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CBAM and Agriculture: Opportunities, Challenges, and Perspectives.

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CBAM and Agriculture:

opportunities, challenges, and perspectives

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CBAM and Agriculture

opportunities, challenges, and perspectives

1. Introduction

After long consultations with stakeholders and parties that may be affected? , simulations of potential impacts and discussion to twist the design of the Carbon Border Adjustment Mechanism (CBAM) to be feasible, justifiable, and effective, the measure has been approved by the European Union in 2023 and has been officially started in October, for five sectors, included fertilizers as major input in agriculture. We use descriptive statistics and graphical analyses to highlight specific and relevant characteristics of target CBAM sectors for fertilizer.

The European Union's (EU) CBAM is a policy tool implemented to reduce global greenhouse gas emissions through carbon taxes. It works in parallel with the EU's Emission Trading Scheme (ETS) to mitigate carbon leakage coming from imports of higher emission-intensity goods from countries with less stringent regulations, and the reverse by increasing the competitiveness of green(er) imports from third countries[1]. More specifically, the CBAM and ETS work in parallel to encourage high-emission product manufacturers to green their production processes to maintain and/or capture EU market share. Overall, the CBAM is expected to mitigate the loss of competitiveness of the energy-intensive industries (Chateau et al., 2023), with marked differences across industries.

During the transitional period, from October 2023 to December 2025, there are only reporting requirements in place. Starting in 2026, importers will have to acquire CBAM certificates for the GHG emissions associated with the production of imported goods that are not subject to an equivalent carbon pricing in the country of origin. In other terms, if the carbon pricing is lower in the country of origin than in the EU, importers must acquire CBAM certificates.

Emissions (and their intensities) are very heterogenous across sectors. Trade exposure is also diverse across sectors. These two dimensions are key to plan the sectorial coverage of the CBAM[2]. The sectors covered by the CBAM are cement, electricity, fertilizers, iron and steel, and aluminum hydrogen, and some precursors and downstream products made from cement, iron and steel, and aluminum[3]. CBAM fits with current EU Green Deal directives to reduce regional reliance on synthetic

[1] The EU aims to extend the coverage of the CBAM to all EU ETS sectors by 2030.
[2] See for instance: Hufbauer et al. (2022) and, Lin and Zhao (2023).
[3] More details are provided by the documents of the EU Parliament. Cfr: https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/754626/EPRS_ATA(2023)754626_EN.pdf

nitrogen fertilizers. The agricultural sector is not included in the policy, despite the ongoing and highly visible debate over the (large) impact that it has on the environment (e.g. Crippa et al., 2021; Laborde et al., 2021; Fong et al., 2022). CBAM thus only affects the agricultural sector indirectly through material inputs to farming. Of these, fertilizer is the most obviously and closely tied to agriculture, though the other industries are also important to modern agriculture. For example, iron and steel used in farm equipment, cement used in farm infrastructure, and electricity used to power farm equipment. CBAM could mitigate some of the detrimental effects of agriculture on the environment[4], although its effectiveness will depend, among other factors, on the degree of substitutability of these inputs, the most salient of which is between fertilizers and land or labour.

'CBAM affects the EU agricultural sector through the fertilizer sector'

2. *CBAM for dummies*

The CBAM functions simply through a carbon certification process. The generated certificates document the carbon price that is determined to cover the cost of offsetting the GHGs emitted during production. EU importers must purchase these CBAM certificates for imports of foreign goods to meet the EU requirements for GHG emissions offsets under the ETS. Thus, CBAM levels the playing field for domestic and foreign producers insofar the certificates proxy the price that should have been paid if the imported good was produced under the carbon pricing rules of the European Union (i.e., ETS). These mechanisms eliminate importers' incentives to acquire lower priced goods that are associated with emission-intensive technologies. Imports under CBAM aim to favour lower emission versions of the target products.

Another relevant aspect is the compliance and reporting process under which exporters must report the carbon content of their goods. This requirement motivates the transition phase that has been dedicated to acquiring information and establish the rules in practice.

[4] The analysis of the nitrogen market would require more analyses, which are beyond the scope of the present study. A few points are worth mention: 1) nitrogen fertilizer is over applied based on empirical studies (Menegat et al., 2022); 2) policies to reduce nitrogen fertilizer use have been in place for many years, esp. ones that target sensitive areas where runoff, etc. has led to contamination of wetlands and waterways; 3) the taxes are likely lower than the estimated tax rates needed to achieve policy targets, e.g., prior EU F2F 20% reduction by 2030 from baseline 2015-17; 4) EU produces most of the nitrogen fertilizer it uses (~55%) but the manufacturing sector relies on old plants with technology that is becoming outdated and must be replaced to increase the sectoral efficiency and emissions. These policies could therefore incentivize capital investment in modern plant technologies, as well as plant electrification where it is possible to draw energy from less emission intensive power sources, such as renewables or nuclear energy. In this way, the energy aims for ETS and CBAM are closely related to the fertilizer sector, as well as the others that are included in the policy framework.

The mismatch between the foreign and the domestic market is closed at the border in that importers are required to pay for the embedded carbon emissions associated with the imports. This mechanism is coupled with monitoring and enforcement mechanisms – along with audits and verification procedures – that are necessary to ensure the functionality of the CBAM.

The revenue generated from CBAM is used to fund dedicated expenses such as investments in clean energy projects (i.e. green construction), or subsidies to foster the transition to green consumption (i.e. electrical vehicles). [5]

The CBAM aims to level the playing field between importers of high-emissions goods and domestic producers. It targets an equal treatment for domestically produced and imported products, to discourage the production in countries with low(er) environmental standards. We use a simple model to illustrate how selected variables may inform on potential effects of the CBAM.

From an *environmental perspective*, the CBAM is relevant if two conditions apply[6]: 1) the implementing country has a (non-negligible) volume of imports; 2) the production process in the implementing and the affected countries differ in terms of emission intensities.

The first condition ensures that the imposition of an extra-tax linked to the amount of GHGs, measured in carbon-dioxide equivalents (CO2eq), emitted during the production process is currently imported in the implementing country, and therefore is embedded in the trade flow. The second condition ensures that the tax is non-trivial (i.e., non-zero): in fact, if the emission intensities in the affected countries are like those reported in the implementing country the CBAM would result in no extra costs[7] for the importers. The CBAM imposes extra costs on importers, with the aim of influencing the producers in the affected countries (to be competitive in the implementing country)

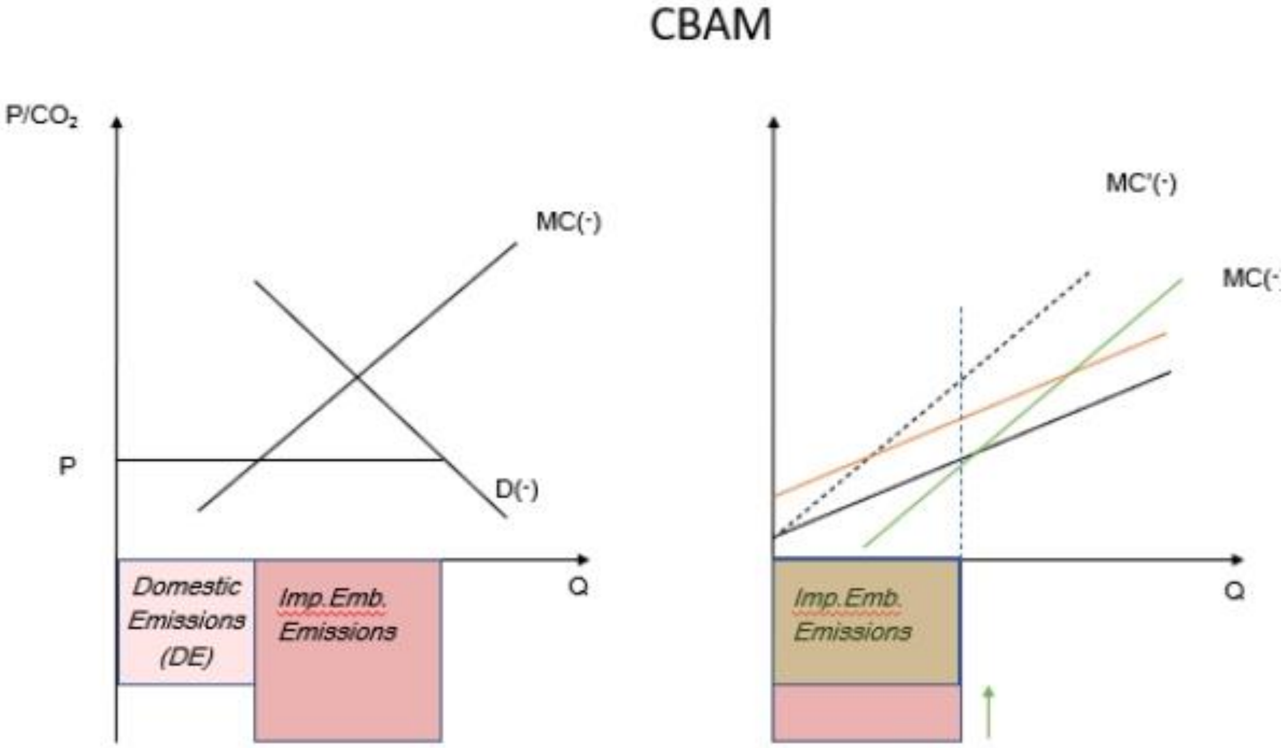
[5] The priority to support producers' transition to modern plants as most of the existing plants are reaching the end of their useful life and need to be replaced. These policies incentivize investment in green(er) efficient manufacturing with costly capital investments that will take many years to recoup. By insulating producers from internal (ETS) and external (CBAM) competition from lower cost 'dirty' inputs, the EU policy will offer a more attractive rate of return on capital investments in new manufacturing. Another concern is that CBAM could mimic non-tariff measures (NTMs) because of administrative hurdles and the large investments that are needed to improve the emissions intensity of manufacturing. While CBAM are applied as a tax/tariff there is significant 'red-tape' that could mean it may be framed as a hybrid measure that could prevent much import due to the burden of documentation.
More info can be found in the Reg. (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023.

[6] These are general conditions relevant to most of the policies applied to imported goods: the policy is effective when volumes of imports are not negligible, and when the imported goods "distance" from the EU standards is large. An emblematic example is the case of the EU Entry Price Regime (*cfr*. Santeramo et al., 2024).

[7] Regulatory costs of additional paperwork are minimal in this case but could add trade frictions through these additional requirements.

to lower the emissions associated with the production of the export good. Thus, the CBAM is likely to increase the marginal costs of production in the affected countries.

Figure 1. The economics of the CBAM



Souce: authors' elaboration

The CBAM is also likely to affect the implementing countries, modifying imports, due to the higher costs imposed by the tax on GHG emissions. The effects could be heterogenous for green and dirty goods. The CBAM will result in relatively higher prices for 'dirtier' imports, while making 'cleaner' or 'greener' imports more price competitive with domestic goods. From a value chain perspective, dirtier goods are generally more upstream (e.g., inputs to production – raw materials like iron and steel, electricity, and fertilizer in the case of agriculture), meaning the relative costs of CBAM are greater for downstream domestic producers[8].

In the affected countries, the CBAM (due to an upward shift of the marginal cost curve, figure 1 MC (·) moves from solid black line to orange line) implies lower exports toward the implementing country and (in the longer run) adaptation of the production processes (i.e., greener production techniques)

[8] An interesting perspective is the value-added component of product carbon neutrality. A 'carbon neutral' product quality attribute may become preferred by like-minded countries or consumers, fostering the formation of climate clubs (Devarajan et al., 2022). Favouring input of raw materials, incentives to innovate clean, green, and efficient technology to compete in market for carbon neutral products and/or high-quality specialized formulations (e.g., NPK blends that EU is a net exporter) the CBAM may accelerate the formation and strengthening of coalitions.

leading to a leftward movement of the slope of marginal costs (which would make if steeper, figure 1 solid black line moves to dashed black line MC′(·)) coupled with a downward shift (figure 1 dashed black line MC′(·) to green line): these adjustments would replace the level of exports. The shift in the marginal cost curve is also associated with a reduction in production embedded emissions in the affected countries, and therefore decreases EU import embedded emissions.

