

# Price developments in the EU

## Content

1. Development of world agricultural prices over time .....	3
2. Price gap between EU and world prices .....	7
3. Price volatility .....	8

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## Figures

Figure 1: Real commodity prices development .....	3
Figure 2: Annual real world food prices .....	4
Figure 3: EU and world common wheat price development .....	4
Figure 4: EU and world white sugar price development .....	5
Figure 5: EU and world milk price development .....	5
Figure 6: EU and world beef price development .....	6
Figure 7: Price development of poultry and pigmeat .....	6
Figure 8: Ratio between EU and world agricultural commodity prices .....	7
Figure 9: Price volatility in the EU .....	8
Figure 10: Price volatility in major competing market players .....	8

## Tables

Table 1: Commodity price changes during specific periods .....	3
Table 2: Ratio between EU and world prices .....	7

## 1. Development of world and EU agricultural prices over time

### World agricultural prices in a broader context

- World agricultural prices in real terms followed a declining trend until the 2000s. During this period, changes in agricultural prices were fairly disconnected from the development of other commodity prices, with the exception of the oil crisis peak in 1973-74.
- From 2000, agricultural prices started increasing together with energy and fertilizer prices but at a much slower pace. Between 1997 and 2008, agricultural prices increased by 29% while energy and fertilizer prices were multiplied by three. Agriculture is highly energy-intensive and this led to substantial production costs increase.
- After the 2008 peak in all commodity prices, agricultural prices followed more closely the developments in energy and fertilizer prices. Nevertheless the recent decline in prices was more limited for agriculture. Between 2008 and 2016, agricultural prices fell by 17% compared to a decline in energy and fertiliser prices around 60%.
- However, while agricultural prices are now only 7% higher than in 1997, fertilizers and energy remain more than 80% and 160% higher respectively.

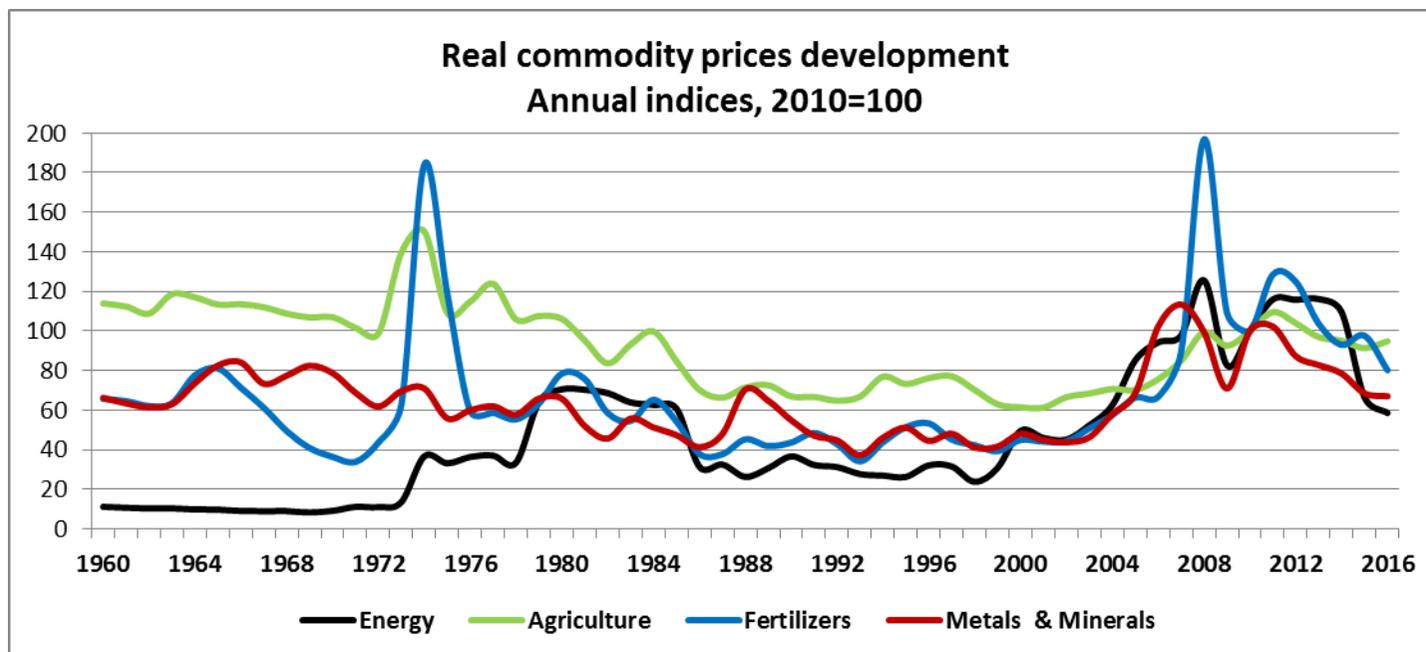


Figure 1: Real commodity prices development

Source: DG Agriculture and Rural Development, based on World Bank

### Commodity price changes during specific periods

	Agriculture	Fertilizers	Energy	Metals & minerals
1997-2008	29%	336%	298%	83%
2008-2016	-17%	-65%	-59%	-35%
1997-2016	7%	83%	162%	54%

