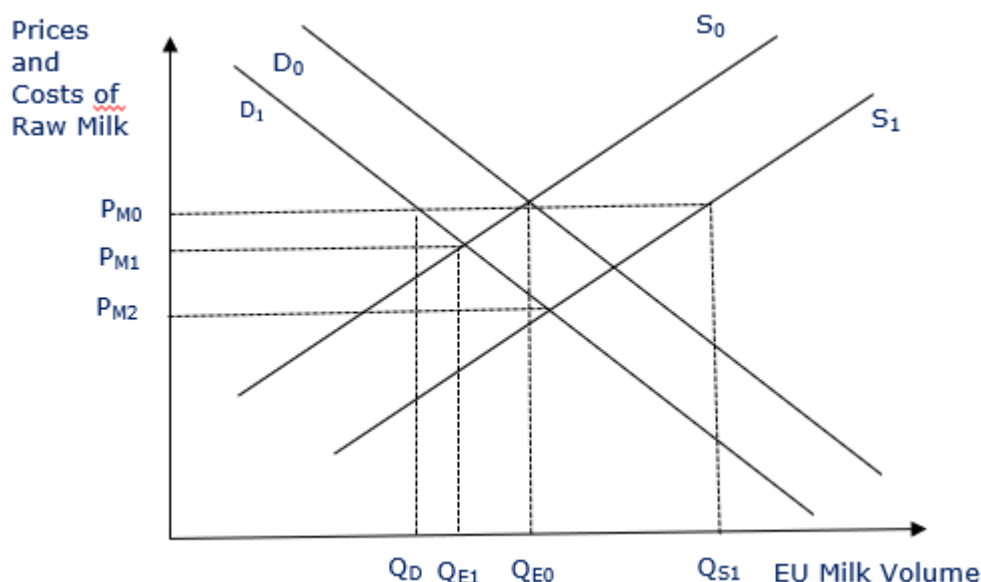
The situation is different if the purchase of raw milk below production costs is prohibited and, as a result, at least the cost-covering price P_{m0} must continue to be paid. The fall in price to P_{m1} , which would otherwise be required due to the shift in demand, can then no longer take place. The producer price signal is no longer determined by the relationship between supply and demand, but by the level of the underlying production costs. Although demand has fallen, milk producers therefore do not receive a corresponding price signal to reduce their production.

Figure 1 also shows that this elimination of the price signal can actually exacerbate the surplus situation. If the cost-covering price P_{m0} remains in place, individual farms may still have incentives to maintain or expand their production volumes. This is illustrated in the figure by the shift in the supply curve from S_0 to S_1 . With the administratively or legally guaranteed price P_{m0} , the quantity of milk supplied consequently rises to Q_{s1} . At the same time, given the lower demand curve D_1 and the price P_{m0} , the quantity demanded is merely Q_D . The difference between Q_{s1} and Q_D thus represents the resulting or exacerbated supply surplus.

The specific problem becomes clear when one considers what price would be required – were it not for the cost-based price floor – to restore market equilibrium given the expanded supply S_1 and the reduced demand D_1 . The point of intersection between D_1 and S_1 lies at the even lower price P_{m2} . The growing difference between the market-clearing price P_{m2} and the price P_{m0} , which continues to be

determined by production costs, illustrates that the market imbalance is becoming more acute. The more supply expands despite falling demand, the greater the need for adjustment becomes; however, due to cost-based price fixing, this adjustment can no longer be achieved via the producer price.

Figure 1: Exacerbation of the supply surplus caused by price-setting at production cost levels (assumption: production costs from the initial situation used)



Source: ife Institute Kiel, 2026.

Figure Note:

- D_0 = Demand curve in the initial situation
- D_1 = Demand curve following a decline in demand, e.g. as a result of falling incomes
- S_0 = Supply curve in the initial situation
- S_1 = Supply curve shifted to the right as a result of an expansion in milk production
- P_{m0} = Equilibrium price in the initial situation; also the assumed cost-covering price if the price were set on the basis of production costs in the initial situation
- P_{m1} = new market equilibrium price following the shift in demand from D_0 to D_1 , with supply remaining unchanged at S_0 and without cost-based price setting
- P_{m2} = market equilibrium price given the lower demand D_1 and supply expanded to S_1 , provided that no cost-based price setting takes place
- Q_{e0} = EU milk volume at market equilibrium in the initial situation; the quantities supplied and demanded are equal
- Q_{e1} = EU milk volume at the new market equilibrium following the shift in demand from D_0 to D_1 with supply S_0 remaining unchanged
- Q_{s1} = EU milk production volume at a price P_{m0} that continues to cover costs and with supply expanded to S_1
- Q_D = EU milk demand volume at the reduced demand level D_1 and a cost-covering price P_{m0} that remains fixed

