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ROUNDTABLE ON CARTELS INVOLVING INTERMEDIATE GOODS

-- Background Paper by the Secretariat --

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www.oecd.org/daf/competition/cartels-involving-intermediate-goods.htm*

Please contact Ms. Despina Pachnou if you have any questions regarding this document [phone number: +33 1 45 24 95 25 -- E-mail address: despina.pachnou@oecd.org].

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CARTELS IN INTERMEDIATE GOODS

Background Paper by the Secretariat

1. Introduction

1. The period following World War II has been marked by an ever-growing consensus over the harmful effects that cartels have on consumers, businesses and the economy at large. As a result, the number of countries where cartels are prohibited and their operation punished, has been rising steadily, reaching well over 120 by now.¹ And while the successful enforcement of anti-cartel laws is rife with challenges arising from cartels' secret nature that complicates their detection and prosecution, the list of countries with active cartel enforcement, which used to be dominated by just a few jurisdictions, has been steadily expanding, in particular since the turn of the century.

2. A quick glance at the results of this global enforcement effort reveals that cartels exist in a wide array of industries and markets, ranging from chemicals, electronics, agricultural products, transport services, telecommunications, financial services, various kinds of industrial goods and many others.² Some industries have been particularly rich with repeated cartel episodes, such as the chemical industry, while others appear less susceptible to cartelization. The reasons why some industries may be more prone to cartel formation than others are numerous and have been explored in depth in the academic literature.³

3. A closer look into the case statistics also reveals another insight, important for this paper, which would suggest that in general cartels tend to be more frequent with respect to final and consumer goods than intermediate goods.⁴ Looking even more closely, there are also meaningful distinctions between cartels in intermediate and final goods when it comes to their geographic scope or stability. Therefore, it

¹ See the website of the International Competition Network, <http://www.internationalcompetitionnetwork.org/members/member-directory.aspx>.

² See Private International Cartels (PIC) database by Prof. John M. Connor, Purdue University, Indiana, USA. This note uses data from the 2015 edition of the database, hereinafter 'Connor (2015)'; also Sakkers, E. and Ysewyn, J., *European Cartel Digest*, (loose-leaf, Wolters Kluwer, 2008), hereinafter 'Sakkers and Ysewyn (2008)'.

³ See, for example, Grossman, P.Z. *How cartels endure and how they fail: studies of industrial collusion*. Cheltenham, UK; Northampton, MA; 2004; Levenstein, Margaret C., and Valerie Y. Suslow (2006) "What Determines Cartel Success?" *Journal of Economic Literature*, 44(1): 43-95, hereinafter 'Levenstein and Suslow (2006)'.

⁴ Factors identified by economists as contributing to cartel formation would suggest otherwise as was expressed by Ludwig Erhard already in 1958: "*We know very well that not all branches of our economy are equally able or willing to form cartels. In basic industry and heavy industry, and where agreement is easily attained, a tendency towards forming cartels, a desire for cartels and an ability to form cartels must be assumed to an appreciable extent. But the nearer we come to the sphere of manufactured goods, the nearer we move to processed goods, the stronger changes in pattern appear, and the more difficult will any agreement be, and so cartel agreements become ineffective and useless*". See Von Erhard, L. *Prosperity through competition*, Ludwig von Mises Institute (1958).

appears useful to explore these issues and to discuss, if any, the bearing they may have on the prevention and detection of cartels in intermediate goods.

4. Cartels involving intermediate goods are specific when it comes to their prosecution due to an ever-increasing globalization of production and the growing complexity of production and distribution chains. The OECD's project on global value chains ("GVCs") documents the current economic reality, where due to a range of factors a variety of final products incorporate inputs from a number of countries and involve the work of numerous intermediaries.⁵ Most complex products, and, in particular, high-tech products, are made up of various parts or components, many of which will also frequently originate from countries other than that in which the final product is being assembled. The complex nature of supply chains has been well illustrated with respect to various products, such as computers, the iPod, Boeing, Smartphones and others.⁶ GVCs are also increasingly prevalent in the agri-food business, as is illustrated in Figure 1 by the GVC of "Nutella®"⁷, which is a famous hazelnut and cocoa spread sold around the world.⁸

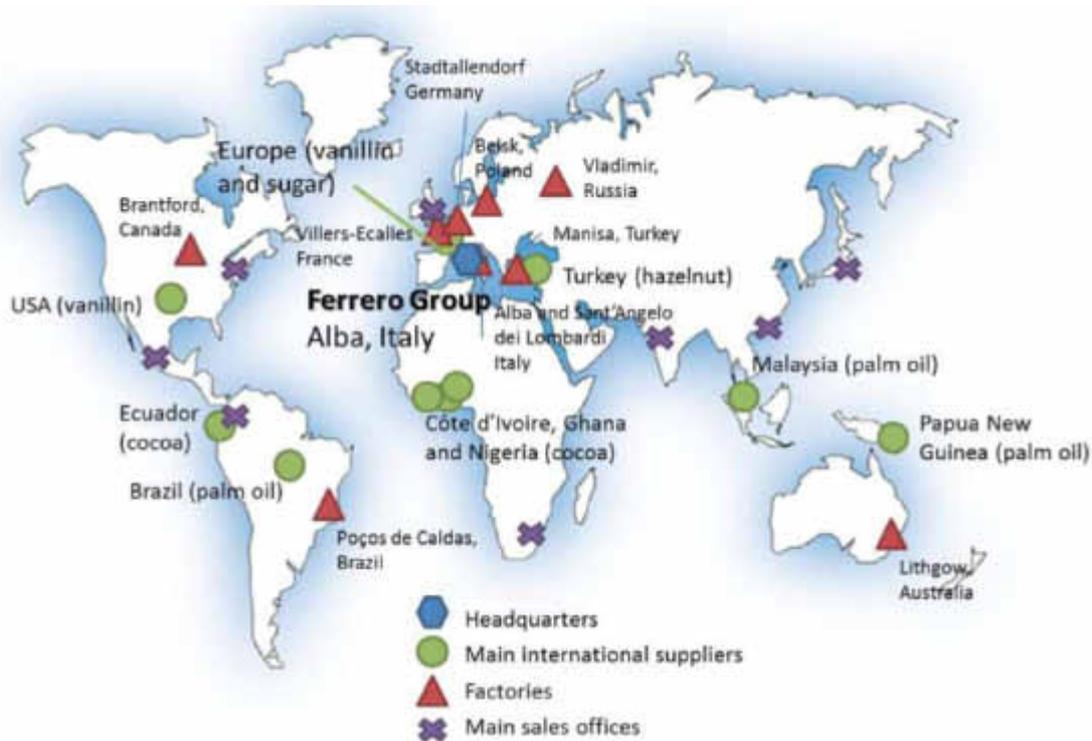
⁵ See OECD (2013), *Interconnected Economies: Benefiting from Global Value Chains*, OECD Publishing, DOI: <http://dx.doi.org/10.1787/9789264189560-en>, which examines how global value chains have evolved and the policy challenges they have created as well as other publications related to global value chains available on the OECD's website, <http://www.oecd.org/sti/ind/global-value-chains.htm>.

⁶ See e.g. Dedrick, J. and Kraemer, K.L. (2002) "Globalization of the personal computer industry: trends and implications." Center for Research on Information Technology and Organizations, University of California, Irvine; Dedrick, J., Kraemer, K.L. and Linden, G. (2008). "Who Profits from Innovation in Global Value Chains? A Study of the iPod and notebook PCs." Paper presented at the Sloan Industry Studies Annual Conference, Boston, MA; Grossman, G.M. and Rossi-Hansberg, E. (2012) "Task Trade between Similar Countries." *Econometrica*, Vol. 80, No. 2 (March, 2012), 593–629; Ali-Yrkkö, J, Foster, N., Hanzl-Weiss, H., Rouvinen, P., Seppälä, T., Stehrer, R., Stöllinger, R., and Ylä-Anttila, P. (2011) "Trade in intermediate products and EU manufacturing supply chains. The Vienna Institute for International Economic Studies, Vienna, The Vienna Institute for International Economic Studies Research Reports (369).

⁷ Nutella is a registered trademark used for Spread Containing Cocoa and Other Ingredients and owned by Ferrero S.p.A. (Piazzale Pietro Ferrero).

⁸ The food processing company Ferrero International SA is headquartered in Luxembourg and currently has ten factories producing Nutella: five are located in the European Union, one in Russia, one in Turkey, one in North America, one in South America and one in Australia. Some inputs are mainly locally supplied, for example the packaging or some of the ingredients like skimmed milk. There are however ingredients that are globally supplied: hazelnuts come mainly from Turkey, palm oil from Malaysia, Papua New Guinea and Brazil, cocoa mainly from Ivory Coast, Ghana, Nigeria and Ecuador, sugar mainly from Europe and the vanilla flavour from the United States and Europe. Nutella is then sold around the world through sales offices. See De Backer, K. and S. Miroudot (2013), "Mapping Global Value Chains", *OECD Trade Policy Papers*, No. 159, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5k3v1trgnbr4-en>, p. 16, hereinafter 'De Backer and Miroudot (2013)'.

Figure 1. Nutella GVC



Source: Nutella and De Backer and Mirodout (2013)

5. This global and complex nature of production presents a particular set of challenges when it comes to the prosecution of cartels relating to intermediate products. This paper looks at the important questions of jurisdiction, investigation, fines calculation, parallel procedures before competition agencies of multiple jurisdictions and others, which all arise in relation to cartels in intermediate goods. The purpose of this paper is first to discuss the specific nature of cartels in intermediate goods and to examine the bearing this may have on their functioning and detection. The second part of the paper explores the particular challenges that cartels in intermediate goods pose with respect to their prosecution by competition agencies. The paper also discusses recent example of intermediate goods' cartels from selected jurisdictions.

6. In short, by examining cartel statistics from several jurisdictions, the paper finds that overall, final goods appear slightly more prone to cartelization than intermediate goods due to factors such as higher market transparency and others. The same statistics reveal that cartels in intermediate goods are generally more stable, have a wider geographic scope and tend to be possibly more difficult to detect *ex officio* than cartels relating to final goods.

7. When it comes to their investigation and prosecution, intermediate goods cartels pose specific challenges with respect to the jurisdictional reach of countries' competition laws, in that some form of effects-based jurisdiction is necessary to effectively fight them due to their international scope and the nature of the products involved. The paper finds that most countries, once they have jurisdiction over the relevant conduct, are able to effectively deal with calculating fines for cartels in intermediate goods, largely irrespective of the basis on which their fines policy is based.