As a final note on linking the theoretical model to the analysis, we limit our work to address only some of the covered aspects of how CBAM is likely to affect the agricultural sector. These limitations are mainly from a lack of detailed information that has prohibited us from more detailed analyses and is indeed not a peculiarity to this specific work, but rather a general problem connected to the implementation of such a transboundary measure. In other terms, the difficulty of reporting, to a third country, the emissions embedded in domestic production, generates distortive incentives. On top of that, the measurement of emissions is not clear cut, and further complications with the implementation and management of the measure are apparent as the framework for reporting and monitoring is being practically applied for only a very short period up to this point. Nonetheless, simple statistics offer a big picture perspective and can be used to derive some insightful conclusions. This is the direction we have taken here in providing empirical evidence of the most salient characteristics of CBAM on fertilizer as it relates to the current situation for EU production, trade, and consumption of fertilizer products.

‘CBAM is most relevant for large exporters with high emissions intensities’

3. *CBAM on fertilizers*

As anticipated, one important point of discussion is how sectors have been selected, and why CBAM has been applied only to a few sectors. The CBAM is implemented for high emission intensity sectors: cement, iron and steel, aluminium, fertilisers, and electricity. As for fertilizers, CBAM covers both indirect emission from electricity used in production, and the embedded precursor emissions, that is nitrogen containing inorganic chemicals needed to produce fertilizers, called precursor goods (e.g. ammonia, nitric acid, and urea).

We use descriptive statistics and anecdotal evidence to indicate which countries and sectors will be mainly or marginally affected by the CBAM, and how its implementation may alter market equilibria outside the European Union.

3.1 Large players in the global market of fertilizers

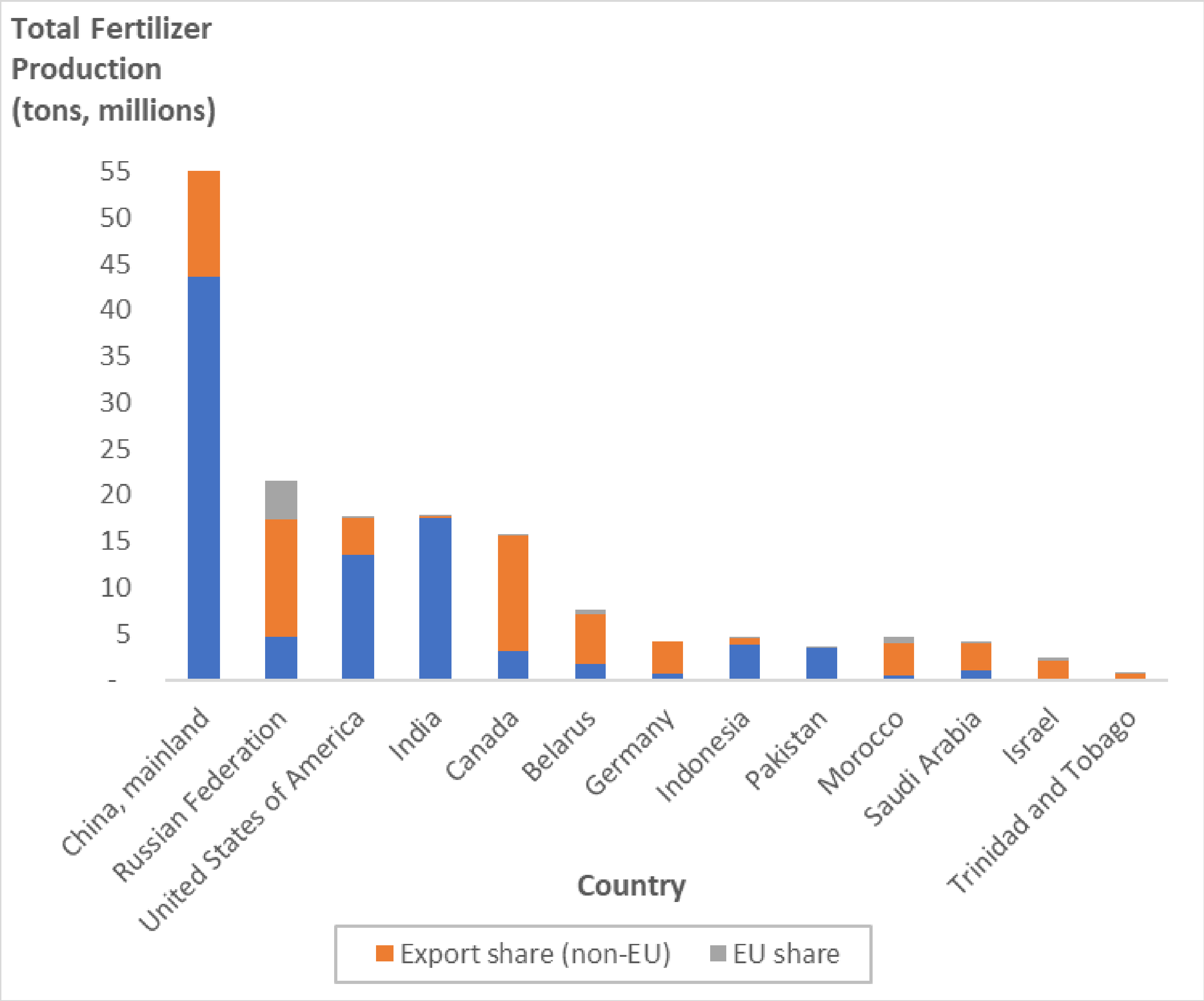
The world market for fertilizers is concentrated. Six countries, namely China, Russia, the United States of America (U.S.), Brazil, Canada, and Australia, are by far the top ones in terms of fertilizer use, GHG emissions, and carbon footprint (Menegat et al. 2022). As for production, Brazil stands out in terms of carbon intensity (i.e., tonnes of CO2eq per tonnes of nitrogen), whereas China is a top user of nitrogen per hectare. The use of fertilizers is very relevant for the U.S., due to their large volume of exports of agricultural products, and for China, due to their outstanding and rising production of agricultural products, coupled with high fertilization rates.

The concentration of production in a few regions is highlighted in figure. Here we flag the imbalance in production and openness to trade for the top players in the fertilizer market. The bars indicate the total aggregate fertilizer output: the orange and grey sections are the export shares of production allocated, respectively, to non-EU countries and to the EU. China is by far the largest producer, principally dedicated to nitrogen and phosphate. The Russian Federation is a distant second in terms of production; however, it exports the greatest volume of fertilizers and is the largest supplier to the EU (*cfr*. grey portion of the bar). Belarus and Russia are large supplier of potash (Belarus accounts for 21 percent of global production). Canada is the next largest supplier of potash and is highly export oriented. The U.S. is the third largest producer of fertilizers, and its production is mostly allocated to the domestic market. A similar domestic orientation is observed for India and Pakistan.

The allocation of fertilizer production to domestic and world markets is further illustrated in figure 3. Many top producers are oriented to the world market. Again, Russia is the largest exporter, though it is not the most export oriented insofar its domestic demand is also large. Other big exporters are Israel, Morocco, Trinidad and Tobago, Germany, Canada, Russia, Belarus, and Saudi Arabia. As for the EU, after Russia, the countries with the greatest allocation of their export share to the EU are Israel, Morocco, Trinidad and Tobago, Belarus, and Canada. However, due to the sizable volume difference, these countries are far less exposed to EU market regulations as compared to Russia. In short, Russia is the only large, export-oriented producer of fertilizers that allocate a large share of its production to the EU.

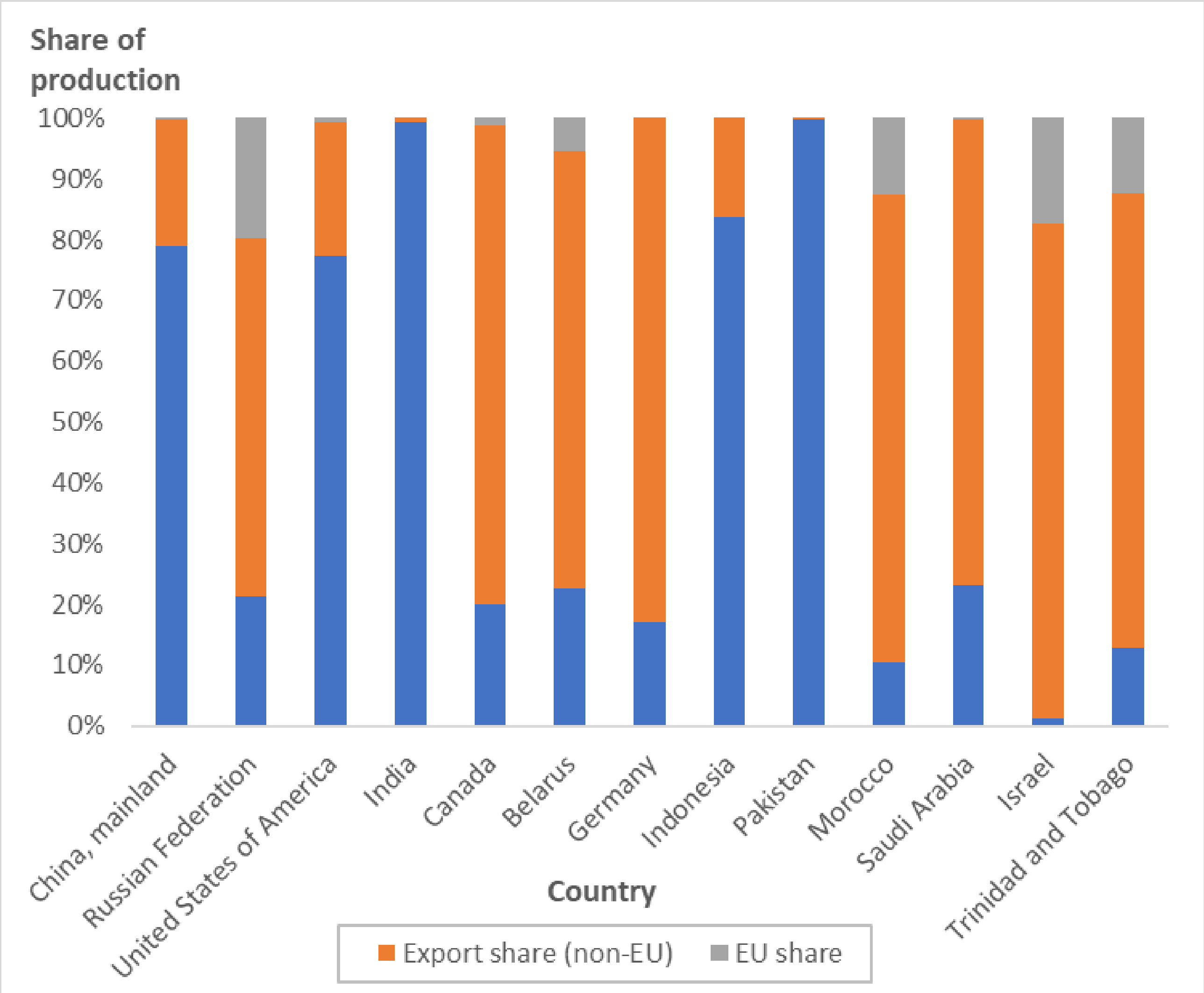
'Russia is the biggest export-oriented fertilizer producer and allocates a large share to the EU, making it the bloc's top external supplier'

Figure 2. Fertilizer production, and export share to the EU and Rest of World



Source: FAOSTAT (2023)