In such a situation, volume adjustments must therefore be made at another point in the supply chain. As dairies cannot permanently absorb and market the additional volume of raw milk independently of

the market opportunities for milk and dairy products, they would have to limit their purchase obligations towards milk producers or introduce other volume-control mechanisms. The volume and sales risks would thus be increasingly shifted from the price mechanism to the contractual relationships between milk producers and dairies. For farmers, this means that whilst a cost-covering price may be formally guaranteed, the purchase of the volume of milk they produce can no longer be guaranteed to the same extent as before.

Consequently, a ban on purchasing below production costs can trigger a self-reinforcing mechanism: the decline in demand from D_0 to D_1 does not lead to the market-standard fall in price from P_{m0} to P_{m1} and thus does not create the corresponding incentives to reduce supply. If, instead, P_{m0} remains the cost-covering price and production is even expanded from S_0 to S_1 , the difference between the quantity supplied Q_{s1} and the quantity demanded Q_D increases. Consequently, surplus situations can persist for longer and milk price crises can be structurally exacerbated. The necessary volume control is ultimately shifted to the dairies, which would have to limit their raw milk purchases. This can weaken the position of both milk producers and dairies vis-à-vis the downstream stages of the value chain.

Conclusion: The results show that, if purchasing below production costs is prohibited, the producer price signal will in future be determined by the level of production costs, irrespective of supply and demand volumes. Consequence: Whilst price signals ensure that farmers reduce their supply volumes when supply is too high, this is no longer the case when prices are determined by production costs. In such situations, farmers' market supply will actually increase further, leading to a worsening of the surplus situation and thus to an intensification of milk price crises. Dairies will then have to reduce their obligations to purchase raw milk. The food retail sector will also reduce its purchase obligations. As a result, the position of farmers and dairies throughout the entire supply chain will be weakened.

3 Ban on purchasing below production costs: administrative costs and their distribution across the value chain

3.1 Variances of raw milk production costs and administrative costs

According to Nieberg and Forstner (2023)¹, the production costs of agricultural products such as raw milk depend on a wide range of factors, including:

¹ Nieberg, H. and B. Forstner (2023): Kurzstellungnahme zur Ermittlung von Produktionskosten landwirtschaftlicher Erzeugnisse vor dem Hintergrund des Prüfauftrags für das Verbot des Einkaufs von Lebensmitteln und Agrarerzeugnissen unterhalb ihrer Produktionskosten. In: Forstner, B., 2023: Staatliches Verbot des Einkaufs von Lebensmitteln und Agrarerzeugnissen unterhalb der Produktionskosten. Erfahrungen in Spanien, Frankreich und Italien sowie Einschätzungen zu einer möglichen Umsetzung in Deutschland. Thünen Working Paper 220, August 2023, Anhang 5, p.10-13.

Natural site conditions (soil, water supply, topography, etc.). The better the natural site conditions, the higher the yields tend to be. Higher yields mean that production costs are spread across a larger volume of production, resulting in lower production costs per unit of product. Different natural site conditions can also lead to varying levels of livestock housing construction costs (e.g. depending on the groundwater level, on sloping terrain, taking snow loads into account, or due to special requirements arising from the location within a protected area, etc.).

Livestock breed: Depending on the breed used, different levels of productivity are achieved in livestock production. With breeds that offer higher productivity, production costs are spread across a higher production volume, resulting in lower production costs per unit of output. If breeds are used which, although they have lower productivity, command higher prices on the market due to specific characteristics, farmers incur higher production costs but also achieve higher revenues.

Individual farm production volume: due to economies of scale in overheads (machinery, buildings, labour), production costs per unit produced decrease as production volume increases (at least up to a certain point).

State of the art: old barn – new barn, old machinery – new machinery. New barns and technology is, in most cases, more expensive than old barns and technology and therefore leads to higher production costs unless the new technology also results in higher productivity (e.g. currently: Automatic Milking Systems). If the barn or machinery is used for longer than the standard depreciation period, production costs are lower.