8. Finally, parallel investigations of intermediate goods cartels in different jurisdictions may theoretically result in the same sales being taken into account more than once for fine calculation purposes (by more than one competition agency). However, so far there have been few situations of such genuine double counting and, while not required to do so, countries are generally able to deal with this risk and take fines imposed in other jurisdictions into account. An effective co-operation between the relevant agencies is particularly important in this respect.

2. Intermediate goods

2.1 *Intermediate goods versus final goods*

9. The concept of intermediate goods traditionally encompasses all goods that are used as an input in the production of manufactured goods for final consumers. They are defined as goods that can be '*...parts and components or any other item used as an input in the production of manufactured goods for final consumers*'.⁹ They include all manufactured or processed goods that are used in the intermediate steps of the production of a final product. Raw materials, insofar as they are further processed, transformed and incorporated into other goods are also considered intermediate goods.

10. Some goods can be classified as either intermediate or final depending on their use. For example, sugar can be a final good when sold to final customers or an intermediate good when used as an input in the production of sweets and confectionery. The definition of an intermediate good is therefore to a large extent functional.

11. In this context, it has to be stressed that national account systems operate with three types of goods (i) intermediate goods, (ii) capital goods, and (iii) households' consumption goods.¹⁰ Intermediate goods being goods that are used as an input in the production of a final product, capital goods being durable goods used by businesses in the process of production (such as property, machinery, etc.) and households' consumption goods being goods that are purchased for consumption. The difference between intermediate and capital goods in this context is drawn principally for the purpose of calculating GDP, whereby intermediate goods are deducted from a country's GDP while capital goods are not.¹¹ However, for the purpose of this paper, which is concerned with cartels at intermediate levels of production, goods are classified as either intermediate or final with the latter covering both capital and household consumption goods.

⁹ UNIDO, Mapping Global Value Chains, Intermediate Goods Trade and Structural Change in the World Economy, Working Paper 5/2010, page 5, Footnote 1.

¹⁰ See Zhu, S., N. Yamano and A. Cimper (2011), "Compilation of Bilateral Trade Database by Industry and End-Use Category", *OECD Science, Technology and Industry Working Papers*, No. 2011/06, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5k9h6vx2z07f-en>.

¹¹ OECD (2003), *Inflation Accounting: A Manual on National Accounting Under Conditions of High Inflation*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264299511-en>, p. 94.

2.2 Value chains¹²

12. A discussion of intermediate goods necessarily involves a discussion of value chains because the very nature of intermediate goods means that they are items that are used at different stages of the value chain. The term value chain is somewhat broader than the traditional term production chains and it can be defined as the full range of activities that firms and workers do to bring a product from its conception to its end use and beyond.¹³

13. Typically, a value chain includes the following activities: design, production, marketing, distribution and support to the final customer. These activities cover both goods and services and can be performed either by a single firm or be divided between a number of economic operators. In terms of geographic scope, value chains can either be local, regional or global, spanning over several countries.¹⁴

14. Value chains have received attention primarily in relation to international trade insofar as in today's increasingly globalized economy they often tend to be cross-border in nature and frequently span across different regions of the globe. The production of many goods not only takes place in different parts of the world than their consumption, but also is the culmination of a process where products and services from across many countries find their way into the final product. This is the result of a host of developments, starting with the lowering of tariffs and other trade barriers, improvements in transportation and logistics and culminating with advances in communications technology that allows for efficient coordination of production across the world.

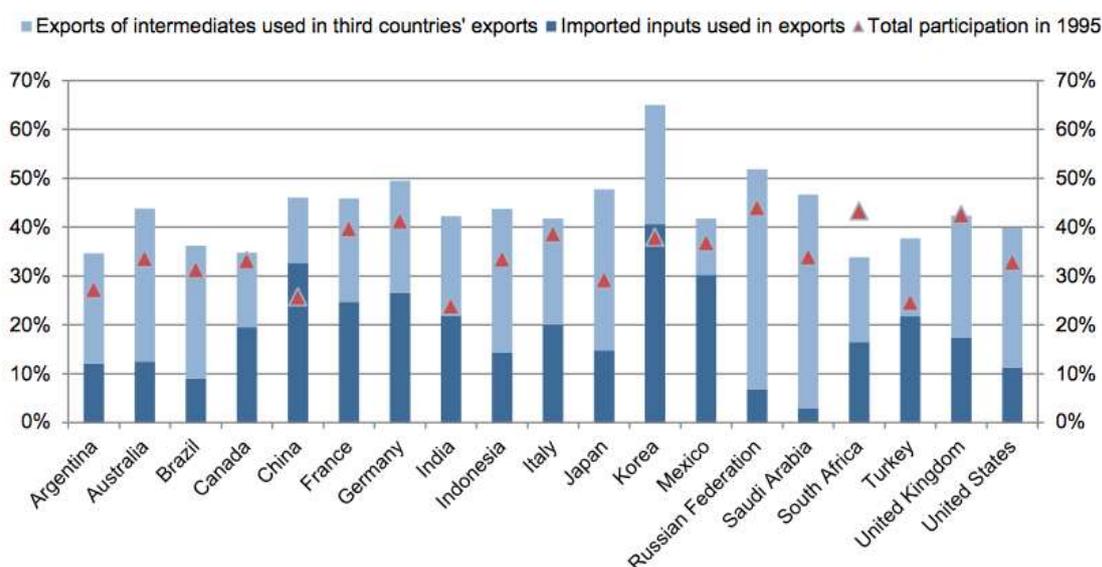
15. As a consequence, on average, more than half of exports are made up of products traded in the context of GVCs.¹⁵ Countries increasingly rely on foreign input for the exports of their own companies, which may be further processed in other countries. The chart in Figure 1 below (participation index) captures these two dimensions. Between 30% and 60% of G20 countries' exports consists of intermediate goods traded within GVCs and comparing the figures of 1995 and 2009, there has been an increase in almost all countries. The study of GVCs is therefore particularly important in the context of international trade where it can provide policy makers with crucial insights.

¹² The OECD provides a broad range of work to help policy makers understand the effects of global value chains on trade policy, production transformation, development and others. In this context it has published a number of materials and studies, which are available at <http://www.oecd.org/sti/ind/global-value-chains.htm>.

¹³ See Gereffi, G. and Fernandez-Stark, K. (2011), "Global value chain analysis: a primer." Durham, NC: Center on Globalization, Governance & Competitiveness (CGGC), Duke University. Available at http://www.cggc.duke.edu/pdfs/2011-05-31_GVC_analysis_a_primer.pdf.

¹⁴ See OECD (2013), *Interconnected Economies: Benefiting from Global Value Chains*, OECD Publishing, DOI: <http://dx.doi.org/10.1787/9789264189560-en>.

¹⁵ See De Backer and Mirodout (2013).

Figure 2. GVC participation, 1995 and 2009¹⁶.

Source: OECD, WTO, UNCTAD, Implications of global value chains for trade, investment, development and jobs, OECD, WTO, UNCTAD, 6 August 2013, Prepared for the G-20 Leaders Summit Saint Petersburg (Russian Federation) September 2013.

16. GVCs and value chains in general present significant issues also in relation to competition policy and enforcement. The OECD, WTO and UNCTAD have cautioned against the risk that prospects for development and competitiveness offered by GVCs may be hampered by anti-competitive practices and highlighted the role that competition law and policy can play by removing barriers to key sectors in GVCs.¹⁷ And although the proliferation of GVCs does not give rise to entirely new concerns for competition policy, it puts a new emphasis on trade in intermediate goods and the barriers to trade that can emerge in this respect through both horizontal and vertical restraints.¹⁸

17. In practice, recent experience of a number of competition agencies dealing with cartel cases relating to intermediate goods has highlighted the issue of competition constraints within GVCs and underscored the challenges that competition enforcement faces in this respect. In view of the fact that GVCs appear to be most prevalent and complex in the automotive and electronics industries¹⁹ it is perhaps not surprising that the cases that have put this issue in the competition spotlight are all from these industries.²⁰

¹⁶ The index is calculated as a percentage of gross exports and has two components: the import content of exports and the exports of intermediate inputs (goods and services) used in third countries' exports.

¹⁷ Implications of global value chains for trade, investment, development and jobs, OECD, WTO, UNCTAD, 6 August 2013, Prepared for the G-20 Leaders Summit Saint Petersburg (Russian Federation) September 2013, p. 18f and Global value chains: Challenges, opportunities, and implications for policy, OECD, WTO and World Bank Group, Report prepared for submission to the G20 Trade Ministers Meeting Sydney, Australia, 19 July 2014, p. 25f.

¹⁸ See OECD (2013), *Interconnected Economies: Benefiting from Global Value Chains*, OECD Publishing, DOI: <http://dx.doi.org/10.1787/9789264189560-en>, p. 110.

¹⁹ De Backer and Miroudot (2013), p. 20.

²⁰ In the car parts industry there are a numerous investigations into price-fixing and bid-rigging before a number of jurisdictions around the world. The U.S. Department of Justice ("DOJ") has described them as

18. Due to the intermediate nature of the cartelized goods and the global character of the relevant value chains, which may lead to the triggering of potentially simultaneous competition enforcement actions in several jurisdictions around the world, competition authorities dealing with these cartel cases have to contend with questions concerning jurisdiction, calculation of fines, double jeopardy arguments and others. Tackling some of these issues oftentimes requires coordination between the respective competition authorities, putting added emphasis on international co-operation in competition matters. And although some commentators have suggested that globalization may have reached its peak and that companies are moving back production closer to their home markets, thus reducing the complexity of their production chains,²¹ competition enforcement challenges posed by GVCs are likely to remain relevant, in particular in certain sectors, such as electronics and car parts.

3. Cartels in intermediate goods

19. The term 'cartel' is understood as defined in OECD's 1998 Recommendation on Hard Core Cartels: '...an anticompetitive agreement, anticompetitive concerted practice, or anticompetitive arrangement by competitors to fix prices, make rigged bids (collusive tenders), establish output restrictions or quotas, or share or divide markets by allocating customers, suppliers, territories, or lines of commerce'.²² Competition regimes around the world, including those of all OECD Members, generally prohibit these types of practices – be they referred to as hard-core cartels or simply cartels – as per se offenses.

