



## Unit Values in international trade as price indicators of legumes in the EU

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### Introduction

International trade of domestically grown grain legumes is a mostly heterogeneous and differentiated niche market in the EU. There are considerable differences between countries and legume species (KEZEYA SEPNGANG ET AL., 2020). International trade of legumes might be a lucrative value-adding stream. These added-values might only be transmitted partially to the production level in farms. To facilitate legume production, it would be necessary to increase transparency in price setting so that farmers are strengthened in their negotiations with local trade partners. Among others and in the short term, low producer prices of certain grain legumes (see tab. 1) and uncertainties in prices are economical reasons why farmers have little incentives to grow legumes (MAGRINI ET AL., 2016; JOUAN ET AL., 2019).

**Tab.1:** Producer prices of pea and faba bean in €/t. Monthly average from 2010 to 2019. Sources: Franceagrimer, AHDB and AMI.

	France	United Kingdom	Germany
Pea	198	177	194
Faba bean	200	186	174

KEZEYA SEPNGANG et al. (2018) used foreign trade data to derive unit values of legumes in German imports and exports to be used as a price indicators for the domestic grain legume markets. In this work, we will focus on the unit values of pea and faba bean in the United Kingdom (UK), France (FR) and Germany (DE). These are three main producing countries of the two most important grain legumes in the EU. A comparison within the three countries is carried out. The unit values highlight the values of legumes in the context of international trade and reflect supply and demand as well as quality aspects in the considered time periods.

### Data and methods

Unit values are calculated by dividing the foreign trade value (in €) by the foreign trade volume (in t) within a specified time period. Thus, unit values are not equal to prices per se as they do not refer to specific market transactions. Unit values can be interpreted as quantity-weighted average of different prices at which products are exported or imported. Further, we distinguish two types of unit values: those related to the import are "import unit values" (IUV) and those related to the export are "export unit values" (EUV). The data were collected from different national sources. For the UK, we used the data from "HM REVENUE & CUSTOMS" and "UN COMTRADE"; for France, the data are from "FRENCH CUSTOMS" and "UN COMTRADE"; for Germany, the data are from "DESTA-TIS" and "ITC". The analysed period is from 2010 to 2019 for

which full-year data are available. We used the monthly data for this work.

### Results

The following graphs illustrate the comparisons of the IUV and EUV for pea and faba bean in the three countries analysed.

