

The Digital Development of the Petrochemical Industry and Competition Regulation

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Abstract

The petrochemical industry, which has always been regarded as a traditional industry, has gradually moved towards digitization with the evolution of production models driven by Information and Communications Technology. However, the application of artificial intelligence and big data in the petrochemical industry is still in its early stages, and the results have not yet become clear, so that there has so far not been any significant impact on firm operating efficiency and market competition. The petrochemical industry currently does not invest a huge amount in AI and big data applications, so that there are few concerns regarding anti-competitive behavior. Once the industry becomes familiar with the digital technology tools, such as the use of big data and algorithms for many petrochemical firms to exchange data or co-build data sets, the possibility of collusion could become a reality in the future. This should be noted by the competition authorities.

The Central Satellite Factory System has often been used by the petrochemical industry to improve its capability with regard to supply chain pricing or raising entry barriers and discouraging competition. If the petrochemical industry's Central Satellite Factory System has violated vertical restraints, the competition law should still be applied. In addition, if digital service providers serve multiple petrochemical companies that compete with each other at the same time, and intentionally lead those petrochemical companies to collude, they will still be liable for violating the Fair Trade Law. If the petrochemical industry engages in mergers and acquisitions or joint ventures with digital

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service companies, or establishes a joint venture with an upstream petrochemical company, an evaluation of the merger's effect on competition restrictions will be required. If the digitalization software for petrochemical companies is heavily dependent on a market-leading digital company, the merger of digital consulting companies should still be the focus of the competition law authority.

Therefore, this study recommends that, in the digital era, the competition authorities should pay attention to a company's advantages of gradually having big data by keeping the merger evaluation with the digital innovation concept in mind, cultivating digital economic evaluation talent or establishing digital economic departments for law enforcement. They should also moderately relax the exceptions field for collusion and continue to pay attention to the changes in the leading companies' market share in the petrochemical industry in order to adapt to the future digital changes in the economic and trade situation, and communicate with and remind petrochemical companies to avoid violating the Fair Trade Law during the digitalization process.

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