Table 1: Commodity price changes during specific periods

Source: DG Agriculture and Rural Development, based on World Bank

## World and EU price developments

- World and EU cereal prices moved from a level around 120 EUR/t before 2007 to 240 EUR/t between 2008 and 2012. This rise was driven by higher energy and fertiliser prices, higher demand for biofuel production and crop failures affecting global supply in 2010 and 2012. Since then successive global record harvests led to a decline in cereal prices at around 160 EUR/t.
- Following the 2006 reform of the EU sugar common market organisation and the decline in EU reference price to 400 EUR/t in 2009, the EU white sugar price declined slightly and stabilised close to 100 EUR/t above reference price until end of 2011. During this period, a shortage in world supply led to world prices sometimes higher than the EU price. In 2011, the EU price increased very rapidly and remained at a high level of 700 EUR/ha until beginning of 2013. While tariffs limit imports from more competitive sugar cane producers, the presence of a quota and the strong concentration of processors could explain this significant increase in EU domestic price despite decreasing world prices. The very good EU and world harvests in 2014/2015 led to a decline in EU sugar price to 400 EUR/t and a significantly lower gap between EU and world prices. In 2016, lower world stocks led to an increase in EU prices to around 500 EUR/t.

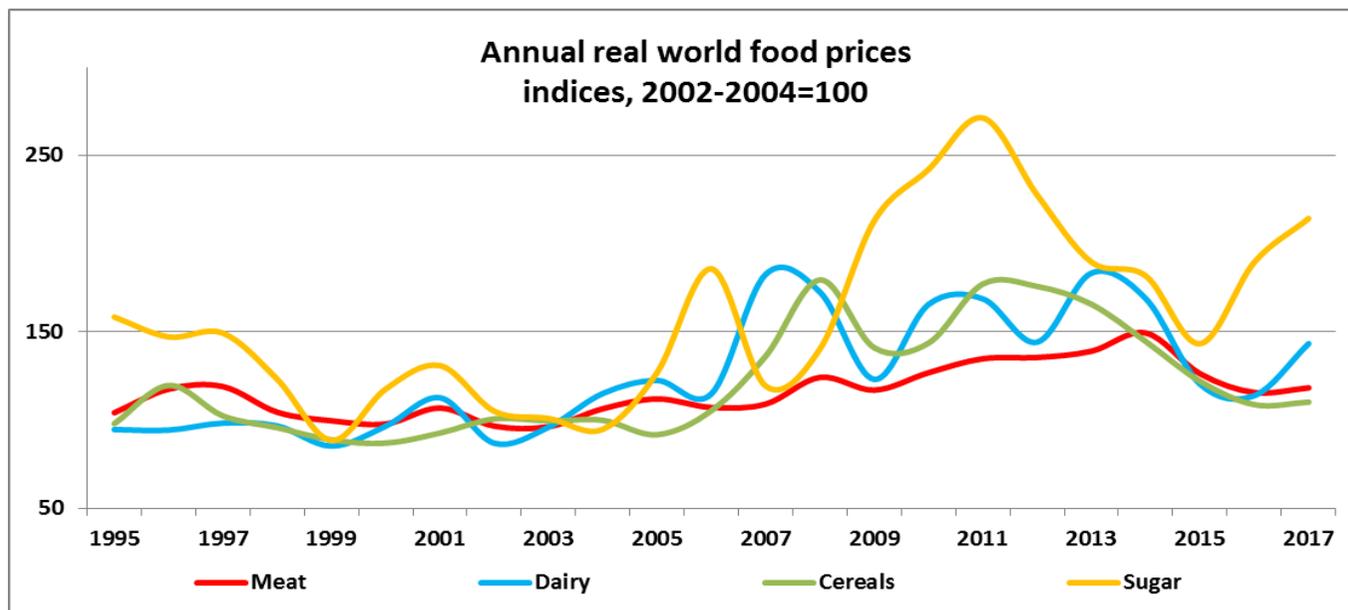


Figure 2: Annual real world food prices

Source: DG Agriculture and Rural Development, based on World Bank and FAO.