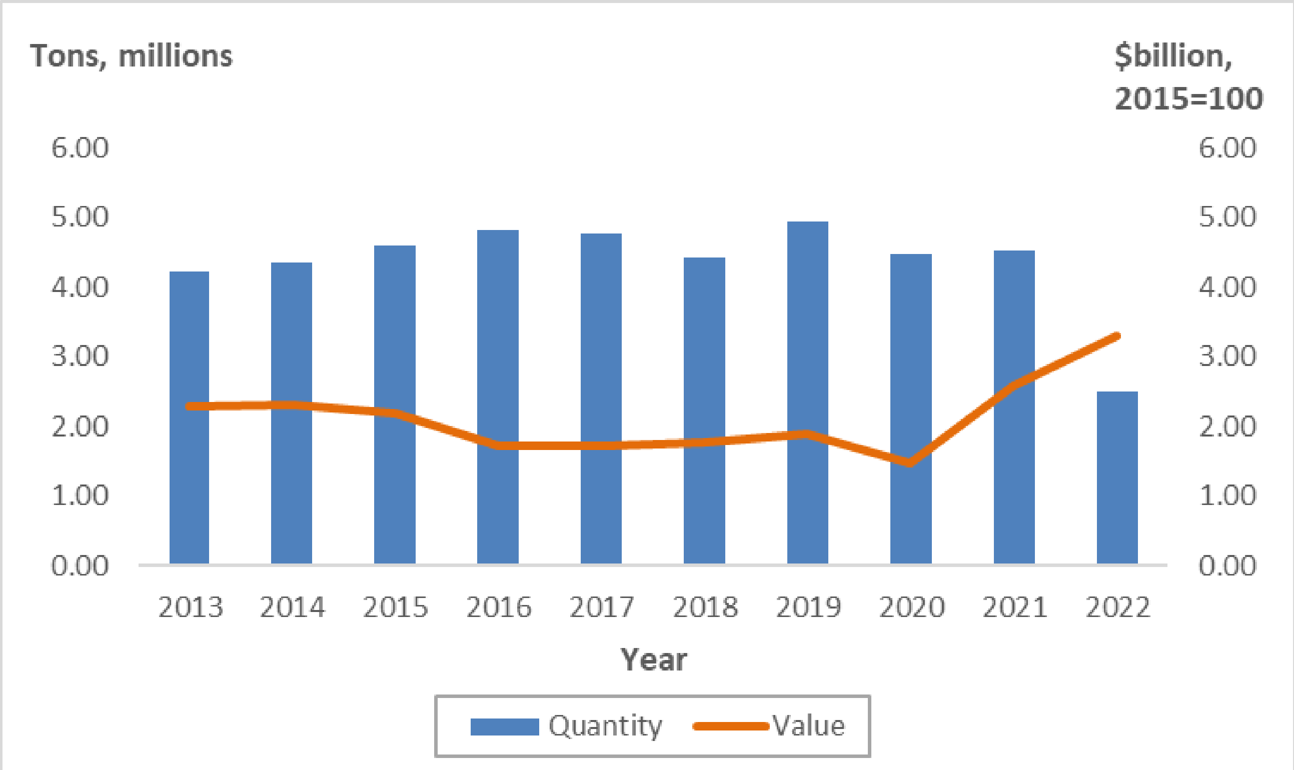
Figure 3. Fertilizer production, and export share to the EU and Rest of World



Source: FAOSTAT (2023)

Figure 4 illustrates import volumes and values from Russia to the EU: the blue bars indicate export quantity, while the orange line indicates real values (in 2015 U.S. dollars). The inverse trends for quantity and value are related to natural gas supply shortages and price increases related to supply-side shocks in the wake of the COVID-19 pandemic, as well as the start of Russia's war in Ukraine (Jenkins, 2022; Crespi et al., 2022). While initially the EU shuttered fertilizer production because of the high cost of natural gas and relied more heavily upon imports from Russia, trade with Russia was largely curtailed following the invasion of Ukraine. The dependency of the EU on Russia has diminished for fossil fuels but has remained to a greater degree for fertilizer (Savage, 2024). The EU is thus working to further decouple from Russia and diversify its sources of imports, and indeed this is already part of the EU de-risking strategy, calling for a recalibration of trade and foreign policies across strategic sectors[9].

Figure 4. Quantity and value of EU fertilizer imports from Russia, 2013—22



Notes: import values are calculated as real 2015 U.S. dollars, billions.
Source: based on authors' calculations from Eurostat (2023) and Trade Data Monitor (2023).

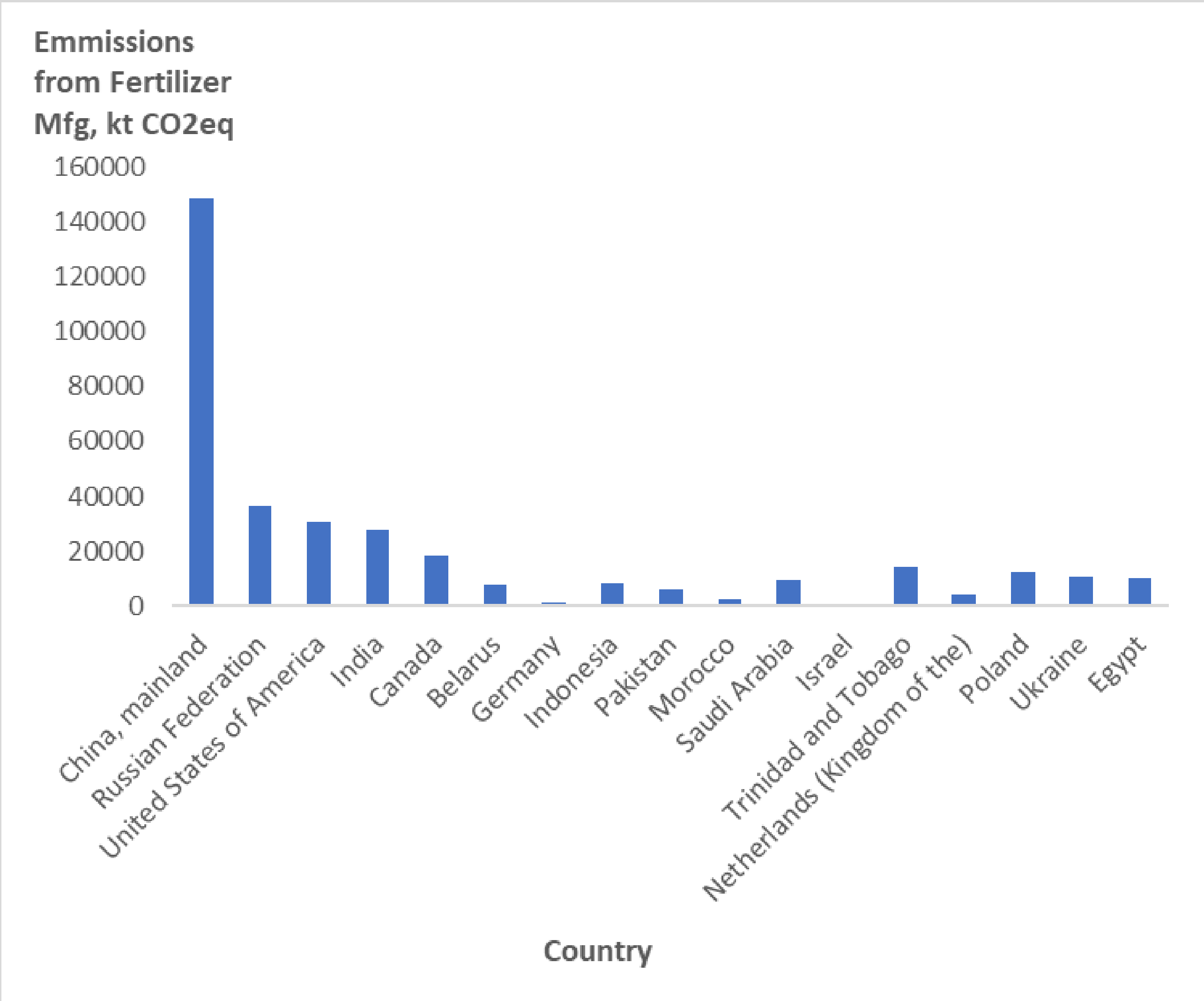
The pictures we have presented here are reflective of the macro view of where CBAM will be relevant to fertilizer production and trade. The CBAM will specifically target ammonia and nitric acid, the most emission intensive fertilizer products. One specific angle through which we analyse the CBAM is the composition of emissions generated by production of fertilizers. The literature on trade and environment points at a very important distinction related to scale, composition, and technology effects of the changes in production vis-à-vis the changes in emissions (Copeland, 2013; Copeland et al., 2022); where scale refers to differences in the techniques and efficiency of production by volume, composition (or scope) considers the basket of goods being produced, and technology to the alternative methods of production that may be more or less efficient (in this case efficiency is considered from the perspective of emissions intensity as the presence of a carbon tax makes this feature of the production technology more economically relevant). These concepts can also help

[9] The de-risking strategy includes a broad umbrella of policies devoted to enhancing economic security of the EU, the resilience of supply chains, to improve physical and cyber security of critical infrastructure, to foster the technology security, to prevent technology leakage, and to limit the weaponisation of economic dependencies or economic coercion (EC, 2023).

understanding the complexity of the fertilizer market, and the necessity to highlight dimensions to infer on where the bulk of emissions come from, and where margins for improvement exist.

Total emissions from fertilizer manufacturing are made up of multiple factors that include volume of production, composition of sectoral output, and production technology that includes inputs or feedstocks. The largest producers emit the most GHGs from fertilizer manufacturing. The top 5 producers are also the top 5 emitters (figure 5): high production of fertilizers is associated with large emissions (scale effect).

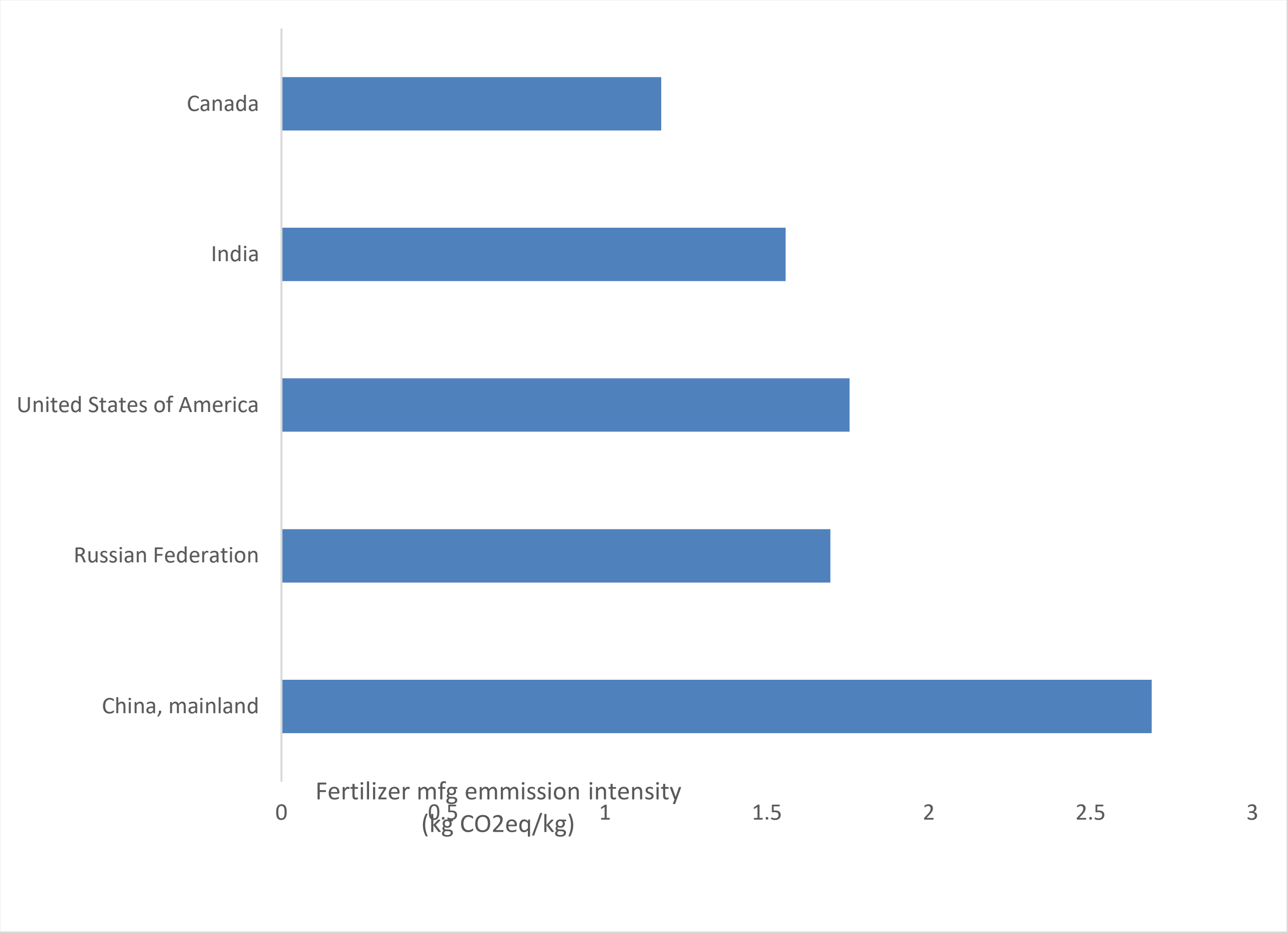
Figure 5. Total emissions from fertilizer manufacturing sector, average 2012—21



Source: FAOSTAT (2023)

The emission intensities inform on other characteristics of the market. Nitrogen fertilizers from China, Russia, and the U.S. require greater relative fossil fuel inputs as compared to potash and phosphorus, which equates to a higher emissions intensity among the top 5 (figure 6). China's reliance on older and dirty technologies for fertilizer manufacturing sets them above the other 4 countries (technology effect). The combination of technology and mix of fertilizers being produced (composition effect) is critical for the manufacturing sector's relative emissions intensity.