20. Cartels relating to intermediate goods are no novelty to competition agencies. In most jurisdictions with an active anti-cartel enforcement competition agencies have contended with cartels relating to cement, which is a typical intermediate product. Most cartels in the chemical industry have also concerned products, which are intermediate in nature, and the same has generally been the case with respect to most cartels in steel and glass industries. However, cartels in intermediate goods can be found in various sectors as is clear from the various cases dealt with by numerous jurisdictions around the world.²³

the largest criminal investigation that it has ever undertaken and to date there have been 37 companies and 55 executives charged in the DOJ's ongoing investigation who have agreed to pay a total of more than \$2.6 billion in criminal fines (*see* Press Release, U.S. Dep't of Justice, KYB Agrees to Plead Guilty and Pay \$62 Million Criminal Fine for Fixing Price of Shock Absorbers (Sept. 16, 2012), *available at* <http://www.justice.gov/opa/pr/kyb-agrees-plead-guilty-and-pay-62-million-criminal-fine-fixing-price-shock-absorbers>). These investigations have related to various car parts, including anti-vibration rubber parts, standard oxygen sensors, spark plugs and air fuel ration sensors, automotive hoses, airbags and steering wheels, and others. Other jurisdictions around the world that have completed investigations in the car parts sector include the European Union (wire harnesses, foam, bearings, parking heaters), Canada (switches and sensors, wheel hub unit, bearings, wire harnesses and electrical boxes), China (motor starters, alternators, throttle bodies and wire harnesses), Japan (wire harnesses, relay block, fuse block and junction block), Korea (windshield wipers and instrument panel clusters, bearings), the Singapore (ball and roller bearings). The most notable cases in the electronics sector concerned the global LCD screens cartel that has been dealt with in the U.S., EU, China, Korea and Japan as well as the CRT cartel that has been dealt with by the EU, Japan, Korea, Hungary and the U.S.

²¹ *See*, for example, Wall Street Journal, Worries Rise Over Global Trade Slump, 14 September 2015, referring to WTO chief economist Robert *Koopman*.

²² OECD (1998), Recommendation of the Council concerning effective action against hard core cartels, section I.A.2.a.

²³ In addition to the numerous cases dealt with by the 'lead jurisdictions' (U.S., EU, Canada, Japan and Korea) and others, such as France and Germany, which are discussed below, there are various examples from other countries around the world, such as Brazil: Steel (1999), Crushed rock (2005), Sand extraction (2008), Cement (2014) and others, *see* the website of Brazil's Council of Economic Defence; Mexico: Refrigeration compressors (2009), Fuel (2010), *see* the website of Mexico's Federal Economic Competition Commission; Chile: Refrigeration compressors (2012), Poultry meat (2014), *see* the website

In recent years, many intermediate goods cartels have been uncovered in the electronics and automotive industries and their investigation and prosecution have helped to expose some of the challenging issues that intermediate goods cartels present.²⁴

21. In terms of statistics, around 38% of the 955 cartels relating to goods that are listed in the Connor database concern intermediate goods.²⁵ This proportion rises to about 50% when looking only at the so-called ‘lead jurisdictions’ (Canada, EU, Japan, Korea, USA), i.e. about 209 cartels collectively²⁶. Looking at selected jurisdictions, the proportion of cartels in intermediate goods in the EU is 74% between 1969 and 2015²⁷ and 38 % for France²⁸, 27 % for the UK²⁹ and 35% for Germany³⁰ in the period 2004-2014.

22. However, some of the cases that are generally classified as involving intermediate goods can be of a mixed nature as they concern products that can be used as both intermediate and final and the relevant practices may have covered both of those uses. This can be illustrated by a cartel of flour mills that was prosecuted by the German Bundeskartellamt in which the companies involved fixed prices, allocated customers and volumes in relation to flour sold to both industrial customers (intermediate use) and to food retailers (final use).³¹ A related flour-milling cartel was also prosecuted by the French Autorité de la Concurrence³² while competition agencies of several other jurisdictions have dealt with cartels in the flour-milling sector as well.³³

of the Chilean Fiscalía Nacional Económica; South Africa: Concrete pipes (2010), Plastic pipes (2012), *see* the website of South Africa's Competition Tribunal; Hungary: Mills (2010), CRT (2014), Ready mix concrete (2014), *see* the website of the Hungarian Competition Authority.

²⁴ *See* fn 20 above.

²⁵ *See* Connor (2015).

²⁶ However, recently prosecuted cases by the U.S. Department of Justice predominantly involved intermediate goods.

²⁷ 138 cartels overall, 85 in intermediate goods, 28 in final goods, 25 in services. *See* Sakkers and Ysewyn (2008).

²⁸ 97 cartels overall, 13 in intermediate goods, 21 in final goods, 63 in services. *See* Sakkers and Ysewyn (2008).

²⁹ 19 cartels overall, 3 in intermediate goods, 8 in final goods, 8 in services (does not include criminal prosecution in Marine Hoses). *See* Sakkers and Ysewyn (2008).

³⁰ 56 cases overall, 16 in intermediate goods, 30 in final goods, 10 in services. *See* Sakkers and Ysewyn (2008).

³¹ *See* German Bundeskartellamt, Press release of 19 February 2013, Bundeskartellamt concludes proceedings against flour mills and imposes fines totaling more than 65 million euros, available at http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2013/19_02_2013_M%C3%BChlenkartell.html. The companies involved have agreed on allocation and supply volumes to their customers. The agreements applied to all forms of common wheat and rye flour distribution, i.e. industrial customers (such as e.g. bakery product manufacturers and bakery chains), artisan bakers and the direct sale of flour in small packages (max. 1 kg packets) to food retailers.

³² *See* Decision of the Autorité de la concurrence 12-D-09 of 13 March 2012, available at http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=418&id_article=1823.

³³ Hungary (2008), Netherlands (2010), Belgium (2013).

4. Aspects in which cartels in intermediate goods differ from cartels in final goods

23. One of the purposes of this paper is to explore if cartels in intermediate goods differ, in a systematic and significant way, from cartels in final goods. As is clear from the statistics quoted in paragraph 0 above, there appear to be some variations in the proportion of cartels in intermediate goods relative to those in final goods. Given that the reporting period for these statistics is representative (11 years and more) the results may point to differences inherent in the nature of the cartels themselves rather than reflect temporary variations and changing enforcement focus of the relevant agencies. These differences may be significant from an enforcement perspective insofar as they may inform detection, investigation and deterrence strategies and aid competition agencies in their fight against cartels.

4.1 Cartel formation

24. The first question that arises in this context is whether cartels are more likely to form in markets for intermediate goods than they are in markets for final goods. However, the statistics discussed in paragraph 0 do not provide a conclusive answer. While the overall figure of 38% may suggest that there are more cartels in final goods this conclusion rests on at least two important caveats.

25. First, this number may be the result of an emphasis on final goods, and in particular consumer goods, in enforcement focus. Cartels in consumer goods affect consumer welfare in the most direct and easily communicated way, which are factors that may affect enforcement prioritization in certain contexts.³⁴

26. Second, and perhaps more important, there are no reliable figures for the ratio between intermediate and final goods overall. There are studies that have been done in the context of international trade that show that the ratio between internationally traded intermediate goods and final goods is 63%.³⁵ However, it can hardly be assumed that the same ratio applies to goods that are not traded across borders. For example, value chains in basic products as well as services tend to be national or regional rather than global, which would suggest a higher representation of intermediate goods in trade databases relative to their share of the product universe overall.³⁶ Nevertheless, the difference is not likely to be in the order of tens of percent. Also, given the high level of vertical fragmentation and complexity of the vast majority of today's final products, it is plausible that the share of intermediate goods could be in the region of 50-60% of goods overall.³⁷

27. With these caveats in mind, the fact that intermediate cartels goods represent only 38% of all the prosecuted cartels may suggest that cartels are more likely to form in markets in final goods. The question is whether there are structural differences between markets in intermediate goods and those in final goods that would make collusion more likely.

³⁴ For example, the Austrian Competition Authority has expressed that its focus in 2015/2016 would be on consumer goods. See GCR, The European Antitrust Review – Austria, 2015, available at (<http://globalcompetitionreview.com/reviews/72/sections/240/chapters/2901/austria-federal-competition-authority/>).

³⁵ De Backer and Miroudot (2013).

³⁶ Ali-Yrkkö, J. and Rouvinen, P. (2015) "Slicing Up Global Value Chains: a Micro View", *Journal of Industry, Competition and Trade*, March 2015, Volume 15, Issue 1, pp 69-85.

³⁷ See also Grobovsek, J. Development accounting with intermediate goods (2012), p.1.

28. Studies in theoretical economics have identified a number of factors that could influence the potential incentives of companies to collude and thereby the rationality of cartel formation.³⁸ These can be generally grouped into structural, supply-side and demand-side factors. Structural factors that would make an industry more prone to collusion include a small number of competitors, high barriers to entry, frequent interaction between competitors and market transparency. Demand-side factors generally include stable demand conditions, low demand elasticity, buyer power and the absence of club and network effects. Finally, supply side factors cover the mature stage of an industry, the low pace of innovation, symmetry and commonality of costs, symmetric capacities, product homogeneity, multi-market contacts, structural links, and a history of anticompetitive conduct, as well as frequent contractual relationships between competitors.³⁹

29. Applying these factors to markets in intermediate goods in an attempt to discern meaningful and sufficiently general differences when compared to markets in final goods faces the nearly insurmountable challenge posed by the heterogeneous nature of each of these groups of markets. As such it is impossible to say whether markets in intermediate goods are in general more concentrated than those in final goods or if there are higher barriers to entry in one or the other. But certain factors do lend themselves to analyse whether there is a higher probability of collusion between firms that sell or buy intermediate goods relative to those dealing in final goods.

30. First, as regards structural factors, the criterion of market transparency would appear to be amenable to useful generalizations in this respect. An element common to all intermediate markets is the business-to-business nature of transactions. These transactions may tend to cover on average a higher volume of items than transactions involving final goods since they do not involve sales to individual final customers (as opposed to final goods). These two factors may contribute to lower price transparency in markets for intermediate goods because invoice prices would tend to correlate less precisely to list prices than in markets for final goods. Various forms of discounts, such as volume and loyalty rebates are the norm in business-to-business transactions whereas prices to final consumers are generally highly transparent.⁴⁰ This difference in market and, in particular, price transparency between markets in intermediate and final goods may suggest, all else being equal, that the latter are more prone to collusion.

