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The role of commodity traders in shaping agricultural markets

Agriculture and Rural Development

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RESEARCH FOR AGRI COMMITTEE

The role of commodity traders in shaping agricultural markets

Oligopoly and Vertical Integration: ABCDs, Emerging Players, Novel Strategies, and Potential EU Intervention

Abstract

This study provides an overview of the impact of commodity traders on agricultural markets. It examines the ramifications of financialisation, explores prevailing trends, and confronts the challenges that characterise the industry's landscape. Moreover, after analysing the regulatory state of play at the international level, it provides suggestions towards bolstering the sector's accountability and transparency, essential for fostering trust and sustainability. By scrutinising these aspects, this study offers insights into the intricate dynamics of agricultural trading and its broader socioeconomic implications.

This document was requested by the European Parliament's Committee on Agriculture and Rural Development.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABCCD	Archer Daniels Midland, Bunge, Cargill, COFCO International, Louis Dreyfus Company
ABCCDV	Archer Daniels Midland, Bunge, Cargill, COFCO International, Louis Dreyfus Company, Viterra
ABCD	Archer Daniels Midland, Bunge, Cargill, Louis Dreyfus Company
ADM	Archer Daniels Midland
AMIS	Agricultural Market Information Systems
BCR	Bolsa de Comercio de Rosario
CAGR	Compound Annual Growth Rate
CAIASA	Complejo Agroindustrial Angostura
CAP	Common Agricultural Policy
CCP	Central Counterparty
CIL	COFCO International
CMO	Common Market Organisation
CME	Chicago Mercantile Exchange
COPs	Cereals, Oilseed and Protein crops
CSMAD	Criminal Sanctions for Market Abuse Directive
CSRD	Corporate Sustainable Reporting Directive
CTP	Cargill Tropical Palm Holdings
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortisation
EC	European Commision
EEA	European Economic Area
EESC	European Economic and Social Committee
EP	European Parliament

EP&C	European Parliament and The Council
ESG	Environmental, Social and Governance
ETFs	Exchange Traded Funds
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FINMA	Swiss Financial Market Supervisory Authority
FT Live	Financial Times Live
FY	Financial year
GDPR	General Data Protection Regulation
G20	The Group of Twenty
iPES-Food	International Panel of Experts on Sustainable Food Systems
IOSCO	International Organization of Securities Commissions
ITC	International Trade Centre
ITS	Implementing Technical Standards
JV	Joint Venture
LDC	Louis Dreyfus Company
MAR/MAD	Regulation and Directive on Market Abuse
MiFID II	Markets in Fianancial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
Mt	Million tonnes
n.d.	No date
OECD	Organisation for Economic Co-operation and Development
OFI	Olam Food Ingredients
OTC	Over-the-Counter

PSH	Public Food Stockholding
RICI	Rogers International Commodity Index®
RSPO	Roundtable on Sustainable Palm Oil
RTS	Regulating Technical Standards
SFDR	Sustainable Finance Disclosure Regulation
UNCTAD	The United Nations Conference on Trade and Development
US	United States of America
USDA	United States Department of Agriculture
US SEC	United States Securities and Exchange Commission
WTO	World Trade Organisation

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The analysis and conclusions provided in the study are the authors' and have not been discussed with or agreed upon by these experts.

EXECUTIVE SUMMARY

The ABCDs, historical agri-commodity traders reinventing themselves beyond trading

Archer Daniels Midland (ADM, operating since 1902), Bunge (1818), Cargill (1865), and Louis Dreyfus Company (LDC, 1851), collectively known as the ABCDs, play a pivotal role in the global agri-commodity trading market. They traditionally offer a portfolio of services ranging from the origination, merchandising, transportation and storage to the primary processing of agricultural raw materials like cereals, oilseeds and protein crops (COPs). Through integration and expansion processes, the ABCDs have grown beyond their traditional core activities into sectors such as animal and pet nutrition; biofuels; chemicals; finance & investment; and human nutrition and health & wellness.

Despite emerging competition, ABCDs keep playing a big role in global agri-commodity trade

Over the past decade, the ABCDs have continued to play a significant role in the global agri-commodity trade. Based on updated estimates, they handle around 50-60% of the worldwide trade in essential COPs. However, their dominance is challenged by emerging competitors in different commodities and geographies. These new actors, some of them former clients, include Asian traders who want to diversify and secure large supply volumes to address their respective countries' deficit in grains and oilseeds production, and large producers who want to market their supply directly.

Commodity traders' role in managing food stocks and market effects

Maintaining agricultural commodity reserves is crucial for food supply from surplus to deficit regions. However, lack of transparency in volumes and distribution increases the risk of price volatility. In 2022, the European Commission, facing increased unpredictability of food supply due to crises and climate change, required monthly data reporting on certain commodities (cereals, oilseeds, rice, and certified seed stock) to enhance market transparency. Indeed, there are concerns about vulnerabilities created by few dominant traders and questions about the need for strategic reserves despite the related challenges of costs, perishability, market interference, compliance with WTO rules, and deterrence of private actors.

Even with significant investments in storage infrastructure, the ABCDs are not obligated to reveal their capacities, which hampers a comprehensive analysis of their roles in agricultural commodity storage. A rough estimate suggests that the ABCDs may have the joint capacity to store approximately 10% of the current global COP stocks.

Evolution and challenges in the modern agri-commodity trading landscape

The contemporary food system is characterised by market consolidation, resulting in an oligopolistic structure dominated by major companies. These companies have grown both horizontally and vertically, expanding their roles across different business segments, geographies, and supply chain stages. Vertical integration involves controlling more stages of a supply chain, while horizontal integration involves expanding within the same stage, usually through mergers or acquisitions.

Recent trends have seen the ABCDs investing heavily in the processing and marketing of value-added downstream products such as biofuels, edible oils, animal feed, and food ingredients. Their involvement in the development of alternative proteins indicates that this direction is likely to

continue. However, this market concentration and the resulting increased bargaining power of large integrated buyers poses a risk, particularly to smaller farmers, who may lose negotiating abilities and face threats to their independence.

Implications and challenges of market concentration in agri-commodity trading

The market concentration in agri-commodity trading, both vertically and horizontally, is driven by corporate aims such as economies of scale, shareholder satisfaction, and market dominance. Market dominance can lead to negative impacts, such as reducing competition, pressuring working conditions, and accelerating environmental degradation through unsustainable practices.

Regulatory and institutional frameworks struggle to curtail market monopolisation due to the lack of global competition policy and the influencing power exerted by large agri-traders. To address these issues, regulatory interventions, such as antitrust measures, market transparency promotion, and empowerment of smaller stakeholders, are necessary. Additionally, measures such as requirements to disclose information about food reserves can promote transparency and balance in the food market, while imposing a windfall tax on excessive profits may help alleviate rising food prices.

Regulatory reforms in the global agriculture sector amid rising prices and economic volatility

Multinational corporations in the global agriculture sector significantly impact food security due to their extensive market knowledge and ties to the financial system. Experiences from the 2008 financial crisis have led to international regulatory initiatives to limit volatile food and oil prices and increase transparency. This has been further evidenced in the governance evolution in the EU and the US, with reforms aimed at controlling commodity market speculation and boosting corporate accountability. Discussions about increased regulation and supervision have heightened due to rising food prices and profits amid the COVID-19 pandemic and Russia's war on Ukraine, with key issues revolving around transparency and accountability.

Potential for monitoring transparency and accountability

The high concentration in the agri-commodity market necessitates a systematic regulatory approach. The soaring food and input prices, and their significant impact on low-and middle-income countries coupled with the inability of farmers to benefit from rising food prices due to escalating input costs, underscore the need for a deeper understanding of market dynamics and the roles of speculation and hedging. The study has highlighted the possibility of enhancing transparency and accountability in the sector by implementing the following recommendations:

- Increase the transparency of physical commodity markets by:
    - Strengthening reporting requirements to the EC dashboard system on EU agricultural markets and introducing reliability estimates.
    - Enhancing cooperation on the international level to improve the supervision of physical agri-commodity markets.
- Improve disclosure requirements of financial risks in the derivatives trading by all traders by:
    - Fostering agreements on the international level to limit the financial risks taken through trading in agri-commodity derivatives.

- Introducing new reporting obligations for agri-commodity traders in the review of the Markets in Financial Instruments Directive and Regulation (MiFID II/MiFIR) to disclose how much of their derivatives trading is strictly hedging and how much speculative trading.

- Ensure the integrity of derivatives markets and orderly pricing by:
  - Preparing legislative proposals for improvement during the next review of MiFID and MiFIR regarding, in particular, the position limits regime, the position management controls, and the transparency on trading strategies used by non-financial and financial participants.
  - Ensuring that the European Security and Markets Authority (ESMA) has sufficient data and resources to effectively monitor the trading of agri-commodity derivatives, on and off exchanges.
- Investigate and regulate market concentration by:
  - Initiating an in-depth investigation of the status and impacts of market concentration at different stages of the agri-food sector.
  - Calling on the EU to initiate the discussion of the concentration issue at the international level and to explore possibilities for more cooperation among competition authorities.
  - Repeating the call for an expansion of the ordinary legislative procedure to include the EP in competition law reviews and development.
  - Initiating research into the potential for a windfall tax on excessive profits in the agri-food sector.

1. STATE OF THE ART — GLOBAL COMMODITY TRADERS

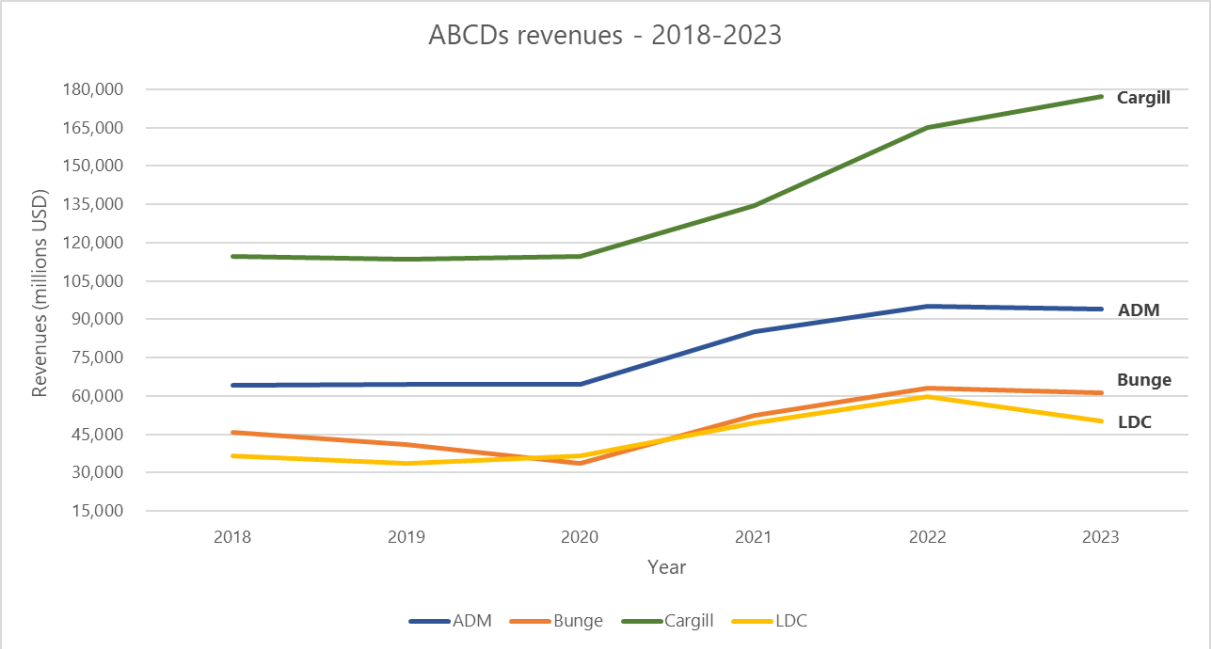
KEY FINDINGS

- In this chapter, the reader will find a brief overview of the activities and profiles of Archer Daniel Midlands (ADM), Bunge, Cargill, and Louis Dreyfus Company (LDC), collectively known as the ABCDs, the importance of these traders in bulk commodities trading, and the role of commodity traders in managing food stocks and market effects.
- **In recent years, despite challenging periods, the ABCDs have all seen considerable growth in their revenues**, with *Cargill* reporting the highest absolute growth amongst the four (USD 117 billion in 2023, with a 2018-2023 compound annual growth rate (CAGR) of +9%), followed by *ADM* (USD 93 billion in 2023, with a 2018-2022 CAGR of +10%). Meanwhile, *Bunge* (USD 61 billion in 2023, with a 2018-2023 CAGR of +6%), and *LDC* (USD 59.9 billion, with a 2018-2023 CAGR of 13%), though having lower revenues compared to the other two, showed significant growth as well.
- **The considerable profits made by the ABCDs, even during challenging periods, can be explained by their dominant market positions and their ability to capitalise on market volatility**. Data disclosure by traders on trade volumes and geographies is very limited. The ABCD's share in the world trade in essential cereals, oilseed and protein crops (COPs) can be roughly estimated at about 50-60% in 2022. This estimate increases to 70-80% when including COFCO International (CIL) and Viterra (to be merged into Bunge).
- **Transparency on agri-commodity inventories is crucial for the monitoring of physical food supplies and financial markets. However, data on the share of traders in stocks is inconsistent and prone to fluctuate**. A rough estimate for the ABCD's COP storage ability suggests a joint capacity to hold up to 10% of the global COP stocks.

1.1. ABCDs Company profiles

The following subchapter provides a **brief overview** of the most relevant agri-commodity traders. The selected companies, collectively known **as ABCDs, are Archer Daniels Midland (ADM), Bunge, Cargill, and Louis Dreyfus Company (LDC)**. For this study, a robust assessment of each of the ABCDs was performed. The approach for this assessment was to build upon current consortium knowledge, desk research of any relevant activities of the ABCDs as well as relevant policies, and quantitative analysis of financial data derived from company publications and relevant databases. Comprehensive company profiles in the form of 'battlecards' for each of the ABCD companies are featured in Annex 2. As the reader progresses through this section, and more generally through this study, it is worth mentioning that ADM and Bunge are publicly owned enterprises, while Cargill and LDC remain privately owned. Figure 1 displays the revenues of each of the ABCDs for the period 2018-2023.

Figure 1: ABCDs revenues for the period 2018-2023.



Source: Consortium elaboration based on released company financial reports, financial press, and financial databases.

1.1.1. ARCHER DANIELS MIDLAND (ADM)

ADM was founded in 1902, as a linseed crushing business. In 1923 the company became formally known as Archer Daniels Midland Company. The company is publicly listed and is currently headquartered in Chicago, Illinois (US) (ADM, n.d.-a). ADM owns subsidiaries in more than 70 countries.

ADM provides services and technologies to around 210,000 farmers globally (ADM, 2023). The company's business is organised in three segments (ADM, 2023): Ag(riculture) Services and Oilseeds, Carbohydrate Solutions, and Nutrition.

- *The Ag Services and Oilseeds segment* involves activities related to the origination, merchandising, transportation, and storage of agricultural raw materials. This segment specialises also in the crushing and processing of oilseeds, including soybeans and soft seeds like cottonseed, sunflower seed, canola, rapeseed, and flaxseed. These undergo transformation into products such as vegetable oils and protein meals, catering to the needs of food, feed, energy, and industrial customers.
- *The Carbohydrate Solutions segment* engages in the wet and dry milling of maize and wheat, undertaking various related activities. This segment specialises in the conversion of maize and wheat into a wide range of products and ingredients crucial to the food and beverage industry (e.g., sweeteners, maize and wheat starches, syrup, glucose, wheat flour, and dextrose).
- *The Nutrition segment* serves diverse end markets such as food, beverages, nutritional supplements, feed premix and additives for livestock, aquaculture, and pet food. The segment focuses on the manufacturing, sale, and distribution of a wide array of ingredients and solution (e.g., plant-based proteins, natural flavours, flavour systems, natural colours, emulsifiers, soluble fibre, polyols, hydrocolloids, probiotics, prebiotics, enzymes, botanical extracts, and other specialty food and feed ingredients).

In 2018, ADM ended the financial year with US$ 64 billion in revenues (ADM, 2019). Between 2019 and 2020 the company's effective tax rate dropped from 13.2% to 5.4%. The company stated that the

drop in rate was caused by changes in the geographic distribution of revenues, and adjustments of previously filed returns (ADM, 2020). ADM closed the 2020 fiscal year with US$ 64 billion in revenues, with 297 processing plants and 308 procurement facilities owned.

Post COVID -19 pandemic, ADM experienced record-breaking profits for the company, with its **2022 fiscal year ending with US$ 95 billion** in revenues compared to US$ 85 billion in 2021. Profits rose due to increased sale prices of oils, soybeans, maize, meal, animal feed, biodiesel, and flavours. Between 2021 and 2022, the operating profit of Ag services and Oilseeds rose by 32%, the one for the Carbohydrate solutions by 79%, while the Nutrition operating profit saw a growth of 20%. However, at the beginning of 2024, the US Department of Justice confirmed that ADM's accounting procedures related to the nutrition reporting segment were probed by US prosecutors (Foley, 2024).

1.1.2. BUNGE

Founded in 1818 in Amsterdam (Netherlands), Bunge has been active in agribusiness for more than two centuries. The publicly listed company is currently headquartered in St. Louis (US) and is incorporated in Geneva, Switzerland (Bunge, n.d.-a).

Bunge is the largest oilseed processor, and a major producer and supplier of specialty plant-based oils, fats and protein (Bunge, n.d.-a). The company features an expansive network of facilities across six continents, encompassing grain elevators, oilseed processing plants, and strategically positioned port terminals. Bunge's declared primary aim is to directly link the consumer with the product originating from the farm. It features an extensive logistics network (Bunge, n.d.-c) to transport its products, featuring trucks, railcars, river barges and ocean freight vessels. As of its 2022 annual report, **Bunge operates within four market segments: Agribusiness, Refined and Specialty Oils, Milling, and Sugar and Bioenergy**. The products are then used in a wide range of applications, such as animal feed, cooking oils and flours, as well as bakery and confectionery, dairy fat alternatives, plant-based meat and infant nutrition. In addition, Bunge is also involved in using its crop infrastructure to help fuel renewable energy solutions. Examples of markets served by the company include Animal Feed & Pet Food, Bakery & Cereals, Beverages, Confectionery, Culinary, Snacks & Frying, Biofuels, Industrial, Nutrition, Meat, and Plant-based Foods (Bunge, n.d.-d). In terms of key commodities traded, these feature soybeans, canola, maize, wheat, palm, shea, sunflower, coconut, and olives (Bunge, n.d.-e).

Bunge's 2018 publication of year-end finances indicated revenues of US$ 45.7 billion (Bunge, 2019b). All of its market segments experienced growth, with the Agribusiness and Oilseeds segment doubling in revenues when compared to 2017. In 2019, Bunge's gross revenues were less than the previous year (Bunge, 2019c). Agribusiness, Oilseeds and Sugar and Bioenergy saw a decrease in revenues compared to the following year. The drop in Oilseeds revenues was due to reversals in soy crushing contracts, and the dip in Edible Oil Products was due to lower results in South America. In 2020, agribusiness was classified as essential or life-sustaining operations, and Bunge stated it had minimal disruptions in its supply chain and reported revenues of US$ 41.4 billion. As of 2020, Bunge still had Fertilizer as one of its business segments, with its annual report stating that the price fluctuations of fertiliser raw materials have led to an increase in the price of fertiliser. The Sugar and Bioenergy and Fertilizer segments dropped in profit compared to 2018 and 2019, while Edible Oil Products and Milling increased. In addition, while its Agribusiness and Refined and Speciality Oils revenues increased compared to 2021, overall revenues were less than the previous year.

As of January 2021, Bunge no longer listed Fertilizer and Sugar and Bioenergy among its core market segments and changed its reporting segments (BP Bunge, 2023). Overall, all its reported market

segments featured net sales increases. In its 2022 annual report, Bunge noted that the regulations imposed because of the COVID-19 pandemic have not significantly affected its supply.

1.1.3. CARGILL

Founded in 1865 by W.W. Cargill in Iowa (US), the family-owned Cargill company has been active for over 150 years and is currently headquartered in Minneapolis (US).

Cargill has a strong presence in global commodity supply chains, serving a diverse range of clients (e.g., farmers, manufacturers, retailers, food service customers and consumers) by covering the following steps in the market (Cargill, n.d.):

- *Origination & Processing*: partnering with farmers growing crops; originating and sourcing of commodities; storing, processing and transporting goods around the world
- *Animal nutrition & Protein*: raising and feeding animals; processing animals for protein products
- *Food & Bioindustrial*: selling ingredients, finished solutions and services to manufacturers, foodservice customers and retailers
- *Agricultural Supply Chain*: processing commodities into branded food, feed, fuel, ingredients and bioindustrials
- *Trade & Capital Markets*: providing insights to partners

Cargill operates globally in agricultural commodity trading and processing. Its activity in this sector is integrated with the sourcing, storage trading, processing and distribution of grains and oilseeds. The main grains include wheat, maize, barley and sorghum, as well as vegetable oils and meals. The company has subsidiaries and activities in both the vertical and horizontal aspects of the value chain. Chapter 2 provides an overview of these activities.

In 2018, Cargill reported revenues of over US$ 114 billion, with all the market segments surpassing the previous year's profits with the exception of Industrial & Financial Services. In 2022, the company ended the fiscal year with revenues of US$ 165 billion. Post the COVID-19 Pandemic, Cargill has halted its public breakdown of revenues by its value chain segments but publishes year end reports with the total revenues. In 2023, Cargill reported record breaking revenues of US$ 177 billion (Cargill, 2023d).

1.1.4. LOUIS DREYFUS COMPANY (LDC)

Founded in 1851 by Léopold Dreyfus, the company was privately family-owned until 2021 when 45% of LDC's indirect equity stake was sold to the Abu Dhabi sovereign wealth fund ADQ (Reuters, 2021a). Louis Dreyfus Company (LDC) has been active for over 170 years and is currently headquartered in Rotterdam (Netherlands).

LDC features ten business lines (LDC, n.d.) covering the trade of agricultural commodities such as oilseeds, grains, cotton, rice, coffee, sugar, and juice. In addition to its role as an agricultural commodities merchant, LDC is currently in the process of evolving its value chain by focusing attention also on food, animal feed, fibres, and other food-related ingredients.

LDC is achieving this value chain evolution through **greater vertical integration within its business lines** with the final goal of securing the supply chain and enabling greater connection of farmers to end-users. LDC claims that this new business model approach has the intention of sharing support and expertise with farmers and producers worldwide to grow crops in a sustainable way. This business model **alleges to support sustainability** by creating a traceable supply chain, bringing crops to LDC's centres for processing and refining. The next step involves the storage of the products, building on a

wide network of silos, warehouses, transloading facilities and ports, as well as trucks, trains, barges and ships for transportation. LDC distributes its products to a wide range of customers, from large multinationals to local manufacturers and retailers.

LDC comparatively has the lowest revenues amongst the four ABCDs. In 2018 the company finished the year with US$ 36.5 billion in revenues (LDC, 2018). It reported its value chain segment sales had decreased by 5.5% from 2017 due to a reduction in shipping volumes. The 2019 financial year closed with US$ 33.6 billion in revenues, with a 6.6% decrease reported to be caused by lower average costs of traded commodities. LDC reported the same income, US$ 33.6 billion, at the close of 2020, **while revenues in 2021 increased by 47.7%** reaching US$ 49.6 billion (LDC, 2021). The increase was reported as due to higher prices of Grains & Oilseeds, which also shipped in higher volumes than in 2020. LDC's Merchandising Segment also experienced growth because of increased prices of goods and higher shipping volumes, especially in coffee and cotton; rice shipments remained stable and sugar shipments decreased. The Freight Platform's operating results were also reported to have risen, with an increase of 20% in the volume of goods shipped.

LDC ended the 2022 financial year with a reported US$ 59.9 billion in revenues, a 20.9% increase compared with 2021 (LDC, 2022a), with the Grains and Oil Seeds Platform segment increasing its operating results.