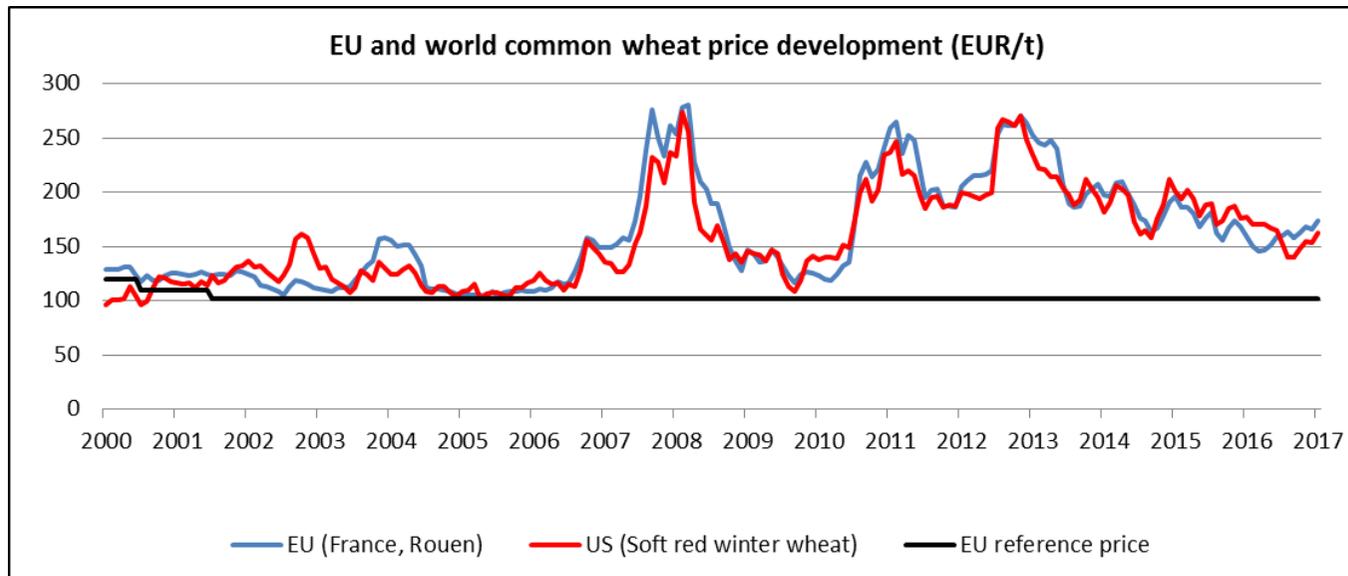


Figure 3: EU and world common wheat price development

Source: DG Agriculture and Rural Development, based on European Commission and USDA

- Before the 2004 reduction in intervention prices for skimmed milk powder (SMP) and butter, the EU raw milk price was oscillating seasonally around an average of 31 EUR/100 kg. Between 2003 and 2009, the milk equivalent support price in the EU decreased by 23% and the EU and world milk prices started to converge to 35 EUR/100 kg in 2008. This boom was due to the general commodity price increase and to lower milk production in Oceania. It was followed in 2009 by the most severe dairy crisis, when the EU average annual price dropped to 26.5 EUR/100 kg because of the strong increase in milk production particularly in Oceania. After this crisis, milk prices increased steadily up to 37.8 EUR/100 kg in 2014. During this period, world consumption kept on growing faster than production, particularly driven by strong Chinese demand and imports. The sudden drop in Chinese purchases and the introduction of the Russian import ban in August 2014 led to a strong decline in prices to 28.5 EUR/100 kg in 2016.