Figure 6. Fertilizer manufacturing sector emission intensities, top 5 producers 2016—21



Source: FAOSTAT (2023)

Because of the limited exposure to export markets in general, with virtually no exports to the EU, the effectiveness of CBAM to incentivise greener production is called into question. In other words, CBAM is principally designed to affect production and trade through existing or potential export relationships, although we cannot exclude trade creation effects in the long-run. At least in the short-term, the greatest effects on EU trade will be for Russia, albeit a relationship that has already come under considerable strain over recent years given the war in Ukraine (Smith et al., 2023; Savage, 2024). Alternative supply is highly relevant here for multiple reasons: 1) diversification strategies to mitigate risk from reliance on few suppliers; 2) prioritizing countries with relatively greener production that stand to increase their competitiveness in the EU market. On the one hand, expanded trade with countries like Israel that shows some of the lowest emissions intensities from their fertilizer sector could be early evidence of the purported goal of substitution toward cleaner (lesser emission intensive) products. On the other, Trinidad and Tobago has one of the highest calculated emission intensities from their fertilizer manufacturing sector that has experienced substantial growth in trade with the EU as a supplier of anhydrous ammonia. Furthermore, manufacturing plants differ across large producer countries like Russia, where the industry may segregate its greenest products to trade with the EU, retaining the dirty products for domestic use or export to countries where these regulations do not exist (Marcu et al., 202).

'CBAM anticipates EU's strategy to diversify fertilizer trade and favour greener trade routes'

3.2 The EU fertilizer market

During the last three decades the EU had a steady consumption of fertilizers, with volumes of around eleven million tonnes for nitrogen, and around 2 million for both phosphorous and potassium. Most of the fertilizers used in the EU are devoted to the cultivation of a few crops, namely wheat, coarse grain, oilseeds, and grassland, which absorb up to seventy five percent of the entire volume of fertilizer consumption in the EU[10]. Fertilizer use is being reallocated across crops: it is expected to increase for oilseeds, fodder crops, and grassland, and decrease for potatoes and sugar beets (Fertilizer Europe, 2023). These dynamics will imply a spatial reallocation of EU fertilizer use, with increased usage in Eastern countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia) and relative reductions in others.

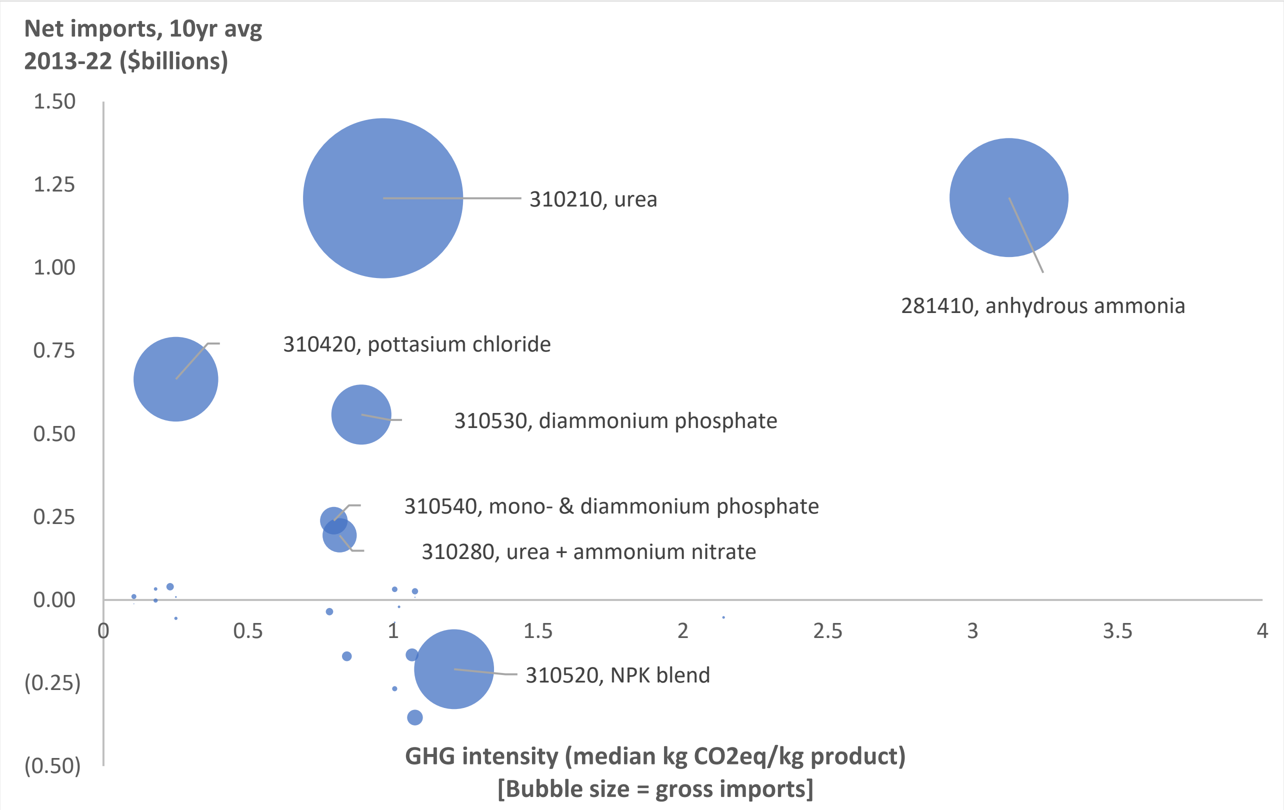
The EU market for fertilizers has a negative trade balance for nitrogen (N), phosphate (P2O5), and potash (K2O). In 2019, respective volumes for nitrogen, phosphate, and potash, imports were 3.9, 1.9, and 2.2 million tonnes (mt), as compared to exports of 2.2, 0.5, and 0.8 mt. As already described, the main exporter to the EU are Russia, Morocco, Egypt, Belarus, Israel, UK, Algeria. In 2020, the exports of fertilizers from Russia to the EU accounted for €1.12 billion. The second largest volume

[10] As part of the Farm to Fork strategy (https://agriculture.ec.europa.eu/sustainability/environmental-sustainability/low-input-farming/nutrients_en), the European Commission aims to remove marginal land from agricultural use (putting pressure on producers to intensify production using additional inputs) and to reduce fertiliser use of at least 20%, although this is still a controversial target due to the impacts it would have on farmers' income.

of exports, from Morocco, has been less than half of the Russian volumes (€492 million). Much lower are the exports for Egypt (€411 million), Belarus (€372 million), and Israel (€185 million).

We compare these patterns with the emissions levels[11]. Figure 7 plots the EU net imports (on the y-axis) and the emission intensity (along the y-axis): the size of the bubble indicates gross imports into the EU. The greatest EU fertilizer net and gross imports are for urea and anhydrous ammonia: the latter has the highest relative emission intensity. The second highest emission intensity is for blended NPK for which the EU is a net exporter. Nitrogenous products are associated with relatively higher GHG emission intensities relative to K- and P-based fertilizers[12].

Figure 7. EU Trade and Greenhouse Gas Emission Intensity by Fertilizer Type, Average 2013—22



Note: Fertilizer type defined by HS-6 code, common name; net imports is equal to gross EU import minus gross EU export; average trade calculated from nominal value in billions of U.S. dollars.
Source: Authors' calculations based on data from Trade Data Monitor (2023) and Tubiello (2021).

Table 1 details the trade flows and the principal trade partners for the top five fertilizer product imports into the EU. The sizable difference between the 10-year average and 2022 value of EU imports reflects sizable growth in fertilizer imports and use over the last decade. The top 5 products

[11] We use the United Nations Food and Agriculture Organization (FAO) GHG emission intensities data (Tubiello, 2021).
[12] This is a feature of the process by which N-based fertilizers are manufactured, and the fossil fuel requirements for their synthesis, namely natural gas utilized in Haber-Bosch, and modern developments to the production process (e.g., methane steam reforming).

make up about 75 percent of fertilizer imports into the EU by value. Considering the relative emission intensities, this translates to roughly 85 percent of GHGs associated with fertilizer imports into the EU. In addition to the concentration of imports among these 5 products, there is also a concentration of exporter regions. Top exporters to the EU will face the lion's share of the impact from the inclusion of fertilizer in CBAM. This is particularly evident for Russia, which is a major source for each of the top 5 fertilizer products. Russia provides 15 percent or more by product, and on average a third of anhydrous ammonia (AA) – the product with the greatest emissions intensity and the principal target product for CBAM[13]. Other major suppliers include Algeria for urea and AA. Trinidad and Tobago, that increased AA supply to the EU in 2022 to cover some of the shortfall from Russia. Belarus, Canada, and Israel have been major suppliers of potassium chloride to the EU after Russia. Finally, Morocco and Tunisia are also top suppliers of diammonium phosphate to the EU.

'CBAM will target EU trade of urea and anhydrous ammonia'

Table 1. Top 5 Fertilizer Imports to the European Union ($billions) and Exporters (percent), Average 2013—22

Fertilizer product (HS-6 code) Percent: 10yr avg. & 2022	Value 10yr (2022)	Top 5 Exporters to EU 10yr (2022)				
Urea (310210) 10yr: 23.7%; 2022: 33.3%	World $1.714 ($5.271)	Egypt 32% (32%)	Russia 18% (20%)	Algeria 18% (20%)	Oman 3% (7%)	Turkmen. 2% (3%)
Anhydrous ammonia (AA) (281410) 10yr: 17.6%; 2022: 21.1%	World $1.274 ($3.335)	Algeria 33% (33%)	Russia 33% (17%)	Trin&Tab 13% (20%)	Egypt 3% (6%)	U.S. 2% (5%)
Potassium chloride (KCL) (310420) 10yr: 12.5%; 2022: 8.2%	World $0.907 ($1.306)	Russia 28% (11%)	Belarus 27% (3%)	Canada 19% (51%)	Israel 10% (15%)	Jordan 4% (13%)
NPK blend (310520) 10yr: 11.8%; 2022: 8.3%	World $0.855 ($1.308)	Russia 48% (44%)	Norway 18% (26%)	U.K. 5% (4%)	Morocco 4% (9%)	Serbia 4% (9%)
Diammonium phosphate (310530) 10yr: 8.9%; 2022: 4.5%	World $0.643 ($0.714)	Morocco 50% (54%)	Russia 24% (23%)	Tunisia 12% (9%)	Egypt 4% (5%)	Turkey 4% (4%)

Notes: Percentages indicate market shares for products and countries, for total fertilizer imports to EU and within product category, respectively; rankings based on 10-year average from 2013—22, 2022 ranking may differ; averages are calculated using nominal value in billions of U.S. dollars.
Source: Trade Data Monitor, 2023.