Workforce levels and the scale of machinery and buildings: An oversized stock of machinery and buildings that is not adapted to the land area, livestock numbers or production volume, as well as a workforce that is not utilised efficiently, leads to higher production costs.

Knowledge, skills and expertise of the farm manager: The greater the knowledge and skills of the management, the more efficient production will be. For example, through the targeted use of fertiliser, plant protection products, site-appropriate variety selection, feed, etc., significant cost savings can be achieved and/or substantial increases in yield or performance and improvements in quality can be realised, which in turn leads to lower production costs per unit produced. Depending on negotiating skills, different input prices can be secured when purchasing intermediate and capital goods as well as external services.

Cooperation between the farm and other farms: through purchasing groups, for example, lower input prices can be achieved through larger purchase volumes, resulting in lower production costs. Shared use of machinery can also lead to significantly lower production costs.

Participation in agri-environmental schemes: This generally leads to higher production costs, which are normally at least offset by agri-environmental payments.

Annual fluctuations in yields and output: Depending on weather conditions, both crop yields and livestock production output fluctuate (e.g. milk yield decreases during heatwaves). Consequently –

assuming all other factors remain constant – this leads to annual variations in production costs. In addition, there are seasonal calving periods that amplify the seasonal effect on milk production

Overall, the factors listed above that influence the cost situation on dairy farms mean that production costs in milk production vary considerably. For instance, analyses by the Thünen Institute of specialised dairy farms within the German Farm Accountancy Data Network (FADN) network show that, on average across the financial years 2017/18 to 2019/20, the cost difference between the 10th percentile (10 % of farms with the lowest production costs) and the 90th percentile (the 10 % of farms with the highest production costs) was 36.82 cents per kilogram of milk (with average production costs, excluding remuneration for own land and capital, amounting to 47.56 cents per kilogram of milk, and with full remuneration amounting to 49.95 cents per kilogram of milk). This raises the question of which production costs should be used to derive a price: the costs of the top 10 per cent, the top 25 per cent, or the average costs? (Nieberg and Forstner, 2023).

Furthermore, the individual full production costs depend on the assumed rates of return for the farm's own factors of production (owned land, equity capital, own labour) and their actual volumes. These so-called imputed factor costs can vary significantly depending on the individual objectives and utility function of the farm managers, as well as on regional locational advantages or disadvantages. Due to a lack of knowledge regarding these farm-specific factors, flat-rate average figures are usually applied, which only reflect the actual circumstances to a limited extent.

- A flat rate of 2 or 3 per cent is often applied as the return on own capital, representing the opportunity cost of the equity capital employed; however, given the high levels of equity capital in many farms at present, negative interest rates would be more likely to apply.
- The level of rent to be applied for owner-occupied land would need to take into account the soil quality, condition, location and layout of the plots. As this information for calculating opportunity costs is not available, only regional average rates or the rents paid for land already under lease are used, which may be too high or too low for the owner-occupied land in question.
- Fundamentally, in the context of interest here, the question arises as to whether rates of return should be taken into account at all for the owned land and equity capital in this context. Ultimately, the return on equity capital and one's own land forms part of income, just as it does for non-farmers who have invested money or, where applicable, even leased out land.
- For the farm's own, unpaid (family) labour, a wage rate (opportunity cost) should in principle be applied that corresponds to what the individuals would receive in another job or occupation. This wage rate would therefore need to be differentiated not only by region but also according to education, qualifications and, where applicable, age. As a rule, however, an average wage is used.
- Furthermore, the level of factor costs for the labour employed per unit of output depends not only on the chosen wage rate, but also on the assumed working hours. Data on actual working hours on the farm – ideally broken down by product – are not available for most farms, and estimating these figures is quite difficult and rather imprecise. This can have a significant impact on production costs.

It can be inferred from the analysis by Nieberg and Forstner (2023) that it is not surprising if dairy farms continue to operate even though the flat-rate full costs, based on average rates, do not correspond to the milk price achieved.

‘Determining product-specific production costs and updating them regularly could turn into a costly endeavour that is the subject of ongoing disputes (as to whether the correct data has been used, etc.) and which will fail to achieve its objectives in the medium term’ (Nieberg and Forstner, 2023, p. 13).