31. Second, with respect to demand-side factors, buyer power may lend itself to meaningful application with respect to intermediate and final goods markets. In general, sellers at the end of the distribution chain are faced with a highly dispersed population of buyers – final consumers. Compared to that, firms at the intermediate levels of a production or distribution chain deal with a comparatively more limited number of counterparts.

32. And again, this would suggest that on average, and all else being equal, there is a greater likelihood that companies will be faced with greater buyer power in markets for intermediate goods, which would reduce their incentives to collude. However, recent cases of cartels in the automotive industry where the colluding firms were facing with significant buyer power clients – the world's major car manufacturers –

³⁸ See Stigler, G. (1964) "A Theory of Oligopoly." *Journal of Political Economy*, 72(1): 44–61; Tirole, J. (1988) "The theory of industrial organization" (MIT press, Cambridge); Levenstein and Suslow (2006) and others.

³⁹ OECD (2013) roundtable on Ex-officio cartel investigations and the use of screens to detect cartels. See also OECD (2015) roundtable on Serial offenders: Why do some industries seem prone to endemic collusion? (forthcoming).

⁴⁰ Thanks to, among others, service providers such as Nielsen that gather and market pricing and volume retail data.

demonstrate that in certain circumstances great buyer power and the resulting pressure to reduce margins may provide an incentive to firms to collude.⁴¹

33. Finally, among the supply-side factors, product homogeneity lends itself to meaningful application to the analysis of the relative tendency of firms to form cartels in markets in intermediate and final goods. Economic theory suggests that collusion is easier to achieve and sustain in relation to goods that are homogenous rather than differentiated. The greater the product differentiation, the greater the number of factors on which firms compete, which complicates the reaching and monitoring of a collusive agreement. When goods are homogeneous, or even fungible, price becomes the prime competition parameter, reducing the number of issues firms have to discuss to get to a collusive understanding.

34. By definition, final goods tend to be generally more differentiated than intermediate goods, not only as a result of their inherent characteristics but also as a consequence of advertising, brand image and so on. Intermediate goods are in general less complex than the final product into which they are incorporated. As such, there is lesser potential for differentiation than with respect to final goods. This is even more the case for raw materials, which are generally altogether fungible.

35. Therefore, two of the examined factors (lower market transparency and greater buyer power) would appear to make the formation of cartels in markets for final goods easier, while the third (product differentiation) suggest the opposite. And although this analysis is imperfect on account of the heterogeneous nature of the various specific markets, it nevertheless provides an insight into the possible reasons for the prevalence of cartels in final goods relative to intermediate goods.

4.2 *Cartel sustenance*

36. The factors that affect cartel formation are equally applicable when discussing cartel stability and sustenance. Cartel's stability should be reflected in its duration. The more stable the cartel, the longer its duration. Therefore, by looking at the reported durations of prosecuted cartels it may be possible to determine whether there are significant and meaningful differences that could be attributed to the nature of the cartelized products. However, this exercise is complicated by the relative unavailability of reliable data as regards the duration of prosecuted cartels across a sufficiently wide sample of jurisdictions.

37. There is no reliable duration data available with respect to the whole population of the cartels in goods across all jurisdictions. However, a possibly meaningful sample can be analyzed by looking at the 114 cartels in goods dealt with at the EU level by the European Commission since 1969 and the 46 and 34 cartels in goods dealt with respectively by the German and French competition authorities between 2004 and 2014.

38. Before discussing these statistics a word of caution is warranted. The duration that is taken into account is that established in the decisions of the relevant authority, which may not necessarily reflect the full duration of the individual cartels because it corresponds to the duration as supported by the available evidence. Also, in cases where there may have been an adjustment to the duration following court proceedings, these changes are not reflected in the statistics. And finally, many of the decisions cover separate infringements, which may have different durations. For the purpose of the statistics it is the longest duration that is taken as representative of the whole overall cartel, irrespective of whether it was dealt with as a series of separate violations.

⁴¹ In the various automotive cases such as Wire Harnesses, Bearings, Anti-vibration rubber parts and others, the cartels' customers were the world's largest car-manufacturers such as Toyota, Nissan, Renault, Suzuki and others.

39. However, the potential that these risks would result in a significant skewing of the data is small, given the relatively large size of the relevant samples and the fact that they affect both intermediate goods and final goods cartels equally. Moreover, the differences between the durations of the two types of cartels are significant enough to exclude the explanation that they are the product of mere chance. Therefore, it is possible to rely on these figures in drawing at least provisional conclusions concerning the duration and stability of cartels relating to intermediate or final goods.

40. As regards the EU, looking at the period between 1969 and 2014, the average duration of cartels in intermediate goods is 94.2 months, while for final goods the average stands at 77.5 months.⁴² This means that cartels in intermediate goods that have been investigated and punished by the European Commission last on average 17.1 months (or 22%) longer than cartels in final goods. In Germany, in the period 2004-14, the average duration of cartels in intermediate goods is 122.8 months, while for cartels in final goods the average stands at 62.4 months.⁴³ Therefore, cartels in intermediate goods that have been investigated and punished by the Bundeskartellamt last on average 60.4 months (or nearly 100%) longer than cartels in final goods. In the same period, the average cartel in final goods investigated and punished by the Autorité de la Concurrence in France lasted 59.1 months while the average cartel in intermediate goods lasted 85.7 months, a difference of 26.6 months (or 45%).⁴⁴

41. The differences in average durations of cartels in final goods and cartels in intermediate goods point in the same direction in all of the three jurisdictions. Moreover, they are of too significant a magnitude (at least 20%) to dismiss them as inconclusive. Therefore, it appears possible to draw at least a provisional conclusion that cartels in intermediate goods tend to, on average, be of longer duration and as such more stable, than cartels in final goods.

42. More work would be required to find further support for this finding by analyzing the duration of cartels dealt with by the many other jurisdictions that are not included in this sample. Also, additional research, which is outside the scope of the present paper, would be needed to examine the underlying causes of intermediate goods cartels' greater stability relative to that of cartels in final goods.⁴⁵ However, the current provisional conclusions are informative in that they may provide additional criteria that might guide further empirical research, which may ultimately inform competition authorities with insights that could be used in designing measures aimed at disrupting some of the factors that play a role in intermediate goods cartels' stability.

⁴² Duration data is available for 84 of the 85 cartels in intermediate goods and amounts to a total of 7920 months (duration is not available for Flat Glass (Benelux), 1984). Duration data is available for all 28 of the cartels in final goods and amounts to a total of 2171 months. *See* Sakkers and Ysewyn (2008).

⁴³ Duration data is available for 15 of the 16 intermediate goods cartels and amounts to a total of 1842 months (duration is not available for Automatiktueren, 2012). For final goods duration data is available for 28 of the 30 cartels and amounts to a total of 1749 months (duration is not available for Antibiotika, 2009 and Instant-Cappucino, 2011). *See* Sakkers and Ysewyn (2008)

⁴⁴ Duration data is available for 11 of the 13 intermediate goods cases and amounts to a total of 943 months (duration is not available for Ciment en Corse, 2007 and Granulats dans l'Ille-Et-Vilaine, 2008). For final goods duration data is available for 19 of the 21 cases and amounts to a total of 1123 months (Duration is not available for Conseil regional de l'Ordre des Pharmaciens de Basse Normandie, 2009 and not taken into account in Produits petroliers a La Reunion, 2008, which concerned only one call for tender). *See* Sakkers and Ysewyn (2008)

⁴⁵ For general discussion about cartel stability *See* Levenstein and Suslow (2006) and Grossman, P.Z. (ed) (2004) *How Cartels Endure and How They Fail: Studies of Industrial Collusion*. Cheltenham, UK: Edward Elgar Publishers, 2004.

4.3 Geographic scope

43. The fact that intermediate goods are often traded within GVCs gives rise to the question whether cartels in intermediate goods are of generally wider geographic scope than cartels in final goods. Vertical fragmentation, together with outsourcing and offshoring has given rise to production chains that span across national borders.

44. As such, a cartel affecting an intermediate product produced in country A, which is subsequently being used in as an input in the production of a final product in countries A, B, C and D has a geographic scope that covers at least countries A, B, C and D. However, the intermediate nature of the cartelized product can add a further layer of complexity if the final product is sold also in countries other than those in which it had been assembled. In such a case, the jurisdictional thresholds of those countries may be triggered as well, widening the scope of the cartel even further.

45. To test the hypothesis that cartels in intermediate goods are, on average, of a wider geographic scope than cartels in final goods, it is possible to look at the statistics derived from the Connor database, which indicate the geographic scope in relation to 955 cartels prosecuted across a wide pool of jurisdictions.⁴⁶ Out of the more than 125 cartels in goods that had a global geographical scope, there are only 10 in final goods. This would suggest that cartels in final goods tend to be overwhelmingly of a more limited geographical scope than intermediate goods cartels, or at least, that they rarely have a global scope.

46. A further confirmation of this finding is provided when looking at the data from selected jurisdictions within the European Competition Network, which is formed by the competition agencies of each member state of the European Union and the European Commission.⁴⁷ As a general rule, only cartels that affect more than three EU member states are dealt with by the European Commission.⁴⁸ As a result of these case allocation rules, the European Commission normally deals with cartels with wider geographic scope, while local or national cartels are dealt with by the competition agencies of the individual EU member states.

47. Looking at the period of 2004-14, the ratio between cartels in intermediate goods and final goods prosecuted by the Commission is around 75%. On the other hand, in selected national EU jurisdictions the ratio is 38 % for France, 27% for the UK and 35% for Germany.⁴⁹ Bearing in mind the above mentioned case allocation rules, these numbers would suggest that cartels with intermediate goods tend to have on average wider geographic scope and as a result be dealt with by the Commission while cartels in final goods are more often national or local and are dealt with national competition agencies.

4.4 Detection

48. The final issue to be addressed with respect to the specific nature of cartels in intermediate goods is whether they display meaningful differences when it comes to their detection by competition authorities, relative to cartels in final goods. To some extent, this question was partially addressed above when examining cartel stability, since detection - or its perceived threat – are one of the elements that impact on cartel stability as observed through its duration.

⁴⁶ See Connor (2015).

⁴⁷ See Faull, J. and Nikpay, A. *The EU Law of Competition* (3rd edition), OUP (2014), hereinafter ‘Faull and Nikpay (2014)’.

⁴⁸ European Commission Notice on cooperation within the Network of Competition Authorities, OJ [2004] C 101/43-53.

⁴⁹ See paragraph 21 above.

