

“Food Sovereignty” and Global Food Value Chains
A comparative perspective on the competition review of mega-mergers in the agrochem sector

Ioannis Lianos

The recently notified mergers in the seed and agro-chem industry, as well as those contemplated in other related sectors raise difficult questions that competition authorities around the world. Because of the importance of their market size, the decision reached by US and EU competition authorities were important for the merging parties, but the perspective of a number of other competition authorities in emerging and developing economies’, in particular in the BRICS, the BRICS competition authorities in some cases assessing the merger transactions before the EU and the US competition authorities had the chance to finalize their assessment. Hence, their decisions played an increasingly important role for the transactions, in particular with the adoption of some global remedies that took care of some of the most controversial competition law concerns raised by these transactions.

The most recent merger wave started in July 2014 when Monsanto made a number of acquisition offers to Syngenta. These offers were rejected, but the Monsanto bid triggered a number of other M&A transactions that were announced in 2015 and 2016 between the various market leaders in the factors of production segment. In November 2015, Syngenta accepted the offer of ChemChina (which owns ADAMA, one of the largest agrochemical companies in the world). In December 2015, Dupont and Dow announced their merger. In September 2016, Bayer put forward a merger deal with Monsanto. During the same month, a deal was announced between two of the leaders in the market for Fertilisers, Potash Corp and Agrium. In November 2015, it was reported that Deere & Co. (the leader in agricultural machinery) has agreed to buy Monsanto’s precision farming business. This deal was opposed by the US Department of Justice as it would have led Deere to control a significant part of the already highly concentrated US high-speed precision planting systems market¹.

The global consolidation of the crop seeds & biotechnology, agricultural chemical, animal health and breeding industries, as well as agricultural machinery has been the focus of economic research, including, Hart (2000)², King (2001)³, MacDonald et al. (2004)⁴, Fernandez-Cornejo⁵, Fuglie et al. (2011)⁶, Moss (2013)⁷, the European Parliament (2014)⁸,

¹ See, <https://www.justice.gov/atr/case-document/file/905571/download> .

² N. E. Hart, The Age of Contract Agriculture: Consequences of concentration in Input Supply, (2000) 18(1) Journal of Agribusiness 115-127.

³ J. King, Concentration and Technology in Agricultural Input Industries, USDA, Agriculture Information Bulletin no. 763.

⁴ J. MacDonald et al., Contracts, Markets, and Prices: Organizing the Production and Use of Agricultural Commodities, (2004) Agricultural Economic Report No. 837, 9.

⁵ J. Fernandez-Cornejo, The Seed Industry in U.S. Agriculture, U.S. Dep’t of Agric., Econ. Res. Serv., Agric. Info. Bull. No. 786 (2004), 4.

⁶ K. Fuglie et al, Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide, USDA-ERS Economic Research Report No. 130 (2011).

⁷ D. L. Moss, Competition, Intellectual Property Rights, and Transgenic Seed, (2013) 58 South Dakota Law Review 543-559

Boston Consulting Group (2015)⁹, the ETC Group (2011¹⁰, 2015¹¹), the European Commission (2015)¹², US National Academy of Sciences (2015)¹³, Howard (2009¹⁴, 2016)¹⁵. High concentration in the food industry is not unusual. This phenomenon has been extensively studied over the last several years. Howard argues that the rapid consolidation of the seed industry led to global dominance by a few companies, with Monsanto, Syngenta and DuPont being the most powerful¹⁶. At the time the mergers were notified it was estimated that “the Big Six” (Monsanto, Syngenta, DuPont, BASF, Bayer, Dow) collectively controlled more than 75% of the global agrochemical market, 63% of the commercial seed market, and almost three quarters of R&D expenses in the seeds and pesticides sector (as the combined R&D budget of the Big Six was 15 times more than the USDA crop science research budget in 2013)¹⁷.

These mergers raised quite interesting questions as to the possible theories of harm analysed, the way the various competition authorities employed the relevant market tool for their assessment or price competition, and the extent to which they ignored it when examining other possible effects of the merger, the way markets were defined for different types of products, the role, if any, of public interest considerations, but also significant differences in the economic and legal context of each jurisdiction, the relevant product markets in some jurisdictions being less concentrated than in others, sometimes being linked to the fact that some markets are conventional seed markets, the commercialization of genetically modified or edited crops being limited by extensive regulation, while other jurisdictions are more GMO-friendly and one may observe a higher concentration of their market.

