

POTATO



Contract

The European potato futures contract trades at Eurex short for European Exchange. The futures' product ticker is 'FEPP' for Futures on European Processing Potato.

Contract size is **25 metric tons** with maturity months in April, June and November. April is not only the most liquid expiry but is also quoted beyond one year.

Price quotation is in € per 100 kg, or one decitonne, which leverages the futures contract to a factor of 250 (100 kg times 250 = 25 metric tons).

The European potato futures is cash-settled only. No delivery of actual food takes place.

Final settlement price is based on the Eurex European Processing Potato Index. It registers prices on loosely loaded 100 kg of specific cultivation areas in **Germany, France, the Netherlands and Belgium**. The four countries are equally weighted 25% in the index.

Tuber size is 4 cm plus, but minimum 60% need to be greater than 5 cm.

Dependencies

Following rice, wheat and corn, potato is the **world's fourth largest food crop**. A **growing world population** will therefore support a solid and potentially even increasing demand in potatoes.

Like with all food commodities, potato prices are heavily influenced by weather conditions. A **long winter** will delay the planting period and increase prices especially during the period prior to the new harvest's availability. Heavy rain or even **flooding** in spring or **excessive temperatures** in July might potentially destroy large parts of the crop.

Numerous **pests** are permanent threats. Serious potatoes diseases include the late or potato blight (*phytophthora infestans*) and rhizoctonia. Also, indirectly, an over-population of insects transmitting various potato diseases increases the infestation chances.

A more recent, and man-made, upward pressure on potato prices is caused by **investments in agricultural land**. Historical low interest rates and the ongoing demand in tangible assets like real-estate and land, away from traditional bonds and stocks, produce a surge in prices including agricultural areas. Subsequently, producers' prices and then eventually consumers' prices increase.

The average European potato prices, as represented by the Eurex European Potato Index, exhibit substantial volatility. Note, the 2012/13 marketing period average price of €24.7 is more than five times higher (!) than the €4.3 average of the previous 2011/12 period (see chart 1). Even intra-seasonal, the average potato price raised steeply within only a few weeks by more than 60%, from €20 to over €33 (see black line in chart 1). The prolonged winter in combination with a so-called ‘century’ flooding in Central Europe end of May 2013 caused that rapid price move.

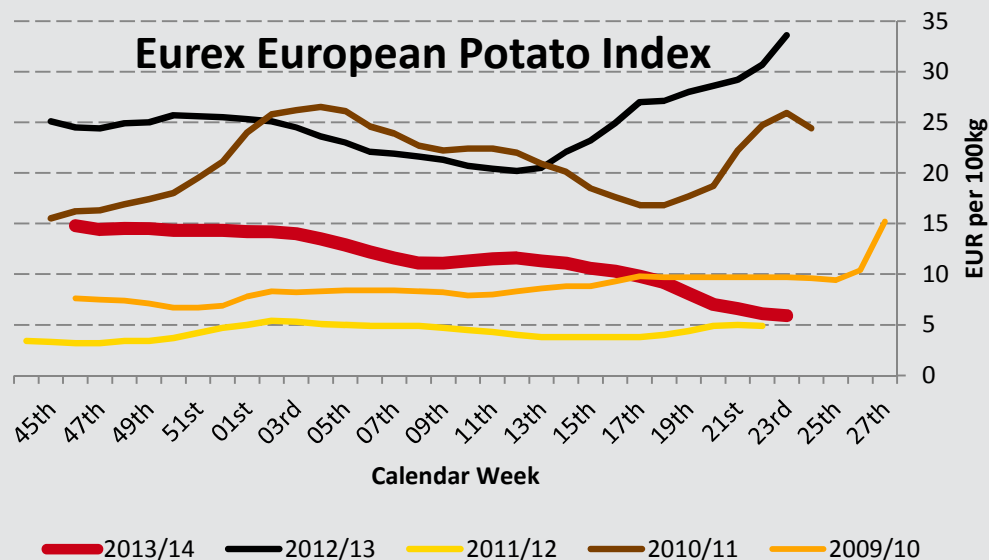


Chart 1: Weekly Eurex European Processing Potato Index values. No calculation between end of the marketing period of last crop season (mid of June) and beginning of next marketing period (November). Source: Eurex Group

Main Producers

Excluding deserts and the extreme tropical or arctic climate zones, potato is grown all over the world. Estimated 368.1 million metric tons of potatoes have been produced in 2013. Naturally, the largest growers are the population rich countries of China (nearly a quarter of world production, see chart 2) and India.

But when related to its comparably smaller population and area size, Germany's potato production is also significant. In general, the highest per capita potato production can be found in Central and Eastern Europe.

The potato's **extensive geographic diversity** is highlighted by the small portion of its top 5 producers: China, India, Russia, Ukraine and the United States grow only 54% of the world potato production. Therefore the remaining 46% production is planted in over one hundred other countries. In comparison, a much higher 79% portion of the world's rice production is currently concentrated in and dominated by the top 5 rice growing countries.