49. That analysis suggested that cartels in intermediate goods tend to be on average of longer duration (suggesting greater stability) than cartels in final goods. And while detection (or its risks) is only one of many factors that affect a cartel's duration, it is possible that the observed greater stability of intermediate goods cartels is partly caused by their lesser susceptibility to detection or lower perceived risks of detection.

50. To test this hypothesis, it may be possible to look at the number of cartels that were detected *ex officio*, as opposed to as a result of leniency (self-reporting), and compare whether there are meaningful differences between cartels in intermediate and final goods.⁵⁰ If the share of intermediate goods cartels uncovered through leniency is higher than that of cartels in final goods, it may suggest that the former are more difficult to detect *ex officio* than the latter. However, caution is warranted when drawing such a conclusion because, as pointed out above, there may be a bias towards final (and in particular consumer) goods when it comes to *ex officio* investigations by competition authorities. Also, the line between leniency and *ex officio* cases is not always entirely clear since some cases that were initiated as a result of a fall-out from a leniency investigation may be reported as *ex officio* cases. Finally, this type of analysis could lead to skewed results on account of a suboptimal functioning of the relevant jurisdiction's leniency programme that would result in the relative overrepresentation of *ex officio* initiated cases.

51. The analysis in the present paper relies on data from three jurisdictions, EU, France and Germany that have been already discussed above in relation to geographic scope and cartel sustenance. It is considered that this provides a sufficiently wide enough sample of cases from three different jurisdictions that all have a well-functioning leniency regime so as to mitigate some of the risks mentioned in the previous paragraph.⁵¹

52. In the EU, the proportion of cartels in intermediate goods that were discovered *ex officio* is 30% whereas for cartels in final goods this figure stands at 35%.⁵² In France, the relevant proportions are 67% for intermediate goods cartels and 81% for cartels in final goods.⁵³ Finally, in Germany the numbers are very close, with 56% cartels in intermediate goods uncovered *ex officio* compared to 53% in final goods.⁵⁴

53. Although the differences are possibly not significant enough to provide a conclusive answer (and in Germany they point to another direction), the statistics nevertheless suggest that cartels in intermediate goods may be more difficult to detect *ex officio* than cartels in final goods. The reasons for this are difficult to identify and their discussion is thus largely theoretical. One possible explanation is that some of the

⁵⁰ In this context, the term *ex officio* detected cartels covers all cartels the investigation of which was initiated as a result of events other than self-reporting under a leniency program, such as screening, complaints, whistle-blower, fallout from another investigation, etc.

⁵¹ To mitigate the risk of overrepresentation of *ex officio* initiated cases on account of not yet existing or not fully functioning leniency programme, the analysis is conducted only with cases that follow the first decision on a case initiated as a result of leniency. In practice, this means that while the EU has had a leniency regime since 1996, only cases following the European Commission's decision against the British Sugar cartel in 1998 are taken into account.

⁵² Since the first leniency initiated case (British Sugar) in 1998, there have been 62 cases in intermediate goods, of which 44 were started following an immunity application and 20 final goods cases of which 13 had an immunity application at their origin. *See* Sakkers and Ysewyn (2008).

⁵³ Since the first leniency initiated case (Secteur de la fabrication des portes) in 2006, 3 out of 9 cases in intermediate goods and 3 out of 16 final goods cases have been initiated as a result of leniency. *See* Sakkers and Ysewyn (2008).

⁵⁴ In Germany, 14 out of 30 final goods cases and 7 out of 16 intermediate goods cases have been initiated as a result of leniency. *See* Sakkers and Ysewyn (2008).

possible screening methods, in particular behavioral, may be less effective due to the relative opacity of pricing in intermediate markets relative to consumer markets or the unavailability of certain data.

54. Also, long term business-to-business relationships that are often present in markets for intermediate goods may have a negative effect on the willingness to resort to a complaint to a competition authority when exposed to suspected collusion (which would lead to an *ex officio* initiated investigation). Finally, this reduced willingness may also be the result of the fact that buyers in intermediate goods sectors are less price sensitive since they may be able to pass-on, at least partially, the possible cartel overcharge. This hypothesis appears to be partly supported by the statistics, which show that in the EU 10% of final goods cases were initiated following a complaint from another company while that figure falls to 3% in the case of intermediate goods.⁵⁵ A similar situation is in France, where 19% of final goods cases and 11% of intermediate goods cases were initiated as a result of a complaint.⁵⁶ On the other hand, in Germany complaints were at the start of 19% intermediate goods cases while for final goods cases the figure stands at only 3%.⁵⁷

55. When it comes to detection by self-reporting under leniency programmes, there appears to be one meaningful aspect that makes cartels in intermediate goods somewhat specific, and that is their geographic scope. As discussed above, cartels in intermediate goods have on average a wider geographic scope than those in final goods, often affecting numerous jurisdictions around the world. For example, when a company involved in an international cartel makes a decision to self-report, it will often do so in more than one jurisdiction. What jurisdictions will those be depends on a number of factors, such as the company's exposure in given territories, the competition authority's enforcement record, the functioning of its leniency programme and so on.⁵⁸ While this calculation is unique to each case, it often results in self-reporting in several 'leading' jurisdictions, such as the U.S., EU, Japan, Korea or Canada.

56. Therefore, the enforcement efforts of one jurisdiction, or events that have their origin in only one jurisdiction, may result in the detection of a cartel through self-reporting in other jurisdictions around the world on account of the cartel's geographic scope. And since cartels in intermediate goods are more often of trans-border scope than cartels in final goods, this effect is more present with respect to the former.

57. The big international cartels of the 1990s such as Lysine and Vitamins are the typical examples in this respect and they all related to intermediate goods. A change in the US leniency regime in 1993 resulted in a wave of amnesty applications in the U.S., which then translated into applications in other jurisdictions with newly introduced leniency regimes such as EU, Canada and others.⁵⁹ Today, most international cartels in

⁵⁵ Since the first leniency initiated case (British Sugar) in 1998, there have been 2 complaint initiated cases in intermediate goods (of which 1 was initiated by a competitor) and 2 in final goods. *See* Sakkers and Ysewyn (2008).

⁵⁶ Since the first leniency initiated case (Secteur de la fabrication des portes) in 2006, 1 out of 9 cases in intermediate goods and 3 out of 16 final goods cases have been initiated as a result of a complaint. *See* Sakkers and Ysewyn (2008)

⁵⁷ In Germany, 12 out of 30 intermediate goods cases and 7 out of 15 final goods cases have been initiated as a result of leniency. *See* Sakkers and Ysewyn (2008).

⁵⁸ The decision to self-report under a leniency programme is a complex one and involves many factors, which are described in Spratling, G.R. and Arp, D.J. (2010) "Making the Decision: What to do when face with international cartel exposure. Developments impacting the decision in 2010", available at http://www.cba.org/cba/cle/PDF/SpComp10_Spratling_paper.pdf.

⁵⁹ As a consequence of the 1993 revision, there was a considerable increase in the number of amnesty applications. The average rose from one application per year under the previous policy to three applications per month under the revised policy. This led in particular to the rapid unearthing of many large

intermediate goods follow a similar pattern, whereby the self-reporting in one jurisdiction is accompanied by applications in several other jurisdictions, resulting in parallel 'detection' and investigations by the relevant competition authorities, such as in the case of the LCD and Automotive cartels.⁶⁰

5. Investigating and sanctioning cartels in intermediate goods

58. This section focuses the specific issues that arise when competition agencies investigate, prosecute and sanction cartels in intermediate goods as compared to those arising in final goods. These issues are principally related to cartels' cross-border effects and the intermediate nature of the products involved. Many of these issues, such as those relating strictly to cartels' cross-border nature (collection of evidence abroad or the coordination of investigative steps) are not unique to cartels in intermediate goods and as such they are discussed only very briefly. Focus is placed on those issues that arise specifically and uniquely in relation to cartels in intermediate goods.

5.1 Issues of jurisdiction

59. One of the first questions that any competition agency must address when determining whether to take an enforcement action against a particular cartel, is whether it has the jurisdiction to do so, which depends on the scope of the relevant jurisdiction's cartel prohibition rules. Their scope is delimited by the principle of territoriality under international law, according to which sovereign states can exercise full authority in regulating conduct within their borders. The objective application of this principle, also known as the effects doctrine, means that states can also legitimately enforce their cartel laws against conduct, which takes place outside their territory, as long as it produces effects within their territory.⁶¹ This means that under international law, a jurisdiction's competition rules may apply both to conduct that takes place within its territory and to conduct that produces effects within it.

60. Consequently, when cartel conduct has a cross-border dimension, the laws of more than one country may apply to a particular conduct. This can lead to tensions, and these tensions are behind some of the most significant issues related to the prosecution and sanctioning of cartels in intermediate goods.

5.2 Scope of jurisdiction (*domestic conduct and domestic effects*)

61. When crafting their anti-cartel prohibition rules, countries may choose to limit their applicability according to the principle of territoriality discussed above. There are different approaches in countries around the world.

62. For example, the U.S. Sherman Act applies to '*trade or commerce among the several States, or with foreign nations*'.⁶² As such, it applies to conduct that takes place in the U.S. even if it affects only other countries but also conduct that produces effects within the U.S. irrespective of where it takes place. The jurisdictional breadth of this formulation has been qualified by a series of subsequent laws and judicial decisions. Most significantly, export cartels (conduct which takes place within the U.S. but produces

international cartels (Vitamins or Lysine cartels) and contributed greatly to the introduction of leniency policies in various jurisdictions around the world.

⁶⁰ See fn 20 above. This may also lead to a possible over-representation of intermediate goods cases within the statistics since one global cartel can be investigated by different countries, which then each count the cartel as part of their national statistics.

⁶¹ See e.g. Popofsky, M.S. "Extraterritoriality in U.S. Jurisprudence", in 3 ISSUES IN COMPETITION LAW AND POLICY 2417 (ABA Section of Antitrust Law 2008), hereinafter 'Popofsky (2008)'.

⁶² Sherman Act, 15 U.S.C. §§ 1–2.

effects only in other countries) are effectively exempted from the Sherman Act.⁶³ Therefore, it is effectively the presence of effects on trade within the U.S. or on import trade to the U.S. that can be relied on as the jurisdictional basis for enforcement by the U.S. antitrust enforcement agencies.