It has been alleged that the large agrochemical companies that have initiated this merger wave are seeking to develop an “integrated offering of equipment and services for farmers,” enabling them to “gradually build a compelling one-stop solution that will allow them to compete for the lion’s share of the market. It is increasingly clear that market players in this industry have made the choice of positioning themselves as fully integrated providers, or the orchestrators of a network, or partners of an established network¹⁸, which may lead to

⁸ I. Mammana, Concentration of Market Power in the EU Seed Market, (January 2014), Study commissioned by the Greens/EFA Group in the European Parliament.

⁹ Boston Consulting Group, Crop Farming 2030 – The Reinvention of the Sector (April 2015), available at <https://www.bcgperspectives.com/content/articles/process-industries-innovation-crop-farming-2030-reinvention-sector/>

¹⁰ ETC Group, Who will control the Green Economy? (November 2011), available at http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/pdf_file/ETC_wwctge_4web_Dec2011.pdf.

¹¹ ETC Group, Outsmarting Nature, November 2015;

¹² European Commission, Overview of the Agricultural Sectors in the EU Study (2015).

¹³ M. M. Nesheim, M. Oria and P. Tsai Yin (eds.), A Framework for Assessing Effects of the Food System, National Academy of Sciences (2015), p. 54

¹⁴ Ph. H. Howard, Visualizing consolidation in the global seed industry: 1996-2008, (2009) Sustainability 1(4):1266-1287.

¹⁵ Ph. Howard, *Concentration and Power in the Food System* (Bloomsbury, 2016).

¹⁶ Ph. H. Howard, Visualizing consolidation in the global seed industry: 1996-2008, (2009) Sustainability 1(4):1266-1287; Ph. H. Howard, Seed industry structure, (2014), available at <https://msu.edu/~howardp/seedindustry.html>.

¹⁷ ETC Group, Breaking Bad: Big Ag Mega-Mergers in Play, (December 2015), Communique 115, available at <http://www.etcgroup.org/content/breaking-bad-big-ag-mega-mergers-play>, p.4.

¹⁸ Id., p. 15.

the development of bottlenecks in the food supply chain affecting consumers and other market actors, such as farmers. This is particularly the case in the seed sector, where companies have been offering a package of genetic transformation technology and genomics, traits, seeds and chemicals¹⁹. It is possible to argue that this package of ‘complementary’ products and technologies may form a system competing with other systems (‘systems competition’).²⁰

Hence, a question that had to be tackled, when determining the relevant markets affected by the mergers is if research, breeding and development/marketing of the various kinds of seeds be considered as part of the same or of different relevant markets? The answer to this question was not clear at the time these mergers were first assessed. For instance in the EU, the question has been left open in the Commission’s decision in *Limagrain/KWS/Genective JV*²¹, while in *Syngenta/Monsanto’s sunflower seeds business*, the Commission considered that breeding and commercialisation are two separate markets²², and in *Syngenta CP/Advanta* the Commission included both stages of the seed industry in one single relevant product market²³. What about seed-herbicide packages, the seed/agrochem company selling cultivars with special tolerance to the parent agro-chem company’s herbicides? Would the Commission proceed to the same approach it employs in the context of tying cases, where the existence of independent suppliers in the manufacture and sale of the tied product may constitute serious evidence of the existence of a separate market for that product²⁴? Of course, market definition issues will also concern the question of GM seed markets being defined as a separate market than conventional seeds, the Commission noting in *Limagrain/KWS/Genective JV* that “it is difficult to predict how the breeding and commercialisation of conventional and GM [...] seeds will interact in the future”, substitutability depending “to a large degree on the future deregulation and overall regulatory environment for GM maize seeds in the EEA”²⁵.

One may also argue that the emergence of integrated technology/traits/seeds/chemicals platforms may place barriers to new entry, as companies wishing to enter the market(s) would need to offer an integrated solution to farmers. This may stifle disruptive innovation, if in the absence of the merger, firms were able to enter one or two segments of the market (e.g. research and breeding) without the need to offer an “integrated” platform product that would offer significant economies of scale, but would also require high fixed costs. Although traditional breeding methods required important resources and a considerable investment of time (because of long breeding cycles) and thus provided large economies of scale leading to the emergence of large market players, the latest genome-editing technologies, particularly CRISPR/Cas, may constitute more efficient and less resource intensive and time-consuming breeding methods, that offer opportunities for the emergence of more competitive and less

¹⁹ D. L. Moss, *Transgenic Seed Platforms: Competition Between a Rock and a Hard Place?*, AAI Submission, October 23, 2009, p. 2.

²⁰ M L Katz & C Shapiro, ‘Systems Competition and Network Effects’ [1994] 8(2) *Journal of Economic Perspectives* 93.