3.2 Administrative costs distribution across the value chain

Figure 2, ‘Higher transaction costs arising from legal disputes and additional documentation relating to the determination of producer costs can only be passed on to a small extent to the demand side (retail, wholesale, end consumers)’, illustrates the potential economic consequences of additional transaction and administrative costs that may be associated with a statutory price-setting mechanism based on agricultural production costs. The central question here is who ultimately bears the additional costs within the dairy value chain. ‘s analysis distinguishes between the effects on the buyer or consumer side and those on the producer side.

The initial situation is represented by the demand curve D_0 and the supply curve S_0 . Their point of intersection determines the original market equilibrium. The volume of EU milk traded in this scenario corresponds to Q_{e0} . As no additional transaction costs are taken into account in this initial situation, the price PC_0 paid by purchasers or consumers corresponds to the price PP_0 received by producers. In the diagram, PC_0 and PP_0 are therefore shown at the same price level. This simplifies the description of an initial situation in which the additional costs of cost-based price setting examined here do not yet lie between the two sides of the market.

If statutory requirements are now introduced stipulating that prices must be determined on the basis of production costs, or that certain production costs must be taken into account when setting prices, this places additional demands on the actors in the value chain. The relevant production costs must first be identified, methodically defined, regularly updated and documented in a transparent manner. In particular, it must be clarified which cost components are recognised as production costs, to which period they relate, how different farm structures are to be handled, and in what way these costs must be incorporated into specific pricing models. The question of whether individual farm costs, average costs of specific farm groups or reference costs determined by other means are used as a basis can also be of considerable importance for practical implementation.

Such a regulation therefore does not merely increase the immediate administrative burden. It also creates new requirements for the contractual structure of relationships between milk producers and dairies, as well as, where applicable, between further stages of the value chain. Contracts and pricing formulas must be designed in such a way that it is clear whether, and to what extent, the prescribed production costs have been taken into account in price determination. Accordingly, there is a growing need for data collection, documentation, auditing and the provision of evidence. From an economic

perspective, these additional expenses constitute transaction costs that are not directly linked to the production, processing or marketing of additional milk, but which must nevertheless be financed by the companies.

Added to this is an increased potential for legal disputes. As soon as compliance with a statutory price requirement depends on how production costs are calculated and factored into price agreements, differing interpretations can have significant economic consequences. Disputes may arise, for example, over which cost items are to be included, which reference period must be used, how cost increases are to be taken into account, or what proportion the calculated production costs must account for within a specific pricing model. Similarly, differing views may emerge as to whether a pricing formula agreed between a producer and a dairy actually complies with statutory requirements. It is therefore to be expected that at least some of these issues would have to be resolved in court. In addition to the direct legal and solicitors' fees, this gives rise to further internal expenditure on documentation, consultancy, monitoring and contract drafting.

Figure 2 summarises these additional burdens as 'transaction costs'. Economically, they act as an increase in the costs of supplying milk and dairy products within the value chain. Graphically, this is illustrated by the shift of the supply curve from S_0 to the left, to S_1 . At any given price, a smaller quantity can be supplied economically due to the additional costs. The new market equilibrium arises at the intersection of S_1 and the unchanged demand curve D_0 . The volume of EU milk traded is thereby reduced from Q_{e0} to Q_{e1} .

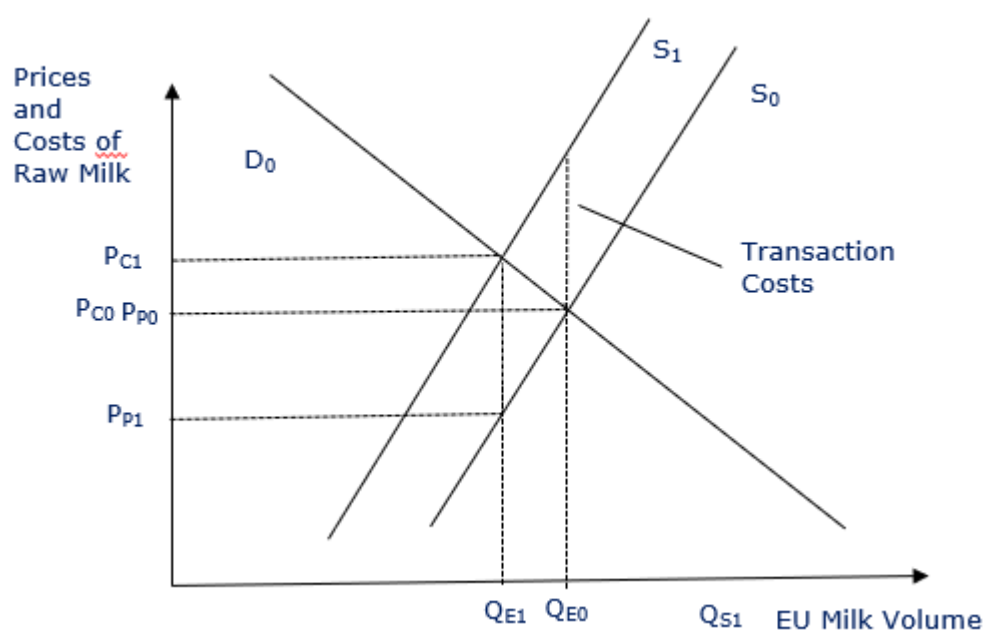
A key factor in the distribution of the additional transaction costs is that these cannot necessarily be passed on in full to downstream buyers or end consumers. The diagram illustrates this through the differing trends in consumer and producer prices. On the demand side, the price rises only from PC_0 to PC_1 . This price increase reflects that part of the additional transaction costs which can be passed on via higher selling prices to downstream market stages – such as wholesalers and retailers – and ultimately to consumers.