63. The wording of the European Union's cartel prohibition (Article 101 TFEU) limits its applicability to agreements which 'may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within' the EU market, thus implicitly excluding conduct, which takes place inside the EU but impacts only countries outside it.⁶⁴ The text of the article has been interpreted as applying to conduct that is either implemented within the EU or that produces its effects inside the EU.⁶⁵

64. The examples of the U.S. and the EU are illustrative of the two different approaches taken by countries around the world to the jurisdictional reach of cartel laws. The first approach, exemplified by the U.S., relies on a general prohibition that catches both the place of the relevant conduct as well as its domestic effects, only to then specifically immunize conduct that affects solely other countries.⁶⁶ The second approach, exemplified by the EU, relies on prohibitions that expressly catch only conduct that affects the relevant domestic territory, thus implicitly immunizing conduct that takes place in those territories but affects only other countries.⁶⁷

65. And while these approaches are inherently different, they effectively rely on domestic effects of the relevant conduct as the jurisdictional trigger. They also effectively immunize export cartels, which has been the subject of significant criticism.⁶⁸ In this context it is curious to note that *Woodpulp*, the leading case on jurisdiction in the EU, concerns a U.S. export cartel, which was immunized in the US under the Webb-Pomerene Act.⁶⁹

66. The exact reach of the jurisdictional powers based on effects on domestic markets is far from clear and its definition has been the subject of much discussion and judicial interpretation. This related, in particular, to the jurisdictional reach of the U.S. Sherman Act, which for many decades had been the main competition act effectively applied around the world.

67. The U.S. courts have wrestled with clearly defining the limits of its extraterritorial reach. In 1945 the U.S. Court of Appeals for the Second Circuit ruled in *Alcoa* that the Sherman Act reaches conduct that

⁶³ 15 U.S.C. § 6a; *see also* Webb-Pomerene Act, 15 U.S.C. §§ 61-66 and Export Trading Company Act, 15 U.S.C. §§ 4001-4003, 4011-4021.

⁶⁴ Consolidated version of the Treaty on the Functioning of the Union, OJ C 326, 26.10.2012, p. 1, Article 101.

⁶⁵ Joined Cases 89/85, 104/85, 114/85, 116/85, 117/85 and 125/85 to 129/85 *A. Ahlström Osakeyhtiö and Others v Commission* [1988] ECR 5193 (hereinafter '*Woodpulp*'); Case T-102/96, *Gencor Ltd v Commission of the European Communities* [1999] ECR II-00753 (hereinafter '*Gencor*'); *See* Faull and Nikpay (2014), §§ 3.435-3.441. *See also* Commission Notice - Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, Official Journal C 101, 27.04.2004, p. 81-96.

⁶⁶ Australia, South Africa, Canada and others. *See* Suslow, V.Y. "The Changing International Status of Export Cartel Exemptions." *American University International Law Review* 20, no. 4 (2005): 785-828, hereinafter '*Suslow (2005)*'.

⁶⁷ European Union and most of its member states, Japan, Brazil and others. *See* Suslow (2005).

⁶⁸ *See* Jenny, F. '*Export Cartels in Primary Products: The Potash Case in Perspective*' in *TRADE, COMPETITION, AND THE PRICING OF COMMODITIES*, p. 99, Simon J. Evenett and Frédéric Jenny, eds, February 2012; and Suslow (2005).

⁶⁹ *See Woodpulp*, para 20.

causes intended effects within the United States but it has left unclear how much of an effect is required and the nature of the required effect.⁷⁰ And although many courts, and eventually the U.S. Supreme Court in *Hartford Fire* in 1993, have reached the conclusion that substantial effects in the U.S. are required, there have been many differing applications of *Alcoa*, which have prompted a significant criticism and backlash from other countries.⁷¹

68. This criticism of the apparent expansion of the Sherman Act's territorial reach has found a response in the rise of the judicial application of the principle of international comity, which was established in the *Timberlane* judgment of the U.S. Court of Appeals for the Ninth Circuit in 1978.⁷² According to *Timberlane*, U.S. courts may refuse to apply the Sherman Act unless '*the interests of, and links to, the United States—including the magnitude of the effects on American foreign commerce—are sufficiently strong, vis-à-vis those of other nations, to justify an assertion of extraterritorial authority*'.⁷³

69. The U.S. Congress ultimately responded with the passage of the Foreign Trade Antitrust Improvements Act (FTAIA) in 1982, adding Section 6a to the Sherman Act, which prescribes the Sherman Act's reach with respect to conduct involving trade or commerce with foreign nations. First, the FTAIA leaves the Sherman Act applicable to conduct involving U.S. import trade or commerce. Second, conduct involving non-import foreign trade or commerce is excluded from the reach of the Sherman Act unless it has a direct, substantial, and reasonable effect on U.S. domestic, import, or export commerce and such effect gives rise to a claim under the Sherman Act. This last requirement is particularly relevant for private damage claims. Unfortunately, the FTAIA did not succeed in conclusively delineating the jurisdictional limits of the Sherman Act's application and discussions continue, for example, about what constitutes a sufficiently 'direct' effect.

70. However, for the purpose of the present paper it is sufficient to refer to the test applied by the U.S. enforcement agencies as described in their international enforcement guidelines. With respect to foreign import commerce, the guidelines refer to *Hartford Fire* according to which the '*Sherman Act applies to foreign conduct that was meant to produce and did in fact produce some substantial effect in the United States*'. As for non-import commerce, the Sherman Act (as modified by the FTAIA) applies to foreign conduct that has a direct, substantial, and reasonably foreseeable effect on U.S. commerce.⁷⁴ This standard is particularly relevant for cartels in intermediate goods, which may affect the United States through mechanisms that go beyond direct sales. Finally, the relevant standards are complemented by comity considerations, which the relevant U.S. agencies are required to take into account when determining whether to pursue a particular conduct or not.⁷⁵

⁷⁰ See Popofsky (2008), p. 2422. See *United States v. Aluminum Co. of America (Alcoa)*, 148 F.2d 416 (2d Cir. 1945), hereinafter '*Alcoa*'.

⁷¹ In reaction to the perceived overreach of U.S. antitrust laws and civil litigation, many countries have adopted blocking and claw-back statutes. See *Fugate, W. L. FOREIGN COMMERCE and the ANTITRUST LAWS (fifth edition)*, Aspen Publishers (1996), p. 279ff; *Born, G.B. INTERNATIONAL CIVIL LITIGATION IN UNITED STATES COURTS*, Kluwer Law International (1996), p. 587ff; Popofsky (2008), p. 2423 and the judgments referred to therein. See *Hartford Fire Ins. v. California* (91-1111), 509 U.S. 764 (1993).

⁷² *Timberlane Lumber Co. v. Bank of Am.*, 549 F.2d 597, 613 (9th Cir. 1976), hereinafter '*Timberlane*'.

⁷³ *Ibid.*

⁷⁴ As regards export commerce, the FTAIA contains an 'export proviso', according to which the Sherman Act applies only for injury to export business in the United States.

⁷⁵ See U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N ANTITRUST ENFORCEMENT GUIDELINES FOR INTERNATIONAL OPERATIONS (1995), hereinafter '*US International enforcement guidelines*'. Considerations of comity are also mandated by the bilateral US-EC agreement of

71. The developments in the application of the effects doctrine in the United States discussed above have taken place in the period when other countries around the world were adopting their own antitrust rules. As such, they informed the formulation of the jurisdictional limits of these countries' antitrust rules, resulting in the situation where the test of '*direct, substantial and reasonable effects*', albeit in various mutations, is widely accepted around the world as a limit for their territorial application.

72. The European Commission, which next to the U.S. Department of Justice ("DOJ") has dealt with the highest number of international cartels, so far had not expressly asserted its jurisdiction based only on the effects of a foreign cartel. Instead, it has relied on the 'implementation' test as set out by the European Court of Justice (ECJ) in *Woodpulp*. In that case, the ECJ distinguished between two aspects of a violation of Article 101, the formation of the illegal agreement and its implementation. It then stated that the relevant producers (which were located, and entered into the pricing agreements, outside the EU) implemented their agreement by selling to customers within the EU, irrespective of whether they did so directly or through subsidiaries or agents located within the EU. As such, their conduct fell under the scope of Article 101.⁷⁶

73. Some commentators have suggested that the ECJ in *Woodpulp* deliberately chose a *sui generis* concept of 'implementation' rather than adopting the US concept of 'effects'.⁷⁷ However, it is questionable whether the difference between the '*implementation*' and '*direct, substantial and reasonable effects*' of a cartel agreement is more than just semantical. The judgment of the EU's General Court in *Gencor*, while relating to jurisdiction in merger control, confirmed the European Commission's jurisdiction over the concentration on the basis of '*foreseeable, immediate and substantial effects*' within the EU, which the court compared to the implementation doctrine as developed in relation to agreements in *Woodpulp*.⁷⁸ This suggests that implementation is in fact the same as direct, substantial and reasonable effects and it has been argued that the EU does in fact apply an '*effects*' doctrine when it comes to the application of its cartel prohibition rules.⁷⁹

74. In EU law the question of jurisdiction is closely connected to the concept of effect on trade between Member States, which has particular relevance in the context of international cartels. In order to pursue a cartel for a violation of Article 101 TFEU, the European Commission must not only establish jurisdiction, but it must also demonstrate that the conduct may affect trade between Member States. This concept is clarified in the EU's guidelines on effects on trade, which build on the extensive case law of the EU courts' on this issue.⁸⁰

1991, which commits the contracting parties to take into account several factors inspired by *Timberlane* when considering enforcement actions that affect the other party (*See* Agreement between the Government of the United States of America and the Commission of the European Communities regarding the application of their competition laws). *See also* DOJ Brief in Hsiung (<http://www.justice.gov/file/488146/download>) at p. 33-41; DOJ Amicus Brief in Minn-Chem (<http://www.justice.gov/file/504411/download>).

⁷⁶ *Woodpulp*, paras 12-18. Compare also the General Court's judgment in Case T-91/11 *InnoLux Corp. v European Commission*, paras 56-76.

⁷⁷ *See* Suffrin, B. "*Competition Law in a Globalised Marketplace: Beyond Jurisdiction*", p. 111 in Capps P., Evans M. and Konstantinidis S., *Asserting Jurisdiction: International and European legal perspectives* (Oxford: Hart Publishing, 2003).

⁷⁸ *Gencor*, paras 87ff.

⁷⁹ *See* Faull and Nikpay (2014), §§ 3.435-3.441.

⁸⁰ *See* the European Commission's Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, OJ [2004] C 101, hereinafter 'EC effect on trade guidelines'.