²¹ Case No COMP/M.6454 - LIMAGRAIN / KWS / GENECTIVE JV (2013), para. 23.

²² Case No COMP/M.5675-Syngenta/Monsanto’s Sunflower Seed Business, C(2010) 7929 final, paras 76-89.

²³ Case No COMP/M.3465 - SYNGENTA CP / ADVANTA (2004), para. 12.

²⁴ Case T-201/04, *Microsoft v. Commission*, [2007] ECR II-3601, paras 917 & 922.

²⁵ Case No COMP/M.6454 - LIMAGRAIN / KWS / GENECTIVE JV (2013), para. 30.

integrated market structures in the traits/seeds segment(s). Competition in this context may also occur between platforms and within platforms. Competition authorities should make efforts to promote inter-platform competition, but also intra-platform competition. But in this case, how to define the relevant market, or the space where competition takes place, in order to complete the analysis of the possible effects of an actual or potential restriction of competition?

The mergers also raised quite important questions as to the level of concentration one needs to take into account when assessing the effect of a series of mergers affecting the same industry. The issue came forward in particular in the EU case concerning Dow/Dupont and will certainly also come up with the ongoing Bayer/Monsanto transaction.

Market structure and concentration is, of course, just one step in the assessment of mergers and is followed by a more thorough analysis of the possible anticompetitive effects and efficiencies, if the level of concentration resulting from the merger raises concerns, in view of the specific thresholds in each jurisdiction triggering a more careful scrutiny. In the EU, the assessment as to whether a merger would give rise to a Significant Impediment of Effective Competition (SIEC) is based on a counterfactual analysis where the post-merger scenario is compared to a hypothetical scenario absent the merger in question. The latter is normally taken to be the same as the situation before the merger is consummated.²⁶ However, the Commission may take into account future changes to the market that can “reasonably be foreseen”.²⁷ The identification of the proper counterfactual can be complicated by the fact that there can be more than one merger occurring in parallel in the same relevant market. Under the mandatory notification regime, the Commission does not factor into the counterfactual analysis the merger notified after the one under assessment.²⁸ On the basis of the identified counterfactual, the Commission then proceeds with the definition of the relevant product and geographic market.²⁹ The Commission tackled the issue in the *Dow/Dupont* merger, as following the notification of the transaction, the Commission received notification of the acquisition of Syngenta by ChemChina and Bayer announced that it had reached agreement to acquire Monsanto. At the time of the review of the merger the Commission’s review of the acquisition of Syngenta by ChemChina was still ongoing. In a manner “consistent with its previous practice” the Commission assessed the transaction “according to a priority principle (‘first come, first served approach’) based on the date of notification³⁰. Citing its previous decisional practice on this issue³¹, the Commission noted:

²⁶ Horizontal Merger Guidelines [2004] OJ C31/6, para 9.

²⁷ *Ibid.*

²⁸ See, eg, *TUI/First Choice* Case COMP/M.4600 [2007], paras 66–68; *TomTom/Tele Atlas* Case COMP/M.4854 [2008], paras 187 and 188.

²⁹ EU Horizontal Merger Guidelines [2004] OJ C31/6, para 10.

³⁰ Commission Decision, Case *M.7932 – Dow/DuPont* (2017), para. 136.

³¹ Commission Decisions in Case M.6214 – Seagate/HDD Business of Samsung (2011); Case M.6203 – Western Digital/Viviti Technologies (2011); Case M.4942 – Nokia/Navteq (2008); Case M.4854 – TomTom/Tele Atlas (2008); Case M.4601 – KarstadtQuelle/My Travel (2007) and Case M.4600 – TUI/First Choice (2007). See also, Case T-342/99, *Airtours v. Commission*, EU:T:2002:146, para.82 (“the level of competition obtaining in the relevant market at the time when the transaction is notified is a decisive factor in establishing whether a collective dominant position has been created for the purposes of Regulation No 4064/89”), as well as Case T-2/93, *Air France v. Commission*, EU:T:1994:55, paras 70-72; Case C-347/00, *Verband der freien Rohrwerke and Others v. Commission*, EU:T:2003:188, para. 170.

“(137) It should be recalled that assessing the competitive effects of a proposed transaction under the Merger Regulation involves a comparison of the competitive conditions that would result from the notified merger with the conditions that would have prevailed in absence of the merger. The competitive conditions existing at the time of notification constitute, as a general rule, the relevant framework for evaluating the effects of a transaction.

However, in some circumstances the Commission may take into account future changes to the market that can reasonably be predicted.