1.2. Importance of top traders in bulk commodities trade

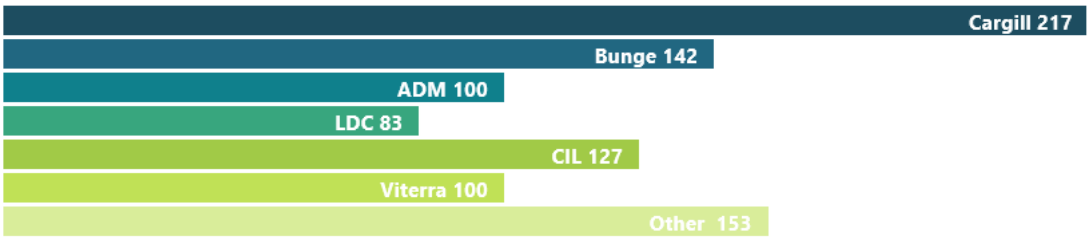
Estimates of different analysts during the last ten years **suggested that the ABCDs jointly accounted for 70-90% of the global grain trade** (Murphy et al., 2012; Keogh, 2013; Lowry, 2014; Harvey, 2022). These figures are still widely quoted. However, the changing market conditions, notably through the growing competition from emerging traders (section 2.6), **reduced the dominance of the ABCD group in recent years**, and the estimates need readjustment (Khalaf, 2023; Kingsman, 2019). In fact, the rise of other traders (section 2.6.2), notably the Chinese COFCO International (CIL), and Netherlands-based Viterra (formerly Glencore Agriculture, to be merged into Bunge), puts the focus on the ABCD group as the leading agri-commodity traders in question. This development has led to a new terminology: ABCCD to include CIL, and ABCCDV to include CIL and Viterra.

The above information is difficult to verify given that none of the top traders disclose full details on their trade volumes per crop and origin (LDC, 2022a). However, **a thorough screening of relevant information** leads us to the estimates presented in Figure 2. Accordingly, the estimated volume handled by the ABCDs in 2022 was 540 million tonnes (Mt). Based on a USDA figure of 920 Mt of global trade in key agri-commodities, this volume equals an **estimated 50-60% of the world trade in essential cereals, oilseeds and protein crops (COPs) in 2022**.[1] Based on the C4 concentration ratio, this, in essence, constitutes already an oligopoly in the global trading of COPs.[2] If we also consider CIL as the main emerging competitor of the ABCDs with an international trade volume of around 127 Mt, the ABCCDs account for an estimated 60-70% of the COPs trade. The expected approval of the merger of Bunge with competitor Viterra would further concentrate this trade, adding 100 Mt of traded volume (Viterra, 2023), and consequently increasing the share of these companies in the global bulk agri-commodity trade to approximately 70-80%.

[1] Global trade of COPs and derivates (oilseed meals, oils) and sugar.

[2] The C4 concentration ratio adds up the market share of the four largest businesses in an industry and expresses the total as a percentage. The definition of an oligopoly is already reached when the top 5 companies in the market account for more than 60% combined market share (Investopedia, n.d.).

Figure 2: Agri-commodity volumes shipped by top traders, 2022 (Mt)



Source: Consortium elaboration based on ADM, 2022; Bunge, 2022; LDC, 2022; LDC, n.d.-b; Kingsman, 2019; Cargill, n.d.-g; USDA FAS, n.d.-a; COFCO International, 2023; Viterra, 2023.
Note: Partly estimated.[3]

These estimates give an indication of the global situation. However, there are considerable regional variations, with local actors accounting for varying, at times important market shares. An impression of the ABCDs' overall position in global agri-commodity trade can also be gained from their role in important producing and exporting countries.

- In **Brazil**, the world's largest soy producer and supplier to world markets, the ABCDs handled around 46% of annual soy exports in 2020. With CIL and Viterra included, this share increased to more than 50% to world and EU markets (Trase, n.d.), giving them an essential role as input providers to the large EU meat and dairy industry.
- The ABCDs jointly accounted for 38% of **Argentina's** agri-commodity exports to the world in 2022, including large volumes of soy, maize, and wheat. Adding Viterra and CIL as the number 1 and 3 traders from Argentina increases this share to 63% (BCR, 2023). In **Paraguay**, Cargill alone had an estimated share of 22% of soy exports in the same year (Panjiva, 2024).
- In the years since the 2018 trade war between **China** and the US, the Chinese market quickly regained its position as the top destination for US exports of soybeans, maize, and sorghum, as well as smaller volumes of wheat (ITC, 2024). In late 2023, ADM, Bunge, and Cargill were among the key companies signing substantial purchasing agreements with Chinese importers (Clayton, 2023).
- **Ukraine's** role as a leading global supplier of cereals (e.g., maize, wheat, barley), oilseeds and edible oils (e.g., rape and sunflower seeds, soybeans) was weakened since the start of Russia's war on the country in early 2022. Until 2021, the ABCCDVs were all among the top 10 exporters of wheat from Ukraine, accounting for more than 6.1 Mt or around 37% of total wheat exports in 2021 (Latifundist, 2021). For grain overall, local trader Kernel (section 2.6.5) was by far the leading exporter (18%), but LDC (10%), Cargill (7%) and CIL (6%) were also among the top 5 (Kernel, 2021). In Ukrainian sunflower seed crushing, ADM, Bunge and Cargill had a joint share of 20% in 2021 (UkrAgroConsult, 2021). Albeit exporting smaller volumes since the outbreak of the war, Ukraine remained a large exporter of grains and oilseeds also in 2022/23, fulfilling an important role as a supplier to destinations in North Africa, Asia and the Middle East (ITC, 2024).
- If the Bunge-Viterra deal gets approved by competition authorities without requiring asset liquidations, the new company plus G3, Bunge's 25/75 joint venture (JV) with the Saudi Agricultural

[3] Cargill reports more than 217 Mt of dry and wet cargo, excluding fuels. Bunge adapted its reporting methodology as of Jan. 1, 2022, limiting agribusiness reporting to sales of processed agri-commodities to third parties. Therefore, its 2021 volume was used here. ADM mentions processed volumes of oilseeds (33.0 Mt) and maize (18.6 Mt) in 2022. This disregards trade in unprocessed form and of other grains, meaning that the total is likely considerably higher. Applying average capacity use rates across different crops to ADM's wheat milling capacity adds 5.5 Mt of processed wheat. Assuming a similar ratio of processed vs. total traded volumes as observed for Bunge (low estimate of 1:1.8), this leads to an estimated total of 100 Mt for ADM.

and Livestock Investment Company (SALIC), will control 37% of **Canadian** grain handling capacity. Together with Cargill (15%), LDC and ADM (3% each), this would increase the role of the ABCDs from what was probably less than 40% to 58%. The Canadian farmers union, NFU, raised concerns over the negative implications of the growing concentration in Canada's grain handling on farmers' profits (NFU, 2023).

In Canada, the second-largest exporter of rapeseed[4] and the largest exporter of rapeseed oil to world markets, the ABCDs also dominate the rapeseed processing industry. They jointly accounted for 77% of the country's crush capacity in 2021 (Bunge 29%, Cargill 23%, ADM 18%, LDC 8%). Viterra controlled an additional 12% (USDA FAS, 2022).

- Their crucial role in the global trade of COPs and presence with logistical and processing facilities in Member States also gave them an important position in the **EU** market. As of 2021, ADM, Bunge, and Cargill controlled about 80% of the EU's soy-crushing capacity (NWF, 2021). Decisions on competition cases showed that, for example, ADM and Wilmar, through their Olenex JV (section 2.6.3), controlled around 20-30% of refined bulk soybean oil and palm oil in the European Economic Area (EEA) in 2016 (EC, 2016a). In 2017, the ABCDs jointly accounted for 55-90% of the crude soybean oil market in the European Economic Area (EEA) (EC, 2017).

  The soy crushing capacity in **Spain**, the third largest in the EU at almost 3.5 Mt, is divided between Bunge (three plants) and Cargill (one plant) (USDA FAS, 2023).[5] Bunge and LDC jointly accounted for around 10-20% of maize trade in Spain in 2020/21, where ADM and Cargill were also seen as competitors (EC, 2022).

While competing in various producing geographies and consuming markets, the big traders are also increasingly connected with each other, through JVs and other cooperations (Kiezebrink et al., 2024). For example, Bunge, LDC and Argentinian Aceitera General Deheza (AGD) jointly operate an oilseed processing facility in Paraguay (Complejo Agroindustrial Angostura, CAIASA), (Bunge, 2023). ADM and Cargill have a 50/50 JV, SoyVen, that supplies soybean meal and oil to the Egyptian market (ADM, 2016; ADM, 2023). In 2020, ADM, Bunge, Cargill, LDC, CIL, and Viterra jointly founded Covantis, an equally owned industry initiative that aims to modernise global trade operations through digitisation (LDC, 2020b). In February 2023, ADM, Amaggi, Bunge, Cargill and LDC filed a request for approval to create a JV in Brazil with equal stakes to handle around 3% of the Brazilian cargo volume of the companies by jointly purchasing bulk trucks. Already in 2021, ADM, Amaggi, Cargill and LDC partnered in the freight platform Carguero (Pressinott, 2023). The judicial decision on the legality of the Ferrogrão railway project to connect the states of Mato Grosso and Pará in Brazil was suspended for six months in September 2023. The project, initiated by ADM, Amaggi, Bunge, Cargill and LDC, is highly controversial due to the expected impacts on the environment and indigenous peoples (Datagro, 2023; Brandt, 2021).

The ABCDs' role in certain geographies or the trade of specific crops confirms their crucial role in the global trade in agri-commodities, and concerns over a global food supply controlled by a few companies remain valid (Khalaf, 2023). **New competitors** have emerged since the early 2000s. However, to be able to compete in an oligopolistic market, they either had to **take over existing agricultural traders** (as seen in the case of COFCO International, section 2.6.2) or Viterra, which built on Glencore's trading experience and grew through acquisitions), or have a **strong position in a**

[4] Referred to as canola oil in Canada due to a lower erucic acid content than in other rapeseed cultivars.
[5] Crush capacity tends to be used at a high level to achieve asset optimisation.

specific market (as seen, for example, in the case of palm oil producer and trader Wilmar, section 2.6.3). Market entry barriers are a key indicator of market power (Kiezebrink et al., 2024; OECD, 2005).

Box 1: The ABCDs' business in Russia

Until the invasion of Ukraine, Russia was the world's largest exporter of wheat and the second-largest exporter of sunflower oil. The ABCDs, alongside Viterra and Olam, had a significant presence in Russia. In reaction to the war, the traders scaled back or ceased operations in the country. LDC had exported, on average, 1.5-3 Mt of grains annually from Russia but ceased grain exports in July 2023. Around the same time, Cargill, the sixth-largest shipper of grain from Russia, stopped elevating and handling grains for export in its own facilities but continued to carry Russian grain with its fleet. Bunge announced the sale of its Russian oilseed processing business in September 2022 and closed the transaction in February 2023. In March 2022, ADM, with Russian operations in the production and transport of food commodities and ingredients, made a vague statement on scaling down its non-essential activities. According to reports from March 2023, it was considering quitting its 50/50 maize-processing JV with Russian Aston; however, according to the Russian company register this is not the case.

Source: OFI, 2023; LDC, 2023; Bunge, 2023; ADM, 2022a; Bloomberg, 2023; Russian company register, 2024.

The role of agri-commodity traders as non-financial, commercial undertakings in the derivatives market is discussed in section 2.5.

1.3. The role of commodity traders in managing food stocks and market effects

Agricultural commodity reserves embody the quantities stored at any given time by the various actors along the supply chain. The ability to hold food reserves enables the flow of food from surplus to deficit regions and plays a crucial role in securing an adequate and reliable food supply from one period to another. There are several distinct motives for storing commodities. First, speculative storage is incentivised by the possibility of receiving higher prices benefitting from future supply shortages. In this case, the amount of storage is driven by the expectations of the future price development and the cost of storage. Other than that, stockholding can be the result of the aggregation of commodities for trading or the guarantee of a stable supply (safety stocks) (Kornher et al., 2016). Part of these reserves are in the hands of companies active in the supply chains, while additional public reserves are kept by government agencies as strategic emergency stocks for food security or as buffer stocks to stabilise prices. To assess the impact of stocks on prices, it is essential to understand the different motives for holding stocks.

The world food price crisis in 2007/08 revived the interest in food stocks as a means to safeguard supplies in times of excessive price volatility and supply disruptions on agricultural commodity markets. It was generally considered that low food stocks in 2007/2008 were one of the structural causes of the global food crisis (Abbott, 2014). In the following years, the comeback of public food grain reserves as a key instrument for stabilising markets and fending off shocks led to new record levels of global agricultural commodity stocks, with developing countries playing an important role in this increase (AMIS, n.d.-a).

In the discussion around food stocks, it must be considered that WTO rules are restricting public food stockholding. In February 2024, an attempt by the G33 (group of developing nations) to obtain a permanent solution with greater stockholding flexibility failed (Denamiel et al., 2024).

Lacking transparency on the volumes, distribution, and nature of (private) agricultural commodity stocks increases the risk of price volatility (iPES-Food, 2022). This perception was the driver behind a European Commission (EC) decision in May 2022 to gather and publish monthly data on cereal, oilseeds, rice, and certified seed stock levels in the EU (EC, 2022a).[6] The Agricultural Market Information System (AMIS[7]) monitoring and the data published by the EC are giving valuable insights into global food market dynamics; however, correctly measuring stock remains problematic in light of business confidentiality and national food security interests hampering full disclosure (AMIS, 2021).

In recent years, supply chain disruptions due to the COVID-19 pandemic and the Russian war on Ukraine raised questions about EU food production capacity, dependency on third countries, and the need for strategic food stocks (EP, 2024a). Moreover, the increasing occurrence of extreme weather events because of climate change, which impacts food production levels in the EU and globally, adds to insecurities and unpredictability. Vulnerability has also increased due to leaner and increasingly efficient supply chains, meaning buffers against unexpected shocks have decreased (Cote et al., 2023). These concerns lead to questions about the need for more sizable commodity stocks, also in countries and regions with significant own production volumes and well-developed and well-connected logistical infrastructure.

The EU's self-sufficiency in food production is generally high. Still, it varies considerably for different COPs, showing, for example, shares far above 100% for soft wheat but relatively low rates for maize (70%), protein crops (78%) and oilseeds (40% on average but only 16% for soy) (EC, 2023; EC, 2024). The reliance on a limited number of source regions and the dominance of a small number of traders in these supply chains create vulnerabilities.

EU stocks of wheat and coarse grains increased in recent years, from 16% of annual domestic consumption in 2020/21 to 18% in 2021/22 and 20% in 2022/23. The 2023 level would be sufficient for around two-and-a-half months of consumption (EC, n.d.-e).

Especially at the start of the COVID-19 pandemic, some experts warned that in combination with limited reserves and logistical restrictions, provisions might not be adequately available on the market when required, considering that in times of crisis, protectionism by exporting countries may increase. Moreover, not all EU countries have sufficient own COP processing capacities, which can also be problematic when trade routes are interrupted. This is, for example, demonstrated by France's lack of wheat milling capacity (Robert, 2020). However, analyses of the early lockdown period later concluded that food availability in the EU was not at stake and that the EU food system showed considerable resilience (Matthews, 2020). Different from the impacts on low-income countries, neither the pandemic nor Russia's invasion of Ukraine put food availability in the EU at stake (Chepeliev et al., 2023). Part of the supply chain issues early on during the pandemic were explained by changing consumption patterns, such as unusually high demand for consumer-sized flour packs (King, 2020).

In the EU, concerns around the disturbance of agri-commodity trade flows from two key agricultural countries because of the war on Ukraine are foremost linked to rising prices and, consequently, food

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6 EC, 2022a. The EC recognised in 2022 that "up-to-date information on levels of stocks of cereals, oilseeds and rice, including production and levels of stocks of certified seeds, held by producers, wholesalers and relevant operators revealed itself to be essential to decide on relevant measures to prevent and mitigate market disruptions." Therefore, reporting obligations of Member States were extended to this information.

7 The AMIS Market Database is available at https://app.amis-outlook.org/#/market-database/supply-and-demand-overview.

affordability for low-income households (Chepeliev, 2023). However, which factors played a role in these price hikes is not completely clear. The role that stockpiling and speculation may have in pushing up prices and contributing to food insecurity needs to be considered in this respect (Kiezebrink et al., 2024), and reinforces the importance of stock transparency.

According to the EC, at least seven EU Member States hold strategic reserves that public authorities or private operators manage. The EC discussed the suggestion of strategic food reserves in 2021 in its contingency plan for ensuring food supply and security in crisis times. It confirmed the role of stocks in mitigating supply shocks but also raised concerns about costs, perishability, market interference and compliance with WTO rules, and a discouraging effect on private actors (EC, 2021).

Meanwhile, it is difficult to ascertain the capacity of commodity traders to manage COP stocks in the EU and other important agricultural markets.[8] According to AMIS, a sizeable share of food stocks is not in public hands but privately managed by traders and processors, local silo operators and down to the level of individual farmers (AMIS, 2021; Donlye, 2018).[9] The expectation that the share of the ABCDs in stocks is sizeable is shared by the International Panel of Experts on Sustainable Food Systems (iPES Food, 2021), pointing to traders' interest in holding stocks back until prices reach a high. Storage of commodities is undoubtedly a crucial part of the arbitrage business of commodity traders but attempts to unravel the role of different actors in agricultural commodity storage capacities are faced with the challenges of incomplete and inconsistent data. While the ABCDs point to growing on-farm storage capacity in origination countries as a risk to their business model, they have themselves heavily invested in storage infrastructure and keep grain reserves in silos, terminals and processing facilities in both origination and consuming markets to leverage price surges (UNCTAD, 2013; Dos Reis et al., 2024). Meanwhile, they are not obligated to fully reveal their grain storage capacities and, even more importantly, their actual stocks.

Among the ABCDs, only ADM and Bunge publish summarised data on storage capacity (Table 1: Storage capacity of the ABCDs (2021/22)). Comparing the 2022 data with ten years ago reveals that ADM's capacity increased by 9% globally and in Europe (ADM, 2013). Meanwhile, Bunge reduced its storage capacity by 30% since 2012; the reduction in Europe was smaller at 7% (Bunge, 2013).

In Brazil, one of the largest global exporters of oilseeds and grains, the National Supply Company (CONAB) maintains a storage register, including public and private facilities. Out of the country's total combined storage capacity of around 200 Mt, the ABCDs account for almost 15 Mt or 7% but achieve higher shares in some states (e.g., 21% in Bahia and Maranhão). CIL accounts for another 1.8 Mt while Viterra has 0.3 Mt (CONAB, n.d.; Hedgepoint Global, 2023).[10] In the US agricultural market, ADM currently has a grain storage capacity of at least 481 million bushels, followed by Cargill with 348 million bushels, Bunge with 89 million and LDC with 29 million bushels (Grain & Milling Annual, 2024)[11]. A total US off-farm storage capacity of 11.8 billion bushels (World-Grain, 2023) suggests a combined share of at least 8% for the ABCDs. If the Bunge-Viterra deal gets approved, this share would increase above 10%.

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[8] The EC commissioned research into the EU storage capacities for agri-commodities in 2017 (Areté, 2017). However, the findings cannot be directly applied to this study.

[9] The role of on-farm storage differs between countries and regions. It has become increasingly common in countries like Argentina, Brazil, the US and the Ukraine. Farmers with own silos can adequately store their production and have the flexibility to negotiate partial sales with multiple traders or to wait for higher prices. In contrast, when traders control storage facilities in origination countries, they have greater negotiation power, especially in frontier regions with limited infrastructure.

[10] Brazil deals with a significant storage shortage, with production of around 315 Mt in 2022/23, leading to a gap of more than 100 Mt. This has led to an increasing use of silo bags on-farm.

[11] These volumes are approximated, as they may not include storage capacity at processing plants. Bushel to tonnes conversion rates differ per crop, between 45.93 bushels per tonne of barley, 39.37 bushels for maize and sorghum, and 36.74 bushels for wheat and soybeans.

Table 1: Storage capacity of the ABCDs (2021/22)

	Storage capacity for crops and derived products, owned and leased, (Mt)*					Notes
Trader	**Global**	**Europe**	**SA**	**NA**	**AP**	
ADM	20.63	1.69	3.21	15.51	0.21	Grains & oilseeds 19.6 Mt, of which 1.7 Mt in Europe
Bunge	16.25	2.45	9.68	2.90	1.22	Agribusiness & Milling 15.5 Mt
Cargill	n/a	n/a	4.40 (Brazil)	~9.0 (US)	n/a	40 countries, 250 elevators, 20 ports
LDC	n/a	n/a	2.40 (Brazil)	~0.7 (US)	n/a	

Source: Consortium elaboration based on ADM, 2023; Bunge, 2023; Cargill, 2023; LDC, 2021a; Grain & Milling Annual, 2024; CONAB, n.d.
Note: Europe refers to the geographic region; incl. assets for sale in Russia as of Dec. 22. SA=South America, NA=North America, AP=Asia-Pacific. *Partly estimated based on bushels to Mt conversion; the types of crops covered may differ per company.

A rough estimate for the ABCD's global COP storage capacity can be extrapolated by applying an assumed average relation between 2022 revenues and capacity as observed for ADM and Bunge to Cargill's and LDC's 2022 revenues. These extrapolations suggest that the ABCDs may have the joint capacity to store approximately 10% of the current global COP stocks (930 Mt) (USDA FAS, n.d.-a).

2. TRENDS AND CHALLENGES SHAPING AGRI-COMMODITY TRADING

KEY FINDINGS

- **Horizontal integration in the agri-commodity sector refers to the acquisition of businesses operating at the same level of the value chain** in the same industry. However, due to the intensive verticalisation strategies of major traders like the ABCDs, horizontalisation becomes more complex. Moreover, diversification into new business segments, like pharmaceutical and chemical production or investment services, can be observed.
- **The ABCDs exhibit varying levels of vertical integration** along the agricultural commodity supply chain, ranging from the provision of inputs to farmers, crop-based biofuels, refined oils and alternative protein products. Although they are all involved to some extent in the upstream production of crops, this topic has not gained importance in recent years. At the same time, peripheral or unprofitable segments are offloaded.
- **Corporate concentration** in the agri-commodity sector is characterised as oligopolistic. The few control many aspects of the commodities trade, which raises concerns about excessive power accumulation in the hands of the few and the potential negative impacts on society. Regulatory frameworks often face obstacles when addressing monopolisation.
- **The financialisation of agricultural commodity markets has become a significant factor in price volatility**, alongside traditional supply and demand factors. Financial players' increased activity in commodity derivatives markets has raised concerns about excessive speculation contributing to price spikes. The functioning of agricultural commodity derivatives exchanges is crucial, as they act as price benchmarks affecting the global food system, with derivatives like futures contracts and options playing a key role in price setting. However, challenges such as lack of transparency and varying regulatory standards across jurisdictions complicate the analysis of these markets and their impact on food prices and financial stability.
- **Emerging rival agri-commodity firms**, particularly from Asian markets, have increasingly gained market share from the ABCDs over the past decade, often in specific commodities or geographies. The **key drivers for the expansion of these firms have been diversification** from hard commodities into food sectors, and concerns around food security and geopolitical interests, particularly in countries facing production deficits in grains and oilseeds. They demonstrated **similar growth trends** as the ABCDs, notably geographic expansion, vertical and horizontal integration, and a focus on emerging markets, while also making inroads into the EU market. Significant investments by state actors, joint ventures, and cross-company investments have bolstered their growth.

In this chapter, the reader will find more information about the integration and consolidation trends of the largest agri-commodity traders, their vertical integration strategies, their horizontal expansion, the financialisation of agri-commodity trading and the emergence of new rival commodity firms.