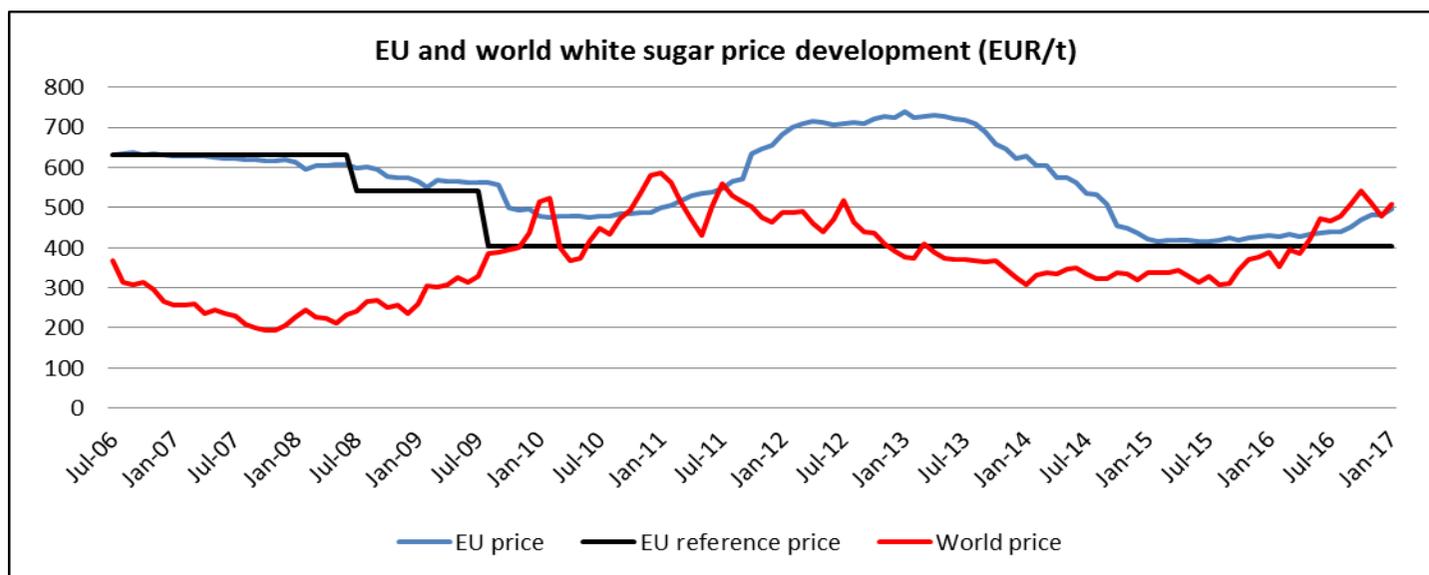


Figure 4: EU and world white sugar price development

Source: DG Agriculture and Rural Development, based on European Commission and London International Financial Futures and Options Exchange

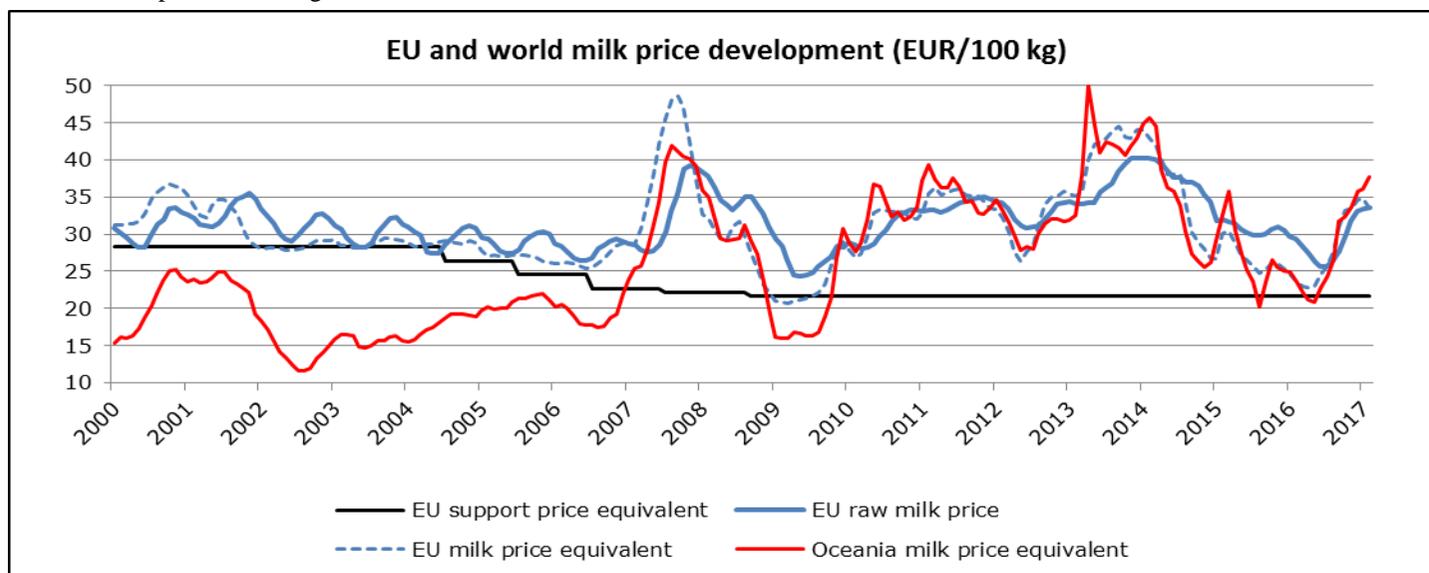


Figure 5: EU and world milk price development

Note: Milk equivalent price based on butter and SMP prices

Source: DG Agriculture and Rural Development, based on European Commission and USDA