[13] However, because of Russia's war in Ukraine a major pipeline that supplied AA to the EU has been shuttered, one that transits Ukraine, with steep declines in supply from Russia observed in 2022 when they supplied 17 percent of EU imports, half of their 10-year average.

EU fertilizer market (by Member States and sectors)

Another perspective to describe the implications that will have the implementation of the CBAM is to analyse the fertilizer market in the EU Member States. We summarize five stylized facts.

1) Farms in the EU Eastern countries use more fertilizers as compared to ones in EU-15 countries
The use of fertilizers in EU agriculture is very heterogenous. A simple analysis on the average farm expenditure on fertilizers (per year) reveals that the EU average is about sixteen thousand, with sensibly higher values for Eastern countries (e.g., Bulgaria, 30K; Czechia, 31K; Estonia, 26K; Hungary, 24K; Latvia, 36K; Poland, 22K, Romania, 26K; Slovakia, 38K) as compared to values computed for members of the EU-15 (e.g., Germany, 18K; Spain, 6K; France, 11K; Italy, 6K).

2) Farms located in EU Eastern countries are more heterogenous
The use across farms located in Eastern countries, as compared to those located in former EU-15 block is very different. The variability (in terms of standard deviations) is about 62K in Latvia, 53K in Bulgaria and 51K in Czechia, and only 22K in Germany and 8K in France with lower values in Italy, Spain, and other countries. In short, the farms located in Eastern countries use much more fertilizers (and there is a large variability across farms).

3) The use of fertilizers is correlated across nutrients (i.e., N, P, and K)
Similar figures can be drawn from the statistics related to use of specific fertilizers (N, P2O and K2O): the input use is much higher in eastern countries, regardless of the type of fertilizer being considered.

4) The imports for nitrogen are much higher than those of potassium and phosphate.
The (EU average) import values of nitrogen are twice as large as the imports of K2O (potassium) and eight times larger than the imports of P205 (phosphate). The same proportions are observed for the quantities.

5) Imports are larger in old EU Member States
The imports of fertilizers are, for N, P205 and K20, respectively equal to 47K, 6K and 25K million euro per Member States per year. Marked differences are observed for old EU Member States (e.g., France).

These stylized facts lend themselves to reflection upon the political economy of the CBAM and of the inclusion of fertilizer. First, Eastern EU countries are the most dependent on fertilizers use, whereas the longer-standing EU Member States use relatively less fertilizers, have larger farms, and lower heterogeneity in terms of input use[14]. Second, most fertilizer imports are mediated by earlier (and Western) Member States, posing questions on the relevance of intra-EU trade of fertilizers and the relevance to importers of extra-EU fertilizer products. For instance, Germany is a top producing country for fertilizers and supplies many of its neighbours in the single market.

The earliest EU member states have greater political sway as compared to their eastern counterparts. At the same time, blocs of EU members can collectively exercise power through unity and demand fair treatment under proposed policies. Such was seen in the case of the EU Green Deal agricultural policies (i.e., Farm to Fork), and the recent termination of the Sustainable Use Regulation for pesticides. In other terms, the balance of interests and power must be such that the more powerful western countries' gains are not excessive, and any losses incurred by the central and eastern countries are marginal. Equitability in sustainable transitions among EU member states with regards to input use has been a topic of considerable debate with central and eastern countries demanding reconsideration over how targets are applied most fairly. Specifically, setting reductions based on specific thresholds and not relative reductions can deliver science-based outcomes that apply equally across EU Member States. This logic can also be extended to farm type and classification of land area by sensitivity to input use or agronomic practices. The CAP 2023—27 is designed to give the Member States greater flexibility and authority to design and implement tailored programs that best suit their unique sectoral composition and concordant needs.

Evolution of CBAM must be viewed through a political economy lens

4. *Conclusions and policy reflections*

The approval of the CBAM, after a long (and still vivid) debate has started a new era of trade policies tightly connected to the carbon content of traded goods. Applying a tariff to the carbon content of traded goods is expected to bring greater attention to the environmental component of trade, and the (long-standing) debate on how trade relationships will be shaped in the future.

The environmental ambition of the EU, and their application of environmental standards to trade, has been subject to many critical points. In particular, the application of the CBAM to emission intensive sectors, was not (necessarily) the only salient dimension that contributed to the selection of the five industries.

[14] The larger size of the farms is likely to be correlated with a stronger lobbying power (Bombardini, 2008).

The intention to lower emissions from the agricultural sector is not new. The debate on the future of agriculture and the efforts to implement strategies, interventions, and to set incentives to lower the emissions of anthropic activities related to agricultural production are widely shared.

The introduction of the CBAM, which has coupled the functioning of the ETS (an intervention scheme that is being applied in several non-EU countries as well) represents a milestone for the trade agenda: it sets the principles that trade cannot be decoupled from its environmental impacts. The idea of linking a tariff to the carbon content of imported goods is, de facto, exporting domestic standards. Including the agricultural sector with the set of industries that is regulated with a tariff on imports seems an almost natural choice, given the sizeable contribution of agriculture to global GHG emissions. The agricultural sector, however, is not only one of the major sectors in terms of emissions, but also a sector where public intervention (in terms of subsidies and trade regulations) is heavy. Vested interests are relevant and can be major determinants of policy decisions[15].

Our analyses have allowed us to shed some lights on where political economy factors may have had a role. It clearly shows that the choice of fertilizers as entry point to start regulating the agricultural sector may have been justified by a minimum risk strategy. In other terms, the application of the CBAM to the fertilizer industry may have been motivated by low domestic and international frictions. Only one country (namely Russia) is largely affected by the CBAM. The impacts on imports from Russia (and their consequent decrease) may help foster the de-risking strategy, aimed at lowering the dependency of the EU from non-EU trading partners.

As for the potential frictions in the domestic market, it is evident that the production, use and transformation of fertilizers is very heterogenous across Member States. More precisely, we observe, and point that CBAM is likely to impact the most on countries that are not as influential. Furthermore, policy incentives to replace older production infrastructure ala the ETS and greening of EU fertilizer production is apparently in line with the purported goals of the countries (e.g., Germany) where most production takes place.

The inclusion of fertilizers in the CBAM could be seen as a compromise outcome. The reductions in emissions from fertilizer, that are likely to result from CBAM, are mechanically small. Based on the overall emissions from the sector, in terms of global emissions, the most optimistic impact would be less than a percentage point. However, leadership in green innovation and transition is likely to accrue further benefits to the EU by requiring greater human capital, with high-wage employees, that can support the economy.

[15] The interested readers may refer to the large literature on political economy in the agricultural sector (e.g. De Gorter and Swinnen, 2002; Swinnen, 2010; Anderson et al., 2013).

How may these considerations help shape the debate on trade regimes? Simply put, the debate is linked to other dimensions that could influence the decisions governments make to address environmental concerns. A first dimension is the relevance of domestic production of emission-intensive agricultural goods. Yet, it is unlikely that countries will lower their self-sufficiency to contribute to the climate agenda.

A second dimension is from the perspective of the global value chain: countries and multinational firms have very different participation levels in these value chains, and that dimension cannot be neglected. The fertilizer case is emblematic of this fact, as it is anticipated that frictions will be encountered when other sectors become part of the discussion for potential inclusion in the CBAM.
To conclude, far from being exhaustive, our analysis points to relevance of deeper political economy considerations that can offer insights into past decisions and help with the interpretation of potential future scenarios, and their likely outcomes.

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Appendix

TABLE OF FERTILIZER GHG EMISSIONS INTENSITIES

Fertilizer product	CO2 emissions factor (kg CO2eq/kg product)	
	Range	Midpoint
Ammonium nitrate	0.77–1.36	1.06
Calcium ammonium nitrate	0.67–1.48	1.07
Urea	0.57–1.36	0.96
Urea ammonium nitrate	0.53–1.10	0.81
Ammonium sulphate	0.56–1.12	0.84
Anhydrous ammonia	2.05–4.2	3.12
NPK fertilizers	0.71–1.71	1.21
Diammonium phosphate	0.63–1.15	0.89
Monoammonium phosphate	0.44 –0.81	0.62
Superphosphate (>35 %)	0.18–0.28	0.23
Superphosphate (<35 %)	0.08–0.13	0.10
Potassium chloride	0.25	0.25
Potassium sulfate	0.25	0.25

Note: CO2 = carbon dioxide; kg = kilogram; eq = equivalents. Midpoint calculated as half the sum of the lower and upper bound for the range in the product CO2 emissions factor.
Source: Tubiello (2021).

TABLE OF OUTPUTS, selected variables of interest

(1) VARIABLES	(2) Unit	(3) Variable Description	(4) Mean (Sd.)
SE131Totaloutputfarm	(€/farm)	Total value of output of crops a crop product.	272,949 (504,275)
SE135Totaloutputcropscro	(€/farm)	Sales + farm use + farmhouse consumption.	126,953 (232,024)
SE136Totalcropsoutputha	(€/ha)	Sales + farm use + farmhouse consumption/ha.	1,539 (2,902)
SE296FertiliserNq	(q)	Quantity of N in mineral fertilisers used.	45.53 (196.3)
SE297FertiliserP2O5q	(q)	Quantity of P205 in mineral fertilisers used.	14.54 (75.73)
SE298FertiliserK2Oq	(q)	Quantity of K20 in mineral fertilisers used.	17.8 (95.88)
SE295Fertilisers	(€)	Purchased fertilisers and soil improvers.	16,280 (35,767)
SE270TotalInputs	(€)	Costs linked to the agricultural activity of the holding.	270,695 (518,773)
SE026Arablelandha	(ha)	Area of land cultivated for crop production.	122.1 (274.0)
SE035Cerealsha	(ha)	Common wheat, spelt, rye, barley, oats other cereals.	68.33 (159.7)
SE041Otherfieldcropsha	(ha)	Dry pulse, potatoes, fiber crops and other industrial crops.	26.95 (70.38)
SE042Energycropsha	(ha)	Area sown under energy crops.	1.079 (8.308)
SE046Vegetablesandflowers	(ha)	Fresh vegetables grown in the open or under shelter. Mushrooms excluded.	1.325 (3.363)
SE050Vineyardsha	(ha)	Including young plantation.	0.851 (2.377)
SE055Orchardsha	(ha)	Fruit trees, berries and citrus fruits.	0.946 (1.628)
SE065Otherpermanentcropsh	(ha)	Permanent crops grown under shelter and young plantations.	0.141 (0.447)
SE071Foragecropsha	(ha)	Fodder roots, brassicas and other fodder plants rough grazing.	44.78 (88.56)
SE074Totalagriculturalarea	(ha)	Agricultural land not cultivated for agricultural reasons.	4.158 (9.010)
SE080TotallivestockunitsL	(LU)	Number of equidae, cattle, sheep, goats, poultry, and rabbits present on holding (annual average).	112.6 (221.2)
SE140Cerealsfarm	(€/farm)	Cereals for the production of grain.	49,322 (117,240)
SE145Proteincropsfarm	(€/farm)	Peas, field beans, sweet lupins, lentils, etc. grown for seed.	1,103 (4,423)
SE146Energycrops	(€)	All crops produced for energy purpose.	583.8 (5,781)
SE150Potatoesfarm	(€/farm)	Including early potatoes and seed.	4,694 (10,235)
SE155Sugarbeetfarm	(€/farm)	Not including the value tops but including pulp returned to the holder or sold by him/her to the sugar beet factory.	3,449 (10,734)
SE160Oilseedcropsfarm	(€/farm)	Oil seed and fiber crops (excluding cotton).	16,829 (48,957)