2.1. Integration and consolidation trends

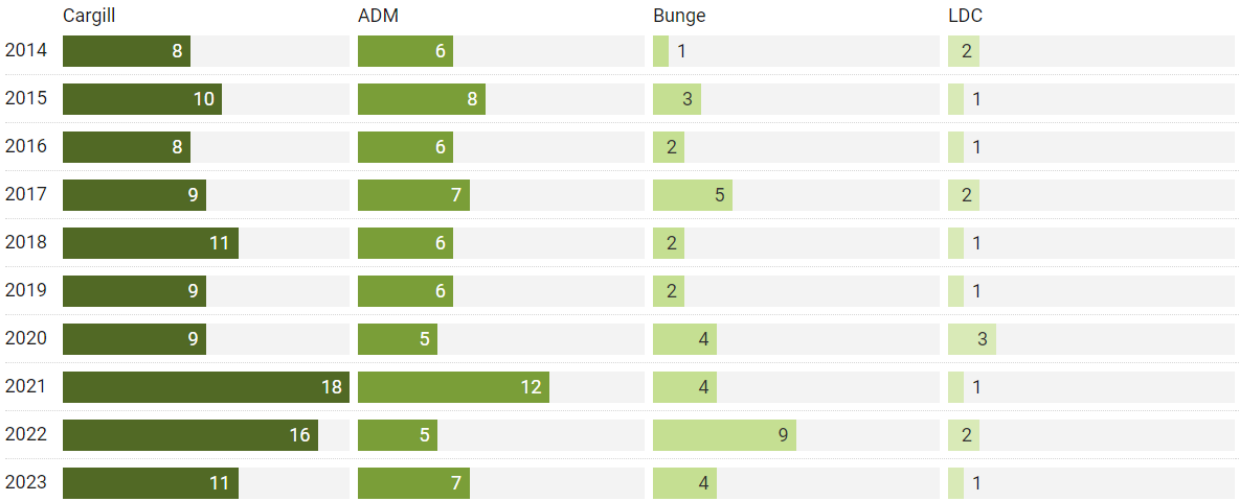
The modern food system is marked by consolidation processes, **embodying an oligopolistic market structure** with a relatively small number of big actors holding a large market share. The ABCDs are playing an important role in this system as they have continuously expanded horizontally and vertically, increasing their role across more market segments and geographies. Integration and consolidation processes increase the involvement of traders in more diversified and longer supply chains, enabling companies to recognise periods of dislocated markets or price mismatches early on and profit from them (Kingsman, 2021).

In this context, vertical integration typically involves a trader expanding its control over other stages of a supply chain (up- and downstream). In light of the core activity of the ABCDs being the trade of agri-commodities, this research assigns crop-related investments to vertical integration processes that strengthen control over supply chains. In contrast, horizontal expansion refers to expanding within the same stage of the supply chain through acquiring or merging with other trading houses. Diversification refers to the expansion into new, unrelated business areas .

The number of investment deals by the ABCDs has shown an overall increasing line during the last ten years, with Cargill and ADM taking the lead (Figure 3). Concurrently, the ABCDs have organised their operations in hundreds of subsidiaries globally, often incorporated in jurisdictions offering advantageous regulatory environments (UNCTAD, 2023). Next to investments, a competitive market means that traders also monitor their portfolios for peripheral segments or activities that are not deemed profitable enough. These segments may be divested, or an investor may be taken on board. Examples of such streamlining actions include Cargill's exit from asset management in 2019 (Leigh Painter, 2019), Bunge's disposal of its Brazilian margarine and mayonnaise assets in 2019 (Bunge, 2019a) and Mexican wheat milling operations in 2021 (Bunge, 2023) or ADM's exit from Bolivian oilseeds in 2017 (ADM, 2017).

The following sections look at the integration trends that shape agri-commodity trading and the broader food system.

Figure 3: Investment deals by ABCD traders, 2014 to 2023



Source: Consortium elaboration based Pitchbook, 2023.
Note: Main types of deals include mergers & acquisitions, JVs, corporate asset purchases, non-control equity investments, and different stages of venture capital investments. Not considering divestments.

2.2. Vertical integration of up- and downstream segments

Transporting, storing, processing, and financing of producers have traditionally been integral parts of the ABCD's activities, including owning or leasing a sizable number of assets (Murphy et al., 2012). However, since the early 2010s, traders stated that the traditional business model, where margins were created from pre-paying farmers and committing to buy their crops upon harvest (off-take agreements), then storing the crops in silos and selling when markets appreciated, was less profitable than in the past. Factors named as disrupting this model include less reliance on commodity traders' inside knowledge as new technologies enable easier availability and affordability of data on prices, weather and yields also for farmers. Moreover, farmers in some producing countries invested in their own storage assets, allowing them to wait out higher prices (Bunge, 2023, Meyer et al., 2018). However, expert interviews confirmed that their extensive market intelligence research capacity still gives traders an important competitive advantage.

In a highly competitive market, **profits are increasingly being made by capturing value at each point in the supply chain** (FT Live, 2019). For the traders, important drivers of the vertical integration processes are economic considerations related to reliable access to agri-commodities and less dependence on suppliers, lower operating costs, minimising production and transaction costs through economies of scale, and higher profit margins through value-adding. As Stefano Rettore, the then-president of Origination at ADM, put it in 2019, covering the entire chain allows traders to "*[…] maximize profitability as profits move up and down the chain […] we can work around disruptions and anticipate quality issues*" (FT Live, 2019). Bunge explains that its integrated business model allows it to harness synergies across its different business segments, including raw material procurement, logistics, and the co-location of manufacturing facilities. Eventually, its downstream products of refined and specialty oils "*[…] benefit from global population and income growth rates*" (Bunge, 2023). Moreover, vertical integration is a means to reduce the risks of being reliant on third parties to manage increasingly stringent requirements for traceability, food safety, and environmental, social and governance (ESG) (RI, 2020).

The vertical integration mechanisms are linked to different levels of commitment by the traders, ranging from flexible contractual agreements to contract farming, JVs, mergers and acquisitions, or the injection of venture capital in start-up companies (RI, 2020). Fully integrated supply chains extend from upstream farming to the marketing of products on the B2B or, in some cases, even the B2C market, while any combination of parts is observed among the large traders. The vertical expansion of control over supply chains further increases the market power of a small group of companies already observed for the trade in agri-commodities (section 1.2). This market power not only extends to food commodities but also feed and industrial products, such as biofuels or chemical ingredients. Within the processes of backward and forward integration along supply chains, some patterns and trends from recent years can be identified for the large agri-commodity traders.

2.2.1. Upstream commodity production

Upstream or backward integration in agri-commodity supply chains involves direct or indirect interests in commodity production. The land tenure in these activities can take different forms with varying levels of control (e.g., contract farming, leased land, or land ownership for own production or sub-contracting) (Public Eye, n.d.). The ABCDs all got involved to some degree in commodity production, but this has not always been a longer-term commitment and there is **no evidence suggesting that**

expansion of upstream production is a strategic focus for any of the four traders. Annex 3 provides an overview of companies linked to these processes.[12]

a. ADM

Among the four companies, **ADM** today has the smallest exposure to commodity production. The company has, since 1994, an indirect interest in palm oil plantations in Southeast Asia and sub-Saharan Africa via its current 22.49% strategic ownership stake in the integrated palm oil producer Wilmar (Singapore),[13] which controls and manages around 300,000 hectares (ha) of oil palm (Wilmar, n.d.-c).[14] In 2011, ADM had established a palm oil project for biodiesel production in the Brazilian Amazon, State of Pará. It involved around 270 small-scale farmers and 14 farms managed by ADM (ADM, 2018). However, in 2020, ADM sold the business to a local company as part of a 'portfolio overhaul' (Reuter, 2020).

b. BUNGE

Bunge expanded its sugarcane operations in Brazil over several years, including plantations on land it owns or manages under partnership agreements (Bunge, 2013). In 2019, Bunge and energy corporation BP created one of the world's largest sugarcane companies by merging their Brazilian sugar and bioethanol operations into BP Bunge Bioenergia (Bunge, 2013, Bunge, 2019). Through its stake, Bunge is now involved in managing 450,000 ha of sugarcane plantations in Brazil (BP BE, 2023). BP Bunge was looking for buyers for the JV in 2022 (Araujo, 2022). Bunge stated then that the JV was operating well but falling outside its core business strategy (Sapp, 2022). However, the sale was cancelled in 2023 due to unsatisfactory offers (Scaramuzzo, 2023).

c. CARGILL

Cargill controls and manages more than 100,000 ha of palm oil plantations in Indonesia, including 29,000 ha of land under scheme smallholders (RSPO, 2022a). Cargill Tropical Palm Holdings (CTP) was set up in 2005 as a 70:30 JV with the Singapore sovereign wealth fund Temasek to acquire the plantations of Harapan Sawit Lestari (Cargill, 2005). The business grew over time, adding 50,000 ha from the acquisition of Poliplant Group in 2014 (Cargill, 2015). Cargill bought Temasek's stake in the JV in 2019, turning it into a wholly owned subsidiary (Cargill, 2005, Cargill, 2019).

d. LDC

LDC was also involved in large sugarcane operations in Brazil but sold its 280,000 ha plantations and sugar and ethanol production facilities in 2021 to the leading Brazilian sugar company Raízen (Raízen, 2021). LDC had been under financial pressure after controlling shareholder and chairwoman Margarita Louis-Dreyfus had accumulated considerable debt from buying out other family members. During the same period, the long search for an investor ended with selling a 45% indirect stake in LDC to Abu Dhabi sovereign wealth fund ADQ (Reuters, 2021a). LDC continues to be one of the leading orange and lemon growers and juice suppliers globally, operating 38 farms with more than 25,000 ha planted with citrus trees in Brazil (LDC, n.d.-c).

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[12] In addition to the referenced sources, information provided in this section was extracted from the corporate business database D&B Hoovers.

[13] ADM's stake in Wilmar has fluctuated over time. When it exceeded 25% in 2020, ADM sold shares to finance its capital expenditures (Upshall, 2020).

[14] Including 44,000 ha of land under scheme smallholders.

e. Regenerative agriculture involvement

None of the ABCD traders is directly involved in the primary production of agri-commodities in EU Member States. Cargill's 2023 announcement that it intends to expand its RegenConnect programme for regenerative agriculture to France, Germany, Poland and Romania is the closest link of an ABCD trader with payments under the EU Common Agriculture Policy (CAP) (Cargill, 2023b). It aims to support the adoption of regenerative agriculture practices by providing "*[…] financial incentives to farmers for environmental outcomes that help to decarbonize agricultural supply chains*" (Cargill, n.d.-d). A study by Wageningen Research concluded that this type of regenerative agriculture practice appears to align with the new CAP (2023- 2027) and the EU Green Deal. Therefore, practices like Cargill's RegenConnect will likely count towards the requirements for EU farmers to receive CAP payments (Manshanden et al., 2023).[15] However, these would only indirectly benefit the company by enabling farmers in its network to obtain additional payments.

2.2.2. Financing and inputs for producers

Over the years, the ABCDs got increasingly involved in providing **inputs and financing to farmers**, thereby extending their business activities to supporting and influencing the production processes themselves. It may, in fact, be more profitable for them to invest in the provision of services to producers than to be producers themselves. This provides them at the same time with a central role in producers' decisions on what to grow, how to grow it, in what quantities and for what markets. For example, **Cargill** offers a range of services to North American farmers, including grain contracting, crop inputs, agronomic advisory services, and financing. It also extends various technological services to producers that aim to innovate production methods (Cargill, n.d.-a; Cargill, 2023a). **ADM** is partnering with Rabo AgriFinance, a service by the Dutch agricultural bank Rabobank, to provide financing for agricultural inputs to farmers in North America (ADM, n.d.). **Bunge** provides credit sales of fertilisers to farmers in Brazil (Bunge, 2023).[16]

Especially in **agricultural frontier areas** with heightened production risks, **traders fill a gap** in providing financing to farmers who struggle to obtain loans from public or private banks due to unfavourable credit assessments. A case in point is the fundamental role that the ABCDs played in enabling the soy expansion in Brazil's agricultural frontier region in the Cerrado, not only by building soy silos and other infrastructure but also by providing financial means to farmers (Shimizu, 2022). For example, Bunge is a substantial financer of the production of soy and other crops in Brazil, with US$ 651 million in outstanding prepaid purchase contracts and advances with Brazilian farmers in 2022, or 12% of its Brazilian net sales (Bunge, 2023).

Lending by traders tends to come with higher interest rates than banks and typically involves barter deals. This means that the traders offer 'take it or leave it' deals to provide inputs, technical assistance, and some advance payment in exchange for the delivery of soy after harvesting (Dos Reis et al, 2024). With such agreements, traders secure themselves a stable supply at a predictable price that may also adhere to specific production requirements. They profit from margins on inputs while ensuring supplies amidst increasing competition from new rivals. However, as observed in Brazil in 2019, it also exposed them to significant risks from poor farm management and economic volatility (Mano, 2019).

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[15] The measurement of soil carbon stock receives increasing attention as companies need to report 'scope 3' emissions, i.e., emissions in their supply chains, for which agriculture is an important source. Regenerative agriculture sees the soils as important carbon sinks that can contribute to net zero commitments. However, there are concerns by scientists and environmentalists that the potential of soil carbon storage to offset emissions may get 'oversold' by companies like Cargill or ADM (Savage, 2024).

[16] Bunge Brazil has a long-term supply agreement with fertiliser producer Yara to supply farmers as part of its grain origination activities. Bunge itself has phosphate and nitrogen production as well as blending and distribution operations in Argentina.

To better control these risks, Bunge announced in 2023 the launch of a fintech with US$ 500 million for barter operations conditional to verified and traceable ESG data (Reuters, 2023).

2.2.3. Downstream processing and marketing

For the last decade, vertical integration by the ABCDs has progressed towards the less volatile downstream segment of **processing and marketing of value-added products**. Investments and acquisitions of these downstream segments cover a broad range of the market and differ between the traders. Observed deals in recent years increasingly include crop-based biofuels, refined edible oils and fats, animal feed and, in the case of Cargill, integrated animal protein supply chains from feed to meat, and speciality food ingredients. All four traders are engaged in the development of alternative proteins to replace animal-based products. Moreover, they all provide venture capital and seed funding to novel applications up and down the supply chain, including alternative fat and protein solutions (Pitchbook, 2023). Many products are supplied to the B2B market, but traders like Bunge and Cargill also profit from the higher margins on the consumer end-market by selling their own brands in certain segments.[17]

a. ADM

Out of **ADM**'s total of 1,102 corporate family members, 872 subsidiaries are dedicated to processing of grains and oilseeds, the manufacture and sale of flour, oilseed meals, edible oils, syrups, alternative proteins, colourants, flavours, starches, sweeteners, and supplements. Building on its oilseeds and grains origination and processing, ADM has become a large producer of **animal feed** (3.1 Mt in 2021) (Feed Strategy, 2022). Its animal nutrition branch is involved in the manufacture and wholesale of animal feed ingredients, additives, premixes, as well as formulated solutions for pet food. Downstream from its maize processing capacities, ADM has bolstered its Carbohydrate Solutions through acquisitions, contributing to the output of starches, sweeteners and flour (ADM, 2022). ADM started building up its **Nutrition division** in 2014 by acquiring the Brazilian natural ingredient producer Wild Flavor. Since then, the company has made various acquisitions to further develop this segment (Unigrains, 2019), with operating profit from the Nutrition segment reported at growing from US$ 280 million in 2015 to US$ 736 million in 2022 (ADM, 2023). However, an accounting probe of the Nutrition segment led to the departure of its CFO and a plunge in share price in January 2024. Reportedly, the historical profits of the segment were overstated by up to 10% (Foley, 2024).

b. BUNGE

Among **Bunge's** 633 subsidiaries, 191 are engaged in the manufacture of edible fats and oils, sweeteners, the processing of wheat, maize and soybeans, and the supply of ingredients to food manufacturers and animal feed and pet food processors. The share of edible oils and speciality fats in the company's total net sales increased from 16% in 2020 to 25% in 2022. It markets various own consumer brands of **vegetable oils and fats** in Europe, Brazil and India (Bunge, 2023). Next to expanding its oilseed processing and origination capacities, other downstream markets are also of strategic interest. These include the production of **crop-based biofuels**, namely in its BP Bunge Bioenergia JV. Moreover, Bunge has an expanding portfolio of plant lipids and novel plant-based protein ingredients, where it supplies ingredients (Bunge, n.d.-a) and has minority stakes in two start-ups (Bunge, 2023).

[17] Unless otherwise mentioned, data in this section is taken from D&B Hoovers (2024) and Pitchbook (2023).

c. CARGILL

Cargill has reached an exceptionally high level of vertical integration. Out of its 1502 corporate family members, 546 are engaged in the manufacture of food and feed for human and animal consumption. It significantly expanded its activities in **animal nutrition**, ranking fourth on the list of top feed companies globally with a 2021 production volume of almost 20 Mt (Feed Strategy, 2022). Further downstream, it holds a leading position among the top 10 US **beef and poultry** producers (Cargill, n.d.-f; Cargill, 2022; WATT, 2022), and supplies poultry to the European market from processing facilities in France and through a UK-based JV (Cargill, n.d.-c). Its **extensive ingredients portfolio** includes sweeteners, shortenings and cocoa products (Cargill, n.d.-b). Next to supplying the B2B market, it also has a portfolio of own consumer brands in different markets (Cargill Brasil, n.d.; Cargill India, n.d.). Its products are part of the supply chains of large downstream customers like McDonald's, Unilever, Nestlé, Wal-Mart, Sysco, and ALDI (van der Heijden, 2022; Aikman et al., 2019; Karim, 2021). Cargill does not directly engage in the manufacturing of biofuels but supplies relevant raw materials to partners (Cargill, n.d.-h), including its JV with The Love's Family of Companies, Heartwell Renewables (Heartwell Renewables, n.d.).

d. LDC

LDC's vertical integration is in comparison less advanced and shows less deals. The company went through a strategic repositioning in recent years, owed to financial turbulences (Reuters, 2019). Among others, it divested its sugar businesses in the US (Imperial Sugar) (LDC, 2021) and Brazil (Biosev) (Reuters, 2021) in 2021. However, the company also diversified its downstream engagement. LDC has 276 subsidiaries that engage in **food processing and manufacturing**. These include the manufacture of vegetable oils and other edible fats, meal, cottonseed, refining raw cane sugar and sugar syrup, the manufacture of coffee concentrates and extracts, and the processing and manufacture of nuts and seeds for snacks. Examples include a coffee-roasting JV in Vietnam (LDC, 2020), an interest in aquaculture and aquafeed research through partnerships with Asian partners established in 2020 (LDC, 2020a), and its investment in Ginkgo Bioworks, a developer of alternative proteins and other plant-based foods in 2019 (LDC, 2019).

LDC is active in the manufacture of **crop-based biofuels**, producing biodiesel and ethanol (LDC, n.d.-a). Finding specific information about the subsidiary manufacturing companies participating in these activities is difficult.

2.3. Horizontal expansion and diversification

Horizontal expansion involves the acquisition of businesses operating at the same level of the value chain in the same industry. This section of the study aims to highlight the horizontalisation of the ABCDs in their traditional business segment and the diversification into new, unrelated activities. It focuses on transportation & logistics and processing as traditional activities, and chemicals, health & wellness, and finance & investment as new business areas that are not directly crop-related. Annex 4 provides an overview of companies linked to these processes.[18]

[18] When not otherwise referenced, all the information provided in this section was extracted from the corporate business database D&B Hoovers.

a. ADM

ADM expanded its **origination, trading and processing activities** with various acquisitions in recent years, especially in North America (e.g., Central States Enterprises (2023), Green Bison Processing (2021)).

ADM's portfolio of horizontal segments ranges from pharmaceutical and chemical production to finance and investing activities. **Ten** subsidiaries are dedicated to the **pharmaceutical production** of drugs, creams, and ointments for human or veterinary use. Seventeen are engaged in the production and/or wholesale distribution of industrial organic chemicals, esters, solvents, synthetic perfume, rubber processing chemicals, synthetic tanning agents, essential oils, fatty acids, chemical warfare gases, and other miscellaneous chemicals.

Sixteen of ADM's companies are related to **financial activities**. These include furnishing services to the security of commodity holders, brokers or dealers, and investing and holding securities of companies. ADM also has its own investor services, offering market research, business consulting, and investment analysis. It also possesses DCA, located in The Netherlands, an enterprise that provides commodity derivative broking services to agricultural customers in Europe.

b. BUNGE

An important development in **Bunge's horizontal expansion** is the merger with the Glencore-backed peer **Viterra,** which will significantly boost its capacity and geographic footprint. The merger was approved by shareholders in October 2023 and is currently waiting for antitrust approval in key markets (see also section 1.2). Moreover, Bunge acquired several processing facilities in recent years, including the acquisition of CJ Selecta's assets (2023), investment in French grain trader BZ Group (2022), and the take-over of Imcopa's soy plants in Brazil (2020).

Bunge has **37 corporate family members involved in transportation and logistics**, including supplying shipping information and acting as transportation arrangement agent for freight and cargo, for both marine and land transportation, and the storage and warehousing of agricultural products. **Six corporate family members** are engaged in the **production of industrial organic chemicals and miscellaneous chemical preparations**.

In terms of **financial enterprises**, Bunge has **34 holding companies** in its corporate family. Seventeen of these companies are holding companies headquartered in the UK Virgin Islands, Cayman Islands, and Bermuda. Two of the 34 are investment service enterprises which provide services to security or commodity holders, brokers or dealers.

c. CARGILL

In recent years, **Cargill** invested in several **origination and trading assets**, including the acquisition of Granol assets in Brazil (2023), the acquisition of Owensboro Grain Company (US) (2023), and of Agrex's share in the US-based Dakota Plains Ag Center (2022).

Cargill has **14 subsidiaries** engaged in **transportation and logistics**. They provide shipping details and serve as intermediaries to organise transportation for freight and cargo, including 'freight forwarders' who handle the transportation of goods from senders to receivers for a fee that encompasses the entire journey, using the services of other transportation entities to facilitate delivery. It also has subsidiaries directly related to freight transportation on inland waterways. Five subsidiaries are marine cargo handling enterprises, including the transfer of cargo between ships and barges, trucks, trains, pipelines, and wharves.

Cargill has two **pharmaceutical manufacturers**, which produce vitamins and medicinal chemicals. Production facilities are located North America, Europe, Latin America, Asia Pacific, and Africa.

There are 24 subsidiaries that partake in chemical production, including **agricultural** chemical manufacture, **miscellaneous** chemical manufacture, **synthetic**, and **basic chemical** manufacture. The manufacture of agricultural chemicals includes fertilisers, insecticides, fungicides, herbicides and soil conditioners. Miscellaneous chemicals are classified as metals, oils, fatty acids (not as biofuels), essential oils, gelatine, water-treatment compounds, ink, industrial insulating compounds, water-proofing compounds, and chemical supplies for foundries. The produced synthetic chemicals include plastics and synthetic resins, produced from petroleum, milk by-products and other raw materials. These chemicals are used in the production of materials such as silicones, polyesters, flooring, furniture, household appliance components, kitchenware, food containers, tanks and vessels for chemical plants, battery cases, packaging material, plastic optical fibres, billiard balls, metal coatings, tires, rubber tubes, and automotive components.[19]

Cargill has **86 subsidiaries that engage in financial and investing activities**. There are 73 subsidiary holding companies, 11 subsidiary investment-services companies, and 2 investment companies in Taiwan and Switzerland. The two investment companies' activities are furnishing intermediate or long-term general and industrial credit, including the finance leasing of trucks and other automobiles and machinery equipment. The investment-services companies are furnishing services for security or commodity holders, brokers or dealers. The holding companies are responsible for holding or owning securities related to other companies, with the ability to have a certain degree of control over the activities of the companies whose securities they hold or own. These holding subsidiaries are present in North America, Latin America, Europe, Southeast Asia and Africa.

d. LDC

LDC expanded its **originating, processing and exporting capacities** with the acquisition of Emerald Grain in Australia in 2022.