- After the price drop in 2001, due to the mad cow and foot and mouth disease crises, the EU beef price showed a slow but steady increase in the following ten years, from an average price level around 2 500 EUR/t to 3 800 EUR/t in 2012-2013. Despite the Russian import ban and the restructuring in the EU dairy sector, beef prices kept relatively firm over the period 2014 to 2016, while US prices recorded a significant price spike during the same period due to an imbalance between supply and demand on their domestic market.
- The average EU pig meat price kept fluctuating between 1 400 and 1 600 EUR/t during the last fifteen years. After the high pigmeat prices in 2012-2013 due to the introduction of new EU welfare rules and a subsequent reduction in the pig herd, production expanded again and it resulted in a price decline, aggravated by the Russian sanitary and economic bans. Thanks to the export surge to China, pigmeat prices recovered in 2016.
- The EU poultry price showed an increasing trend over the last fifteen years driven by a steady increase in consumption, rising from 1 400 EUR/t to 1 800 EUR/t. In 2016, EU poultry price dropped due to an oversupply on the domestic market and the export competition from Brazil.

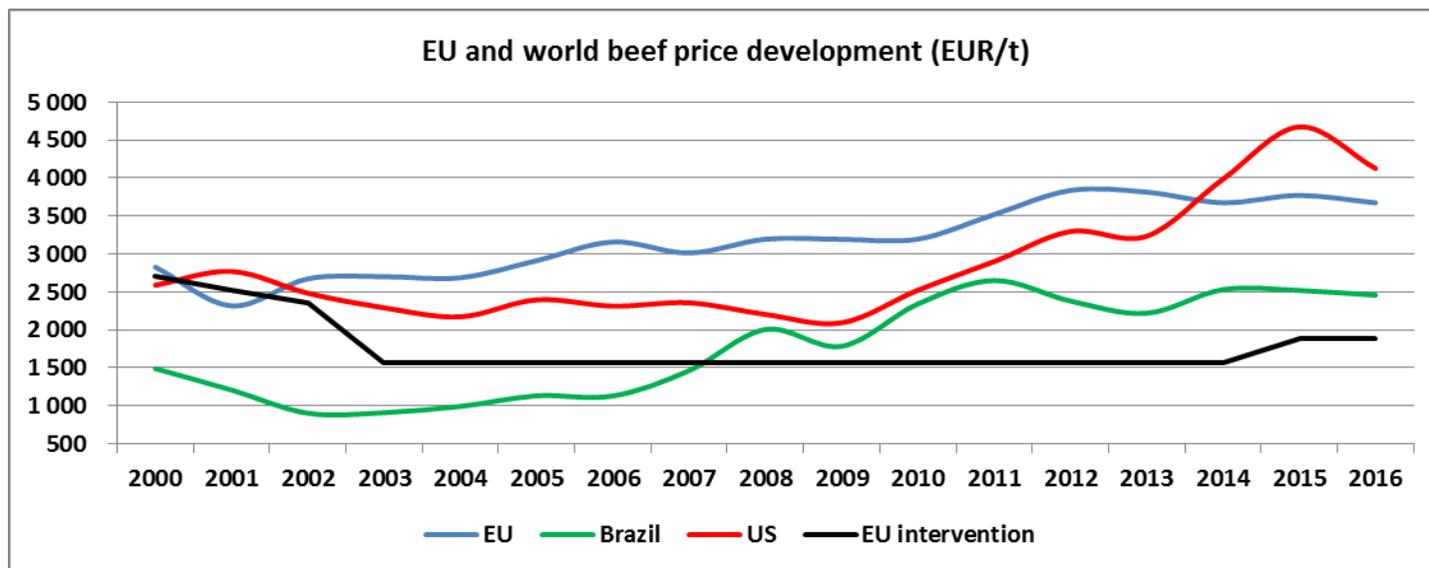


Figure 6: EU and world beef price development

Note: EU: young bulls (R3), Brazil: AVG Arroba do Boi (6 St), US: Omaha Carcass

Source: DG Agriculture and Rural Development, based on European Commission, Pecuária.com.br and USDA