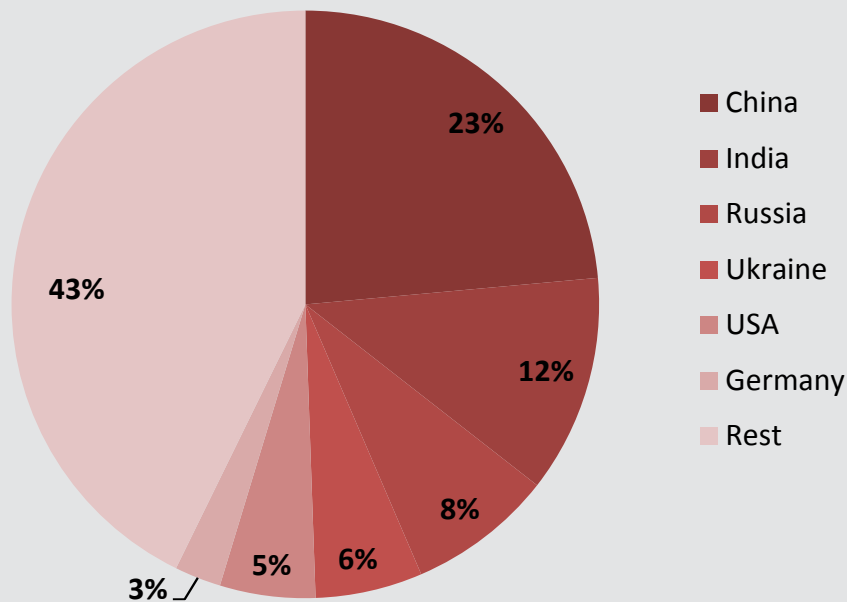


Chart 2: Main potato production countries. Worldwide 368.1 million metric tons in 2013.
Source: Food and Agriculture Organization of the United Nations (FAO)

Similar to rice, potato is produced and consumed predominantly locally. Due to its perishability, only an estimated 5% of the world's potato crop is traded cross-countries.

Uses

Maybe surprisingly, potatoes have in fact numerous applications. The most obvious use, the direct human consumption, is only one of many.

Certain potato varieties are grown to get later further processed to French fries or potato chips. These processing potatoes, as oppose to the aforementioned table potatoes, are underlying the FEPP futures. A more memorable and popular labeling might therefore be **French fries futures**.

So-called industrial potatoes are grown exclusively to extract an optimum of **starch** used in the food industry (thickeners and binders in soups and sauces), textile industry and pulp industry.

Other potatoes are grown solely for animal feed. The demand for meat is ever increasing.

Potatoes are also used to brew high-proof alcoholic beverages such as Russian vodka or Scandinavian akvavit.

Lastly, a certain portion of seed potatoes need to be retained or grown for the coming planting.

Demand in potato comes therefore from various sides. On the one hand, the important food staple can count on a solid, long-term increasing, demand. On the other hand, potato demand is also depending on cyclical consumption (processed food, textile, paper, beverages). It is therefore comparable to corn, that likewise, is simultaneously a food and energy source.

Harvest

Different potato varieties have different maturation durations. One distinguishes between the **early**, the **semi-early** and the **semi-late** ones.

The early variety has a growing period of only 90-110 days. Planting after winter in March/April one could harvest these potatoes already in June/July. Production zones close to the coast have often an earlier last frost, so new potatoes are available firstly out of these temperature-moderate coastal areas.

Demand prior to June/July would have to be matched with the stored previous harvest or from opposite hemisphere imports. Under optimal cooled conditions potatoes can be stored for up to ten to twelve months.

The semi-early potatoes grow 120-140 days. The new harvest would then reach the market the earliest in July/August.

The semi-late ones need 140-160 days till matured and are available only in August/September or later.

The Eurex European Potato Index, that underlies the FEPP futures contract, includes the semi-early varieties of **Agria** or **Bintje** (as well as comparable varieties regarding pricing and processing). New Agria and Bintje are however not available before July. It is therefore of no surprise that the FEPP futures shows strong seasonality: Potato supply is ample in November relative to April or June. Typically the futures' April expiry, and in particular the June expiry, exhibit therefore higher prices than the November expiry. The June contract expires on this month's first Friday (22nd or 23rd calendar week). Depending on duration of cold weather European potato prices show a tendency to increase towards that June expiry, see chart 1.

Potato Origin and Varieties

Today's potato has its origin in modern-day Peru and Bolivia. The English word 'potato' is linked to the Spanish 'patata', which in turn is derived from native South American languages.

The potato (*solanum tuberosum*) is a domesticated plant from the family of nightshades (*solanaceae*), which includes also the tomato, paprika/chili, eggplant and tobacco. In raw form it contains a very high portion of 75% water. There are about 5000 potato varieties (in all colors) worldwide and more are being created constantly.

Useful Links

- Eurex European Processing Potato Index:
<http://www.eurexchange.com/exchange-en/products/com/agr/index-composition/>
- Food and Agriculture Organization of the United Nations (FAO):
<http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor>

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