Eight LDC subsidiary companies manufacture chemicals, including agricultural chemicals. The agricultural class of chemicals are fertiliser and fertiliser materials. Two subsidiaries in Mexico manufacture bulk organic and inorganic medicinal chemicals and their derivatives from botanical materials. The other chemicals produced include industrial organic chemicals, classes of natural and synthetic fatty acids, synthetic perfume and flavouring materials, solvents, esters, and chemical warfare gases. LDC also has **eight subsidiary companies** involved in **transportation and logistics**. These companies engage in inland waterway freight transport, marine cargo handling, the transfer of marine cargo to rail, trains, and trucks.

In the corporate family, **32 companies** are associated with **financial and investment activities**. Among them, 29 are holding companies, while the remaining three operate as investment companies. The specific investment activities of the three companies are not publicly disclosed, other than the fact that they are involved in investment practices, while the primary function of the holding companies involves possessing or managing securities from other companies.

Of the segments not classified, LDC notably also has **a subsidiary** primarily engaged in the wholesale **distribution of petroleum and petroleum products**, including packaged and bottled petroleum products distributors, and others marketing petroleum and its products at wholesale, as well as port real estate companies.

[19] Please note this list is not exhaustive.

2.4. Corporate concentration

The increasing **integration processes among traders are driving corporate concentration in the agri-commodity sector**, indicating an oligopolistic market structure (see section 1.2). The leading traders have nowadays considerable influence over various aspects of the global food economy, including production patterns, storage capacities, market prices, and innovation prospects. While the size of a business does not necessarily indicate an issue per se, a potential concern arises when a small number of businesses accumulates significant market power as this could enable them to act in ways that serve their own interests, potentially leading to negative impacts on the broader society and the environment.[20]

The motives for concentration are ultimately grounded in corporate objectives, such as achieving greater economies of scale and shareholder satisfaction. It is worth noting that a **company's corporate structure can significantly influence its economic objectives**. Typically, publicly listed companies like ADM or Bunge focus on maximising shareholder value (Bunge, 2023a), while family-owned companies like Cargill or LDC are concerned with establishing a long-term and stable future for the company. Concentration in different stages of the value chain can also be attributed to a sort of 'ripple effect', whereby concentration occurs at one stage of the chain where it increases the bargaining power, reducing the bargaining ability of smaller groups at other stages in the chain. Increasing concentration among a few large players increases the threat of anti-competitive practices as well as the potential for collusion between these large players, be it tacit or formal (UNCTAD, 2023).

In an oligopolistic context, it is exceedingly **challenging for external entities to establish a foothold**, primarily because they lack the capacity to compete at the same level with the large agricultural traders. Emerging rival trading firms tend to focus on specific segments or geographies to gain footing (section 2.6).

2.4.1. Impact on prices

Market concentration and trade liberalising reforms increasingly expose smaller farmers, especially, to globalised markets and the superior bargaining power of large players.[21] This puts the profits of producers at risk, as well as the share of value-adding captured in producing countries (UNCTAD, 2016). It should be noted, though, that an OECD (2021) review concluded that empirical studies published since the early 2000s have generally not observed systematic and significant competition problems in the agri-food supply chain. It points to the complexity of competition dynamics and pricing mechanisms within the sector and emphasises the need for nuanced, case-specific analysis to accurately understand the implications for farmers. Moreover, it is important to consider the market influence of agricultural policies in various parts of the world (Resnick et al., 2023) as well as WTO and bilateral or regional trade agreements that liberalise trade in agricultural products (see Annex 5 for details). Farmers in various parts of the EU protested in early 2024, among other reasons also against the implications of EU free trade agreements.

The vertical integration of traders can have both positive and negative consequences for farmers: secure access to credit, inputs, and technology, as well as reliable markets, can positively impact farmers' livelihoods. However, broad control of large actors over supply chains can **sideline**

[20] Agricultural inputs, like seeds and agrochemicals, are an example of a market characterised by high corporate concentration, giving the dominant companies considerable potential to exert power in wider food systems. This may undermine key goals for sustainable and equitable food systems, like access to food, sustainability (e.g., crop diversity, low carbon emissions), and inclusive governance of food systems (Clapp, 2021).

[21] It must be kept in mind though that concentration is not a fully reliable indicator of competitive conditions as other factors also influence the ability to generate profits.

small producers or threaten their independence (ResponsAbility, 2020). Moreover, farmers lose their ability to negotiate higher prices or alternative deals when prices increase during the season (Dos Reis et al., 2024). This can lead to economic hardships, particularly in developing nations. The lack of advantageous prospects of agricultural work leads young farmers to seek more secure opportunities off-farm. Concentration can also affect labour conditions as strong pressure of buyer power may negatively affect working conditions to cut costs (Bassanini, 2023; Dobbelaere et al., 2023). Trends such as these ultimately **jeopardise the sustainability of the global agriculture economy** and pose a significant threat to agribusinesses if not addressed.

Farmers' market power depends on several factors, including the level of horizontal and vertical integration in a sector, the relative size of value chain companies, and the characteristics of the commodity (Biely et al., 2022). For example, the soy supply chain shows a considerable integration level from elevator to crushing, refining, and processing into animal feed, edible oils, or biofuels. However, while various dependencies exist (for example, in the form of barter financing, section 2.2.2), it has been observed that at times of low market prices, larger farmers increasingly opt to store their harvest and wait for better market conditions, creating some more independence from traders. In other value chains, for example, palm oil or sugar cane, the leading traders exercise control from the sourcing from their own plantations or contracted smallholders, the processing in own mills and refineries, and the trading and transporting of the resulting derivatives to food producers or industrial users as well as own biodiesel facilities and food brands. **Small producers in these value chains often have low bargaining power** as they are highly reliant on these integrated buyers, aggravated by the fact that the harvested crops quickly spoil, so farmers are dependent on mills in their vicinity.

EU farmers can also find themselves in a vulnerable position with restricted bargaining power, as demonstrated in a study (Biely et al., 2022) on sugar beet and rapeseed farmers in, respectively, Belgium and Germany. The farmers cannot easily shift to another crop with better sales conditions, and direct marketing or value-adding is not feasible. In the case of sugar beet, they are faced with an oligopolistic market structure which is deepened by the crops' high perishability and unsuitability for storage or direct marketing before processing and refining. Similarly, the negotiation space for rapeseed producers is limited by global competition and on-farm value-adding is not feasible.

Not overlooked should be the role of the **retail sector and food-producing companies, who also have considerable market power** over farmers supplying fresh produce. Large retail market shares in certain markets carry the risk of abusing a dominant position (Maverick Law, 2022). Moreover, analyses of the profit distribution in commodity supply chains found that the downstream food processing and retail sectors account for a large share of the gross profit pool generated from the underlying commodities (Kuepper & Rijk, 2020; Rijk et al., 2021). During the recent periods of high inflation, the fact that price pressure remained high also when commodity markets cooled down in 2022 was partly driven by food companies and retailers increasing their food prices and waiting with passing on decreasing costs (Allianz SE, 2023). Referred to as **'greedflation', such moves exploit inflation for corporate profiteering** and to make up for previously lost margins (Weber & Wasner, 2023; Inman, 2023).

2.4.2. Limiting marketing concentration

The EU has recognised the problem of power imbalances and dependencies in agri-food supply chains. To counteract the impacts of the so-called 'agricultural squeeze' in which farmers operate (Biely et al., 2022), the Directive 2019/633 on unfair trading practices in agricultural and food supply chains was enacted in 2019 (European Parliament and The Council (EP&C), 2019a). The goal of strengthening farmers' position in value chains is also reflected in the CAP objectives formulated by the EU

Commission, including goals of increased market transparency and mechanisms against Unfair Trading Practices (EC, 2019).

However, regulatory and institutional frameworks face **many challenges when attempting to curtail concentration in the agricultural market**. Firstly, no institution or rules govern competition policy for mergers and acquisitions globally. The regulatory authorities of states where large agribusiness firms operate approach the subject of the mergers based on the domestic market effects it may have. When the potential negative effect on competition is raised, it often ignores the broader public interest, as well as environmental consequences. In addition, large agri-traders have the capability to exert different forms of influence, including market, discursive, and lobbying power. The discursive power wielded by these firms may contribute a large part of what frames the sustainability discourse, as they could promote the idea that greater control over the supply chain is an essential step for pursuing more sustainable agricultural practices, even if the research shows little evidence of that (UNCTAD, 2023). Market power holds sway over national economies, encouraging policymakers to be more attentive to corporations' preferences. Lobbying power can also influence governments in other aspects of policy and decisions regarding merger reviews.

2.5. Financialisation

This section gives a brief overview of the **financialisation of the agriculture commodity market** and the debate around the perceived effects of the increasing financialisation of the market. Over the past two decades, agriculture commodities have experienced significant price fluctuations. Some of this volatility can be attributed to standard supply and demand factors for said commodities, as well as the effects of weather, fuel prices and/or export restrictions. However, **financialisation**, defined as the growth in importance and activity of financial players and financial strategies in commodity derivatives markets, becomes another significant factor in these markets' landscape. Indeed, the scale at which prices have fluctuated, combined with the increased activity of financial investors in agriculture commodity derivatives trading, have led researchers to suggest that financialisation and resulting excessive speculative activity are responsible in greater part for **recent price spikes** and volatility of agriculture commodities. However, it must be noted that the influence of financialisation on commodity price volatility is still a subject of empirical debate due to lack of transparency and supervision resulting from current regulation in various jurisdictions.

The financial agricultural commodity derivatives exchanges act as a **benchmark for prices** used between those selling and those buying physical agricultural products. The mechanisms and the actors in these derivatives markets determine the smooth functioning or problems in the food system. **Excessive price swings** are considered harmful, as AMIS explains: "*especially [for] those that are heavily dependent on imports or exports of the commodities." "For consumers, food price volatility can lower food security causing poor people to reduce consumption or switch to cheaper, less nutritious foods. Volatility also impacts producers who face high uncertainty about future prices or lack adequate tools to manage risk"* (AMIS, n.d.-b). High food prices even impact inflation and monetary policy. So, analysing the functioning of the derivatives markets helps to understand whether prices are based on fundamental physical supply and demand issues, or undue price setting and financial profit-making.

The derivatives traded are financial instruments, such as futures contracts, options, or swaps, related to different kinds of agricultural products such as wheat, maize, or soy. Futures contracts (a type of security),[22] mostly referred to simply as **futures**, are a standardised legal contract to buy and/or sell

[22] Securities are a broad definition of asset classes including stocks, bonds, future contracts, investment contracts and others.

something, at a predetermined price for delivery at a specified time in the future at a specific place. An additional type of agricultural derivative security contract is an option contract, or simply referred to as **options**. These are contracts by which the contract purchaser acquires the optional right, but not an obligation, to buy or sell an agricultural commodity futures contract at a predetermined price by a specified future date, known as the expiry date (Euronext, 2012). Options trading influences futures' prices. The trade in these derivatives takes place on agricultural commodity derivative **exchanges and off-exchanges** referred to as 'over the counter' (OTC). The majority of the agricultural commodity derivatives trading happens on exchanges, contrary to energy commodity derivatives, but EU and international statistics do not provide sufficient detailed information due to lacking rules on transparency in various jurisdictions.[23]

Most global price setting of wheat is done on the US commodity derivatives trading venues, e.g., the Chicago Mercantile Exchange (CME Group), which are global price benchmarks. CME covers Chicago, Kansas City (KC), Black Sea, and Australian wheat. The volume of trade in wheat derivatives contracts on CME exchanges is much higher as compared to Euronext where European milling wheat is traded (see e.g., AMIS, 2024). The global price **benchmark for European physical milling wheat** "from Spain to the Black Sea" is derived from the **Paris-based Euronext** futures exchange. "*The milling wheat [derivative] contract is also used as a proxy for [the price of] barley, ethanol and many other cereals whose adequate price is correlated with [Euronext's] futures contract*" (Euronext, 2024). Black sea wheat contracts are now also traded on a CME exchange.

2.5.1. The European milling wheat derivatives market[24]

As explained for milling wheat price setting in the EU, the wheat futures exchanges aim at orderly price discovery and price risk management ("hedging") and are used as a reference price for physical trading. So, farmers and other producers or traders can sell futures contracts that guarantee a price at which they can deliver a standard volume of wheat at a pre-determined date ("**short position**"), while processors, traders and other buyers of wheat can buy contracts that guarantee them a price of a standardised volume of wheat at a certain place ("**long position**"). These actors in the derivatives markets are defined as "**commercial undertakings**". When these non-financial entities are reducing the risks of price uncertainty and fluctuations through derivatives contracts, they are "**hedging**", defined by the EU's Market in Financial Instruments Directive (MiFID II, Art. 57) as "*reducing risks directly related to commercial activities*". The physical EU-origin milling wheat covered by the futures contracts traded on the Euronext exchange must be delivered at a pre-set date in March, May, September or December, in silos based in Rouen, Dunkerque/Dunkirk, La Pallice and Nantes-Montoir.

2.5.2. Non-hedging speculative financial participants

Since supply and demand for the derivatives contracts do not always immediately match, some financial players also buy and sell those contracts without taking any delivery of the wheat. They provide so-called "liquidity" to these markets by speculating. These 'non-commercials' are categorised by EU technical standards as "investment firms or credit Institutions", "investment funds", "other financial institutions", which cover investment banks, hedge funds, fund and asset managers, pension funds sovereign wealth funds, and retail investors who trade on (app-based) platforms (van Huellen et al., 2023). When these financial entities hold futures contracts with the expectation of profiting from a

[23] European Securities and Markets Authority (ESMA), Bank of International Settlements (BIS), via expert interview.
[24] See Annex 1 for a literature list on derivatives trade and speculation.

rise in their value, they are categorised as having a **long position**.[25] When they expect to profit from lower prices in the future, they are holding futures that are categorised as having a **short position.**[26] They are involved in "non-hedging" activities, i.e. speculating, by buying, holding, selling, and short selling commodity derivatives contracts to profit from expected fluctuations, price rises and falls, and differences in prices between markets (margin traders, arbitrageurs) as opposed to buying the contracts for actual delivery of the commodity underlying the contract.

The financial speculative players that are providing "**liquidity**" to the agricultural commodity derivatives trading, amount ideally to about 30% of the trade for orderly price setting. Beyond that percentage, the question is whether "**excessive speculation**" is at play that distorts prices. Excessive speculation can lead to extreme price volatility of commodities and to low or high prices that do not accurately reflect the true value of the commodity or the supply and demand on the physical market. This excessive level of speculation is measured by the excessive speculative index (ESPI), which takes into account the short and long open positions in futures by speculators and hedgers. When more financial speculators want to profit from betting on higher or lower futures contract prices, they might do so to diversify from other asset classes that are less profitable (e.g. less profitable bond or equity markets).

Also, there are a series of **investment funds**, namely **commodity exchange traded funds (ETFs)** that track (or invest "passively" in) the prices of a basket of commodities (a commodity index). Those ETFs directly or indirectly buy futures according to that commodity index. When investors expect they might profit from price increases, they can buy shares in the commodity ETF, which then has to buy the related futures or buy related swaps.[27] "One of the most popular" index ETFs exposed to agricultural commodities is the Invesco DB Agriculture (VettaFi, 2024).[28] When prices increase of one or more commodities that are in the index, or more investors buy into the fund, the fund has to directly or indirectly buy more derivatives from each of the commodities in order to continue to track the index. In this way, the Euronext futures trading can be affected by other commodity prices, including those in US dollars or other currencies. Euronext milling wheat futures prices are 2% of the widely used Rogers International Commodity Index® (RICI) (Beeland Interests, 2021)[29] and also included in the S&P World Commodity IndexTM (Euronext, 2024). Hedge funds also speculate actively in agricultural commodity derivatives to profit from increasing or declining prices, some of which have specialised knowledge and trading strategies, as is recently the case with hedge funds and other speculators buying cocoa derivatives, resulting in excessively high prices (Savage, 2024a).

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25 If the price of the derivatives contract increases after being bought, a profit can be made by selling the derivative at the higher price.

26 The investor can then return the shares and keep the difference between the selling price and the buyback price as profit.

27 Research on annual reports of commodity ETFs shows that the assets in the fund are often not agricultural futures but other assets (bonds, shares) and the value of the commodities are tracked via swaps (derivatives contracts whose traders are mentioned in the commitment of traders' reports) provided by swap traders who trade on related derivatives.

28 The total assets under management on that date were $ 714 million; the explanation states that the fund needs to frequently sell contracts and buy new ones ("roll-over" contracts) because agricultural commodity derivatives contracts are given that they are related to harvests of the physical underlying agricultural product; however, explanation of the assets held shows that ca. 69 % consist of US treasuries and 30.20 % is invested in a non-specified mutual fund (see: top holdings), which means that the fund only tracks the value of the agricultural commodities with buying the futures. The DBA Fund Flows Charts show a lot of investors buying into the fund in the beginning of 2022 but selling the fund from mid-2022 onwards (VettaFi, 2024).

29 The only other commodity traded on Euronext and included in the RICI is rapeseed; milling wheat and rapeseed are the only commodities in Euros (the rest have US dollar denominations).

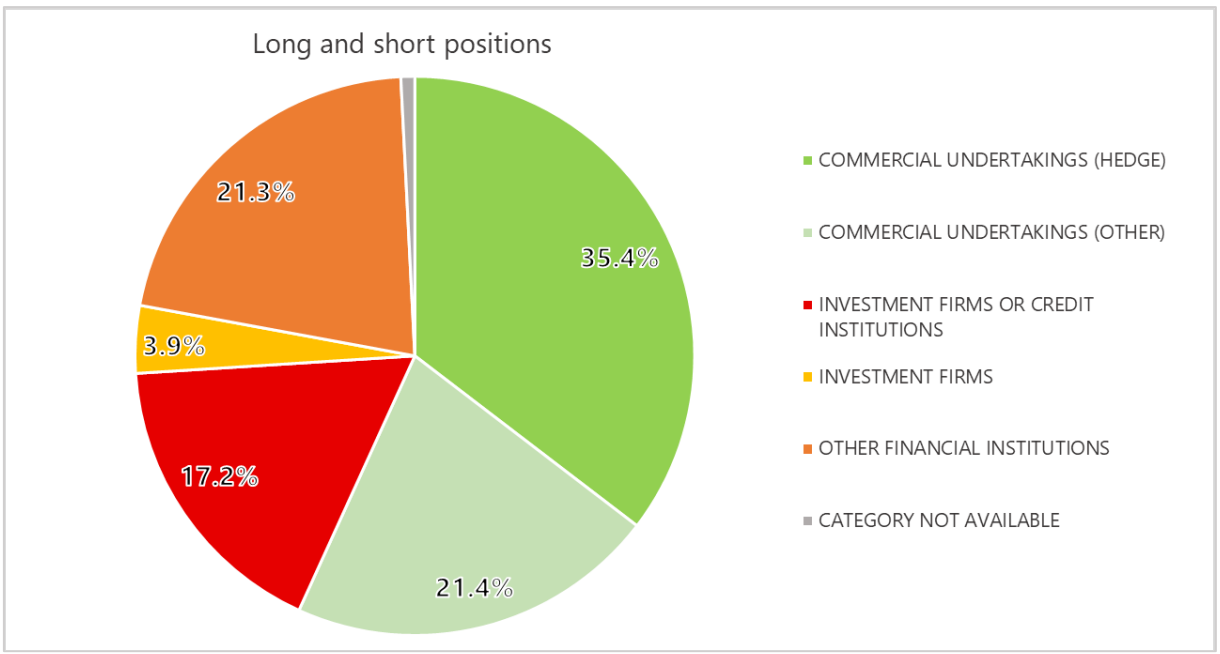
2.5.3. The dominance of speculative non-hedging participants

In US wheat derivatives markets, which dominate global price setting, financial firms dominate. In the period 2018-2021 they held 74% of the open interest, while commercial undertakings only held 26% of the open interest (AMF, 2022, p. 5).

On the Euronext milling wheat derivatives markets, the speculative non-commercial players have gradually increased their participation. In 2018-2021, they held, on average, 43% of positions (Figure 4).

The **EU has an important legal obligation,** inexistent in the US**,** by which commercial undertakings (whose business is to trade physical agriculture commodities) must, for each derivatives contract, identify and report whether they take a hedging or a non-hedging/speculative position. The latter must be reported as "other" on the weekly published commitment of traders' reports, e.g. by Euronext regarding the milling wheat futures trade.

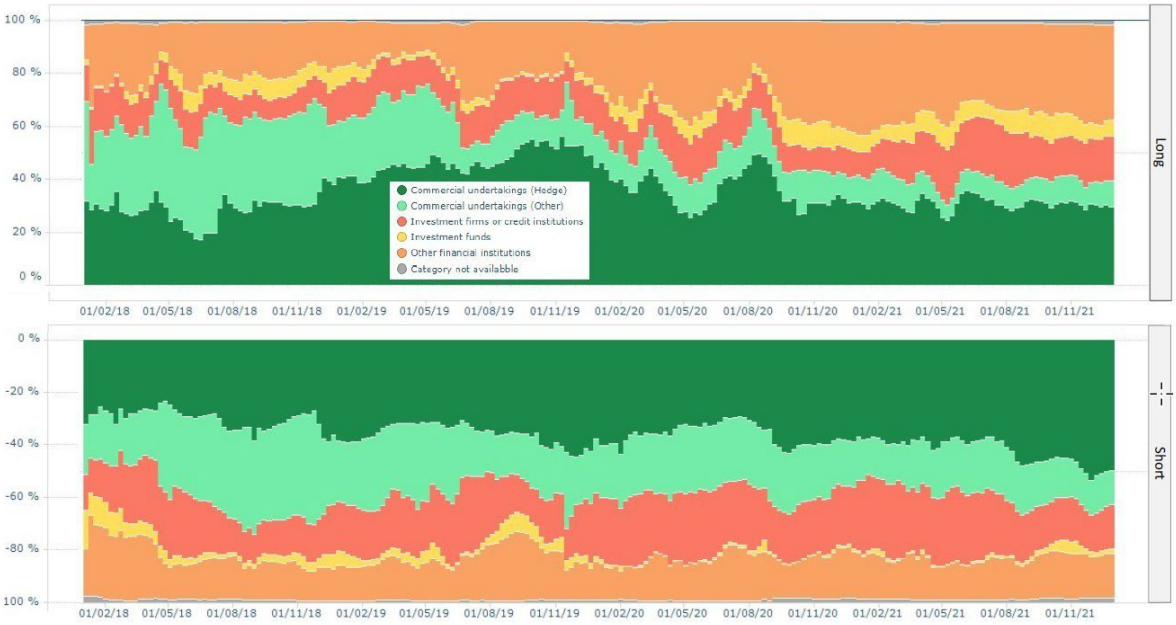
Figure 4: Categories of market participants, according to their positions taken, trading wheat derivatives contracts on Euronext, average 2018-2021



Source: Consortium elaboration based on AMF, 2022, p. 4.

In addition, the EU reporting format exposes that the contribution of non-hedging ("other") positions by physical traders is substantial as compared to their hedging positions. An analysis of 2018-2021 reports by the French Financial Markets Authority (AMF) shows (visually represented in light green in Figure 4, Figure 5 and Figure 6) on average 21.4% of non-hedging positions, while the overall hedging positions account on average only for 35.4%. As a result, the total non-hedging/other/speculative positions amount to 63.8%. The AMF was also concerned about the lack of legal obligation to disclose the trading strategies by the large number of investment funds and "other financial institutions" (that may be non-EU institutions) (AMF, 2022).