(138) The Commission considers from these principles and the general scheme of the Merger Regulation that a party that is the first to notify a transaction should have it assessed on its own merits as to whether it would significantly impede effective competition in the internal market or in a substantial part thereof. This first to notify a transaction should therefore be entitled to have its operation decided first (for example, declared compatible with the internal market) within the applicable time limits of the Merger Regulation. It is therefore not necessary or appropriate to take into account future changes to the market conditions resulting from subsequently notified transactions that require approval from the Commission.

(139) Therefore, in the circumstances of this Decision, the Transaction, which was notified to the Commission first, should be assessed in the light of the competitive situation that prevailed at the time of its notification, disregarding the potential changes that may be brought by the proposed ChemChina/Syngenta and Bayer/Monsanto transactions”.³²

This issue has not been addressed in the decisions of the other competition authorities I have been able to identify and process. It raises interesting questions as to the way competition authorities around the world may be played out by global corporations engaged in a sector-wide re-structuration process, when arranging their notification of the merger and the order in which it will be assessed by the various competition authorities around the world.

I will structure the discussion in four Sections. The first Section will focus on the global transformations of the food industry with the emergence of global food value chains and the important concentration of the sector into the hands of few multinational corporations. The structure of the industry has therefore become mainly global, and this is certainly an important aspect in the review of the mega-mergers by national competition authorities, in view of the important challenges global concentration in this politically sensitive sector raises from a national public interest perspective. The first Section will therefore take a broader perspective than price theory in the conceptualization of competitive interactions between economic actors involved in food production and commercialisation. Competition authorities were faced with an important choice to be made as to the broader framework of analysis: the micro-economic perspective of price and innovation theory, usually the bread and butter of competition law, or the political economy/macro-perspective of “food regimes”³³. The “food

³² Commission Decision, Case *M.7932 – Dow/DuPont* (2017), paras 137-139.

³³ This term denotes a ‘rule-governed structure of production and consumption of food on a world scale: H. Friedmann, ‘The political economy of food: a global crisis’. (1993) 197 *New Left Review* 29. On “food regimes” see also, H. Friedman, *International regimes of food and agriculture since 1870*. In: T. Shanin, (ed.) *Peasants and peasant societies* (Oxford: Basil Blackwell, 1987), p. 258; H. Friedman, *From colonialism to*

regimes” approach may offer important insights in understanding the important structural changes of the governance of food systems the last decades, with the rise of the globalization of food production and consumption (the de-nationalisation of food systems and the emergence of an international food order which largely operates on the basis of transnational food value chains) and the increasing financialisation with the emergence of a “corporate food regime”³⁴ The hypothesis I will examine throughout the paper is if the quest for “food sovereignty” may be an important explanatory factor in the decisions reached by the competition authorities of the EU, US and the five BRICS jurisdictions that have reviewed these mergers. I explore if “food sovereignty”³⁵ concerns may have influenced the action of competition law enforcement authorities, in particular with regard to the global agrochem mergers and the design of the remedies imposed, or if one may trace the degree of differentiation between the various competition authorities in their review of these mega-mergers in the various economic and regulatory circumstances prevailing in the specific jurisdictions. My starting point is that as all markets, food markets cannot be analysed abstractly without realising that they are embedded in social relations³⁶, not only between consumers and producers or retailers, but also between other sociological categories of actors that are present in various fields of life, than the specific market where the economic exchange takes place. These could be the political or the cultural fields³⁷. One should not forget that farmers and their struggle for land re-distribution and economic independence has profoundly influenced the political and economic constitution of modern capitalist societies³⁸

green capitalism: social movements and the emergence of food regimes. In: F.H. Buttel & P. McMichael, (eds.) *New directions in the sociology of global development. Research in rural sociology and development* (Vol. 11, Oxford: Elsevier, 2005), p. 229; Ph. McMichael, 'A food regime genealogy', (2009) 36(1) *Journal of Peasant Studies* 139. For a critical review, see H. Bernstein, 'Agrarian political economy and modern world capitalism: The contributions of food regime analysis'. (2016) 43 *Journal of Peasant Studies* 3.

³⁴ Ph. McMichael, *Global Development and the Corporate Food regime*, in F.H. Buttel and P. McMichael (eds.) *New directions in the sociology of global development* (Oxford: Elsevier Press, Volume 11, 2005), 269.

³⁵ On “food sovereignty” see, *inter alia*, Ph. McMichael, 'Historicizing food sovereignty' (2014) 41 *The Journal of Peasant Studies*, 933; Ph. McMichael, 'Commentary: Food regime for thought', (2016) 43 *The Journal of Peasant Studies* 648; (noting that food sovereignty “is about reorganizing international political economy, modeling social struggle around democratic principles, gender equity, producer rights, ecological practices and rebalancing the urban/rural divide”).