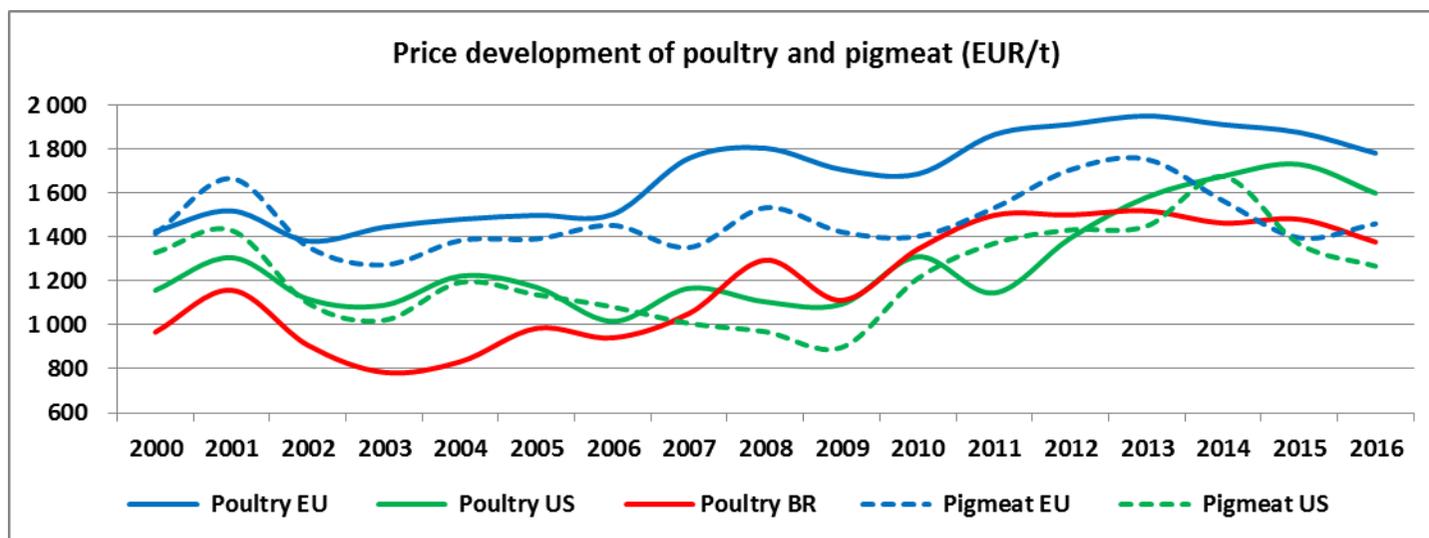


Figure 7: Price development of poultry and pigmeat

Note: EU: broiler (65%) and pig carcass class E; Brazil: avg price main producer states; US: fresh chicken grade A Chicago and lean hogs, carcass, Iowa-Minn. 167-187

Source: DG Agriculture and Rural Development, based on European Commission, USDA and FAO:

## 2. Price gap between EU and world prices

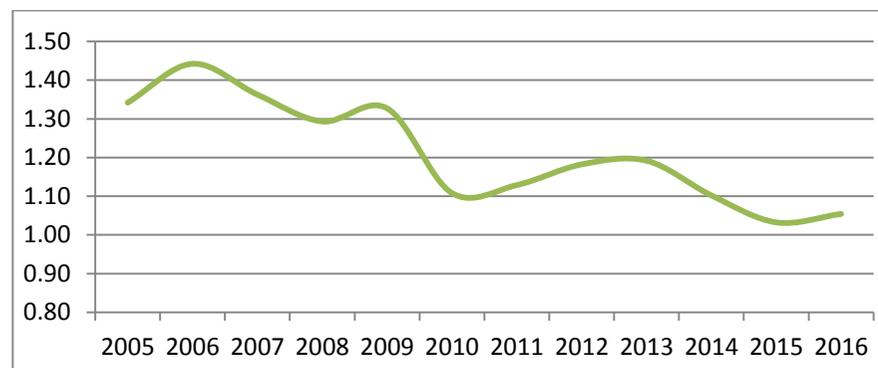
- In 2016, EU prices were on average 5% above world prices. In the last ten years, the gap between EU and world prices decreased from 30-40% to around 5%.
- This was possible also thanks to the successive CAP reforms, moving from price to income support, which brought EU prices closer to world prices especially in the cereal and dairy sectors and less for the meat and sugar sectors.
- In addition, in the last 2 years, the stronger USD favoured the competitiveness of EU exports on world markets.
- For beef<sup>1</sup>, the gap between the EU and the world market prices is closing as illustrated in the table. This is the case for Australian prices, while the US lost competitiveness because of a surge in beef prices in 2014-15. By contrast, Brazil remained much more competitive. In the poultry sector, the EU gained competitiveness over the US but lost compared to Brazil (recession). After the drop in 2014-15, the EU pigmeat price increased relatively more compared to the US and Brazil because of Chinese demand.