Figure 5: Gross long and short positions, in percentages, on the Euronext wheat derivatives contracts (2018-2021)

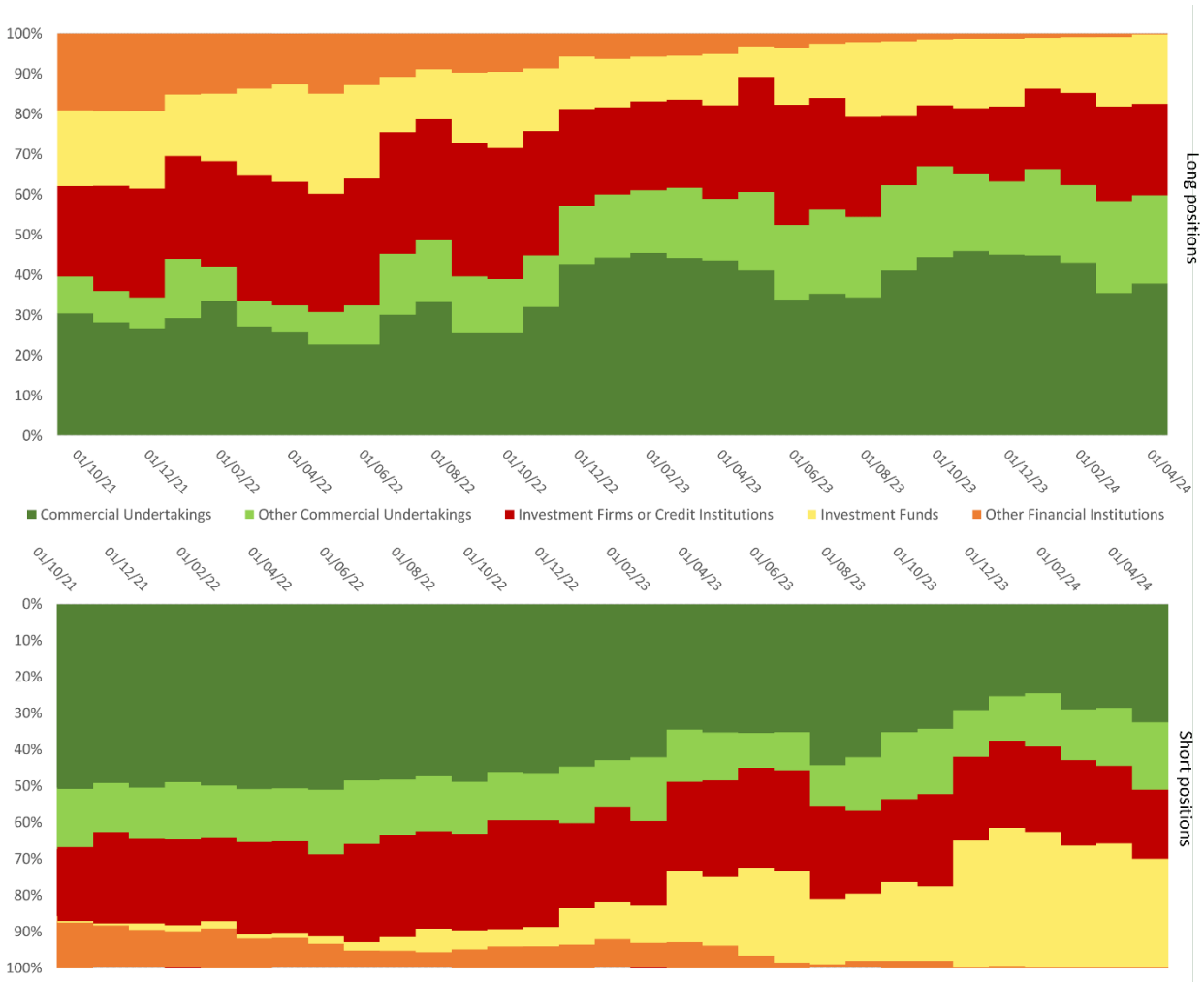


Source: AMF, 2022, p. 4.

According to European law (Markets in Financial Instruments Directive (MiFID II) and Regulation (MiFIR)), with similarities in US law, each of the non-hedging financial participants in the agricultural commodity derivatives markets is subject to "position limits" (see Chapter 3). However, there is no limit on the total amount of non-hedging positions. In order to avoid commercial undertakings abusing their knowledge and inside information, MiFID II introduced a yardstick to calculate when a commercial undertaking's non-hedging positions are no longer an "ancillary activity" only to support their business but are so large that they have to be regulated as financial players. To avoid market abusive behaviour and manipulation of prices, the Regulation on Market Abuse (MAR) and the Criminal Sanctions for Market Abuse Directive (CSMAD) have particular provisions (see Chapter 3). The question is whether they are effective to prevent betting positions to dominate and result in excessive speculation that distorts the price setting function of the futures market. High numbers of various speculative players contribute to volatility and price uncertainty for commercial traders since they buy and sell commodity derivatives betting on increasing or declining prices, including on misguided expectations. This study therefore provides some further analysis whether the current situation on agricultural commodity derivatives markets contributes to orderly pricing.

For this study, an analysis of the commitment of traders reports of milling wheat futures traded on, and reported by, Euronext, has been conducted for the period October 2021 – beginning April 2024 (Figure 6). The methodology for that analysis attempted to imitate the methodology of the AMF. However, note that AMF has been able to correct reporting data by Euronext, based on its access to additional non-public data (AMF, 2022, pp.3-4).

Figure 6: Gross long and short positions, in percentages, on the Euronext wheat derivatives contracts (October 2021- April 2024)



Source: Consortium calculations based on Euronext data, 2021-2024.

During the period 2022-April 2024, speculative non-hedging positions continued to dominate, rather than those hedging the price of agricultural commodities by commercial traders. At the start of 2022, long positions by non-hedging commercial undertakings and financial participants totalled 70%, while their total short positions were 50%. The commercial participants' hedging positions amounted to ca. 30% of the total long positions, and 50% of the short positions.

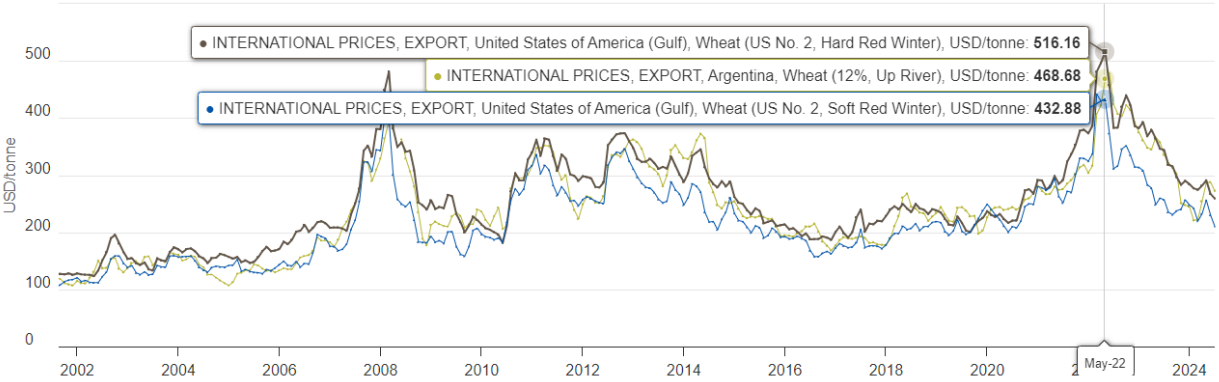
In the beginning of April 2024, commercial participants' hedging positions amounted to ca. 37% of the long positions and somewhat more than 30% of short positions. The speculative financial participants and the non-hedging commercial undertakings held about 62% of the total long positions, and around 68% of the total short positions. This reflects a situation in which excessive speculative participants are at play. The high amount of short positions by investment funds at the end of 2023 and beginning 2024, shows that investors were betting to profit from lowering prices, or preventing to lose money from their bets on higher prices (by closing their long positions), which is reflected in lower commodity prices (Figure 7). The reduction of the "other" non-disclosed financial institutions might result from foreign speculators to be recognised as European and entities into existing categories, after an intervention made by ESMA (interview AMF, 4 May 2024). The increased percentage of reported speculative non-hedging long positions by commercial undertakings between January 2022 and April 2024, from ca. 7% to ca. 22% is of concern. Big commercial traders like the ABCD have profound knowledge and long-term expertise of the physical and derivatives agricultural markets, extended

networks, global infrastructure and non-transparent storage capacity. Such facilities and inside information can be used to abuse their position, manipulate prices and make huge profits. The French supervisory authorities are monitoring and taking action when both the hedging and non-hedging positions by commercial undertakings exceed the position limits in place.

2.5.4. No food crisis but a price crisis?

The food prices have received high attention since they rose dramatically after the Russian invasion of Ukraine on 24 February 2022. Wheat (and vegetable oil) prices soared after a relatively stable pricing period since 2015 until the end of the COVID-19 pandemic. The much higher food prices affected poor people around the world, and especially poor food importing countries, and contributed to high inflation. Price peaks had happened in 2007-2008 and in the 2010-2014 period, which resulted in food crises and riots in some countries, after which EU laws were introduced (see Chapter 3) and US laws reviewed.

Figure 7: The fluctuations of international wheat prices, 1 January 2000 – 1 March 2024



Source: AMIS, 2024a.

The wheat market price came down relatively quickly from its peak in May 2022. Prices spiked again when the Black Sea deal with Russia, which facilitated grain exports from Ukraine, was uncertain (before July 2022). After the grain deal collapsed at the end of July 2023, the prices continued to fall. Russia reportedly was able to export (as aid) grain to many countries in the Global South and Ukraine also managed to export some of its grain via alternative or protected routes.

The reasons for these high price hikes and high volatility can be manifold. Prices on commodity derivatives markets are supposed to be set according to "fundamentals", e.g., supply and demand of futures based on real or assumed availability or supply influenced by the level of (good or failed) harvests, costs of production (influenced by fertiliser and energy prices), availability and accessible of stock, the exchange rate of the dollar and other events in financial markets, etc. In 2022-24, there was no lack of availability of stock/storage at global level. There were increases in fertiliser prices as they are linked to prices of natural gas that is also traded on commodity derivatives markets, where participants reacted to the Russian gas exports decline (van Huellen et al., 2023).

At the same time, many speculative financial participants continued to be at play in agricultural commodity derivatives markets at the time of the Russian invasion into Ukraine. In US futures' markets, they increased their positions (Kornher L. et al. 2022). This might have been reflected in prices not in sync with physical wheat storage and trade, resulting in excessive prices due to assumed shortages in the future and excessive speculative players entering the market.

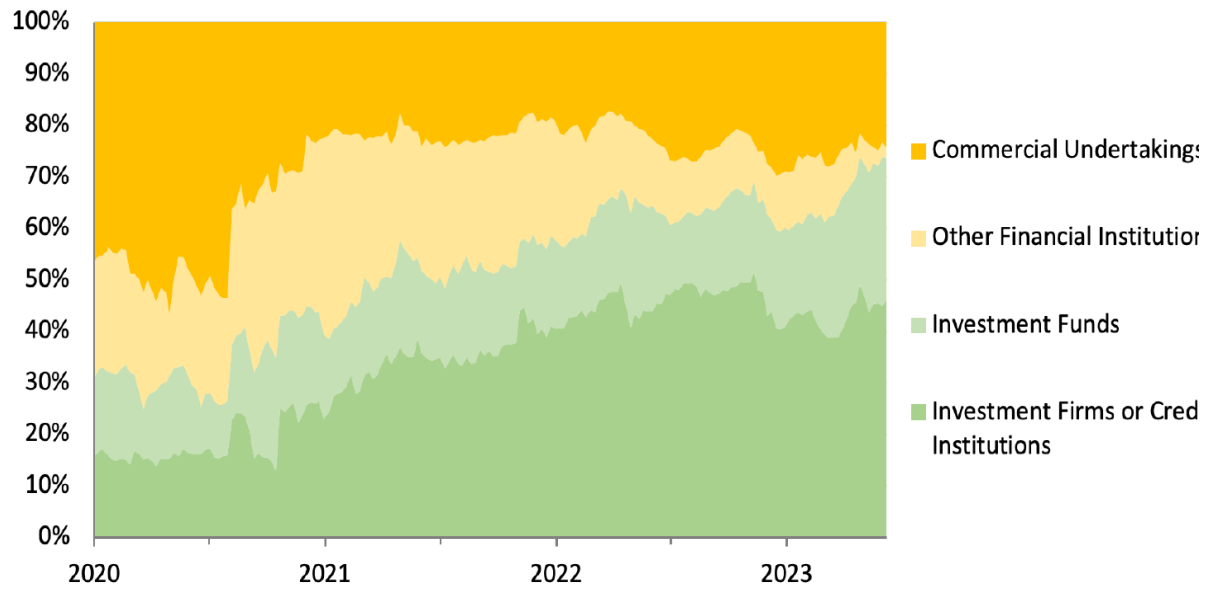
In the EU, the AMF did a quick analysis of open positions after the Russian invasion and the price hikes but mentioned that much more research was needed (AMF, 2022, pp.7-8). Indeed, the number of

positions does not reflect at what prices the futures were traded nor the trading strategies or whether position limits and higher margin requirements played a role. The AMF data show, amongst others, that the absolute number of contracts (not the percentage) traded somewhat decreased but restored by June 2022. Note that in volatile markets, participants have to pay a high 'margin' or guarantee they will be able to deliver or pay to the clearing houses. High margins can become too expensive for small commercial undertakings. The AMF commented that long positions grew more than short positions by the financial entities, especially by the "other financial institutions", i.e., they were more betting on higher prices. The long net positions by investment firms continued their growing trend since the beginning of 2021. The graph in Figure 6, produced for this study and representing the commitment of traders reports (October 2021-April 2024), also shows that the speculative positions were the highest in the covered period, ranging from 75% on 4 May 2022 to 76.5% on 1 June 2022, which is during the same period of the highest global wheat prices (Figure 7).

The AMF mentions that participants are reacting strongly to news announcements of, for instance, suspension of exports, droughts, discussions about a deal to allow Ukraine exports, etc., the reason for which might need more analysis. If climate and geopolitical events strongly affect pricing without excessive speculation, agricultural prices might continue to be highly volatile, with regular price spikes affecting the economy. When trading happens not according to the reality of the market and is influenced by excessive speculation, higher prices might become a kind of self-fulfilling prophecy, and profits can be made from high volatility.

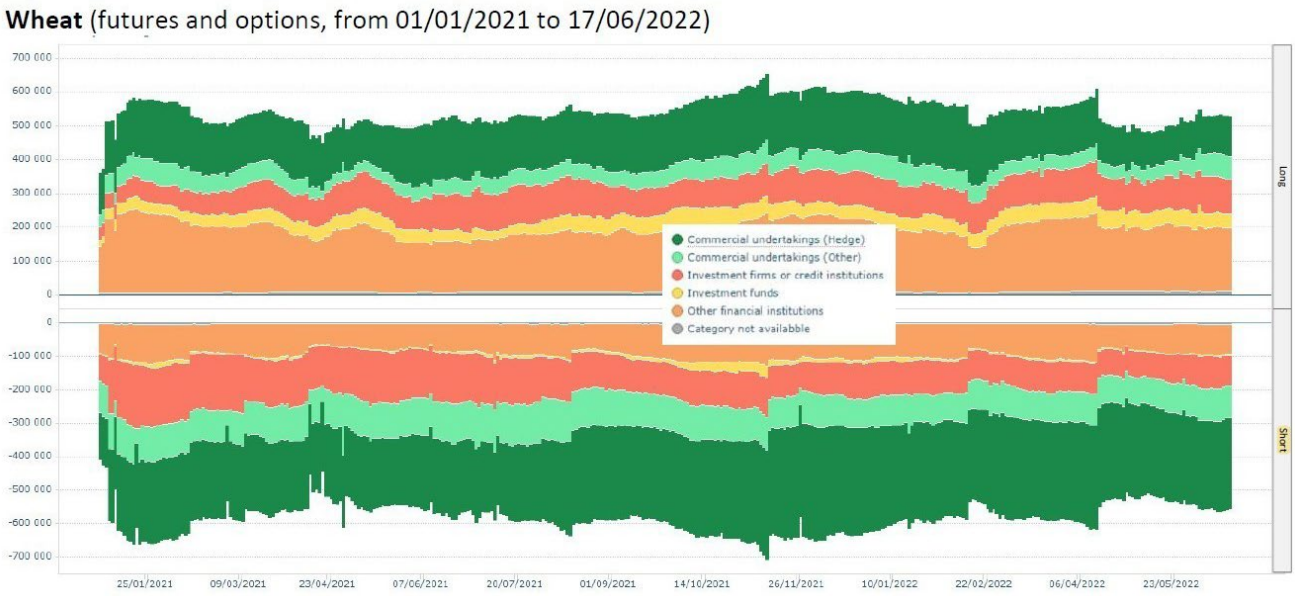
Some speculative players have been able to make huge profits. According to an analysis by Société Générale, the speculative strategies by a group of ten hedge funds were able to make a profit of US$ 1.9 billion based on the price spike of wheat, maize and soybean following the start of the war on Ukraine (UNCTAD, 2023). Whether their non-hedging positions contributed to their high profits needs further analysis.

Figure 8: Composition of speculative traders in Paris Wheat Market, the figure is an amalgamation of various participants in the Euronext milling wheat derivatives market



Source: van Huelen and Ferrando, 2023.

Figure 9: AMF analysis of Euronext AMF analysis of Euronext wheat futures trading, 25 January 2021 - 23 May 2022, gross positions by category of market participant



Source: AMF, 2022, p. 11.

Some empirical studies of the US derivatives markets have pointed to bilateral relationships between price volatility and speculation (Aligieri, 2016). A 2014 study reviewed previous studies on the topic of volatility spillover before the new US law on position limits (Dodd-Frank Act, 2010) became fully implemented, and concluded that volatility in the agri-commodities maize, wheat and soy, was *not* closely related to volatility in the energy market, but that price volatility in agri-commodities was influenced by volatility in financial markets (such as the Standard & Poor 500 stock market index) (Grosche et al., 2014). However, similar studies using empirical models show that changes in food prices *are* linked to energy and financial markets, with volatility in financial markets **coupled with speculative activity** amplifying short-term spikes in food prices, while volatility in oil prices intensifies medium-term volatility in agri-commodities (Tadesse et al., 2014).

In 2018, a research study further reinforced this link, establishing a significant correlation between increased investments from Agriculture ETFs and a rise in commodity prices for agricultural produce like maize, wheat, and soy (van Huellen, 2018). The study revealed that the surge in commodity prices diverged from the commodities' actual value, as suggested by various technical indicators. This divergence led the study to conclude that the escalation in speculative activity was the root cause behind the price increases. A 2022 study linked excessive speculation by investment firms and funds in the commodity market and the sudden rise in food prices (Agarwal et al., 2022).

2.6. New rival agri-commodity firms

2.6.1. Drivers of growth

During the last ten years, **emerging rival firms** have increasingly gained market share from the ABCDs. Emerging commodity houses challenge the position of established traders by transforming from

clients for commodity supplies into competitors for a spot in the top group.[30] This competition is usually linked to the production, transport, trade, and processing of certain agricultural commodities or the engagement in certain geographies.

COFCO International Limited (CIL), Wilmar, and Olam are examples of emerging traders that have all seen large geographical expansion in their operations in the recent past, even though, at times, they are making strategic decisions to divest activities that become economically unattractive. Vertical and horizontal integration play an important role in gaining control over supply chains, increasing efficiencies, and spreading risks. These strategies show considerable **parallels with the ABCDs**. Ukrainian Kernel shows, in comparison, less diversification and operates at a smaller scale but has nonetheless developed important links with the EU market.

While they all have a strong focus on emerging markets, particularly in Asia, the **EU market has delivered important growth** for these competitors. CIL stands out with its rapid expansion in terms of supplies to and sourcing in the EU and Eastern Europe.

a. Meeting demand

The development was partly driven by Asian traders' interest in **diversifying from hard commodities** into the more predictable food sector and in securing large supply volumes to counter their home countries' production deficits in grains and oilseeds for food and feed, as observed in Japan and China. Moreover, access to agri-commodities is of **high geopolitical relevance**, as illustrated by the US -China trade war in 2018/19 and Russia's war on Ukraine since 2022.

Several of the so-called *sogo shosha*, the seven major Japanese trading houses, invested billions of dollars in expanding their commodity portfolios since the 2007/08 financial crisis to include substantial volumes of grains and oilseeds. Examples include Marubeni, Mitsubishi, and Mitsui. As a result, they evolved into global trading entities with the capacity to source agri-commodities from various regions directly. They have invested in North America and Australia, but foremost in the agricultural powerhouse Brazil, where Japanese traders acquired grain origination and export infrastructure, and some also invested in physical farming assets (Marubeni and Mitsui) (Vitón, 2017; Lopes Enei, 2020). Driven by similar interests is Zen-Noh Grain Corporation, a subsidiary of the Japanese National Federation of Agricultural Cooperative Associations. It has expanded its sourcing network in the US, Canada, and Brazil over the years, including the ALZ Grãos joint venture (JV) with Amaggi and LDC in Brazil,[31] in which Zen-Noh acquired a one-third stake in 2017 (Reuters, 2017). In 2020, it expanded its US sourcing network by acquiring 35 grain elevators along the Mississippi from Bunge (Food Manufacturing, 2020).

CIL and its state-owned parent COFCO Group, China's largest food and agriculture company, is another example of food security and geopolitical interests driving the rapid rise of a new trader (section 2.6.2).

Part of the growth of emerging traders is facilitated by taking (minority) investors on board. Looking for **investors** can be considered a part of their broader business strategy within vertical and horizontal integration processes. Although not directly fitting into either of these two categories, seeking investors may be a means to **secure capital for acquisitions**. At the same time, bringing in an investor leads to changes in decision-making power. It can have strategic implications as it dilutes ownership and control and may, in time, impact the company's strategic direction (Liquidity Group, n.d.). While a trader secures access to capital from such a deal, **investors often have their own food security and**

[30] For example, LDC in 2020 named not only ADM, Bunge, and Cargill as main agri-commodity competitors, but also COFCO International and Viterra (formerly Glencore Agriculture) on the international level, and Wilmar and Olam in Asia and Africa (LDC, 2020b).

[31] Including aggregation facilities and a 25% participation in the Tegram grains terminal at Itaqui port in Maranhão.

geopolitical interests. Recent examples include the Saudi Agricultural and Livestock Investment Company (SALIC) acquiring a 35.43% indirect stake in Olam Agri in 2022, an integrated agri-commodity subsidiary of Olam Group, Singapore (section 2.6.4). SALIC's strategic goal is to secure Saudi Arabia's food security. The supply and cooperation agreement that forms part of the transaction is expected to accelerate Olam Agri's access to the large and expanding Middle Eastern market (Olam Group, 2022).[32] Temasek, the Singapore sovereign wealth fund, holds an indirect stake in CIL (CIL, n.d.-a) and increased its stake in Olam Group to a majority stake in 2014 (51.4%) (Olam Group, 2023).

b. Marketing supply

Several traders who have emerged as more substantial players in recent years are upstream producers who have reached a scale where they can **market their commodities without intermediaries** (Ansart et al., 2019). They combine significant upstream production of globally sought-after crops with a growing role in midstream commodity trade, usually in a limited number of commodities. Examples include the leading Southeast Asian palm oil producers and traders Wilmar and Golden Agri-Resources (GAR) and the diversified producer and trader Olam, all three headquartered in Singapore and with advanced vertical integration. In Brazil, Amaggi is a significant producer of soy and maize and competes with the ABCDs and CIL in the trade of these commodities. Amaggi is today Brazil's fifth-largest exporter of soy and maize (Panjiva, 2024).

c. Strategic partnerships

The growth of emerging traders has also been supported by forming joint ventures. Mutual benefits can include access to other geographic or commodity segments or tapping into logistical networks. Such cooperation can also **leverage existing business segments** by bundling partners' capacities in a particular segment, as shown by ADM's and Wilmar's European vegetable oil joint venture, Olenex (section 2.6.3). Moreover, traders have acquired minority stakes in their peers. Examples include Singapore-based palm oil leader Wilmar, in which ADM holds a 22.49% stake. The Japanese *sogo shosha* Mitsubishi Corp has been the second largest investor in Olam Agri's parent, Olam Group, since 2015, with both parties mentioning strategic synergies (Olam Group, 2015; Olam Group, 2023a).

In the following sections, the business models and market positions of four traders are profiled as examples of competitors to the ABCDs: CIL, Olam, and Wilmar from Asia are nowadays considered to be part of the broader group of top agri-commodity traders globally. Ukrainian Kernel is included as an example of a European actor.