The remaining portion of the costs, however, is borne by the supply side. The price remaining for producers falls from PP_0 to PP_1 . A gap thus arises between the price PC_1 paid by the demand side and the price PP_1 remaining on the producer side. This wedge, labelled 'Transaction Costs' in the diagram, represents the additional costs incurred within the value chain. Put simply, therefore: part of the additional costs is borne by the demand side through the rise from PC_0 to PC_1 , whilst another part is borne by the supply side through the fall from PP_0 to PP_1 . At the same time, the quantity traded falls from Q_{e0} to Q_{e1} .

The diagram thus also illustrates an important point regarding the assessment of cost-based price targets: the incurrence of additional costs does not automatically mean that these can be passed on to wholesalers, retailers or end consumers via correspondingly higher selling prices. Whether, and to what extent, such a pass-through is successful depends in particular on market and competitive conditions, as well as on how demand responds to price increases. If dairies are unable to pass on

additional costs in full to their customers, these costs must be absorbed within the upstream value chain. Particularly where there is high competitive pressure in the sales markets, it cannot therefore be assumed that all additional administrative, documentation, consultancy and legal costs can be passed on to the sales side.

Figure 2: Higher transaction costs arising from legal disputes and additional documentation relating to producer cost determinations can only be passed on to a limited extent to the demand side (retail, wholesale, end consumers)



Source: ife Institute Kiel, 2026.

Figure Note:

- D_0 = Demand curve in the baseline scenario
- S_0 = Supply curve in the initial situation
- S_1 = supply curve shifted to the left as a result of transaction costs (arising from contracts, legal disputes and documentation)
- P_{C0} = Equilibrium price in the initial situation = price paid by consumers in the initial situation 0
- P_{C1} = Price paid by consumers in the new situation 1, taking transaction costs into account
- P_{P0} = Equilibrium price in the initial situation = producers' price in the initial situation 0
- P_{P1} = producers' price in the new situation 1, taking transaction costs into account
- Q_{E0} = EU milk volume at market equilibrium in the initial situation
- Q_{E1} = EU milk volume at the new market equilibrium with increased transaction costs in the dairy value chain

A regulation aimed at taking greater account of production costs – and thus at improving the income situation of agricultural producers – may at the same time give rise to additional transaction costs. Insofar as these costs cannot be passed on to the demand side, they reduce the value added available

to milk producers and dairies within the value chain. There is therefore a possibility that part of the economic benefit sought by the regulation will be offset by the costs of its practical implementation.

This is of particular significance for the intended effect of cost-based regulation. Consequently, Figure 2 illustrates a potential counterproductive effect of mandated cost-based pricing. Mandated price-setting based on production costs requires the reliable recording, calculation and documentation of the relevant costs, as well as their incorporation into contracts and pricing models. At the same time, legal disputes are to be expected regarding which production costs should be applied, how these should be correctly calculated, and to what extent or proportion they must be taken into account in the respective pricing models.