75. In the context of cartels, the effect on trade is established if the conduct has direct, indirect, actual or potential effect on the pattern of trade between Member States. The notion of indirect effects is particularly relevant in the context of this paper because it has been applied in a case involving an intermediate product. In *BNIC* the ECJ ruled that an agreement concerning spirits used in the production of cognac and not traded cross border was capable of having an effect of trade on account of the fact that the final product – cognac – was traded cross border.⁸¹ Moreover, for an effect on trade to be established, the relevant conduct must be of a certain magnitude, i.e. it must be capable of affecting competition to an appreciable extent. Although this is a question of fact to be assessed on a case-by-case basis, the guidelines set out safe harbours for conduct involving parties with a combined market share below 5% and annual turnover of less than EUR 40 million in the EU market.⁸² In a certain sense, the appreciability test is similar to the jurisdictional test of substantial effects.

76. As is apparent from the above, the jurisdictional rules in the U.S. and the EU contain effects-based tests. Some countries are, however, more conservative when it comes to the extraterritorial application of their antitrust rules, requiring a more substantial link of the conduct to their territory than pure effects. For example, the Canadian Competition Act is silent on the issue of its territorial application and the Canadian Criminal Code gives the courts jurisdiction over foreign conspiracies to commit a criminal offence in Canada. But so far there has not been a case in the context of criminal cartel proceedings against a foreign cartel whose only connection to Canada were the sales of the cartelized product. The Canadian enforcers have obtained guilty pleas from foreign producers of fax paper, sorbates or vitamins for cartel violations that occurred wholly outside of Canada but were specifically directed at Canadian markets, prices and consumers.⁸³ They have also done so with respect to several Japanese companies involved in cartel conduct related to various car parts (Wire Harnesses, Anti-vibration equipment and Bearings)⁸⁴ This approach, however, has not been tested before the Canadian courts and some uncertainty therefore remains.

77. Other countries, such as Australia, Japan or Korea apply jurisdictional rules that allow them to pursue international cartels that have an effect on their territory.

78. As regards Korea, Article 2-2 of the Monopoly Regulation and Fair Trade Act applies to conduct that takes place outside Korea as long as it has an impact on the Korean market.⁸⁵ This provision has been interpreted by the Korean Supreme Court as requiring a direct, significant and reasonably foreseeable effect on the Korean market.⁸⁶

⁸¹ See Case 123/83 *BNIC v Clair*, [1985] ECR 391, hereinafter '*BNIC*'.

⁸² See EC effect on trade guidelines, para 52.

⁸³ See Rowley, J. W., Low, M. D. and Wakil, O.K. (2002) "Recent Trends in the Prosecution of Cartels in Canada".

⁸⁴ See guilty plea of 4 April 2013 by Furukawa Electric Co., Ltd. and guilty plea of 18 April 2013 by Yazaki Corporation, both before the Superior Court of Ontario, and the accompanying statements of admission and other available on the Canadian Competition Bureau's website.

⁸⁵ See Article 2-2 of the Korean Monopoly Regulation and Fair Trade Act, available at http://eng.ftc.go.kr/files/static/Legal_Authority/Monopoly%20Regulation%20and%20Fair%20Trade%20Act_mar%2014%202012.pdf

⁸⁶ See Rhee, P. and Yun, S. "Korea – Cartels and Leniency 2015" chapter in International Comparative Legal Guides, available at <http://www.iclg.co.uk/practice-areas/cartels-and-leniency/cartels-and-leniency-2015/korea>.

79. The Japanese Antimonopoly Act ("AMA") does not include any particular provision as regards its jurisdictional reach and it has been interpreted to apply to conduct that causes substantial effects on the Japanese market, irrespective of where it takes place.⁸⁷ The Japanese Fair Trade Commission ("JFTC") has applied the AMA for example in relation to the CRT cartel, where it sanctioned conduct that took place outside Japan and affected the sales of products purchased by Japanese manufacturers located abroad.⁸⁸

80. As regards Australia, the Australian Competition and Consumer Commission ("ACCC") has taken an action against a number of foreign cartels, including Marine Hoses or Fine Paper, showing that it has the tools to effectively tackle international conduct.⁸⁹ The 2010 Australian Consumer and Competition Act ("ACC") made that task easier by removing a requirement of the previous regime, according to which the relevant conduct must have occurred in or had an effect on a market 'in Australia', in order for the cartel prohibition to apply.⁹⁰ Under the current regime, the ACC's cartel prohibition applies to foreign conduct by corporations registered or doing business in Australia as well as to conduct that is directed to, or implemented in, Australia. The Australian Competition Policy Review proposed to broaden the scope of the prohibition's application even further by removing the business residence test, according to which the ACC applies only to corporation incorporated in, or carrying on business within Australia.⁹¹

5.3 *Jurisdiction and cartels in intermediate goods*

81. The jurisdictional issues that arise in relation to cartels in intermediate goods and their consequences can be illustrated with the following hypothetical scenario.

Alpha Corporation and Beta Corporation are organized under the laws of Country A and have factories in Country A where they manufacture Component X, a piece of high-tech hardware used in electronic products. Alpha and Beta agree to charge higher prices for Component X sold to finished product integrators. These integrators are organized under the laws of Country B and have factories in Country B where they incorporate Component X into finished electronic products sold in Country C.

Some or all of the anti-competitive overcharge on Component X is passed on by the integrators to purchasers of the finished product in Country C. Alpha and Beta are aware that Component X is

⁸⁷ See Japanese Act on Prohibition of Private Monopolization and Maintenance of Fair Trade (Act No. 54 of April 14, 1947), available at http://www.jftc.go.jp/en/legislation_gls/amended_ama09/ and Hara, E. and Ishida, H. "Japan: Cartels" chapter in The Asia Pacific Antitrust Review, GCR, available at <http://globalcompetitionreview.com/reviews/69/sections/235/chapters/2753/>.

⁸⁸ See the JFTC cease and desist order of 29 March 2010 available at http://www.jftc.go.jp/en/pressreleases/yearly-2010/mar/individual-000136.files/2010-Mar-29_1.pdf. See also "Appeals against JFTC fines for foreign CRT cartel go down the tube" blog post of 8 June 2015 by King & Wood Mallesons, available at <http://www.lexology.com/library/detail.aspx?g=67a9b94c-cd0b-450b-922b-ac138e694f1f>.

⁸⁹ See website of the ACCC at <https://www.accc.gov.au/business/anti-competitive-behaviour/cartels/cartels-case-studies-legal-cases>.

⁹⁰ See Huet, L. and Stevenson, P. "Australia: Cartels" chapter in The Asia Pacific Antitrust Review, GCR, available at <http://globalcompetitionreview.com/reviews/69/sections/235/chapters/2733/>, in particular the discussion concerning the *Australian Competition & Consumer Commission v Air New Zealand Ltd* [2014] FCA 1157 judgment.

⁹¹ See Australian Competition Policy Review, Final Report of 31 March 2015, part 4: Competition Laws, available at <http://competitionpolicyreview.gov.au/final-report/>.

incorporated into finished products sold in Country C and Alpha and Beta discuss market conditions and track sales of the finished products in Country C.

82. Under this scenario, there are three countries whose jurisdiction could be possibly triggered in relation to the pricing agreement between Corporations Alpha and Beta.

83. First, with respect to Country A, under whose laws the two corporations are organized and where they manufacture the cartelized product, Component X. Since the cartelized product is sold to product integrators in Country B and assuming there are no spill-over effects of the agreement on the market in Country A (for example because it involves an agreement to limit re-imports), the cartel is of a pure export nature. Therefore, if Country A is like most countries around the world, offering either an explicit or implicit exception to export cartels, it would not have jurisdiction over the cartel conduct in this example.

84. Second, as regards Country B, where the cartel's direct customers are located, incorporating Component X into finished electronic products. From the perspective of this country, the cartel is of a pure import nature. The cartelists are located abroad, the cartel agreement was reached abroad but the cartelized product is imported into its territory and bought by customers located within it. The conduct was intended to produce effects within the territory of Country B and it was implemented in it as a result of the direct imports. As such it led to intra-territory effects. Therefore, the conduct would be most likely caught by the competition rules of most countries, irrespective of whether they apply jurisdictional test based on effects, implementation or variations of the two.⁹²

85. Finally, with respect to Country C, where the final product is sold. The price of the final product contains all or part of the cartel's overcharge as a result of its pass-on by the integrators. There are no direct imports of the cartelized product into Country C and as such, if its jurisdiction over foreign conduct requires impact over import trade, it would not be able to reach the cartel agreement. Similarly, if Country C relies on the doctrine of implementation it might not be able to reach the cartel since the implementation may be considered to place within Country B where the product was first sold by the cartelists.

86. The conduct undoubtedly causes effects in country C in terms of higher prices of the final product. Moreover, the cartelists are aware of the fact that the cartelized component is sold in Country C as part of the finished product and they track its sales and discuss market conditions there. These factors may be sufficient to trigger Country C's jurisdiction if the test is based 'direct, substantial and reasonably foreseeable effects', in which case Country C might be able to reach the cartel conduct.⁹³ Other factors that connect the conduct to Country C, such as (i) the presence of the cartelists in price negotiations with customers in Country C concerning the final product, (ii) the integrators being wholly owned subsidiaries of the finished product purchasers in Country C, and (iii) the attendance in cartel meetings in Country C, may further contribute in establishing the required 'direct' effects.⁹⁴

87. Looking at real examples of international cartels involving intermediate goods, competition agencies have so far dealt with cases that involved at least some direct imports of the cartelized product in their territory, which were used as a jurisdictional anchor.

⁹² Provided of course that other parts of the relevant jurisdiction's test, such as 'substantiality' or 'appreciability' of effects, were met.

⁹³ Compare illustrative example B in the US government's international enforcement guidelines, which is analogous to the present example apart from the fact that it does not concern an intermediate good (*See US International enforcement guidelines*). In this context also see the judgment in *BNIC*.

⁹⁴ *See* the discussion in relation to the judgments in *Hsiung* below.

88. In the United States, all of the electronics component cases prosecuted by the DOJ so far have involved at least some component sales into the United States. The same goes for the car parts cases. Similarly, the intermediate goods cases dealt with by the European Commission in the electronics and automotive sectors have involved at least some intra-EU sales. In this context it is important to note that the concept of sales in the EU has been applied by the European Commission as encompassing both (i) sales on the basis of the place of delivery of the cartelized product and (ii) sales on the basis of invoicing even if the good is ultimately delivered outside the EU.⁹⁵ Other countries around the world that have dealt with the recent intermediate goods cartels in the car parts and electronics sectors, such as Japan, Korea, Canada or Hungary, were also able to rely on direct imports as a jurisdictional trigger.⁹⁶

89. There do not seem to be cases in which a competition authority dealt with a cartel in intermediate goods without any direct imports into its territory.⁹⁷ As discussed above, it would appear possible for the U.S., EU, Australia, Japan, Korea and other countries that rely on some form of effects jurisdiction to reach such a cartel, in particular, if it displays some of the factors mentioned above as evidence to prove the requisite direct effect.