2.6.2. COFCO International (China)

The state-owned COFCO Group (China Oil and Food Corporation) is the world's largest agri- and food business by asset value. It is tasked with safeguarding China's food supply and security and is partly responsible for storing maize and rice reserves (FitchRatings, 2022). Its subsidiary COFCO International Limited (CIL), incorporated in the tax haven Cayman Islands and headquartered in Geneva (Switzerland), was founded in 2014. It is part of COFCO Fortune, the main agriculture and food business unit controlled by COFCO Group (CIL, n.d.-a).[33] CIL reported revenues of US$ 53.3 billion in 2022 and traded 127 million tonnes (Mt) of mainly grains, oilseeds, sugar, coffee, and cotton. CIL has more than 11,000 employees (CIL, 2023). After CIL reported a record profit for 2020, in 2021, several media

[32] Next to farmland investments around the world, SALIC also holds a majority stake in the Canada-based grain company G3 Global Grain Group, in a JV with Bunge.

[33] Other shareholders include China Chengtong, China Life, China Public-Private Partnerships Fund, China Investment Corporation, COSCO Shipping Hopu Investment Management, and the National Council for Social Security Fund (SSF) from China, and Affirma Capital (former Standard Chartered Private Equity) and the sovereign wealth fund Temasek from Singapore.

conveyed that COFCO Group would go ahead with its longer-standing plan to list the subsidiary in Shanghai, following a merger with some domestic trading and processing assets. Analysts estimated the value of the IPO to be in excess of US$ 5 billion (Aleida et al., 2021). However, the listing has not yet taken place.

At the same time, CIL has increasingly **diversified geographically** and today serves also many other high-growth destinations (Terazono, 2019). In 2015, the then-chairman of COFCO Group, Frank Ning, presented plans to create a powerful trading house that could **challenge the ABCDs** (Hume et al., 2017). The internationalisation of CIL's footprint accelerated with the acquisition of Noble Agri (Hong Kong) and Nidera (Netherlands) through several deals between 2014 and 2017, both companies with an international sourcing network in key production regions and a diversified commodity footprint (Nidera, 2016). The Noble and Nidera deals were the most significant overseas acquisitions in China's grain sector until then (Valoral Advisors, 2015). The deals allowed CIL to participate in financing activities, input provision, technical assistance, and production marketing across the main Latin American commodity-producing countries while enabling China to become less dependent on transnational companies (Hume et al., 2017). Since then, the rapid development of CIL's trading operations has been achieved through organic growth rather than further acquisitions.

In 2022, the company turned over 127 Mt of commodities, had a processing capacity of 29 Mt, and a storage capacity of more than 30 Mt in warehouses, silos, and ports (CIL, 2023). **This puts the company at par with the ABCDs**. CIL's exceptional growth is driven by a two-fold expansion strategy: serving the strategic interests of China on the one hand, and finding the most profitable destinations, routes and origination countries globally, like any of its commercially driven competitors on the other hand.

Table 2: COFCO International global assets 2022

Assets	Asia Pacific	EMEA	Latin America	North America	Total
Warehouses	1	17	36	3	57
Processing	1	2	8	-	11
Ports	-	4	8	3	15

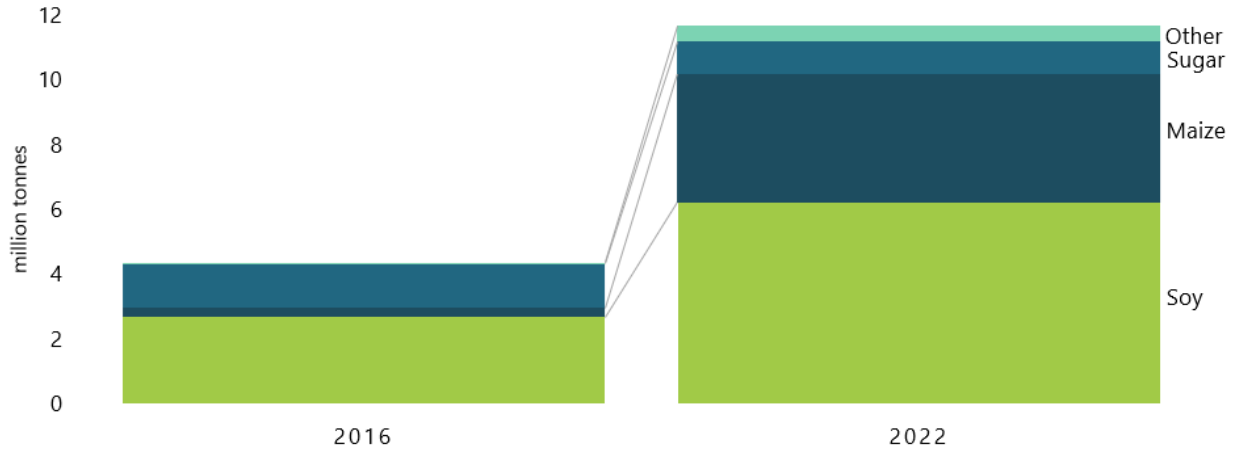
Source: Consortium elaboration based on CIL, 2023

As China will remain dependent on food imports due to its shortage of arable lands (Hume et al., 2017), **CIL is involved in all supply chain stages**, from production and sourcing of grains, oilseeds, cotton, coffee, and sugar to storage, processing and refining, trading and merchandising, and transportation and distribution (CIL, n.d.-b). It also plays a role in the geopolitical context, as it, for example, helped to redirect trade routes during the US-China trade war (Blas, 2023).

CIL aims to diversify the origination of commodities to provide a better balance amidst seasonal and regional fluctuations. This is demonstrated by the recent opening of the Brazilian maize export channel to China, which supplements flows from North America and the Black Sea area (CT, 2023). Its development in Brazil and the US, two critical suppliers of bulk agri-commodities to world markets, illustrates the rise of CIL into the top traders' group. The company first showed up as a shipper from Brazil in 2016. Until 2022, the traded volume almost tripled, reaching 11.7 Mt, supported by

investments in processing and transport infrastructure (CIL, 2021c).[34] Exports to China decreased from 50% of the total in 2016 to 33% in 2022, while the EU share increased from 12% to 21%.

Figure 10: COFCO International Brazilian exports, 2016 and 2022



Source: Consortium elaboration based on Panjiva, 2024

Owing to its acquisition of Nidera and Noble Agri, CIL also became a leading trader from what it refers to as the South Cone, representing Argentina, Paraguay and Uruguay (CIL, 2021b). In 2022, it was the third largest exporter of agricultural commodities from Argentina.[35] Exports from the US also increased significantly, from just 300,000 tonnes in 2016 to around 14 Mt in 2022, consisting of maize (83%), soy (12%) and sorghum (5%). In 2022, 95% of these volumes were destined for China (Panjiva, 2024). CIL has also strongly expanded in West Africa since 2019, focussing on wheat and smaller volumes of other grains and oilseeds (CIL, 2022).

CIL trades up to 6 Mt from Eastern European hubs annually. Its key physical assets are in Romania, with a total inland and Danube River silo capacity of 0.19 Mt in 2022. From the Black Sea port of Constanta, CIL exports almost 4 Mt of wheat, barley, maize, rapeseed, and sunflower seeds annually to destinations in Europe, the Middle East, and Asia. It refers to the Danube as 'Europe's Mississippi' (CIL, 2021c). CIL also exports various grains and oilseeds from Ukraine via its terminal in Nikolaev Port, which opened in 2016 (CIL, 2021a). Ukraine was of strategic interest to China due to its important agricultural output, location, and free trade deal with the EU. It forms an important hub in China's extensive infrastructure and foreign policy project, the Belt and Road Initiative (Reuters, 2022). Other EU-based distribution operations are in Italy, Spain, Portugal, France, Hungary, and the Netherlands (CIL, n.d.). The company identifies a **flexible and responsive business structure** as key to its success in the mature European market. It includes high agility in choosing the most favourable destinations, transporting routes and origination countries (CIL, 2021c).

CIL also diversified into upstream farming. It operates around 180,000 ha of sugarcane plantations in Brazil and produces grains and oilseeds on 80,000 ha jointly with local farmers in South Africa (CIL, 2023).

In line with the broader strategy for Chinese agri-business expansion, CIL has adopted a finance-driven approach to its global operations and management, moving from mere production to a more profound

[34] In 2022, CIL won a 25-year concession for a new terminal in Brazil's important Santos Port. It is expected to expand the company's port capacity from 3 to 14 Mt by 2026. Midstream assets include a soybean processing and biodiesel plant in Mato Grosso and four sugar and ethanol mills.

[35] Exports from Paraguay are transported by river barge to Argentina (Marín et al., 2023).

integration with financial markets. It adopted strategies similar to those of the ABCDs, aiming to control resources and supplies without necessarily depending on land tenure rights. In Brazil, CIL provides farmers access to fertilisers, seeds and agrochemicals sourced from Chinese producers in exchange for direct supply agreements. Infrastructure and financial assistance deepen its debt relationships with local farmers. COFCO Group has also become increasingly involved in trade speculation over the years and has become a leading player in China's derivatives market (Tares, 2023).

2.6.3. Wilmar International (Singapore)

Wilmar International (WIL), founded by the Kuok Group in 1991, has been listed on the Singapore Stock Exchange since 2006. Its ownership includes US commodity trader ADM with a 21.93% stake and a significant role of family members of the company's chairman, Kuok Khoon Hong. It reported 2022 revenues of US$ 73.4 billion and traded 92 Mt of food, feed, and industrial products. Around 70% of the company's geographic focus is China and Southeast Asia. Europe had a share of 4% (WIL, 2023).

The fully integrated Group's business activities include oil palm cultivation, oilseed crushing (palm oil and soy), edible oils refining, flour and rice milling, sugar milling and refining, manufacturing of consumer products, central kitchen products, speciality fats, oleochemicals, biodiesel and fertilisers. It has more than 100,000 employees, over 1,000 manufacturing plants and a wide distribution network covering China, India, Indonesia and around 50 other countries and regions (WIL, n.d.; 2023; 2023a). With its extensive oil palm operations on more than 200,000 ha planted area in Indonesia (65%), Malaysia (26%) and Africa (9%), it is one of the **top palm oil producers and traders** globally with full up- and downstream integration (WIL, n.d.-c).

Wilmar successfully listed operations in recent years: In 2020, Yihai Kerry Arawana, an integrated processor of grains and oilseeds, was listed on the Shenzhen Stock Exchange; in 2022, Adani Wilmar, its Indian joint venture and the largest Indian food and fast-moving consumer goods (FMCG) company, was listed on the National Stock Exchange of India (WIL, n.d.-b).

The company's long-term growth strategy focuses on establishing **new businesses that complement** its current vertically integrated model and **exploring high-growth potential markets** (WIL, 2023). As a comparatively new player on the international scene, Wilmar has rapidly expanded its operations through various acquisitions and investments, focusing on sugar and bolstering its presence in the Asia-Pacific market. These included, among others:

- 2017: Acquisition of a majority stake in Shree Ranuka Sugars, India's leading sugar manufacturer and growing fuel ethanol producer;
- 2019: Joint venture Kerry Arawana Holdings with Associated British Foods, producing and distributing bakery ingredients in China;
- 2019: Acquisition of remaining stake in Goodman Fielder (New Zealand), a leading producer and distributor of food products in Australia, New Zealand and Asia Pacific;
- 2020: Acquisition of Sime Darby's edible oils and fats business in Malaysia;
- 2023: Acquisition of Durrah Advanced Development's sugar refinery in Saudi Arabia (Pitchbook, 2023).

It also developed links with established traders and used joint ventures with other upcoming players to move into other emerging markets; however, not all continued for long. In 2016, Wilmar formed RAW, a sugar trading joint venture with Raízen, the world's largest sugar producer. RAW was the second-largest sugar trader in Brazil; however, reportedly, Wilmar did not want to cooperate with Raízen on shared investments and expansion in Brazil, leading to Raízen dissolving the unit in 2020

(Teizeira et al., 2020). Also, since 2016, Wilmar has had a 50% equity stake in Bunge's Vietnamese soybean crushing operations (Bunge, 2016).[36]

Since 2012, Wilmar and its shareholder ADM have Switzerland-based partnerships to improve efficiencies and capitalise on synergies in the global purchasing and distribution of fertiliser, European sales and marketing of vegetable oils, and utilising and managing their global ocean fleets (ADM, 2012). **Olenex**, their strategic partnership for sourcing, processing, and selling refined tropical and liquid oils in Europe, was established as a joint venture in 2016. It took over four refineries from its parent companies (Salter et al., 2022). Wilmar Europe Holdings (WEH, incorporated in the Netherlands) is a 62.5% shareholder. Due to its stake in Wilmar, ADM is the ultimate holding company with an indirect interest of 51.4% (Olenex Holdings, 2023). Olenex supplies various edible oils and fats to consumer goods companies from its processing plants in Germany and the Netherlands and a palm refinery in Germany. Moreover, Olenex markets refined oils and fats from ADM's facilities in the Czech Republic, Germany, The Netherlands, Poland, and the United Kingdom (Olenex, 2022). In 2022, Olenex shipped 2.3 Mt of refined oils, up from 2.1 Mt in 2021.[37] Customers are almost exclusively located in the EU and the UK. Revenues reached € 3.95 billion in 2022, a 47% year-on-year increase mostly attributable to price increases (Olenex Holdings, 2023).

WEH's subsidiaries are active in producing and trading palm and lauric oils, oleo products and biodiesel (WIL, n.d.-a). These operate, among other places, in Spain, Italy, and France. Moreover, WEH has an investment holding company, WONA, registered in Delaware (US) and joint ownership of Volac Wilmar Feed Ingredients (VWFI, UK), whose global operations focus on producing ruminant feed (WEH, 2023; VWFI, n.d.).

2.6.4. Olam Group (Singapore)

Founded in 1989, Olam Group has grown into one of the leading integrated agri-businesses globally. Origination and merchandising accounted for 67% of total revenues of US$ 27.5 billion in 2022. Fibre, agri-industrials and ag services accounted for 19%, while processing and value addition contributed 13%. With almost 50%, Asia, the Middle East and Australia form the geographic focus of Olam's operations (Olam Group, 2023).

In 2020, Olam Group announced a reorganisation into distinct operating groups, creating Olam Agri, Olam Food Ingredients (ofi), and the Remaining Businesses of Olam Group. The split is meant to optimise operations, take better advantage of market opportunities, and achieve long-term profitable growth (Olam Group, n.d.-a; ofi, 2023).[38] The subsidiary Olam Agri has **integrated operations** in grains and oilseeds, edible oils, rice, specialty grains, as well as commodity financial services (Olam Agri, n.d.-c).[39] It handled 38.2 Mt in 2022 and had a total planted area of around 110,445 ha that year, of which around 77% were annual crops.[40]

In 2022, a substantial minority stake of 35.43% in Olam Agri was acquired by SALIC (Saudi Arabia) for US$ 1.24 billion. At the same time, it was announced that a primary listing for Olam Agri on the mainboard of the Singapore Exchange and a demerging from Olam Group should follow the SALIC transaction. A concurrent listing on the Saudi Exchange would be explored depending on market

[36] Initially a three-party JV with Vietnamese feed company Quang Dung, it is now a 50/50 JV between Bunge and Wilmar.
[37] 1.3 Mt from ADM facilities and 0.9 Mt from own facilities.
[38] ofi focusses on the raw materials and ingredient platforms for cocoa, coffee, dairy, nuts, and spices. The plan is to list ofi on the London Stock Exchange, with a secondary listing in Singapore. At that point, ofi would demerge from Olam Group.
[39] Olam Agri also handles cotton, rubber and wood.
[40] Annual crops include mostly vegetables and rice and cotton.

conditions. This listing has yet to take place. A majority of 64.57% stayed in the hands of Olam Group, in which, in turn, Temasek holds a majority stake of 51.4% (Olam Group, 2023).

The **growth strategy** for Olam Agri has four pillars: maximising returns from recent strategic investments; expanding its geographic footprint into emerging high-growth markets, with a focus on growing its animal feed business and branded rice distribution; enhancing the contribution from processing and value-added businesses; and exploring expansion in adjacent industries, such as oilseed processing, expanded food and feed trading, higher third-party freight volumes, and an expanding portfolio of commodity financial services and risk management solution (Olam Group, 2023).

As part of its 2019-2024 strategic plan, Olam Group announced plans to invest US$3.5 billion to further develop businesses with high growth potential while freeing US$1.6 billion by divesting selected businesses and assets with low strategic priorities (Olam Int., 2019). During the last few years, Olam Group's investments were mostly linked to the business segments now organised under OFI. In grains and oilseeds, acquisitions included:

- 2021: Second Milling Company (Saudi Arabia), which is engaged in producing flour and derivatives for food and feed;
- 2019: Dangote Flour Mill (Nigeria), a producer and distributor of flour and related products;
- 2018: Ruyat Oil, a processor of crude vegetable oil in Nigeria (Pitchbook, 2023).

Further upstream integration is limited to plantations and forest concessions in countries with a comparative advantage for more economical or sustainable production (Olam Group, n.d.). Meanwhile, in recent years, the company has increasingly followed a sale-leaseback or revenue-sharing strategy, expanding in a less asset-intensive way where it does not have to own the land and still maintains the production economics of the asset (Olam Int., 2019).

Today, Olam Agri holds a principal role globally in rice trading and offers leading brands in key markets (Olam Agri, n.d.-d). The company also states to be an important shipper of maize and soybeans from Brazil. Moreover, it is said to be a key exporter of wheat from, among others, Germany and Argentina (Olam Agri, n.d.-a; IFC, 2022).[41] Customers in Africa, the Middle East, Europe and Asia are supplied with vegetable oils in an integrated supply chain from sourcing to bottling and distribution (Olam Agri, n.d.). In the EU, Olam Agri has a trading desk in Rotterdam (Netherlands), which markets oilseeds and derived products from Europe, North and South America and serves destinations in Asia, the Middle East and Africa (Olam Agri, n.d.-b). Its Swiss trading desk manages European and Black Sea origins traded globally (Olam Agri, n.d.-e).

2.6.5. Kernel (Ukraine)

Compared to the ABCDs and profiled emerging traders, Ukrainian agri-business Kernel is a more minor player by overall volume and geographic scope. However, it has built up a **significant role in some market segments**, notably sunflower oil. It began trading in 1995 and was listed on the Warsaw Stock Exchange in 2007. A delisting was requested in April 2023, with completion pending at the time of writing. The controlling shareholder, with 94.37%, is Namsen, a company controlled by Kernel's founder and chairman, Andrei Verevsky (Kernel, 2023a).

[41] In 2022, Olam Agri received a loan of US$ 200 million from the IFC to finance the purchase of wheat, maize, and soy from Canada, Germany, Latvia, Lithuania, and the US for delivery to the company's processing operations in developing countries that rely heavily on grain imports (e.g., Bangladesh, Cameroon, Chad, Egypt, Ghana, India, Indonesia).

In the financial year (FY) ending in June 2023, Kernel generated revenues of US$ 3.45 billion, a year-on-year drop of 35%. It remained the largest producer of grain and oilseeds in the country. However, its harvested leasehold acreage dropped from 499,000 ha in 2022 to 363,000 ha in 2023. Kernel continues to be the **world's largest producer and exporter of sunflower oil** (8% of global trade) and the leading grain exporter from Ukraine, ahead of the ABCDs and CIL, despite the heavy impact of the war on farming operations, input supplies and export logistics, and Russia capturing part of Ukraine's traditional export markets. The company exported a total of 6 Mt of maize, wheat, and sunflower in FY 2023 (Kernel, 2023). However, grain exports decreased significantly to 3.7 Mt from 8 Mt in 2021 and 2022. Europe was the largest export destination for sunflower oil (around 75%), where Kernel supplies bottled oils to leading retailers. Moreover, about 42% of grain exports were destined for European markets, second only to Asia (43%) (Kernel, 2022).

In recent years, Kernel has made several acquisitions related to agricultural technology (Ukrainian Agrarian Investments, 2017) and services (Agro Invest Ukraine, 2017). In 2019, it expanded its agricultural freight and export capacities by acquiring Rail Transit Cargo Ukraine, a railway operator throughout Ukraine, CIS, and the Baltic States. As some Black Sea terminals like Mykolaiv have become inaccessible since the beginning of the Russian war on Ukraine, Kernel acquired additional storage facilities on the western side of the Black Sea in 2023, in Chornomorsk and Port Yuzhnyi (Pitchbook, 2023).

Shortly before the outbreak of the full-scale war on Ukraine, Kernel had announced a new growth strategy until 2026, formulating a strategic goal to increase annual exports to 20 Mt with the help of strategic acquisitions and strong relations with local farmers (Kernel, n.d.). With few exceptions, notably a 1 Mt sunflower seed crushing plant, these plans have been put on hold in light of the ongoing war (Kernel, 2022).

3. REGULATORY STATE OF PLAY

KEY FINDINGS

- **Within the European Union, multiple legislative measures have been introduced and developed over the years to regulate the commodity and derivatives markets**. The European Parliament has advocated for integrated financial supervision to create greater transparency for trading activities and an increased level of equality for competition among businesses. Regulations such as the European Markets Infrastructure Regulation (EMIR), the Markets in Financial Instruments Directive and Regulation (MiFID II & MiFIR), and the Regulation and Directive on Market Abuse (MAR and CSMAD) delegate power to the European Commission to adopt regulatory and technical standards to curb excessive speculative activities. Regulatory frameworks combatting anti-competitive behaviour have also been adopted.
- In the **United States, significant regulatory changes aimed at re-regulating the financial industry were implemented following the 2008 financial crisis**. Key provisions included the registration and regulation of derivatives dealers, imposition of financial safeguards by clearinghouses for actively traded derivatives, and the establishment of oversight for data repositories to enhance transparency.
- A large loophole that can be exploited is that non-financial entities (commercial undertakings), such as agri-commodity producers, traders, or processors, are exempted from being regulated as financial entities if their non-hedging transactions in support of their business remain below a certain threshold. Based on the analysis, **there is a clear need** and potential benefits **for stricter regulation** and **increased transparency in the agri-commodity market due to its concentration and emerging risks.** Existing regulatory frameworks may not suffice, leading to potential market abuses and heightened food insecurity, especially in low-income nations.

The commodities sector is lightly supervised, much of it is opaque and regulation of key actors is close to non-existent.

Ashley Alder, chair of global securities watchdog IOSCO (Jones, 2022)

The large, integrated multinationals in the global agri-commodity trade play a crucial role in the availability of food and feed globally, and therefore have a strong impact on global food security. They pertain over critical information on market fundamentals, while also being **closely entwined** with the **core financial system** through physical and derivatives markets. The discussion whether the broad influence of these actors on global food markets requires more regulation and supervision is not new but regained heightened attention in light of rising food prices and extraordinary corporate profit gains since the COVID-19 pandemic and Russia's war on Ukraine (see section 1.1). Key issues in this context are **transparency and accountability**, whereas transparency is a basic necessity for accountability and good governance of markets as it lowers market uncertainty and is indispensable for policy

coordination (UNCTAD, 2020).[42] The call for more transparency and accountability refers to the physical agri-commodity trade and stockholding (sections 1.2 and 1.3) as well as to the activities of commodity traders in financial markets.

The financial crisis of 2008 had shown that excessive financial speculation and extreme price volatility can harm the integrity of the original price discovery and hedging purposes of the agricultural derivative markets (Vander Stichele, 2014). In the following years, calls for increased market transparency and regulation on the physical and financial commodity markets for agricultural and energy products led to the first EU regulatory initiatives.

On the international level, the G20 committed in 2011 to measures limiting excessive volatility and avoiding a repetition of the widespread economic repercussions from significant fluctuations and spikes in food and oil prices (G20, 2011). This aim led to the set-up of the AMIS market information system,[43] which hosts and publishes data and forecasts of market fundamentals and prices of key agri-commodities (AMIS, n.d.).

The following sections **summarise** the **development of regulatory oversight** by market and competition authorities since the 2008 financial crisis. The focus is on the EU and the US, as two markets with a large influence on global agri-commodity prices, which introduced regulatory reforms to tame commodity market speculation based on the lessons learned from the 2008 financial crisis. Moreover, other EU regulatory developments that are relevant to corporate transparency and accountability are highlighted for assessment and potential initiatives by the European Parliament.