The resulting documentation, administrative, consultancy and legal costs increase transaction costs throughout the entire dairy value chain. As it is unlikely that these additional costs can be passed on in full via higher selling prices to wholesalers, retailers and end consumers, at least part of them must be borne by the upstream players in the value chain. As illustrated by the difference between PC1 and PP1 in the figure at , there is therefore a risk that additional bureaucratic and legal costs will ultimately reduce the prices or revenues remaining with milk producers and dairies. Regulation that is actually intended to strengthen producers' position by taking production costs into account could thus simultaneously generate additional costs that partially counteract this objective.

4 Prohibition on purchasing below production costs: impact on the resilience of dairy farms

The question is: which production costs should actually be used and determined as a basis for price setting? In France, pricing is based solely on average production costs rather than high production costs. Furthermore, the average production costs of dairy farms account for only 25 to 50 per cent of the price formulas for raw milk. Using nationwide average production costs as a benchmark for price setting would lead to the following changes.

- If one takes the production costs of the most cost-effective dairy farmers, then little would change if these costs are below the current average producer price. In that case, the market price would either be determined by the market as before, or would always remain above the farmers' own production costs. Those farms with lower production costs would tend to expand their production (production incentive – it is worthwhile ...). This surplus supply on the market can only be sold at lower prices on the world market, which ultimately weakens the processors (e.g. co-operative dairies owned by the farmers themselves).
- The dairies will lose competitiveness if, at the same time – as is to be expected – this price exceeds international producer prices, as they cannot command the same level of prices on the markets (due to international competition).
- For those farmers whose production costs exceed the average, almost nothing will change for the time being (they still won't be covering their costs); they will remain dissatisfied, and some of them will eventually cease production (mostly as part of a generational change, as is already the case). It can even be assumed that these farms will reduce their milk production more

rapidly than before, as they know from the outset that their milk price will always be based on average costs rather than on their own high costs. They do not benefit from these regulations and will experience a weakening of their resilience. (Nieberg and Forstener, 2023)

Conclusions: Dairy farms with high production costs will not benefit from a ban on purchasing below production costs, as in countries that apply production cost indices – such as France – only a) average, rather than high, production costs are factored into price setting, and b) production costs account for only 25 to 50 per cent of the price formulae. This reduces the resilience of smaller dairy farms with higher production costs and accelerates structural change.

5 Ban on purchasing below production costs: EU competitiveness and EU food security with dairy products

Figure 3 below compares the development of three raw milk values relevant to price formation on the European dairy market over the period from 2001 to 2026. The vertical axis shows the respective raw milk values in cents per kilogram of raw milk (Ct/kg Raw Milk). The blue line shows the 'Raw Milk Value World Market', i.e. the raw milk value on the world market derived from international market conditions. The grey line represents the 'Raw Milk Value Europe', which reflects the trend in raw milk value on the European market. Both time series are supplemented by the red line labelled 'Raw Milk Value Intervention'. This indicates the level of raw milk value that can be derived from the intervention prices of skimmed milk powder and Butter applicable over time or from the safety net provided by the European market organisation. The figure 3 illustrates in particular how closely price trends in the EU have been linked to developments on the international milk markets since around 2007.

In the early years of the period shown, this correlation was much weaker, or non-existent. Between 2001 and around 2006, the European raw milk value largely fluctuated within a relatively narrow range of approximately 27 to 35 Ct/kg raw milk, whilst the world market value exhibited much more pronounced and, at times, opposite movements. This is particularly evident in 2002 and 2003, when the world market price temporarily fell to only around 10 to 15 Ct/kg, whereas the European raw milk price remained at approximately 30 Ct/kg. During this phase, the EU milk market was still much more shielded from the world market by the instruments of the European common market organisation. The intervention price – shown in red as the state-set price floor – was also significantly higher at that time, initially at just under 30 Ct/kg, than in later years.²

With the changes to the European milk market regime (2003) and the increasing focus on international markets, this picture is changing. Since around 2007, the Raw Milk Value World Market and the Raw Milk Price Europe have largely followed parallel trends. Both significant price rises and falls in the world market value are reflected in the European raw milk prices, with a similar trend and often only a slight

² According to calculations by the ife Institute, the raw milk value intervention now stands at approximately 18 Ct/kg of raw milk, taking all cost factors into account (ife Institute Kiel, 2026).

time lag. The figure 3 thus illustrates that supply and demand conditions on the international markets now determine, to a very large extent, both the fluctuations and the level of European raw milk prices. According to the calculations by the ife Institute on which the figure is based, since around 2007 up to 80 per cent of the trends and fluctuations in the European raw milk prices can be explained by trends in the global raw milk value. The European milk market is therefore now closely integrated into the international milk markets.