**Ratio between EU and world prices**

	EU/World price (in EUR)									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Beef (Australia)	1.50	1.69	1.26	1.21	1.19	1.24	0.98	0.95	1.03	
<b>Beef (Brazil)</b>	1.59	1.79	1.36	1.33	1.61	1.72	1.45	1.50	1.49	
<b>Pigmeat (US)</b>	1.59	1.59	1.16	1.12	1.19	1.21	0.94	1.02	1.15	
Pigmeat (Brazil)	1.22	1.45	1.00	1.13	1.37	1.25	1.02	1.10	1.20	
Poultry	1.41	1.25	1.18	1.35	1.18	1.13	1.04	0.82	0.80	
Soft wheat	1.11	1.00	0.99	1.07	1.04	1.04	1.02	0.94	0.99	
Maize	1.16	1.10	1.19	1.04	0.98	1.04	1.13	1.03	1.11	
Barley	1.01	1.04	1.11	1.01	1.00	1.00	0.98	0.99	0.95	
Sugar	2.48	1.58	1.04	1.10	1.55	1.90	1.62	1.24	0.98	
Butter	1.08	1.47	1.09	1.17	1.19	1.27	1.23	1.06	1.09	
Cheddar	1.08	1.17	0.95	1.03	1.14	1.10	1.12	1.03	1.02	
WMP	1.04	1.18	1.02	1.07	1.09	0.98	1.11	1.10	1.06	
SMP	0.98	1.10	0.93	0.90	0.95	0.90	0.97	0.96	0.99	
<b>Weighted average</b>	<b>1.29</b>	<b>1.33</b>	<b>1.11</b>	<b>1.13</b>	<b>1.18</b>	<b>1.19</b>	<b>1.10</b>	<b>1.03</b>	<b>1.05</b>	

**Table 2: Ratio between EU and world prices**

Note: the data is weighted using EU supply. For the aggregation, the beef price in Brazil is used as Brazil is more competitive on the world market. For pigmeat, US price is used, though slightly less competitive than Brazil, because a longer time series is available.



Source: DG Agriculture and Rural Development, based on European Commission, USDA, World Bank, IGC, London International Financial Futures and Options Exchange, National sources.

**Figure 8: Ratio between EU and world agricultural commodity prices**

<sup>1</sup> In the meat sector, there are several world reference markets, namely the Atlantic (e.g. Brazil) and Pacific (USA, Australia) markets.

### 3. Price volatility

- In the EU, the level of price volatility (here measured as Coefficient of Variation) is different for each sector: it is fairly low for beef, poultry, sugar and raw milk, and higher for crops, olive oil, pigmeat, milk powders and butter. In a single year, price volatility can reach 20% for SMP (2008 and 2014), butter (2008 and 2016) and wheat (2008). Averaged out over four-year periods volatility levels are lower but allow for a better comparison over time.
- For grains, volatility significantly decreased in recent years from 12% during the crisis 2009-2012 to 7%.
- For milk powders and butter, volatility keeps high since 2005. By contrast, volatility for raw milk and cheese is lower.
- Comparing volatility in the EU and worldwide, similar levels and patterns can be observed for grains. This convergence is more recent for milk powders and butter, given it started after the decrease in intervention prices in 2004. Moreover, the volatility remains higher in Oceania.
- By contrast, volatility is higher for meat and raw milk on the world market (around the double). In addition, world price volatility is increasing for poultry and beef, while decreasing in the EU.