TABLE OF OUTPUTS, CONT'D

SE165Industrialcropsfarm	(€/farm)	Hops, tobacco and other industrial crops.	1,118 (3,889)
SE170Vegetablesflowers	(€/farm)	Fresh vegetables grown in the open or under shelter. Included the output for mushrooms.	23,765 (66,559)
SE175FruitexclCitrusand	(€/farm)	Fruit trees and berries grown in the open, excluding citrus fruits orchards and grapes.	4,291 (19,520)
SE180Citrusfruitfarm	(€/farm)	Orange, tangerines, mandarins, lemons and other citrus fruit.	465.7 (2,501)
SE185Wineandgrapesfarm	(€/farm)	Table grapes, grapes for quality/table wine, miscellaneous products of wine.	5,504 (19,501)
SE190Olivesoliveoilfa	(€/farm)	Table olives, olives for oil production, olive oil and by-products of olive groves.	643.4 (1,670)
SE195Foragecropsfarm	(€/farm)	Fodder roots, brassicas and other fodder plants.	11,898 (26,236)
SE060Olivegrovesha	(ha)	Olive groves.	0.425 (1.12)
SE340Machinerybuildingcur	(€)	Costs of current upkeep of equipment, (and minor equip.) car expenses, buildings, land improv. and insurance buildings.	14,786 (26,559)
SE345Energy	(€)	Motor fuels and lubricants, electricity, heating fuels.	22,641 (46,168)
SE011Labourinputhrs	(hrs)	Time worked by total labour input on holding.	9,424 (18,730)
SE370Wagespaid	(€)	Wages and social security charges of wage earners.	35,002 (86,359)
T_Imports_3102_N_Euros	(€)	Mineral or chemical nitrogenous fertiliser in Euros.	47.36 (75.07)
T_Imports_3102_N_Quantity	(Q. in 100KG)	Mineral or chemical nitrogenous fertiliser. Quantity in 100KG/1,000,000.	2.232 (3.376)
T_Imports_3103_P205_Euros	(€)	Mineral or chemical phosphatic fertiliser in Euros.	6.245 (11.42)
T_Imports_3103_P205_Quant	(Q. in 100KG)	Mineral or chemical phosphatic fertiliser. Quantity in 100KG/1,000,000.	0.284 (0.476)
T_Imports_3104_K20_Euros	(€)	Mineral or chemical potassic fertiliser in Euros.	25.24 (48.5)
T_Imports_3104_K20_Quant	(Q. in 100KG)	Mineral or chemical potassic fertiliser. Quantity in 100KG/1,000,000.	1.083 (1.982)

TABLE OF VARIABLES OF INTEREST (i.e., FERTILIZERS), EU-27

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		EU 27	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece	Spain	Finland	France	Croatia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
295Fertilisers	(€)	16,280	2,401	8,597	30,000	2,589	31,117	18,022	10,743	26,482	3,195	5,927	9,901	11,599	8,508
		(35,767)	(1,923)	(5,615)	(53,055)	(2,007)	(51,790)	(22,521)	(9,858)	(42,147)	(2,503)	(5,213)	(8,651)	(8,582)	(10,760)
296Fert_Nq	(q)	45.53	4.132	14.68	75.28	3.059	85.04	27.13	33.82	89.88	2.678	6.928	16.76	16.09	46.94
		(196.3)	(9.11)	(28.58)	(275.2)	(6.937)	(294.5)	(83.21)	(65.69)	(255.7)	(6.185)	(17.49)	(31.26)	(39.72)	(62.98)
297Fert_P2O5q	(q)	14.54	1.164	1.411	17.57	1.932	18.6	4.499	11.67	24.17	1.158	4.336	2.7	3.59	18.15
		(75.73)	(2.49)	(2.9)	(67.76)	(4.331)	(63.19)	(13.54)	(21.47)	(65.78)	(2.73)	(11.36)	(4.703)	(8.435)	(24.29)
298Fert_K2Oq	(q)	17.8	1.34	4.994	6.686	0.993	18.29	7.534	17.48	35.09	0.944	4.426	5.478	3.983	22.21
		(95.88)	(2.943)	(9.929)	(24.61)	(2.44)	(57.48)	(23.4)	(31.7)	(94.92)	(2.254)	(12.12)	(11.07)	(9.303)	(30.58)

		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		Hungary	Ireland	Italy	Lithuania	Luxemburg	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
295Fertilisers	(€)	24,839	10,156	6,047	45,592	9,071	36,655	1,300	6,002	22,800	7,790	26,027	13,554	2,524	38,603
		(42,645)	(14,077)	(7,235)	(81,078)	(7,430)	(62,435)	(939.2)	(5,120)	(39,657)	(15,497)	(42,723)	(13,231)	(2,748)	(52,765)
296Fert_Nq	(q)	67.98	42.57	12.93	149.9	42.65	109.9	0.675	14.45	54.75	12.34	128.2	23.75	3.908	90.5
		(197.1)	(106.7)	(35.01)	(436.6)	(69.36)	(328.9)	(1.107)	(23.18)	(151.3)	(72.9)	(457.5)	(53.28)	(10.03)	(274.6)
297Fert_P2O5q	(q)	22.61	4.272	5.912	51.82	4.364	43.93	0.131	0.954	17.51	3.281	75.05	7.299	1.267	18.45
		(63.74)	(10.46)	(14.03)	(151.7)	(8.644)	(132.5)	(0.184)	(1.843)	(48.28)	(11.95)	(266.3)	(16.1)	(3.156)	(54.31)
298Fert_K2Oq	(q)	23.02	14.97	5.441	69.2	2.697	44.62	0.343	4.822	25.99	2.724	98.83	9.671	1.51	18.9
		(65.23)	(42.14)	(13.39)	(203.9)	(4.32)	(135.2)	(0.461)	(9.531)	(71.34)	(9.441)	(358)	(22.06)	(3.658)	(55.32)

TABLE 1 OF CONTROL VARIABLES:

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		EU 27	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
270TotalInputs	(€)	270,695	78,105	265,378	317,514	53,293	561,541	357,570	409,927	381,394	44,802
		(518,773)	(47,493)	(274,512)	(532,285)	(66,664)	(934,169)	(431,873)	(488,275)	(661,321)	(40,472)
74Totalagri. area	(ha)	4.158	0.88	0.352	6.08	6.08	1.943	3.846	4.832	13.03	0.803
		(9.010)	(0.668)	(0.245)	(8.045)	(0.818)	(2.65)	(6.82)	(3.054)	(11.79)	(0.513)
26Arableland	(ha)	122.1	19.81	29.23	293.5	14.16	254	105.9	89.97	273.2	11.95
		(274.0)	(12.73)	(13.4)	(470.4)	(12.27)	(394.2)	(130.5)	(79.06)	(370.4)	(8.937)
35Cerealsha	(ha)	68.33	11.45	11.45	177.9	5.501	146.5	57.76	55.05	135.9	5.156
		(159.7)	(7.902)	(3.702)	(288.8)	(4.477)	(219.5)	(69.59)	(45.14)	(179.4)	(3.146)
41Othercrops	(ha)	26.95	3.797	6.623	97.50	0.640	61.81	23.48	13.05	46.41	2.975
		(70.38)	(2.552)	(3.996)	(158.3)	(0.753)	(96.0)	(32.68)	(13.22)	(62.98)	(2.595)
42Energycrops	(ha)	1.079	0.341	0.519	0.306	0	3.568	2.946	0.725	1.839	0.221
		(8.308)	(0.224)	(0.997)	(1.289)	(0)	(9.267)	(4.092)	(1.108)	(6.678)	(0.343)
46VegFlowers	(ha)	1.325	0.166	2.294	1.582	0.657	1.652	1.213	0.444	0.203	0.504
		(3.363)	(0.257)	(2.807)	(2.518)	(0.749)	(2.988)	(1.918)	(0.571)	(0.273)	(0.669)
50Vineyards	(ha)	0.851	0.733	0	3.292	0.219	0.927	0.477	0	0	0.297
		(2.377)	(0.780)	(0)	(4.888)	(0.16)	(1.153)	(0.384)	(0)	(0)	(0.152)
55Orchards	(ha)	0.946	0.229	0.941	1.992	1.992	1.71	0.308	0.254	0.431	0.686
		(1.628)	(0.255)	(1.243)	(2.188)	(0.216)	(1.969)	(0.28)	(0.239)	(0.43)	(0.427)
65Other_crops	(ha)	0.141	0.0129	0.244	0.133	0.133	0.104	0.229	0.538	0.060	0.031
		(0.447)	(0.013)	(0.374)	(0.271)	(0.102)	(0.257)	(0.365)	(0.674)	(0.127)	(0.042)
71Foragecrops	(ha)	44.78	17.17	22.43	20.12	20.12	122.7	46.88	21.74	141.6	6.339
		(88.56)	(4.677)	(9.353)	(18.45)	(7.323)	(143.9)	(40.83)	(20.11)	(190.1)	(7.469)
80Totallivestock	(LU)	112.6	31.35	163.0	88.62	88.62	173.1	127.0	156.7	149.7	20.08
		(221.2)	(22.09)	(170.3)	(160.3)	(53.91)	(287.1)	(142.7)	(250.9)	(273.9)	(22.38)

Note: Zero means that the data value was very low. Hence insignificant.

			(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		EU 27	Spain	Finland	France	Croatia	Hungary	Ireland	Italy	Lithuania	Luxemburg
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
270TotalInputs	(€)	270,695	128,660	266,614	226,827	109,228	456,396	118,713	145,754	331,345	242,975
		(518,773)	(18,683)	(357,497)	(235,571)	(197,695)	(860,395)	(213,687)	(216,703)	(626,295)	(264,689)
74Totalagri. area	(ha)	4.158	5.106	2.553	2.156	0.839	4.333	0.338	1.27	8.739	0.242
		(9.010)	(2.618)	(1.547)	(1.16)	(1.448)	(7.437)	(0.749)	(1.249)	(11.23)	(0.342)
26Arableland	(ha)	122.1	32.29	62.84	54.38	44.33	219.2	14.31	28.96	280.5	43.62
		(274.0)	(20.69)	(26.26)	(35.09)	(51.95)	(363.1)	(27.07)	(30.39)	(440.1)	(33.88)
35Cerealsha	(ha)	68.33	18.29	31.58	27.56	23.45	135.6	9.616	12.64	165.2	18.54
		(159.7)	(11.74)	(10.58)	(20.34)	(25.93)	(224.1)	(21.0)	(13.19)	(262.7)	(11.55)
41Othercrops	(ha)	26.95	4.379	5.463	10.52	12.06	51.95	1.691	2.825	63.51	4.458
		(70.38)	(3.131)	(2.113)	(7.554)	(15.32)	(82.17)	(5.679)	(3.276)	(104.2)	(3.637)
42Energycrops	(ha)	1.079	0.005	0.029	0.521	0	0.174	0.010	0.134	6.447	0.37
		(8.308)	(0.018)	(0.072)	(0.842)	(0)	(0.592)	(0.026)	(0.415)	(28.99)	(0.679)
46VegFlowers	(ha)	1.325	1.821	0.783	1.34	0.509	4.834	0.01	1.733	0.944	0.0152
		(3.363)	(3.107)	(1.728)	(2.042)	(0.643)	(9.055)	(0.026)	(2.694)	(2.091)	(0.043)
50Vineyards	(ha)	0.851	1.802	0	3.565	0.786	0.607	0	2.008	0	0.694
		(2.377)	(0.795)	(0)	(4.158)	(1.509)	(0.391)	(0)	(1.935)	(0)	(0.386)
55Orchards	(ha)	0.946	3.487	0.11	0.72	0.704	2.265	0.004	1.323	0.51	0.003
		(1.628)	(2.094)	(0.122)	(0.875)	(0.868)	(2.15)	(0.008)	(0.974)	(0.712)	(0.010)
65Other_crops	(ha)	0.141	0.036	0.079	0.073	0.053	0.517	0.013	0.25	0.005	0.059
		(0.447)	(0.11)	(0.139)	(0.121)	(0.245)	(1.157)	(0.027)	(0.464)	(0.020)	(0.139)
71Foragecrops	(ha)	44.78	16.93	26.55	29.84	14.23	42.04	52.63	14.45	55.71	58.51
		(88.56)	(15.2)	(16.01)	(13.18)	(15.38)	(64.75)	(21.77)	(12.13)	(81.96)	(42.88)
80Totallivestock	(LU)	112.6	140.2	69.1	108.9	71.2	146.3	113.1	110.2	129.9	130.8
		(221.2)	(254)	(101.5)	(129)	(165.1)	(292.8)	(176.8)	(212.6)	(287.2)	(158.3)

Note: Zero means that the data value was very low. Hence insignificant.