3.1. Regulatory framework in the European Union

The business activities of agri-commodity traders are at varying levels subject to EU regulation and supervision, including the legislative initiatives falling under the EU Green Deal, the EU competition law, and the supervision of agri-commodity derivatives markets. This section provides an overview of legislation that does affect the agri-commodity trade or has the potential to improve its governance and deal with issues.

a. Agri-commodity trade and stockholding

- **Market Observatories of the EU Commission**

In May 2022, EC Regulation (EU) 2022/791 amended the reporting obligations of EU Member States, reacting to information gaps identified considering Russia's invasion of Ukraine in February 2022 and the resulting disruptions in the world market. It recognises the importance of up-to-date data on levels of stocks of crucial agri-commodities held by producers, wholesalers, and relevant operators to inform appropriate measures to prevent and mitigate market disruptions. Member States got time until July 2022 to develop the methodologies and operational systems to collect the required information, covering cereals, oilseeds, rice, and certified seed (EC, 2022a). The collected information feeds into an online dashboard to monitor the EU agricultural markets (EC, n.d.-d).[44] As Member States developed own methodologies and operational systems, there are concerns around the reliability and comprehensiveness of the data.

- **Common Agricultural Policy**

[42] Where transparency is defined as "*[…] a situation where the public has comprehensive and timely access to information and data that are necessary to hold policymakers, institutions and enterprises accountable for their actions […] including the stages of exploration, production, processing and trading.*"

[43] The AMIS Market Database is available at https://app.amis-outlook.org.

[44] Available at https://agridata.ec.europa.eu/extensions/Ukraine/Ukraine.html#.

The reviewed EU Common Agricultural Policy (CAP) 2023-27 entered into force in January 2023. The CAP covers economic, social, and environmental objectives linked to agriculture in EU Member States. With direct market interventions under the CAP being reduced over the years, the link with financial markets has become closer, as risk management by producers has increasingly become reliant on derivative markets (Barral, 2023).

The CAP is meant to provide the EC, among others, with the resources to manage EU agricultural markets in a global context and to "*[…] contribute to specific measures increasing the transparency of world markets, taking account of Union objectives and commitments*" (EC, 2021a). This monitoring of agricultural resources focuses on remote-sensing applications that allow crop yield forecasting and give early warning of crop shortages or failure that inform EU development aid support to food insecure countries (EU Science Hub, n.d.).

In recent months, farmers' protests hit the roads in many EU Member States, triggered, amongst other reasons, by decreasing sales prices and pressure from powerful retailers, rising costs, and costly environmental measures as part of the CAP reform (Hancock et al., 2024). Under pressure from the protests, the European Commission reversed some of these measures, rather than ensuring that farmers receive prices that would allow to cover spending on environmental measures.

- **EU Green Deal**

Several pieces of legislation forming part of the EU Green Deal also apply to agri-commodity traders. The European Parliament (EP) has co-decision-making power related to the ongoing development of technical standards for laws such as the **Corporate Sustainable Reporting Directive** (CSRD), the **EU Deforestation Regulation** (EUDR), and the **Corporate Sustainable Due Diligence Directive** (CSDDD).

The CSRD is an amendment to the existing Non-Financial Reporting Directive (NFRD), which came into force in 2017. The NFRD sets out rules on the disclosure of non-financial information, such as environmental, social, human rights, anti-bribery, corruption, and diversity matters, by large EU-based corporations. The CSRD, which entered into force in January 2023, aims to solve shortcomings in the NFRD. Amongst others, the CSRD reframes the reporting requirements in line with the Sustainable Finance Disclosure Regulation (SFDR) and extends the scope to a broader set of large companies and listed SMEs. Some non-EU companies with a net turnover of more than EUR 150 million also have to report (EC, n.d.-c). Initially intending to start implementing the reporting requirements in the FY 2024 (for reports published in 2025), the EP and the Council agreed in February 2024 to the EC proposal to postpone the implementation of sector-specific reporting standards through delegated acts from mid-2024 to mid-2026 to ease reporting burden on companies (EP&C, 2022).

Under the CSDDD, Member States must ensure that companies conduct human rights and environmental due diligence in global supply chains and to address adverse impacts. While the EP and the Council reached a provisional agreement in December 2023, a vote in the Council failed in February 2024. The original proposal was then considerably weakened to obtain agreement before the European elections in June 2024 (Euronews, 2024), and was approved by the EP in April 2024. The Council promised to give its final approval after this EP vote, after which it can become law (Council, 2024). Despite the reduced scope, it is an important step in promoting responsible corporate conduct and improve accountability.

The EU Deforestation Regulation (EUDR), which entered into force in June 2023 and needs to be implemented after 18 months, requires companies to confirm that their products have been produced on land not subject to deforestation or forest degradation after 31 December 2020. The law involves strict legal, environmental, and social due diligence requirements for key agri-commodities and

derived products and, therefore, also applies to agri-commodity traders supplying the EU market. Due diligence statements by operators and traders will be filed in an information system accessible to customs authorities, competent authorities, operators and traders (European Parliament & The Council (EP&C), 2023).

- **EU competition law**

The EU has implemented several legal instruments that aim **to prevent** or **correct anti-competitive behaviour**. EU Competition Law deals, inter alia, with mergers, unfair arrangements (cartels), or the abuse of a dominant position. The **EU Merger Regulation** (139/2004/EC) sets out the main rules for assessing concentrations, whereas the Implementing Regulation deals with procedural issues. The EU competition legislation includes a comprehensive ban on anti-competitive agreements, the prohibition of abuse of a dominant position, and the control of mergers with a strong supervisory role of the European Parliament (EC, n.d.-b).

Within the EP, the Economic and Monetary Affairs (ECON) Committee and the Internal Market and Consumer Protection (IMCO) Committee deal with matters concerning competition policy and consumer welfare. The primary function of the EP in this context is to monitor the execution of the Regulation. The Commissioner for Competition comes before the ECON committee several times yearly to discuss specific decisions and defend the applied strategy. In the approval process for competition policy legislation, the EP's role is fairly small compared to the EC or the Council, as it is often limited to the consultation procedure. The EP has called for more adequate involvement in shaping competition policy and the activity of working parties and expert groups. Specifically, it called on the Council to adopt a decision allowing for the adoption of legislative acts in competition policy in accordance with the ordinary legislative procedure (EP, 2023).

None of the competition cases related to the activities of the large commodity traders in the EU market have been negatively decided by the competent authorities in recent years. No decision on the Bunge-Viterra merger is publicly available yet.

b. Financial markets

Different pieces of EU legislation with relevance to commodity and derivative markets were introduced after the food price spikes and the 2008 financial crisis, and were further reviewed over the years.

The main instruments in the EU to regulate agri-commodity derivatives markets and their orderly price setting and risk management function are the **European Markets Infrastructure Regulation** (EMIR), the **Markets in Financial Instruments Directive** (MiFID II) and **Regulation** (MiFIR), and the **Regulation and Directive on Market Abuse** (MAR and CSMAD). Note that existing banking laws (Capital Requirements Directive (CRD) and Regulation (CRR)) cover loans to agribusinesses.

- **EMIR**

The European Market Infrastructure Regulation (EMIR) was adopted in 2012, aiming to fulfil the G20 commitments (September 2009) to increase **transparency in over-the-counter (OTC) derivative contracts** to avoid the problems derived from the functioning of the OTC derivatives market in 2007/08. It recognises the important economic role of derivatives but also their inherent risks. In this context, EMIR has three main objectives:

- to increase transparency in OTC derivative contracts;
- to mitigate the counterparty credit risk of derivatives contracts through an obligation of central clearing of standardised OTC derivatives contracts through central counterparties (CCPs); and

- to reduce operational risk by requiring market participants and CCPs to monitor and mitigate the operational risks associated with OTC trade in derivatives (EC, n.d.).

The goal of increasing transparency is met by requiring market parties to report their OTC commodity derivatives' trading to one of the trade repositories, which are registered and supervised by ESMA (ESMA, n.d.-a). For agricultural derivatives, data requirements include, inter alia, the contract type, asset class, delivery type, and commodity details (for COPs further broken down into feed wheat, milling wheat, soybeans, maize, rapeseed, rice, other) (EC, 2019a). The EMIR Refit, Regulation (EU) 2019/8341 amending EMIR, entered into force on 17 June 2019 (EP&C, 2019). Additional amendments to EMIR Refit come into force on 29 April 2024. Supervisors are expecting full compliance on improving the quality of reported data to and by trade repositories, which in the past were not sufficiently accurate, complete, consistent, and timely (Finandium, 2024). An exemption from the reporting obligation was introduced for intra-group transactions where one counterparty is a non-financial party.

EMIR also regulates the CCPs responsible for the clearing of derivatives contracts, which are usually linked to exchanges in the EU Member States and are also registered and supervised by ESMA (ESMA, 2022). EMIR Refit requires the CCP risk management, and initial margin setting, to be validated by supervisors. The clearing obligation threshold for non-financial counterparties are periodically reviewed by ESMA (EC, 2013). In November 2022, the EP agreed to an increase of the commodity clearing threshold to EUR 4 billion (EP, 2022).

The EC proposed on 7 December 2022 an EMIR review package (EC, 2022b; EC, 2022c), which was adopted on 24 April 2024 (EP, 2024b). The package includes measures to reduce ongoing risks to financial stability in the Union due to "*excessive concentration of clearing in some third-country CCPs*", especially the ones in the UK. The review also introduces some conditions on the exemption to report details of derivatives trades that are solely for the purpose of transferring risk between group entities.

- **MiFID II/MiFIR**

The Markets in Financial Instruments Directive II (MiFID II) and Regulation (MiFIR) were introduced in 2014 with the purpose of regulating investment services and financial markets activities. They are supplemented by dozens of technical standards drafted and executed by ESMA (ESMA, n.d.). The rules' implementation started in January 2018 (EC, 2016).[45]

MiFID II regulates and supervises, amongst others, agricultural commodity derivatives trading across various exchanges and trading venues, as well as the entities involved in providing commodity derivatives investment services and derivatives' trade data reporting services. The goal is to protect the orderly price setting and risk management functions of derivatives trading. MiFID II (Art. 57) defines hedging as "*reducing risks directly related to commercial activities*". It introduced position limits on commodity derivatives (futures, options, and economically equivalent OTCs (EEOTCs)) for non-hedging individual traders, with the aim of curbing excessive speculation in agricultural commodity derivatives markets and preventing the accumulation of market-distorting positions. Despite calls by several EP political groups, **financial products that bet on food prices were not banned**. Non-financial entities referred to as commercial undertakings, such as agri-commodity producers, traders, or processors, were exempted from being regulated as financial entities if their non-hedging transactions in support of their business remained below a certain threshold ("**ancillary business exemption**").

[45] Data collection by ESMA extends to around 300 trading venues on about 15 million financial instruments.

Controversies were linked to standard RTS 21 on speculative commodity trading issued by ESMA in 2017. It set the standard for position limits somewhat low for speculative trading in "*derivatives with underlying that qualifies as food for human consumption*". Still, national regulators who are responsible for imposing the position limits in the derivatives markets in their country are allowed to adjust the position limit between 2.5% and 35%, and up to 50% of the standard amount under exceptional circumstances (ESMA, 2021). Several EP political groups, as well as civil society, called to limit speculative traders to hold a maximum of 15% of an agricultural future's trading to save MiFID II's intent to curb food speculation (Finance Watch, 2016; Vander Stichele, 2017).

In February 2021, the so-called MiFID II "Quick Fix" (Directive 2021/3381) was published, with amendments on information requirements, product governance and position limits while keeping the remainder. The proclaimed goal was to simplify certain requirements and encourage investment by reducing compliance costs and bureaucratic obligations in the aftermath of the COVID-19 pandemic. In practice, it implemented changes long lobbied for by the financial and commodity industries. Agri-commodity derivatives and their EEOTC contracts remain under the position limit regime. Position limits are not applicable for derivatives held by or on behalf of financial entities that extend liquidity to non-financial counterparties in a predominantly commercial group.

In November 2021, the EC made new proposals to review particular articles in MiFID and MiFIR to improve data quality and integrity of trading on all financial markets, with a few technical changes in Art. 57 to improve transparency in derivatives trading. After the publication in the Official Journal on 8 March 2024, technical standards will follow (EP&C, 2024a; EP&C, 2024b). While there was no political majority to introduce changes in the position limits regime, the EC is required to report by 31 July 2024 regarding the criteria for establishing when an activity is to be considered ancillary to the main business at the group level. The EC also has to report by 31 July 2025 regarding regimes for the position limits and the position management controls, and the transparency and public formats to report transactions in markets for commodity derivatives or for derivatives of emission allowances. Both reports can be accompanied by proposals for legislative amendments.

- **MAR and CSMAD**

The **Market Abuse Regulation** (MAR) and the **Directive on Criminal Sanctions for Market Abuse** (CSMAD) entered into force in July 2014, with implementation including delegated and implementing acts and technical standards and guidelines two years later. MAR and CSMAD aim to establish a common regulatory framework in all EU markets on insider dealing, the unlawful disclosure of inside information and market manipulation, and consider the role of new technologies like algorithmic or high-frequency trading (HFT).

Concerning commodity derivatives or spot commodity contracts, Article 1(b) defines "inside information" held by non-financial traders as information that has not been made public, but if it were made public, "*[…] would be likely to have a significant effect on the prices of such derivatives or related spot commodity contracts, and where this is information which is reasonably expected to be disclosed or is required to be disclosed in accordance with legal or regulatory provisions at the Union or national level, market rules, contract, practice or custom, on the relevant commodity derivatives markets or spot markets*" (EP&C, 2024).

Under Article 12, market manipulation in agri-commodity derivatives and spot markets is constituted when a transaction, order or other behaviours give false or misleading signals as to the supply of, demand for, or price of, a derivative or related spot commodity contract, or results in an unfair trading position by securing an abnormal or artificial position in a spot commodity or derivative contract.

Therefore, these rules handle behaviour in spot agricultural commodity markets when it is likely to affect any agricultural commodity derivative market and vice versa (Vander Stichele, 2014). Moreover, abusive practices in algorithmic trading and HFT, as well as the manipulation of benchmarks, are prohibited.

3.2. Regulatory framework in the United States

Following the 2008 financial crisis, the **Dodd-Frank Wall Street Reform and Consumer Protection Act** was signed in 2010, which amended the Commodity Exchange Act (CEA) and re-regulated the US financial industry after years of liberalisation. Important reforms included the registration and regulation of derivatives dealers, clearing houses imposing financial safeguards for the most actively traded derivatives, an oversight framework for data repositories that facilitate real-time, public post-trade transparency for derivatives, a new mandate for speculative position limits on futures commodity contracts and related derivatives (options, swaps) (Better Markets, 2020).

The Dodd-Frank Act permitted the Commodity Futures Trading Commission (CFTC) to issue rules regarding transacting swaps in agri-commodities. It required the CFTC to establish **guidelines on speculative position limits** for contracts linked to agri-commodities (CFTC, 2011). Due to court challenges (FIA, 2012), these position limits have only been implemented by the CFTC in 2020 and applied since March 2021. In addition to trading at commodity exchanges, position limits are also applied to the OTC trading of economically equivalent swaps since January 2023 (Kornher et al., 2022; Ammons et al., 2023). Federal spot month position limits apply to all referenced contracts, where each spot month limit is set at or below 25% of the estimated deliverable supply. Federal non-spot month speculative position limit levels are set at 10% of open interest for the first 50,000 contracts, subsequently incrementally increasing by 2.5% of open interest (CFTC, n.d.).

Civil society organisation Better Markets criticised the position limit rules as being far too high, allowing excessive speculation except in the most egregious and unlawful cases, and having significant loopholes (Hall, 2021).

According to 2022 information, the role of passive investors in price spikes has reportedly been examined by US regulators but no outcomes could be identified (ReedSmith, 2023).[46] US CFTC Commissioner Christy Goldsmith Romero had proposed to the Commission to conduct deep-dive studies into some key commodities' trade that went through significant volatility or price increases, including wheat, in line with the CFTC's mission of controlling whether market fundamentals determine prices (Goldsmith Romero, 2022).

The US has a detailed **export sales reporting system** for agricultural commodities. Data on sales transactions obtained from US exporters of key cereals, oilseeds and derived products are published weekly. The same accounts for food aid donations. The data are compared and merged with other sources, including USDA's Federal Grain Inspection Service, the US Census Bureau, and trade reports. Export sales activities above a certain volume threshold require daily reports to USDA (USDA, n.d.).[47] Moreover, monthly reports provide overviews of global trade, production, consumption and stocks of wheat, rice, and coarse grains.

[46] No report on outcomes could be identified. See also other studies in this context mentioned in section 2.5 (financialisation).

[47] 100,000 tonnes of one commodity in one day to one destination, or 200,000 tonnes of one commodity to one destination during one week.

3.3. Regulatory framework in Switzerland

Switzerland is one of the largest trading hubs for commodities globally, including agricultural products. It is reportedly the global market leader in the trading of sugar, cotton, oilseed, coffee, and cereals (SFC, n.d.). While the ABCDs and other traders organise a considerable share of their global physical transactions from Swiss commodity desks, this **trade remains largely virtual** as the commodities never enter the country and, therefore, also do not appear in customs statistics. Consequently, no reliable data on the role of Switzerland in global physical commodity transactions are available. The non-profit organisation Public Eye estimated that just for grains, traders in the country transact at least 50% of the global trade. While the Swiss Financial Market Supervisory Authority (FINMA) that oversees the financial sector was established in 2007, no such legislative framework or oversight body exists for the physical commodity trading sector (Lang et al., 2023).

3.4. Fitness of existing measures

Calls for transparency by different institutions are related to agri-commodity trading and speculation but also apply to the broader level of the food supply chain. As put by Abdolreza Abbassian, Former FAO senior economist and involved in setting up AMIS, "*[y]ou need transparency at every level, from all commodities to final products and a more influential set-up to look at the market*" (Thomas, 2023).

To guarantee a proper risk management and price discovery functioning of derivatives markets and to safeguard global and regional food security, regulations should ensure that there is no room for excessive speculation. Due to their increasing market power on the physical commodity markets, their inside knowledge on demand and supply balances, and their hardly supervised subsidiaries or affiliates involved in derivatives and financial markets, the large agri-commodity traders can gain additional profits from (excessive) speculation. This may motivate these actors to intensify their already significant role (UNCTAD, 2023).

Market developments connected to the COVID-19 pandemic and Russia's war on Ukraine raise questions about the fitness of the existing measures to address extra-ordinarily high commodity prices. In April 2023, the International Monetary Fund (IMF) concluded that **significant regulatory and data gaps** existed in relation to the heavy engagement of commodity trading firms in commodity derivatives (IMF, 2023). The global securities supervisor, IOSCO, also confirmed the necessity for scrutiny of the close links between the commodities futures trading on derivatives exchanges and physical commodity delivery, especially during times of scarcity (Jones, 2022). Similarly, the United Nations Conference on Trade and Development (UNCTAD), in its 2023 Trade and Development Report, did not firmly establish excessive financial speculation in US derivatives markets as a driver of food price increases. Still, its analysis "*[…] suggests a strong link between corporate profiteering through the use of financial instruments and the current period of market volatility*" (UNCTAD, 2023). UNCTAD concluded that the regulatory measures implemented since 2010 were **too fragmented and unfit to tackle financial speculation and unearned profits effectively**. Only the EU reporting rules provide some public information about increasing non-hedging activities by unidentified commodity traders but too little about strategies of the dominating speculative participants (see section 2.5 on financialisation). Supervisors of physical commodity trading are often still missing or not cooperating with financial derivatives' supervisors or operating too much at the national level. Climate-related problems in agricultural production can easily lead to high prices and volatility, as is currently happening with cocoa prices.

Moreover, traders' activities are **deeply entwined with various broader sustainability issues** that are included in the Sustainable Development Goals (SDGs), ranging from sustainable agriculture practices

to the inclusion of smallholder farmers and women, transparency and price volatility, to reducing agriculture-related GHG emissions, among many more (Index Initiative, 2020). As highlighted by the European Economic and Social Committee (EESC), transparency is also required in relation to reporting on environmental, social and governance (ESG) performance and broader non-financial disclosure of companies involved in speculative activities (EESC, 2023).

4. POLICY RECOMMENDATIONS: POTENTIAL FOR MONITORING, A FOCUS ON ACCOUNTABILITY AND TRANSPARENCY

KEY FINDINGS

- **Transparency is a basic necessity for accountability and good governance of markets**, but insights into inventories and derivatives in public financial accounts of companies and financial players like hedge funds are very limited. The lack of transparency poses difficulties in distinguishing between hedging and speculative trading, as well as in tracking derivatives trading across internal platforms, exchanges, and OTC markets. This raises concerns about the supervision of large agricultural traders with numerous subsidiaries and the potential impact on financial stability due to limited visibility into derivative trading activities.
- **The complexity of defining and quantifying the underlying issues, risks and negative impacts of physical as well as financial agricultural commodity trading,** makes identifying feasible solutions and related additional regulation and effective supervision of agri-commodity trading a multifaceted challenge.
- **Against this background, recommendations include:**
  - Greater **transparency** of physical markets through the standardisation and strengthening of **reporting requirements** for the levels of key crop stocks to the EC dashboard system.
  - Improvements of the Markets in Financial Instruments Directive and Regulation (MiFID/MiFIR) through legislative proposals that address the **effectiveness of the current regulations on position limit rules**, improved **transparency on the trading strategies** employed by the financial and non-financial participants, ways to **prevent an overconcentration of speculative, non-hedging participants** in any single commodity derivative market, and ensure that regulators have comprehensive information about all derivatives market participants to fulfil their mandate and enhance governance in financial agricultural commodity markets, in coordination with monitoring physical trading.
  - A **reassessment of the current threshold for ancillary activities** and of the current Regulation on Market Abuse (MAR) and the Criminal Sanctions for Market Abuse Directive (CSMAD) to prevent insider information abuse. The European Securities and Market Authority **(ESMA) should have adequate data and resources to publish detailed reports on agricultural commodity trading derivatives**, both on and off exchanges, separately from energy derivatives. These reports should be at least annual and include individual analyses for each main agricultural commodity, along with an examination of traders' commitments and price benchmarks.
  - An in-depth **investigation of the status and impacts of market concentration** in agri-commodity trading, **discussions** of the concentration issue **at international level**, more **cooperation** among competition authorities, an expansion of the **ordinary legislative procedure to include the EP** in competition law reviews and development, and research into the **potential for a windfall tax** on excessive profits in the agri-food sector.

The high concentration in the agri-commodity market, in combination with novel types of risks and shocks that affect the global food system, means that a more **targeted** and systematic approach to **regulating the industry** may be required. As summarised in the previous section, a call for enhanced disclosure requirements and improved oversight of activities on physical and financial markets is shared by various international actors.

The market developments since the COVID-19 pandemic and Russia's war on Ukraine raise questions about the fitness of US and EU regulatory frameworks to address current challenges in regulating financial markets, including derivatives markets. They may not sufficiently acknowledge the risk that agri-commodity traders may abuse their strong market positions on the physical markets and their in-depth information on market fundamentals, including stocks, for potentially excessive speculation on derivatives markets.

It is crucial to consider that even a **small increase in food price inflation** can have **significant ramifications for poor consumers**, especially in low-income food-importing countries, where a considerable portion of people's income is allocated towards food expenses. Increasing import costs for food and inputs like fertilisers contribute to the debt crisis of many low- and middle-income countries.

Meanwhile, recent experiences have shown that **farmers are largely unable to capitalise** on rising food prices, as the expenses for inputs, mostly provided by a small group of major corporations and related to energy prices, are increasing even more rapidly than commodity prices (Clapp et al., 2023).

The complexity of defining and quantifying the underlying issues, risks and negative impacts of physical, as well as financial agricultural commodity trading, makes identifying feasible solutions and related additional regulation and effective supervision of agri-commodity trading a multifaceted challenge.

Considering the global scale of operations, a comprehensive approach to tackling these issues also requires broad global cooperation.