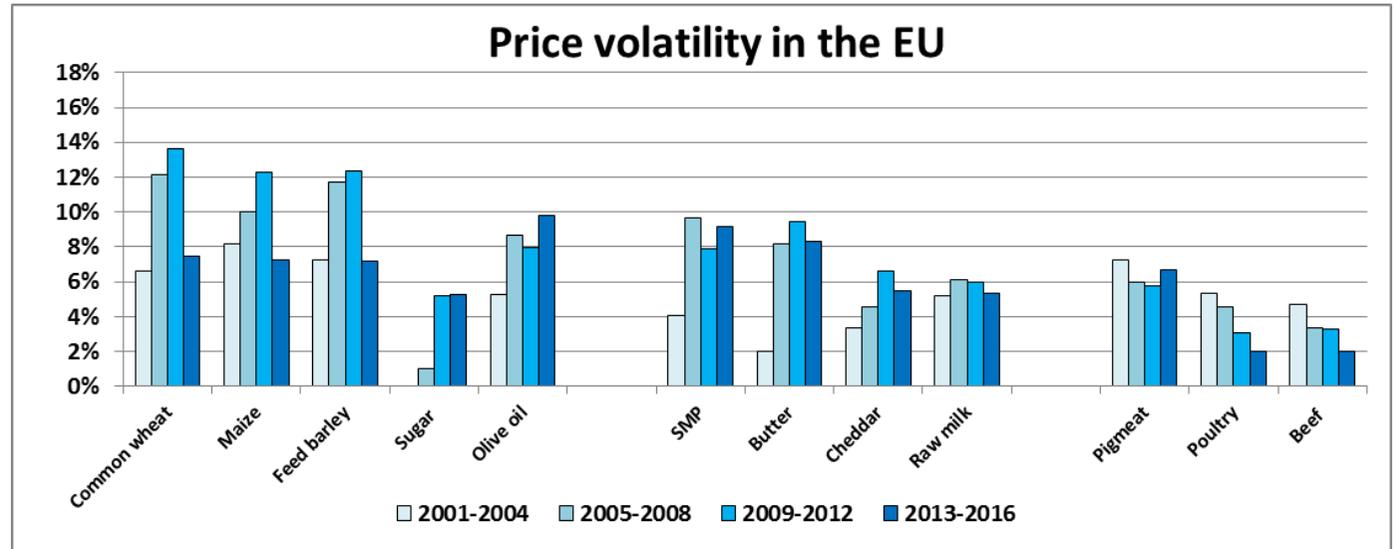


Figure 9: Price volatility in the EU

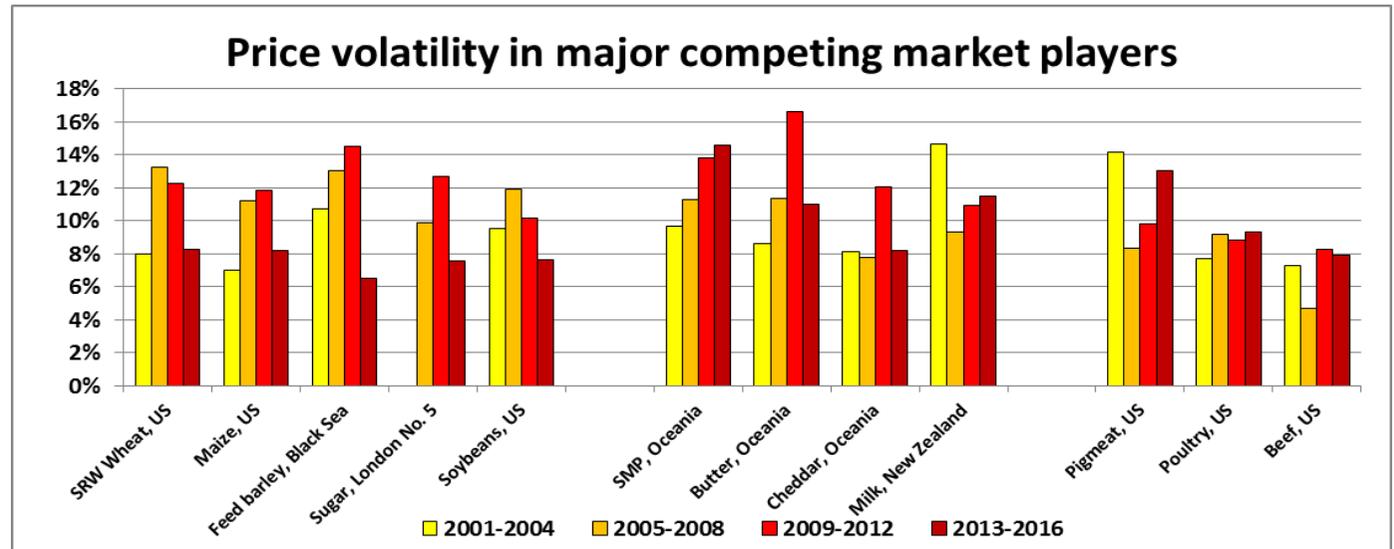


Figure 10: Price volatility in major competing market players

Note: there are several measures/estimators for volatility, such as standard deviation of the changes in price, variance of log-returns, coefficient of variation and so on. All of them produce different numbers but they all show the same pattern. Source: DG Agriculture and Rural Development, based on European Commission, USDA, World Bank, IGC, London International Financial Futures and Options Exchange, National sources.