			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		EU 27	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
270TotalInputs	(€)	270,695	478,394	109,260	403,066	254,735	124,149	280,731	321,717	58,563	711,778
		(518,773)	(880,119)	(173,048)	(440,386)	(467,605)	(227,532)	(503,975)	(396,608)	(53,913)	(948,226)
74Totalagri. area	(ha)	4.158	17.26	0.115	0.358	1.378	8.372	1.486	4.67	0.134	10.87
		(9.010)	(20.87)	(0.071)	(0.382)	(2.446)	(10.63)	(4.852)	(3.714)	(0.39)	(21.96)
26Arableland	(ha)	122.1	285.5	2.877	16.19	112.5	33.13	292.6	116.0	10.71	389.6
		(274.0)	(414)	(1.017)	(8.397)	(187.3)	(38.61)	(468.4)	(102.5)	(11.5)	(492.3)
35Cerealsha	(ha)	68.33	157.8	0	3.527	70.11	7.711	187.2	52.18	5.745	213.2
		(159.7)	(228.3)	(0)	(0.865)	(113.6)	(14.63)	(301.1)	(47.96)	(6.367)	(273)
41Othercrops	(ha)	26.95	52.81	0.248	4.491	29.04	2.495	90.77	12.84	1.149	87.92
		(70.38)	(87.48)	(0.172)	(2.712)	(52.49)	(6.792)	(150.2)	(14.58)	(1.349)	(113)
42Energycrops	(ha)	1.079	3.853	0	0.0156	0.191	0.0563	0.522	0.466	0.033	4.44
		(8.308)	(18.19)	(0)	(0.038)	(1.163)	(0.279)	(3.225)	(1.573)	(0.148)	(15.26)
46VegFlowers	(ha)	1.325	1.214	1.003	2.101	0.815	4.028	1.065	1.051	0.229	2.154
		(3.363)	(1.775)	(0.686)	(2.163)	(1.294)	(8.982)	(1.787)	(1.373)	(0.365)	(1.919)
50Vineyards	(ha)	0.851	0	0.265	0	0	1.196	3.094	0	0.455	2.838
		(2.377)	(0)	(0.136)	(0)	(0)	(0.618)	(7.443)	(0)	(0.312)	(4.155)
55Orchards	(ha)	0.946	0.613	0.18	0.282	1.127	1.788	1.62	0.035	0.338	1.986
		(1.628)	(0.415)	(0.096)	(0.22)	(1.585)	(1.844)	(3.956)	(0.112)	(0.279)	(2.198)
65Other_crops	(ha)	0.141	0.123	0	0.317	0.101	0.209	0.050	0.093	0.022	0.389
		(0.447)	(0.16)	(0)	(0.385)	(0.173)	(0.937)	(0.151)	(0.226)	(0.065)	(0.90)
71Foragecrops	(ha)	44.78	84.61	1.512	19.01	21.24	25.36	23.18	60.49	12.58	235.2
		(88.56)	(97.61)	(0.699)	(9.382)	(32.3)	(25.41)	(19.16)	(46.89)	(7.182)	(237.9)
80Totallivestock	(LU)	112.6	212.2	68.11	124.1	123.1	83.31	116.2	120.5	32.27	172.8
		(221.2)	(465.7)	(125.5)	(140.9)	(215.1)	(156.7)	(270.3)	(172)	(34.44)	(249.0)

Note: Zero means that the data value was very low. Hence insignificant.

TABLE 2 OF CONTROL FACTORS:

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		EU 27	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE140Cerealsfarm	(€/farm)	49,322	9,373	15,802	120,358	1,913	112,491	57,654	53,527	68,671	4,544
		(117,240)	(7,364)	(7,469)	(215,490)	(2,209)	(177,747)	(70,573)	(50,299)	(105,987)	(3,085)
SE145Prot.cropsfarm	(€/farm)	1,103	165.1	303.5	939.6	136.6	1,370	931.9	558.6	3,563	398.1
		(4,423)	(198)	(647.6)	(3082)	(180.8)	(2,316)	(1,315)	(832)	(7,150)	(476)
SE150Potatoesfarm	(€/farm)	4,694	1,605	13,515	1,760	3,679	11,682	10,864	7,301	2,365	2,518
		(10,235)	(1,868)	(13,864)	(2,529)	(4,519)	(18,851)	(15,984)	(9,976)	(1,856)	(4,035)
SE155Sugarbeetfarm	(€/farm)	3,449	1,804	6,534	10.07	0.256	14,522	7,789	3,217	0.092	190.2
		(10,734)	(1,636)	(3,243)	(92.2)	(1.696)	(25,831)	(8,763)	(3,321)	(0.481)	(323.5)
SE160Oilseedcropsfa	(€/farm)	16,829	2,257	417.3	62,396	20.72	46,865	18,532	7,367	24,611	388.3
		(48,957)	(1,772)	(392.8)	(112,282)	(79.14)	(76,268)	(27,539)	(8,339)	(41,560)	(445.1)
SE165Industrialcrops	(€/farm)	1,118	272.0	1,400	4,262	73.7	4,668	1,627	37.75	195.8	2,801
		(3,889)	(201.1)	(798.9)	(5,501)	(283.8)	(8,998)	(1,566)	(73.66)	(1,253)	(2,178)
SE170Veget.flower	(€/farm)	23,765	1,848	62,919	14,907	11,034	13,075	29,363	21,265	2,611	13,094
		(66,559)	(2,854)	(76,556)	(24,928)	(12,532)	(21,174)	(43,515)	(37,268)	(4,574)	(19,811)
SE175FruitexclCitru	(€/farm)	4,291	1,794	17,733	2,713	1,450	4,816	2,702	1,439	244.8	3,339
		(19,520)	(2,072)	(24,054)	(2,795)	(1,002)	(6,495)	(2,482)	(1,404)	(270.6)	(2,511)
SE180Citrusfruitfar	(€/farm)	465.7	0	0	0	908.2	0	0	0	0	1,294
		(2,501)	(0)	(0)	(0)	(663.0)	(0)	(0)	(0)	(0)	(1,283)
SE185Wine&grapes	(€/farm)	5,504	6,069	1.574	5,028	472.7	4,571	6,041	0	0.030	1,675
		(19,501)	(6,035)	(5.699)	(6,302)	(424.4)	(4,658)	(3,602)	(0)	(0.305)	(994.9)
SE190Olivesoliveoil	(€/farm)	643.4	0	0	0	923.2	0	0	0	0	2,981
		(1,670)	(0)	(0)	(0)	(379.6)	(0)	(0)	(0)	(0)	(995.9)
SE195Foragecrop	(€/farm)	11,898	683.7	2,411	5,643	4,039	31,712	13,602	19,478	33,376	2,915
		(26,236)	(857.7)	(1,308)	(8,079)	(5,421)	(48,437)	(17,446)	(25,479)	(59,107)	(2,431)
SE146Energycrops	(€)	583.8	211.2	95.72	75.79	0	775.0	1,441	446.1	1,076	35.66
		(5,781)	(297.0)	(161.5)	(693.6)	(0)	(2,938)	(3,135)	(1,047)	(4,128)	(146.8)

Note: Zero means that the data value was very low. Hence insignificant.

VARIABLES	Unit	(10) EU 27	(11) Spain	(12) Finland	(13) France	(14) Croatia	(15) Hungary	(16) Ireland	(17) Italy	(18) Lithuania	Luxemburg
		Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE140Cerealsfarm	(€/farm)	49,322	11,838	17,494	30,109	19,153	108,134	13,027	16,505	116,006	16,366
		(117,240)	(9,284)	(8,364)	(25,529)	(23,769)	(183,290)	(32,854)	(19,505)	(202,484)	(12,519)
SE145Prot.cropsfarm	(€/farm)	1,103	410.0	448.5	599.2	57.84	919.3	144.5	415.4	5,891	117.2
		(4,423)	(348.8)	(451.8)	(454.1)	(97.27)	(1,785)	(252.9)	(375.4)	(14,336)	(115.3)
SE150Potatoesfarm	(€/farm)	4,694	2,706	2,491	7,756	12,103	770.7	523.8	1,622	4,602	4,289
		(10,235)	(4,900)	(2,733)	(13,010)	(38,090)	(734.2)	(1,391)	(2,701)	(8,433)	(7,136)
SE155Sugarbeetfarm	(€/farm)	3,449	938.5	826.5	3,377	709.6	4,379	136.9	1,003	9,764	0
		(10,734)	(1,490)	(753)	(4,107)	(1,163)	(12,437)	(536.0)	(1,920)	(18,618)	(0)
SE160Oilseedcropsfa	(€/farm)	16,829	879.5	1,164	6,160	6,843	39,199	2,100	1,462	36,800	3,024
		(48,957)	(756.7)	(637.0)	(5,415)	(7,813)	(66,172)	(8,626)	(1,840)	(68,702)	(2,472)
SE165Industrialcrops	(€/farm)	1,118	924.7	193.9	2,779	393.9	300.4	0	1,238	414.3	58.67
		(3,889)	(1,071)	(240.6)	(3,810)	(419.1)	(446.2)	(0)	(1,979)	(1,381)	(236.4)
SE170Veget.flower	(€/farm)	23,765	30,202	79,317	24,987	4,697	18,022	43.5	25,894	8,535	158.4
		(66,559)	(51,755)	(170,259)	(31,349)	(5,982)	(24,295)	(224.8)	(36,027)	(21,310)	(409.4)
SE175FruitexclCitru	(€/farm)	4,291	11,062	268.6	8,498	1,845	5,190	5.6	8,148	441.0	9.262
		(19,520)	(14,205)	(323.9)	(12,250)	(2,658)	(5,322)	(14.59)	(6,403)	(762.4)	(29.31)
SE180Citrusfruitfar	(€/farm)	465.7	5,551	0	188.4	366.9	0	0	1,909	0	0
		(2,501)	(10,441)	(0)	(255)	(790)	(0)	(0)	(1,511)	(0)	(0)
SE185Wine&grapes	(€/farm)	5,504	3,894	0	53,650	5,256	2,779	0	23,487	0	14,918
		(19,501)	(2,568)	(0)	(74,183)	(11,340)	(3,232)	(0)	(31,857)	(0)	(10,512)
SE190Olivesoliveoil	(€/farm)	643.4	5,782	0	90.68	607.0	0	0	3,669	0	0
		(1,670)	(3,401)	(0)	(113.0)	(798.3)	(0)	(0)	(1,044)	(0)	(0)
SE195Foragecrop	(€/farm)	11,898	3,130	9,548	595.7	9,818	14,087	6,789	10,766	16,884	3,722
		(26,236)	(3,159)	(13,736)	(644.0)	(13,399)	(27,856)	(7,254)	(13,880)	(28,848)	(7,007)
SE146Energycrops	(€)	583.8	1.51	4.125	437.3	0	49.13	0.813	11.62	4,269	148.3
		(5,781)	(6.33)	(12.73)	(799.2)	(0)	(190.1)	(3.23)	(33.57)	(21,016)	(390.2)

Note: Zero means that the data value was very low. Hence insignificant.