³⁶ On the social embeddedness of markets and more generally economic activity, see M. Granovetter, *Economic Action and Social Structure: The problem of Embeddedness*, (1985) 91(3) *American Journal of Sociology* 481; M. Callon, *Introduction: The Embeddedness of Economic Markets in Economics*, in M. Callon (ed.), *The Laws of the Markets*, (Oxford: Blackwell, 1998), 1-57; B. Jessop, *The Social Embeddedness of the Economy and its Implications for Economic Governance*, in F. Adaman & P. Divine (eds.), *The Socially Embedded Economy*, (Black Rose Books, Montreal, 2001); . This approach questions the assumption of neoclassical price theory that the market forms a clearly delimited, socially disembodied sphere of economic relations, in which the various actors only pursue their material interest in order to satisfy their wants, exchange being entirely driven by the optimizing, economizing behaviour of pre-constituted rational individuals with pre-given and stable preference functions, their incentives and subsequent action being “managed” by the invisible hand of the price mechanism.

³⁷, See N. Fligstein, *The Architecture of Markets - An Economic Sociology of Twenty-First-Century Capitalist Societies* (Princeton University press, 2001), highlighting the importance of studying markets also as political and cultural fields, markets being social constructions that require extensive institutional support.

³⁸ K. Polanyi, *The Great Transformation: The political and economic origins of our time* (first published 1944, Beacon press, 2001). According to Polanyi, the disembodiedness of the market from other spheres of social activity has been achieved only because it has been followed by a counter movement, various social groups (or society) attempting to re-embed market forces in social institutions and thereby to regulate the market mechanism (the so called “double movement”). Social movements, such as those initiated by farmers have played an important role in this respect.

and to a large extent explains the emergence of antitrust law, the last decades of the 20th century³⁹.

The second Section will delve into a comparative perspective of the competition law analysis performed by the competition authorities of the BRICS countries, EU and the US on these mergers regarding the effects of the notified transactions on price (the so called product competition). As it will become clear, with regard to this more conventional competition law analysis, the authorities seem to take a similar approach, implementing well-known principles of market definition and competition assessment, or for the analysis of efficiencies, even if, of course, one may expect some limited differences, due, for instance, to the specificity of the product and geographic markets explored, the level of concentration in each jurisdiction and their overall perception on the contestability of these markets.

In contrast, the approach followed by the competition authorities in question with regard to the assessment of the effect on innovation (innovation competition) is quite different, as it will be shown in the third Section of this study. This is particularly interesting in view of the extraterritorial dimension of competition law enforcement with regard to mergers that concern markets of genetically modified food, which is prohibited in some jurisdictions, while authorised in others, and also because the specific mergers were between firms whose innovation capabilities and assets were, in most cases, outside the jurisdiction examining the merger. There are also important differences as to the analysis of innovation effects by the various competition authorities. Indeed, some authorities have engaged in depth with the possible effects on innovation and explored new approaches in dealing with these effects, some have flagged up the issue but preferred not to take a specific standpoint for this case, while others have preferred, for various reasons, to focus their analysis on the more conventional competition law issues of product competition, sometimes even ignoring possible effects on innovation. Among the first, there have been considerable differences in the way these “innovation effects” were conceptualized and the methods employed for their assessment. Interestingly, some competition authorities integrated these innovation concerns in the public interest criteria employed for the assessment of these mergers. The fact that the mega-mergers wave concerned the whole sector, gave some industrial policy flavour to the assessment of the mergers, in particular if the canvas chosen by the specific competition authority was the broader framework of public interest. Was self-restraint of the authority sufficient in this regard?

The fourth Section will focus on remedies. By the time of the presentation, most competition authorities would have reviewed all these mega-mergers and one may have a better perspective on the remedies sought. I will discuss the way “food sovereignty” concerns could have influenced the design of the remedial packages and the lessons one may draw from the point of view of the global governance of competition law.

³⁹ In the US, the so called “Granger movement” was established in 1867 by Oliver Hudson Kelley, with the aim to unite the farmers against the monopolistic practices of railroads and elevators and to institute for themselves cooperative methods of buying and selling: S.J. Buck, *The Granger Movement - A study of agricultural organization and its political, economic, and social manifestations 1870-1880* (Harvard Univ. Press, 1913); T.J. DiLorenzo, *The Origins of Antitrust: An Interest Group Perspective* (1985) 5 *International Review of Law and Economics* 73