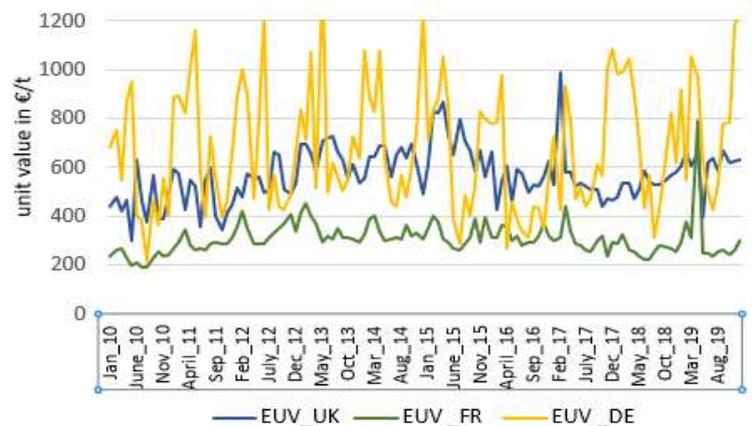


Fig. 1: Export unit values (EUV) of pea from FR, DE and UK

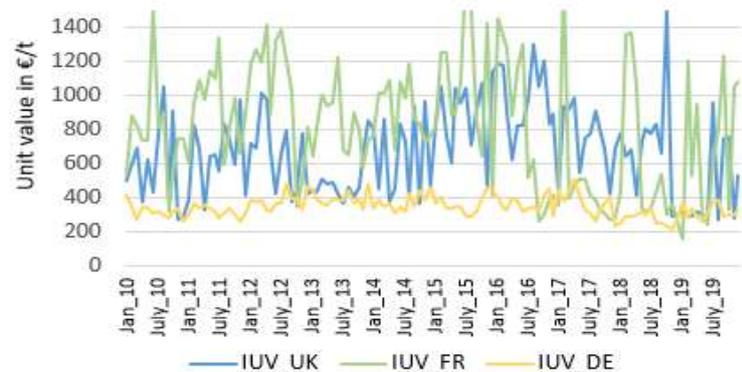


Fig. 2: Import unit values (IUV) of pea in FR, DE and UK

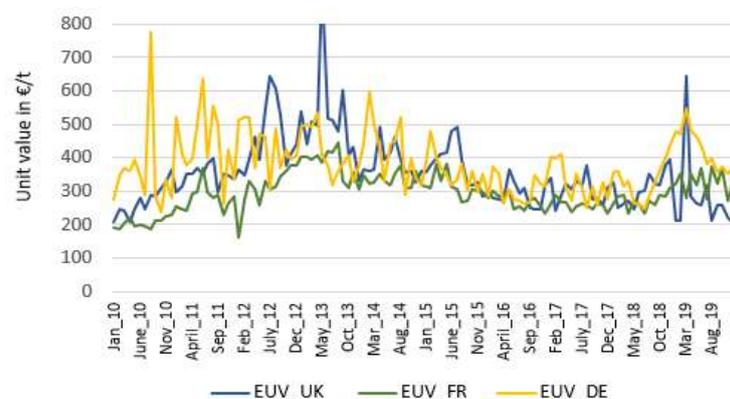


Fig. 3: Export unit values (EUV) of faba bean from FR, DE and UK

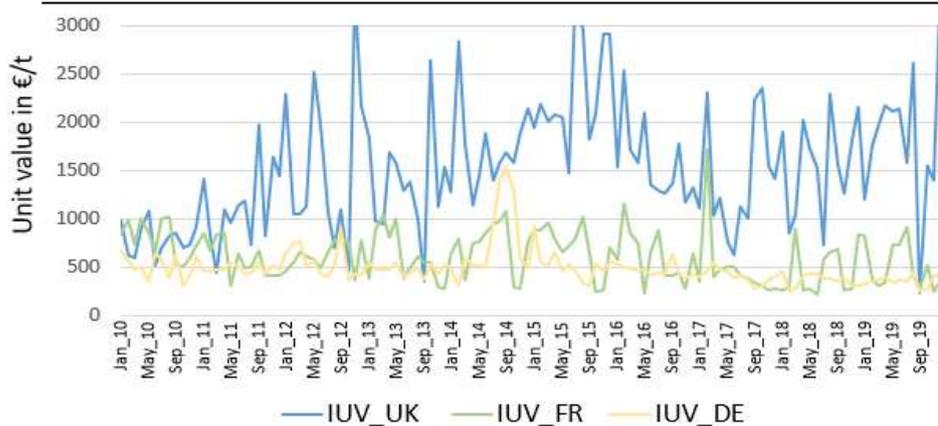


Fig. 4: Import unit values (IUV) of faba bean in FR, DE and UK

### Discussion

Our results show that considerably higher unit values are generated in foreign trade as compared to reporting of national producer price statistics. Aspects like quality, storage, transport and the margin of the traders should be taken in consideration in these unit values. The exchange rate and policies (domestic and foreign) could also affect unit values levels. Details on the margins between producer prices and unit values in international trade are not available. Qualitative comparisons with other grains show higher trade margins for grain legumes probably indicating higher transaction costs in legume trade. A more transparent and more equal repartition of the added value along the whole value chain up to the farmers could incentivise farmers to grow more legumes. However, it should also be acknowledged that reported average producer prices might underestimate prices paid to farmers in some specific high-value grain legume chains as also reporting on producer prices is little quality differentiated and is generally considered not to be transparent.

The results show that EUV of pea and faba bean are higher in Germany than in France and the UK. This could be explained by Germany's low export quantities (KEZEYA SEPANGANG, ET AL., 2020). In particular, for pea, EUV for pea in Germany has the highest volatility. In contrast the EUV of pea in France is more stable as larger quantities are exported.

Our results highlight that IUV are higher in France in the case of pea and higher in the UK in the case of faba bean. A possible explanation is that these two countries dominate the market of the respective species in terms of production and as consequence, imports are very low as they only cater to very specific niche uses. The lower imports result in a higher import unit value for each specie, due to likely higher transaction costs of lower quantities. In contrast to the UK and France, especially for pea (see fig. 2), the IUV of pea in Germany is the lowest and the most stable price indicator, since Germany is one of the main importers of pea in the EU, after Spain and Belgium.

### Conclusion

Unit values might become an interesting price indicator to better valorise EU produced legumes. To ensure a sustainable use of unit values as price indicators, the choice of the indicator (EUV or IUV) is decisive. The higher the transaction volume in a specific period, the more stable are the corresponding unit values over longer time periods. Therefore, the EUV for pea in France and the UK are more sustainable than the EUV of pea in Germany. On the other hand, the IUV of pea in Germany is the most stable and constitutes a more appropriate price

indicator for high quality pea in Germany. In case of faba bean, the EUV (mainly driven by the Egyptian market) show similar trends in the three analysed countries. The IUV of faba bean in the UK is not a reliable price indicator for standard faba bean but indicates the existence of specific lucrative niche markets.

Different determinants of unit values such as the location in relation to the market of the origin and destination of the legume, the outlets and the different costs have to be taken into account. Based on the same procedures, specific price indicators can be determined for bilateral trade relations, knowing the exact origin or outlet of the raw material. This could be the IUV of pea from Russia in some value chains in Germany or the EUV of faba bean destined to Egypt from France and the UK.

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### Sources

AHDB (AGRICULTURE AND HORTICULTURE DEVELOPMENT BOARD): <https://ahdb.org.uk/>.

AMI (AGRARMARKT INFORMATION): <https://www.ami-informiert.de>.

FRANCEAGRIMER: <https://www.franceagrimer.fr/>.

JOUAN J., RIDIER A., CAROF M. (2019) Economic Drivers of Legume Production: Approached via Opportunity Costs and Transaction Costs. Sustainability, 11(3):705.

KEZEYA SEPANGANG B., MUEL F., SMADJA T., STAUSS W., STUTE I., SIMMEN S., MERGENTHALER M. (2020) Report on legume markets in the EU. Deliverable D3.1 of the EU-project LegValue. Forschungsberichte des Fachbereichs Agrarwirtschaft, Soest. Nr. 50.

KEZEYA SEPANGANG B., STUTE I., STAUSS W., SCHÄFER B.-C. & MERGENTHALER M. (2018): Möglichkeiten zur Bildung von verwertungsorientierten Preisindikatoren für Futtererbsen und Ackerbohnen im Vergleich zur veröffentlichten Marktpreisberichterstattung. Berichte über Landwirtschaft 96(3). dx.doi.org/10.12767/buel.v96i3.226.

MAGRINI M.-B., ANTON M., CHOLEZ C., CORRE-HELLOU G., DUC G., JEUFFREY M.-H., MEYNARD J.-M., PELZER E., VOISIN A.-S. & WALRAND S. (2016) Why are grain-legumes rarely present in cropping systems despite their environmental and nutritional benefits? Analyzing lock-in in the French agrifood system. Ecological Economics. Vol 126, P. 152-162.