This correlation is particularly evident in the pronounced periods of high and low prices. The sharp rise in the world market price for raw milk in 2007/08 was followed by a corresponding rise in the European raw milk price. Following the subsequent slump, both prices rose significantly again from 2010 onwards. Comparable parallel movements can be seen during the high-price phase of 2013/14 and during the subsequent price decline from 2014 to 2016. The trend since 2020 also confirms this close correlation particularly clearly. The sharp rise in the world market value in 2021 and 2022 is accompanied by a substantial increase in the European raw milk price. Similarly, the subsequent decline in the world market value is reflected in a downward trend in the European prices. The renewed upward trend in 2024/25 is again evident in both series.

Figure 3: Development of international raw milk value world market prices determine the development of raw milk prices in Europe by up to 80 %

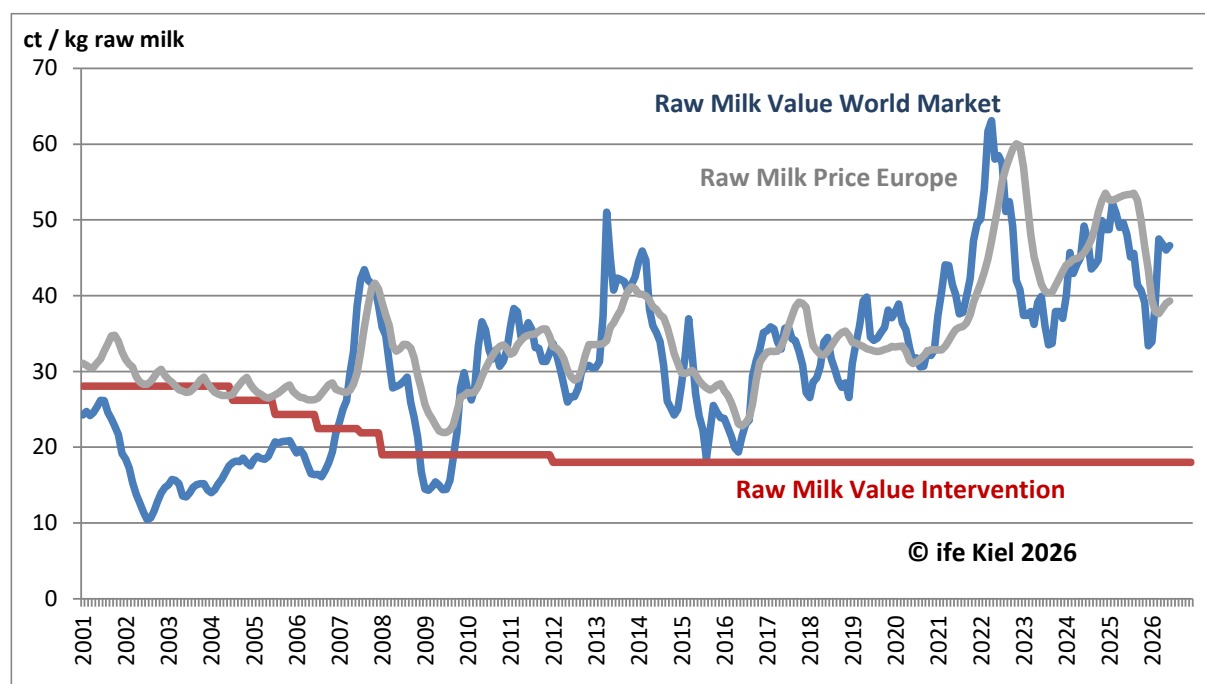


Figure Note: Raw Milk Value Word Market: raw milk value, 4.0% fat, 3.4% protein, calculated based on skimmed milk powder and butter prices Oceania; Raw Milk Value Internvention: raw milk value, 4.0% fat, 3.4% protein, calculated based on EU skimmed milk powder and butter intervention prices; Raw Milk Price Europe: raw milk prices, 4.0% fat, 3.4% protein, farm gate, no taxes, based on BLE calculations for German milk prices.

Source: BLE, Bonn, 2026; USDA, Washington, 2026; ife institut Kiel, 2026, own calculations.