			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		EU 27	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE140Cerealsfarm	(€/farm)	49,322	100,472	0	4,768	57,318	8,885	117,019	41,072	5,857	142,414
		(117,240)	(170,455)	(0)	(1,847)	(101,142)	(23,331)	(196,114)	(44,333)	(7,184)	(199,887)
SE145Prot.cropsfarm	(€/farm)	1,103	3,470	0	192.4	861.5	114.2	1,305	1,873	41.92	1,885
		(4,423)	(9,868)	(0)	(167.4)	(1,483)	(325)	(3,077)	(2,905)	(134.3)	(2,862)
SE150Potatoesfarm	(€/farm)	4,694	4,183	1,686	15,241	4,805	1,645	3,769	6,197	1,688	6,605
		(10,235)	(5,449)	(1,344)	(14,433)	(8,292)	(2,972)	(5,971)	(9,217)	(2,631)	(8,954)
SE155Sugarbeetfarm	(€/farm)	3,449	3,960	0	4,863	7,782	84.41	4,094	4,292	181.8	12,414
		(10,734)	(19,218)	(0)	(2,561)	(15,070)	(331)	(7,587)	(5,298)	(570.4)	(23,446)
SE160Oilseedcropsfa	(€/farm)	16,829	31,750	0	64.63	23,030	1,091	55,194	5,330	442.5	54,709
		(48,957)	(59,974)	(0)	(63.45)	(44,923)	(3,814)	(96,365)	(6,802)	(613)	(77,978)
SE165Industrialcrops	(€/farm)	1,118	238.9	0	1,057	214.9	2,584	327.4	936.9	2,309	860.6
		(3,889)	(599)	(0)	(3,690)	(245.2)	(12,360)	(771.2)	(2,679)	(4,611)	(1,343)
SE170Veget.flower	(€/farm)	23,765	22,289	25,953	154,313	19,983	29,825	9,363	22,982	3,423	16,220
		(66,559)	(46,907)	(25,442)	(230,949)	(26,385)	(63,421)	(22,819)	(34,972)	(6,908)	(29,163)
SE175FruitexclCitru	(€/farm)	4,291	654.3	564.9	5,674	2,095	24,422	4,050	793.7	1,956	2,664
		(19,520)	(1,361)	(412)	(5,255)	(1,585)	(85,038)	(5,970)	(2,910)	(2,348)	(4,195)
SE180Citrusfruitfar	(€/farm)	465.7	0	112.7	0	0	1,020	0	0	0	0
		(2,501)	(0)	(113.7)	(0)	(0)	(838.0)	(0)	(0)	(0)	(0)
SE185Wine&grapes	(€/farm)	5,504	0.098	2,578	0.353	0.029	5,120	10,093	0	3,750	6,083
		(19,501)	(0.477)	(4,203)	(2.567)	(0.221)	(6,216)	(25,670)	(0)	(4,007)	(8,346)
SE190Olivesoliveoil	(€/farm)	643.4	0	39.49	0	0	1,621	0	0	99.96	0
		(1,670)	(0)	(62.85)	(0)	(0)	(1,593)	(0)	(0)	(292.9)	(0)
SE195Foragecrop	(€/farm)	11,898	16,897	1,429	5,027	1,874	5,427	11,351	29,222	8,658	45,423
		(26,236)	(25,324)	(1,015)	(4,566)	(3,908)	(9,393)	(10,624)	(31,405)	(8,074)	(60,358)
SE146Energycrops	(€)	583.8	2,557	0	10.74	193.6	2.34	256.3	225.4	23.48	2,332
		(5,781)	(12,746)	(0)	(33.64)	(1,448)	(12.4)	(1,623)	(1,259)	(107.6)	(10,755)

Note: Zero means that the data value was very low. Hence insignificant.

TABLE 3 OF CONTROL FACTORS (production functions)

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		EU 27	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE340Machinery	(€)	14,786 (26,559)	7,251 (2,818)	13,357 (10,921)	12,629 (21,934)	2,814 (2,406)	44,726 (72,771)	25,610 (26,006)	28,627 (25,586)	20,669 (32,437)	1,764 (1,433)
SE345Energy	(€)	22,641 (46,168)	5,257 (3,017)	18,761 (20,308)	33,073 (54,836)	4,872 (4,547)	49,178 (77,402)	27,481 (31,436)	15,656 (19,671)	32,056 (50,156)	4,601 (3,853)
SE370Wagespaid	(€)	35,002 (86,359)	2,375 (2,445)	17,219 (22,360)	35,533 (56,317)	5,859 (6,322)	106,574 (193,407)	47,635 (74,723)	39,849 (57,165)	58,810 (112,313)	4,978 (5,203)
SE11Labourinputhrs	(hrs)	9,424 (18,730)	3,614 (882)	5,657 (3,350)	17,388 (22,418)	4,024 (2,134)	20,800 (31,653)	7,050 (6,602)	3,389 (3,085)	12,968 (20,145)	4,411 (2,271)

			(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		EU 27	Spain	Finland	France	Croatia	Hungary	Ireland	Italy	Lithuania	Luxemburg
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE340Machinery	(€)	14,786 (26,559)	5,302 (6,964)	19,698 (18,566)	15,548 (13,114)	4,030 (6,535)	19,333 (36,066)	8,397 (10,176)	4,188 (5,635)	15,497 (27,929)	19,935 (17,599)
SE345Energy	(€)	22,641 (46,168)	7,376 (9,156)	36,036 (62,490)	10,786 (10,514)	6,373 (8,436)	45,305 (80,855)	5,410 (7,433)	11,086 (14,681)	29,333 (54,109)	11,559 (10,791)
SE370Wagespaid	(€)	35,002 (86,359)	22,690 (38,251)	25,940 (50,116)	24,250 (33,684)	10,961 (23,560)	69,708 (139,990)	6,341 (17,183)	20,399 (30,108)	43,543 (95,782)	9,806 (10,774)
SE11Labourinputhrs	(hrs)	9,424 (18,730)	5,190 (4,859)	4,419 (4,176)	4,050 (2,928)	4,705 (3,493)	16,454 (28,129)	3,065 (1,456)	5,049 (3,846)	15,167 (26,027)	3,891 (1,957)

			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		EU 27	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
SE340Machinery	(€)	14,786	21,318	5,426	21,361	9,937	5,186	9,223	22,388	4,558	33,026
		(26,559)	(33,948)	(8,093)	(16,790)	(16,729)	(8,369)	(15,797)	(22,705)	(3,039)	(41,240)
SE345Energy	(€)	22,641	46,869	8,530	35,402	22,925	7,752	29,452	24,352	4,868	63,708
		(46,168)	(77,014)	(10,312)	(52,042)	(39,489)	(12,065)	(50,682)	(26,959)	(4,189)	(84,541)
SE370Wagespaid	(€)	35,002	67,675	8,017	44,521	32,372	18,437	31,609	27,946	1,874	134,226
		(86,359)	(137,249)	(14,465)	(57,453)	(68,764)	(43,772)	(59,196)	(44,381)	(3,483)	(189,591)
SE11Labourinputhrs	(hrs)	9,424	19,903	5,309	5,908	11,508	6,594	17,420	4,114	3,929	29,217
		(18,730)	(38,459)	(2,997)	(4,368)	(15,507)	(9,656)	(27,164)	(3,180)	(1,888)	(38,911)

TABLE OF TRADE, EU-27 IMPORTS

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		EU 27	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
T_(M)_N_Euros	(€)	47.36	1.88	73.19	57.86	0.376	1.17	76.21	10.91	20.87	44.84
		(75.07)	(2.04)	(39.41)	(30.96)	(0.379)	(1.286)	(39.06)	(4.814)	(22.3)	(13.78)
T_(M)_P205_Euros	(€)	6.245	0.321	11.18	2.006	0.056	0.055	11.20	1.340	0.368	3.796
		(11.42)	(0.283)	(8.733)	(2.251)	(0.046)	(0.102)	(7.061)	(1.989)	(0.581)	(1.913)
T_(M)_K20_Euros	(€)	25.24	2.054	176.2	2.074	0	5.648	2.318	1.902	2.85	7.023
		(48.5)	(2.678)	(80.79)	(1.495)	(0)	(3.162)	(1.228)	(2.197)	(4.439)	(3.208)
T_(M)_N_Quant.	(Q. in	2.232	0.070	3.416	2.448	0.015	0.060	3.489	0.535	1.351	1.958
	100KG)	(3.376)	(0.081)	(1.496)	(1.339)	(0.019)	(0.082)	(1.468)	(0.181)	(1.54)	(0.497)
T_(M)_P205_Quant.	(Q. in	0.284	0.017	0.456	0.100	0	0.001	0.427	0.058	0.026	0.206
	100KG)	(0.476)	(0.017)	(0.320)	(0.110)	(0)	(0.004)	(0.216)	(0.073)	(0.044)	(0.081)
T_(M)_K20_Quant.	(Q. in	1.083	0.074	7.014	0.070	0	0.223	0.049	0.060	0.153	0.273
	100KG)	(1.982)	(0.095)	(2.032)	(0.052)	(0)	(0.160)	(0.053)	(0.081)	(0.267)	(0.136)

TABLE OF TRADE, EU-27 IMPORTS, CONT'D

			(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		EU 27	Spain	Finland	France	Croatia	Hungary	Ireland	Italy	Lithuania	Luxemburg
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
T_(M)_N_Euros	(€)	47.36	170	13.04	316.3	2.897	16.77	59.65	177.3	46.18	0
		(75.07)	(49.59)	(3.748)	(126)	(2.747)	(8.588)	(25.24)	(42.34)	(26.64)	(0)
T_(M)_P205_Euros	(€)	6.245	5.448	0.134	32.79	0.753	0.66	2.041	16.39	0.409	9.00
		(11.42)	(3.638)	(0.158)	(15.18)	(1.137)	(0.546)	(1.656)	(5.816)	(0.357)	(0.00)
T_(M)_K20_Euros	(€)	25.24	47.63	3.867	38.70	20.39	20.46	8.508	49.84	14.72	94.00
		(48.5)	(12.68)	(6.805)	(17.93)	(5.526)	(9.425)	(6.01)	(17.8)	(8.666)	(0)
T_(M)_N_Quant.	(Q. in 100KG)	2.232	7.467	0.635	14.78	0.121	0.92	2.371	7.527	3.014	0
		(3.376)	(1.89)	(0.154)	(5.668)	(0.11)	(0.415)	(0.898)	(1.043)	(1.434)	(0)
T_(M)_P205_Quant.	(Q. in 100KG)	0.284	0.318	0.006	1.230	0.021	0.040	0.063	0.9	0.024	0.28
		(0.476)	(0.175)	(0.011)	(0.417)	(0.031)	(0.031)	(0.063)	(0.308)	(0.030)	(0.00)
T_(M)_K20_Quant.	(Q. in 100KG)	1.083	1.948	0.343	1.327	0.762	0.906	0.296	2.00	0.821	0
		(1.982)	(0.456)	(0.73)	(0.592)	(0.146)	(0.35)	(0.197)	(0.523)	(0.513)	(0)

*Note: Luxemburg St. dv. is not showing due to the very low number of observations.

TABLE OF TRADE, EU-27 IMPORTS, CONT'D

			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		EU 27	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
VARIABLES	Unit	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)	Mean (Sd.)
T_(M)_N_Euros	(€)	47.36	22.05	0.328	29.72	64.56	11.62	39.62	17.84	0.903	4.487
		(75.07)	(10.41)	(0.705)	(14.65)	(34.65)	(7.924)	(30.18)	(7.025)	(0.908)	(2.643)
T_(M)_P205_Euros	(€)	6.245	0.388	0	32.47	1.103	0.180	14.31	0.014	0.032	0.039
		(11.42)	(0.566)	(0)	(18.65)	(1.157)	(0.134)	(11.66)	(0.019)	(0.050)	(0.040)
T_(M)_K20_Euros	(€)	25.24	2.961	0.01	80.33	156.9	4.42	6.685	17.42	0.156	2.593
		(48.5)	(2.142)	(0.016)	(21.97)	(57.81)	(2.056)	(6.476)	(8.943)	(0.358)	(2.227)
T_(M)_N_Quant.	(Q. in 100KG)	2.232	1.238	0	1.682	3.369	0.412	1.903	1.164	0.038	0.243
		(3.376)	(0.508)	(0)	(1.147)	(1.487)	(0.16)	(1.498)	(0.413)	(0.034)	(0.139)
T_(M)_P205_Quant.	(Q. in 100KG)	0.284	0.02	1.48	1.148	0.038	0.012	1.014	0	0	0
		(0.476)	(0.024)	(1.80)	(0.534)	(0.043)	(0.012)	(0.832)	(0)	(0)	(0)
T_(M)_K20_Quant.	(Q. in 100KG)	1.083	0.135	0	4.352	6.89	0.186	0.235	0.701	0.006	0.135
		(1.982)	(0.088)	(0)	(1.287)	(1.481)	(0.086)	(0.201)	(0.257)	(0.016)	(0.117)

*Note: All the reported means coefficients are imports (M) averages from 2004 to 2020.