The EU does not exist in a vacuum and, as one of many actors, is dependent on coordinated international steps. However, EU regulation can contribute important measures to tackling these issues.

Moreover, EU regulation can inspire other jurisdictions, as has been observed in different fields (e.g., the EU GDPR legislation on data protection). Based on the findings of the research, some key recommendations can be drawn, focussing on improved transparency and accountability as crucial conditions for allowing more oversight of physical agri-commodity markets and improving the integrity of related derivatives markets to serve their original function.

4.1. Transparency of physical markets

As demonstrated in the analysis and confirmed by various institutions, there is a broad lack of transparency in the global commodity trading market. However, data accessibility and monitoring options are fundamental preconditions for meaningful supervision. **Greater transparency needs** are relevant for the **intertwined physical and financial markets**.

Comprehensive information on flows and stocks forms the basis for monitoring the status of food availability as well as sustainability issues in commodity supply chains.

Recommendations:

- Suggest amendments to EC Regulation (EU) 2022/791 on the notification of levels of stocks of cereals, oilseeds, and rice to standardise and strengthen reporting requirements to the EC dashboard system. Reporting approaches should be standardised across Member States. Private sector actors should be subject to mandatory, regular reporting of stocks according to standardised criteria. The requirements should cover all relevant supply chain actors (traders, warehousing companies, cooperatives etc.). The need for reporting thresholds should be investigated. Clear reporting guidelines should be formulated, for example in relation to the categorisation of stocks in transit. The obtained data should also flow into the AMIS system.
- Call on the EC to add reliability estimates to its online dashboard system to monitor the EU agricultural markets.
- Call on the EC to cooperate on the international level to improve the supervision of physical agri-commodity markets.

4.2. Disclosure of financial risks

The physical and financial derivatives trading and profits therefrom are being integrated into the annual financial accounts of the ABCDs. Listed companies, like ADM and Bunge, must provide some insights into the value of their inventories and derivatives traded in publicly available annual and quarterly financial accounts. Private companies, like Cargill and LDC, are not obliged to publish such data. Similarly, many financial players, such as hedge funds, that are important speculators in agricultural commodity derivatives markets and take speculative risks, also have no publicly disclosed accounts. However, experts warn that even in the financial accounts of listed agricultural companies, not all derivatives trading, risks, and profits are visible, which results in a further **lack of transparency and increases the risks for financial instability**.

Some of the derivatives trading by the large agri-commodity traders is done on internal trading platforms, in which contracts can be "netted" or, in practice, nullified against each other. The rest of the derivatives trading can be done on exchanges or OTC by the agricultural corporate affiliates that are not consolidated in the parent's financial accounts, incorporated in jurisdictions with lax regulation, or by joint ventures in which a trader only has a monitory stake and the affiliate's trading does not need to be reported.

Moreover, it is difficult to distinguish whether the trading in (commodity) derivatives accounted for in the financial reports is hedging or speculative, whether it is trading on exchanges (for which margins have to be paid to the clearing house) or OTC (for which not always margins have to be paid). For instance, Bunge states that it does not "*designate or account for the majority of {their} commodity contracts as hedges*" (Bunge, 2023). This means that Bunge does not need to do hedge accounting, which requires various tests and analysis about risks and proving that it is hedging and not speculation. All results from the derivatives trading are reported in the cost of goods sold account and, in the profit, and loss (P&L) account, which makes it difficult to know how much profit has been made from hedging and speculative derivatives trading. The consolidated accounts provide very little disaggregation for agricultural commodity derivatives. The question then is, who is supervising the accounts of the large agricultural traders, which have hundreds of subsidiaries?

Recommendations:

- The EP should call on the EU to foster agreements on the international level that:
    - Require all traders on exchanges, including non-hedging and financial players such as hedge funds in little-regulated jurisdictions, to disclose their financial risks, such as the amount of

capital invested in agricultural commodity derivatives, the amount of debt involved, and unrealised profits and losses.

  - Ensure that the clearing and margin payments cover all OTC agricultural commodity derivatives to avoid financial instability or crisis in times of extremely high or low prices and volatility.

- Introduce an obligation for the agri-commodity traders, being listed or not, to disclose how much of their derivatives trading is strictly hedging and how much is speculative trading in the review of the Markets in Financial Instruments Directive (MiFID II)/ Markets in Financial Instruments Regulation (MiFIR) reporting requirements. The format could be based on the EU legal reporting requirements, which distinguish reporting on hedging and non-hedging positions.

4.3. Ensuring integrity of derivatives markets and orderly pricing

Imbalances in positions between participants trading to hedge actual physical agricultural commodities and those speculating on higher or lower prices to make a profit, can cause disruptions in futures and off-exchanges derivatives markets. They can lead to excessive price volatility and peaks, increased uncertainty for those hedging, potentially resulting in disorderly markets and systemic risk. Implementing position limits and maximum price fluctuations can help mitigate excessive volatility and allow all market participants to understand price movements fully (IOSCO, 2023). Exemptions to position limits should be strictly limited to hedging of objectively established physical commodity trade.

Recommendations:

- Ensure that the European Securities and Markets Authority (ESMA), national supervisors, analytic and data-gathering institutions, and independent and academic experts contribute to the EC report[48] due by 31 July 2025 (according to the latest MiFID amendment) regarding the position limits regime and the position management controls, and the transparency and public formats to report transactions in markets for commodity derivatives or for derivatives of emission allowances. The evaluation should assess, and provide the necessary legislative proposals for improvement during the next review of MiFID and MiFIR, regarding:

  - How effective the position limit rules for individual participants are in reducing excessive price volatility and excessive speculation that disrupts orderly pricing and food accessibility, especially in times of crisis, e.g. due to negative climate impacts on agricultural production and trade;

  - How to avoid the excessive dominance of non-hedging speculative participants in one particular commodity derivative market;

  - How to improve transparency about the trading strategies used by the non-financial and financial participants, including whether the trading is impacted by the use of artificial intelligence, algorithms and high frequency trading.

[48] ESMA, along with national supervisors and various experts, is tasked with contributing to an EC report by July 2025 on the position limits regime and transparency in commodity derivatives markets. This evaluation aims to improve regulations on position limits, reduce excessive speculation, prevent dominance in specific markets, enhance transparency in trading strategies, and ensure comprehensive information for regulators. Additionally, the report due in July 2024 focuses on defining ancillary activities at group levels, reviewing trading impact, and considering changes to ancillary activity thresholds and abuse prevention measures. Lastly, ESMA is required to publish detailed reports on agricultural commodity derivatives separately from energy derivatives, including analysis of traders' commitments and price benchmarks.

  - Ensure that supervisors and regulators have by law comprehensive information about all the participants in derivatives markets to fulfil their mandate and improve the governance of the financial agricultural commodity markets. This should happen in coordination with monitoring of physical trading by appropriate supervisors to be established.

- Ensure that the EC report due by 31 July 2024 regarding the criteria for establishing when an activity is to be considered ancillary to the main business at the group level, is based on thorough investigations of commercial undertakings' non-hedging trading, trading by all its subsidiaries or non-consolidated entities, and its impact on pricing and profit making. Appropriate changes to the threshold of ancillary activities have to be considered, as well as whether MAR and CSMAD rules sufficiently prevented abuse of inside information. The full reporting on intra-group transactions should be reintroduced where derivative trade has the sole purpose of transferring risk between group entities.
- Ensure that ESMA has sufficient data and resources to publish annually, or more frequently, separately on agricultural commodity trading derivatives on and off exchanges (i.e. not combined with energy derivatives), and preferably on each of the main agricultural commodities underlying the derivatives contracts, accompanied by a thorough analysis of the commitment of traders' reports and price benchmarks.

4.4. Investigating and regulating market concentration

Market concentration among large commodity traders, characterised by oligopolistic structures, presents several challenges that can have detrimental effects on market dynamics and the global agriculture commodity market and structure. While influenced by a variety of factors, such concentration can lead to reduced competition, limiting choices for consumers and producers alike, resulting in higher prices, lower quality products, and decreased innovation as dominant players face less pressure to improve their offerings or lower costs.

To address these issues, regulatory interventions are crucial, including **antitrust measures to prevent excessive consolidation**, the promotion of **market transparency** and **competition**, and the **empowerment of smaller stakeholders** through supportive policies and incentives. Competition authorities typically prioritise addressing the exclusionary behaviours of dominant firms. However, they may also intervene in cases involving exploitative practices by dominant companies (Maverick Law, 2022). Furthermore, stimulating sustainable practices and fostering international cooperation can help mitigate the negative impacts of market concentration, ensuring fair and resilient commodity markets that benefit all participants.

Recommendations:

- Initiate an in-depth investigation of the status and impacts of market concentration. As concerns around the impacts of concentration are not limited to the trading sector, such an investigation should also look at other agri-food supply chain stages like the retailing sector, which is also marked by a high concentration level in many markets (albeit less concentrated across countries/regions).
- Call on the EU to initiate a discussion of the concentration issue at the international level and to explore possibilities for more cooperation among competition authorities. Relevant global discussion fora include, inter alia, the G20 (agricultural and financial ministerial meetings and the annual G20 Leaders' Summit), the International Competition Network, and FAO meetings.

- Repeat the call for an expansion of the ordinary legislative procedure to include the EP in competition law reviews and development.
- Initiate research into the potential for a windfall tax on excessive profits in the agri-food sector. Lessons could be drawn from experiences in Member States that have introduced a windfall profit tax in the energy sector. Furthermore, such an investigation should look at which fiscal measures the resulting revenues should support, considering the EU objective to achieve ambitious sustainability goals.

5. CONCLUSIONS

The study highlights the critical role of commodity traders in the global agricultural market, confirming their significance and influence extending beyond mere trading to comprehensive supply chain management and diversification into other sectors. While still subject to empirical debate, this concentration and the financialisation of commodity markets have led to concerns about the impacts on commodity price volatility and inflation. However, vital market data, crucial for monitoring physical food supplies and financial markets, is often limited or inconsistent, preventing a full evaluation of their roles.

The agri-commodity market landscape, historically dominated by the ABCD traders, has seen significant changes in recent years through the market entry of emerging actors, such as those diversifying from hard commodities into food sectors and state-owned entities serving food security and geopolitical interests. Driven both by corporate ambitions and market dynamics, the historical traders have integrated and diversified, increasing their market clout while complicating transparency issues.

Simultaneously, financialisation is becoming increasingly important, involving the expansion of financial players and strategies in commodity derivatives markets. Although numerous legislations were introduced after the 2008 financial crisis, significant gaps still exist in the supervision and regulation of physical and financial markets. Notably, interventions for greater transparency across physical markets and improved disclosure of financial risks in derivatives trading are recommended. Moreover, an evaluation of the effectiveness of position limits, a deeper analysis of the impacts of market concentration, and research into the potential of a windfall tax on excessive profits in the agri-food sector are suggested. The outcomes could serve to inform approaches to curbing concentration on the agri-commodity market, promoting competition, and ensuring more sustainable and equitable trading practices.

Furthermore, expanding market monitoring efforts could offer valuable insights into the complex nature of this agri-commodity trading landscape. To this end, strategies to boost transparency and accountability, such as standardised reporting requirements and increased cooperation among global competition authorities, could be of significant benefit.

Ultimately, diligent application of such strategies alongside a consistent push for adaptability in the face of crises like the COVID-19 pandemic and the Russia-Ukraine conflict and the unpredictable impacts of climate change will help enhance the sustainability of these markets.

This, in turn, will ensure the maintenance of stable food supplies for consumers and promote fair trade practices for the benefit of all stakeholders, primarily the smaller farmers, who form the backbone of this global agricultural industry.

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ANNEX 2 – ABCD BATTLECARDS

Based on publicly available information, the study featured the development of comprehensive company profiles in the form of 'battlecards' for the ABCDs, namely Archer Daniels Midland (ADM), Bunge, Cargill, and Louis Dreyfus Company (LDC). Data refers to the year 2023.

Archer Daniels Midland (ADM) - battlecard

Financial structure and governance:

- Shareholder and ownership structure:
  - Public.
  - Vanguard Group Inc.: 11.41%
  - State Farm Mutual Automobile Insurance Co.: 9.23%
  - Blackrock Inc.: 8.15%
  - Capital World Investors: 7.40%
  - State Street Corporation: 5.82%
  - Gam Holding AG: 0.03%
  - Advisors Asset Management Inc:
- Governance: Board of Directors, Board Committees

Nationality/Headquarter: American / Chicago, Illinois, US

Geographic spread (scope of operations): Asia, North America, North Latin America, South and West Latin America, Europe, the Middle East and Africa. Active in over 70 countries.

Staff (approx.): 42,000

Key financial data:

- Profitability (EBITDA): US$4.9 billion (2022)
- Sales (net): US$95 billion (turnover-operating revenue 2022)

Tax strategies:

- Tax planning strategies: ADM UK utilises tax reliefs and allowances in accordance with the guidelines set by HMRC and statutory regulations.
- Share buy-backs: US$650 million (as of June 2023)

Supply chain: Entire value chain

Bunge - battlecard

Financial structure and governance:

- Shareholder and ownership structure:
  - Public
  - 26.6% Capital World Investors and divisions
  - 11.9% Vanguard Group
  - 10.6% Capital Research Management
  - 8.5% Blackrock
- Governance: Board of Directors

Nationality/Headquarter: Swiss (incorporated) / Hamilton, Bermuda. US

Geographic spread (scope of operations): Main regions: Americas, Europe, Asia, smaller activities: Africa and Middle East

Staff (approx.): 23,000

Key financial data:

- Profitability (EBIT): US$3.33 billion (2023)
- Sales (net, core business segments): US$59.26 billion (2023)

Tax strategies:

- Tax planning strategies: Bunge anticipates the following projections for 2024: an adjusted annual effective tax rate ranging from 21% to 25%; net interest expense ranging between $300 and $330 million; capital expenditures ranging from $1.2 to $1.4 billion; and depreciation and amortisation of around $450 million.
- Dividends: 2.59%
- Share buy-backs: US$2 billion (2023)

Supply chain: Entire value chain

Cargill - battlecard

Financial structure and governance:

- Shareholder and ownership structure:
  - Private
  - > 85% descendants of the founding Cargill and MacMillan Families
- Governance: Board of Directors

Nationality/Headquarter: American / Wayzata, Minnesota, US

Geographic spread (scope of operations): Global (over 70 countries, serving 125 markets)

Staff (approx.): 160,000

Key Financial data:

- Profitability (EBITDA): not disclosed
- Sales: not disclosed
- Annual revenues: US$177 billion

Tax strategies:

- Dividends: N/A (family owned)
- Share buy-backs: N/A (family owned)

Supply chain: Entire value chain

Louis Dreyfus Company (LDC) - battlecard

Financial structure and governance:

- Shareholder and ownership structure: Private. Louis-Dreyfus Margarita (Chairperson & ultimate owner), 45% indirect equity stake held by Abu Dhabi sovereign wealth fund ADQ
- Governance: Supervisory Board, Supervisory Board Committees, Managing Board

Nationality/Headquarter: French / Rotterdam, Zuid-Holland, the Netherlands.

Geographic spread (scope of operations): Asia, North America, North Latin America, South and West Latin America, Europe, the Middle East and Africa. Active in over 100 countries.

Staff (approx.): 17,000

Key Financial data:

- Profitability: EBITDA: US$1,169 million (for the 6-month period ended in June 2023)
- Sales: Net Sales: US$25.8 billion (for the 6-month period ended in June 2023)

Tax strategies:

- Tax planning strategies: LDC's strategy follows four tax objectives:
  - Risk Management: the company aims to comply with all tax laws and statutory obligations, including paying the appropriate level of tax in all the jurisdictions in which it operates and the mitigation of tax when possible
  - Tax planning: LDC aim to engage in tax planning that is aligned with its commercial activity ad in accordance with the relevant tax legislation
  - Level of tax risk: to comply with legal requirements applicable to all its transactions and, via this, to minimise tax risk
  - Relationship with Tax Authorities: to maintain a strong and mutual respectful relationship with Tax Authorities based on openness, transparency and cooperation in relation to tax audit, providing accurate information on a timely basis
- Profits: Net Income, Group Share: US$568 million (for the 6-month period ended in June 2023)
- Dividends: N/A (family owned)
- Share buy-backs: N/A (family owned)

Supply chain: Entire value chain ("from farm to fork")

ANNEX 3 – VERTICAL INTEGRATION

Table 3: ABCD subsidiaries and investments linked to vertical integration (examples)

	ADM	Bunge	Cargill	Louis-Dreyfus
Agriculture	Wilmar (22.49%-stake) (SG)	BP Bunge Bioenergia (JV, BR)	Cargill Tropical Palm Holdings (ID)	LDC Brazil (BR)
Seeds		Grupo Sinagro Produtos Agropecuários (BR); Orígeo (JV, BR); Pantanal Agrícola (BR); Seedcorp HO (BR)	Precision Ag (CA)	
Animal & Pet Nutrition	Crosswind Industries (US); Golden Farm Prod & Comm (VN); Invivo Sanpo (CN); NutraDine (US); Nutrimix Feed Company (US); Pancosma North America Inc. (US); Pedigree Ovens (US), PetDine (US); PT Trouw Nutrition Indonesia (ID), Revela Foods (US); The Pound Bakery (US);		Agribrands International (US); Beckers Indústria de Nutrição Animal (BR); BlackGold (US); Delacon (AT); EWOS (NO); Provimi (NL)	
Biofuels	Elstar Oils (PL); Vantage Corn Processors (US); Collingwood Grain (US)	Bunge Chevron Ag Renewables (JV, US); Bunge Loders Croklaan (NL); Bunge/Olleco (JV, UK); Equinom (IL); Chacraservicios (AR)	Heartwell Renewables (JV, US)	LDC Claypool (US);
Human Nutrition	Amazon Flavors (BR); Eatem (US); Flavor Infusion International (PN); Kansas Protein Foods (US); New Culture (US); PlantPlus Foods	Australian Plant Proteins (AU); Heartland Harvest, Inc. (US); Protein Industries Canada (CA)	Aalst Chocolate (SG); Aleph Farms (VC, IL); Campollo (CL); Cubiq Foods (VC, ES); Grupo Turin (MX); Infinant Health (US); Leman Decorations Group (BE); Pollos Bucanero (CO);	Gingko Bioworks (VC, US); ILD Coffee Vietnam (JV, VN)

	(JV, US)[49]; Puris Proteins (US); Revela Foods (US); Rodelle (US); Sojaprotein (RS); WILD Flavors (Ziegler Group) (DE);		Sanderson Farms (US); Salmones Multiexport (CL); UPSIDE Foods (VC, US)	

Source: D&B Hoovers, 2024; Pitchbook, 2023.

Note: Main types of deals include mergers & acquisitions, joint ventures (JV), corporate asset purchases, non-control equity investments, and different stages of venture capital (VC) investments; examples focus on deals since 2015

[49] JV with Marfrig (BR).

ANNEX 4 – HORIZONTAL EXPANSION AND DIVERSIFICATION

Table 4: ABCD subsidiaries and investments linked to horizontal expansion and diversification (examples)

	ADM	Bunge	Cargill	Louis-Dreyfus
Commodity Processing & Logistics	Central States Enterprises (US); Green Bison Processing (US); Prairie Pulse (CA)	BZ Group (FR); CJ Selecta (BR); Imcopa (AP, BR); Viterra (NL)[50]	Granol (AP, BR); Dakota Plains Ag Center (US); LiangGaBa (CN); Owensboro Grain Company (US);	Emerald Grain (AU)
Chemicals[51]	Buckminster Química (BR); Comhan Trading Company (SA); Flotek (US); Geltor (VC, US)		AMSilk (VC, DE); Arkema's epoxides (US); Croda International (UK); Floratech (NL); Qore (JV, DE)	Arkema Epoxides (US); Commodities Uganda; LDC Wittenberg (DE); LDC Nebraska (US);
Transport & Logistics	American River Transportation Co., LLC (US); ARTCo Barge & Stevedoring (US); Blue Ocean Agencia Maritima (BR); North Star Shipping (UK); Nrg (US);	Fertimport (BR); Vector Transportes e Tecnologia (JV, BR)	Temco (JV, US)	Molenbergnatie (BE); Dairy Merchants (BE);
Raw Material Acquisition[52]		Bunge Mineral (AR);	Cargill Metals (SG)	
Digital solutions	Covantis (JV, CH); Grão Direto (VC, BR); SustainIT (JV, BR)	Covantis (JV, CH)	Covantis (JV, CH); ProfilePrint (VC, SG); SustainIT (JV, BR) ZeroNorth (VC, DK); Zoonivet (IN)	Covantis (JV, CH); SustainIT (JV, BR)
Finance & Insurance	Agrinational Insurance Company (US); D.C.A. Finance (NL); D & P Holding (US); GrainCorp (AU); Soy Investors (US);	Allied Trend Limited (VI), CCC International Holdings (VI); CCC Carbon Services (KY); Serrana Holdings (BM); Greenleaf (BM);		

Source: D&B Hoovers, 2024; Pitchbook, 2023.
Note: Main types of deals include mergers & acquisitions, joint ventures (JV), corporate asset purchases (AP), non-control equity investments, and different stages of venture capital (VC) investments.

[50] Awaiting antitrust approval of merger.
[51] Fertilisers, pharmaceuticals, additives, petrochemicals, etc.
[52] Metals and others.

ANNEX 5 – WTO ON FOOD STOCKHOLDING

Regarding WTO rules that hinder public food stockholding (PSH), IATP published a short explanation (Manduna & Murphy, 2024) that is partly quoted below. In short, PSH is easily considered as a subsidy that is limited under the WTO. Developing countries have been disputing it, but food exporting countries like the US have prevented more easy stockholding by developing countries.

As described by IATP: "*The WTO Agreement of Agriculture acknowledges food security in its preamble and in Article 20 of the Agreement, which is focused on "non-trade concerns." Public stockholding is also explicitly listed in paragraph 3 of Annex 2 of the agreement (the section often called the Green Box [of allowed subsidies). The text reads as follows:*

> *(3) Public stockholding for food security purposes*
>
> *Expenditures (or revenue foregone) in relation to the accumulation and holding of stocks of products which form an integral part of a food security programme identified in national legislation. This may include government aid to private storage of products as part of such a programme.*
>
> *The volume and accumulation of such stocks shall correspond to predetermined targets related solely to food security. The process of stock accumulation and disposal shall be financially transparent. Food purchases by the government shall be made at current market prices and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question.*

Crucially, the language of this exemption requires that stockholding purchases be made "at current market prices," which constrains the level of administered prices. Arguments over this constraint have generated several formal trade disputes in recent years. Moreover, the WTO practice is to count procurement of any share of the total production of a given crop at an administered price as a subsidy affecting all of it. The resulting subsidy estimate is much higher than the actual budgetary outlay [….] some of the objectives that a PSH program might include — notably, price stabilization — are not accepted. […] WTO Members arrived at a temporary "Peace Clause" in 2014, which exempts existing PSH programs from legal challenges at the WTO (if certain other conditions are met) until a "permanent solution" is achieved. The Members covered by this Peace Clause include Bangladesh, China, India, Indonesia, Pakistan, Philippines and Chinese Taipei. Negotiators have been looking for a permanent solution on PSH for food security purposes ever since."

At the WTO ministerial conference (MC13) in February 2024, the issue was discussed based on actual proposals (see IATP article and WTO information) but no agreement has been reached. The WTO wrote in its press release: *"[…] despite the intense negotiations during MC13, members were not able to find convergence. Divergences remained on public stockholding (PSH) for food security purposes and in respect of timelines, expected outcomes and the scope of the flexibility to be provided to food imports by the most vulnerable countries from export restrictions*" (WTO, 2024).

This study provides an overview of the impact of commodity traders on agricultural markets. It examines the ramifications of financialisation, explores prevailing trends, and confronts the challenges that characterise the industry's landscape. Moreover, after analysing the regulatory state of play at the international level, it provides suggestions towards bolstering the sector's accountability and transparency, essential for fostering trust and sustainability. By scrutinising these aspects, this study offers insights into the intricate dynamics of agricultural trading and its broader socioeconomic implications.

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