Since around 2007, there have been only a few exceptional phases in this close correlation. These occur in particular when the raw milk price derived from the world market falls so far that it drops below the price level determined by European intervention. In the figure, 2009 and 2015/16 in particular are identifiable as such phases. In these situations, the very low European safety net becomes more significant: the European raw milk price can decouple from the very low world market price because the intervention mechanisms counteract a further fall in prices. Outside these extreme phases, however, the world market value lies above the intervention level. The red intervention line then has no immediate significance for current price formation, whilst the international supply and demand situation becomes the dominant determining factor for the European raw milk price.

The figure 3 thus also illustrates a key framework condition for assessing the case for greater regulation of producer price formation. If European milk prices have been closely linked to international milk markets for many years, a pricing mechanism that takes these international supply and demand signals into account to a lesser extent in future may have an impact on the international competitiveness of the EU dairy sector. This is particularly relevant because the EU is linked to the world market through both exports and imports. European prices cannot therefore be viewed in the long term as independent of international price relationships.

A ban on purchasing raw milk below production costs could weaken this link if production costs, rather than current market conditions, were to become a binding lower limit for price formation. The potential consequences vary depending on the market situation. In a situation of high global milk production and a resulting low world market price, international market signals would actually indicate a fall in the European milk price. If this fall is prevented by a cost-based price floor, the EU price – all other things being equal – would be higher than the international supply and demand situation would otherwise justify. European milk and dairy products made from it would consequently become relatively more expensive compared with products from other suppliers.

This would have two opposing effects, both of which are equally problematic for the EU dairy sector. On the one hand, a relatively higher European price would increase the incentive to import into the EU, provided that equivalent products are available more cheaply on the world market. On the other hand, the export prospects for European dairies would deteriorate, as EU dairy products would lose their price competitiveness against rival suppliers in international markets. Particularly during periods of global oversupply, this would make it more difficult to adjust European supply to the international market situation as required. The close link between world market and EU raw milk prices, as shown in the figure, would be partially negated by a more cost-based pricing system.

However, a similar problem can also arise in the opposite market situation. Where there is a global shortage of milk, rising prices must provide the economic signal to produce additional milk. A higher market price creates incentives to expand production and thus helps to restore the balance between supply and demand. If, on the other hand, pricing is based more on previously determined production costs and less on the actual scarcity in the market, prices may, all other things being equal, turn out to

be lower than would be necessary to mobilise additional production volumes. This would also impair the market price's regulatory function in a situation of scarcity – though this time in the opposite direction: instead of an insufficient reduction in production during periods of surplus, there could be an insufficient expansion of production during periods of scarcity.

The key message of the figure therefore goes beyond a mere description of historical price trends. The close parallelism between world market and European raw milk prices, evident since around 2007, shows that the European dairy industry is now closely integrated into international supply and demand dynamics. According to the underlying calculations of the ife institute, around 80 per cent of the fluctuations or trends in the European raw milk price are determined by developments on the world market. Only during exceptional periods of low prices – particularly in 2009 and 2015/16, when the world market price for raw milk fell below the level guaranteed by intervention – was a more pronounced decoupling observed.

A greater decoupling of EU producer prices from these international market signals, caused by a ban on purchasing below production costs, can therefore give rise to undesirable side effects. During periods of surplus, EU prices may be higher than the international market situation would suggest, thereby increasing incentives for imports and reducing export opportunities. Conversely, during periods of scarcity, the price signals may be too weak to prompt the necessary expansion of milk production. In both cases, this makes it more difficult for European milk production to adjust to actual situations of scarcity or surplus. In addition to reducing the international competitiveness of the EU dairy industry, there is therefore a risk that the European dairy sector's ability to respond to shortages by expanding production sufficiently will be weakened. As an unintended side-effect of a ban on purchasing below production costs, the security of supply of milk and dairy products within the EU could thus also be compromised.

Conclusions: A pricing mechanism in the dairy market which, in future, takes less account of supply and demand conditions on international dairy markets will reduce the competitiveness of EU dairy markets on the international stage. A ban on purchasing at prices below production costs means that, despite high milk volumes, prices are higher than they would otherwise be under identical conditions. During periods of high global milk production, the incentives for importing into the EU increase whilst the EU's export opportunities decrease. The purchase ban also means that, when milk volumes are low, prices on a cost-plus basis are lower than necessary to produce the additional milk volumes. Overall, this results in a reduction in the security of supply of dairy products across the EU as an undesirable side-effect of the purchase ban.