90. The recent judgment of the US Court of Appeals for the Ninth Circuit in *Hsiung*, relating to the prosecution of AU Optronics, its U.S. subsidiary, and two of its executives in the TFT-LCD panel cartel is very significant in this respect because it appears to open the door to establishing jurisdiction even if direct imports are absent.⁹⁸ A similar line was taken by the US Court of Appeals for the Seventh Circuit in *Motorola Mobility*, which is a damages case related to the TFT-LCD cartel.⁹⁹

91. In *Hsiung*, the criminal prosecution was based both on effects on imports (as the cartel had direct sales of the component screens into the United States) and on effects on U.S. commerce (as a result of imports of the final products, which incorporated the cartelized screens). The court upheld both of these as independent grounds for jurisdiction and as regards the domestic effects ground it ruled that there is ‘*direct, substantial and reasonably foreseeable*’ effect on U.S. commerce. There were various factors linking the foreign conduct to the United States, allowing the court to confirm that the evidence ‘*underscored the integrated, close and direct connection between the purchase of the price-fixed panels,*

⁹⁵ The delivery test was used in LCD or TV and Computer Monitor Tubes decisions, while invoicing has been relied on in Intel and Marine Hoses (See European Commission Decision of 8 December 2010 in Case COMP/39.309 – LCD, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39309/39309_3643_4.pdf; European Commission Decision of 5 December 2012 in Case COMP/39.437 – TV and Computer Monitor Tubes, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39437/39437_6784_3.pdf; European Commission Decision of 13 May 2009 in Case COMP/37.990 – Intel, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/37990/37990_3581_18.pdf; European Commission Decision of 28 January 2009 in Case COMP/39.406 – Marine Hoses, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39406/39406_1902_1.pdf.

⁹⁶ See press announcements and relevant orders / plea agreements on the websites of the JFTC, KFTC, Canadian Competition Bureau and the Hungarian Competition Authority.

⁹⁷ With the possible exception of Japan in the CRT cartel case, which involved sales to Japanese manufacturers' facilities located abroad insofar as the final product was ultimately sold in Japan. It is not entirely clear from the publicly available material whether that approach did not relate only to some of the defendants while the overall cartel may have had some direct sales to Japan. See fn 88 above.

⁹⁸ United States v. Hsiung, No. 12-10492, 2015 U.S. App. LEXIS 1590 (9th Cir. Jan. 30, 2015), hereinafter *Hsiung*.

⁹⁹ Motorola Mobility LLC v. AU Optronics Corp., 773 F.3d 826 (7th Cir. 2014), amended, Jan. 12, 2015, ECF No. 148, petition for reh'g en banc denied, Jan. 12, 2015, ECF No. 147.

the United States as the destination for the products, and the ultimate inflation of prices in finished products imported to the United States.¹⁰⁰

92. As regards the impact of these judgments in other countries, the U.S. courts analysis as regards ‘direct, substantial and reasonably foreseeable effects’ in the context of intermediate goods cartels is highly informative and could inspire enforcers and courts in countries that apply this jurisdictional test.

5.4 Prosecution and fining issues

93. This discussion on jurisdiction illustrates the complex issues that arise in the context of international cartels in intermediate goods. As demonstrated in the hypothetical example above, the relevant cartel conduct can either escape punishment or be caught by competition rules of more than one jurisdiction. The former is clearly suboptimal, in particular if it is the result of Country A exempting export cartels and Countries B and C lacking the requisite rules for their effective enforcement. The latter option, i.e. when more than one country can exercise its jurisdiction, presents its own particular challenges.

94. Many of these challenges arise with respect to any international cartel. This is the case, for example, of the need for coordination between enforcement authorities when dealing with defendants or evidence located abroad, or the interactions between leniency regimes of different jurisdictions. Most of these have already been dealt with in previous roundtable discussions and reference is therefore made to the relevant materials.¹⁰¹

95. Some challenges are, however, specific to cartels in intermediate goods on account of the intermediate nature of the cartelized product. These relate in particular to the determination of the fine to be imposed on the companies involved in the cartel and the question of whether the fine should take into account sanctions imposed in other jurisdictions.

5.5 Calculating fines

96. When determining fines, countries generally look at the turnover of the companies involved. Many of them look specifically at the relevant turnover in the cartelized product over the duration of the violation, be it referred to as value of sales, volume of commerce or otherwise. Others look to the gains or profits of the cartel.¹⁰² These different approaches and their mutual interaction may result in difficulties

¹⁰⁰ There were a variety of arrangements in terms of incorporating the panels into finished products. For example, Dell had a factory in Malaysia where 100% of the products were destined for the American market. In other situations, overseas systems integrators purchased the panels for integration into finished products, often with direct oversight of TFT-LCD panel pricing by United States manufacturers. In yet other circumstances, a global product arm of a United States company purchased the panels directly from one of the co-conspirators and then sold them to system integrators. It was not uncommon that the orders placed with system integrators were based on custom orders from United States customers for direct shipment to that customer. *See Hsiung*.

¹⁰¹ *See* OECD (2012) Improving international co-operation in cartel investigations; OECD (2012) Leniency for subsequent applicants; ICN Anti-Cartel Enforcement Manual - Chapter on International Cooperation and Information Sharing, available at http://www.internationalcompetitionnetwork.org/uploads/cartel%20wg/icn_chapter_on_international_cooperation_and_information_sharing.pdf.

¹⁰² *See* ICN Setting of Fines for Cartels n ICN Jurisdictions, Report to the 7th Annual Conference in Kyoto, April 2008, available at <http://www.internationalcompetitionnetwork.org/uploads/library/doc351.pdf>; *See* also Background Note by the OECD secretariat and other materials submitted for Session I (Criteria for Setting Fines for Competition Law Infringements) at the LATIN AMERICAN COMPETITION FORUM,

when dealing with cartels in intermediate goods. These difficulties can again be illustrated with the hypothetical scenario of a cartel relating to a component that is manufactured in Country A, imported into Country B and there incorporated into a final product that is sold in Country C.

97. For Country A, the cartel is a pure export cartel with no sales on its territory. However, if Country A's jurisdiction covers export cartels it may be argued that the export sales could be taken into account when determining the fine. There would be obviously no difficulties if Country A bases its fines on the total turnover the companies involved or the gains generated by the cartel since they do not depend on a nexus to its territory.

98. With respect to Country B, into which the cartelized product is imported, there would be generally no issues irrespective of whether its fining policy was based on turnover, relevant sales or profit, given that all three can be applied in this situation.

99. As regards Country C, where the final product is sold, the situation is straightforward if fines are assessed on the basis of the companies' total turnover or the gains generated by the cartel. However, it becomes more complicated if the basis for calculating the fine is the relevant turnover in the cartelized product. Since there are no direct sales of the cartelized product in its territory, Country C would have to find a suitable proxy or reflect the conduct in its fining in another way. A possible calculation could be the proportion of the cartelized component in the price of the final product as reflected by the value of purchases by the integrators (in order to exclude their margin from the calculation).

100. This hypothetical example illustrates that international cartels in intermediate goods present particular challenges when it comes to determining fines by countries that rely on the sales of the cartelized product in their territory. In certain circumstances, the cartelized component is sold in the relevant territory only as part of the final product, or not at all, at least with respect to some of the cartel participants. Competition agencies must find appropriate solutions to assessing fines in such situations and in the cases decided so far, they have done so by using appropriate proxies or resorting to discretionary fine increases.¹⁰³

101. For example, the European Commission has used the concept of 'sales through transformed products' in its LCD and TV and Computer Monitor Tubes cartel decisions. In those cases the European Commission categorized the cartel sales as follows: (i) direct sales, which covered direct sales of the cartelized component to customers in the European Economic Area ("EEA"), (ii) direct sales through transformed products, which covered sales within the EEA of the cartelized component incorporated into finished products by a vertically integrated cartel participant that has assembled the finished products outside the EEA¹⁰⁴, and (iii) indirect sales, which covered sales of LCD panels to a third party outside the EEA, which then incorporated the panels into finished products and sold these within the EEA. When determining the fines the Commission took into account both direct EEA sales and direct sales through transformed products. It excluded indirect sales since the fine was deterrent enough, thus maintaining its power to take them into account in appropriate cases.

3-4 September 2013, Lima, Peru, available at <http://www.oecd.org/competition/latinamerica/2013-latin-american-competition-forum.htm>.

¹⁰³ See e.g. the European Commission's approach in Wire harnesses as regards Furukuawa (European Commission Decision of 10 July 2013 in Case At.39748 - Wire Harnesses, para 133, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39748/39748_3865_3.pdf).

¹⁰⁴ The internal sales were made at prices affected by the cartel and the cartel participants were aware that the price of the cartelized panels affected the price of the finished products into which they were incorporated.

102. Similar issues arose in relation to the car parts investigations in the United States, where the DOJ looked at three categories of commerce and used two of them to determine the relevant fines range within the context of the U.S. Sentencing Guidelines. The first category was parts that were manufactured abroad, but sold into the U.S. for installation in cars made or sold in the U.S. The second category involved auto parts that were actually manufactured in the U.S. and sold to automotive manufacturers in the U.S. Both of those categories were used to calculate the volume of affected commerce, and ultimately the fines range. The third category involved the sale of auto parts that were manufactured and sold abroad, but put into cars on assembly lines that were destined for the U.S. While the DOJ did not take into account those sales when determining the affected volume of commerce in setting the fine range under the Sentencing Guidelines, it nevertheless looked at them as a factor for where within that range to sentence or, if applicable, to adjust downward from to account for the defendant's co-operation. The DOJ felt that not considering that commerce at all would have understated the seriousness of the offence and the impact this conduct had on the U.S.¹⁰⁵

103. While the DOJ's car parts investigations concluded so far have been all settled through plea agreements, the European Commission's approach was challenged and ultimately upheld by the European Court of Justice (ECJ) in *Innolux*. In that case, the ECJ declined to decide the case on the basis of jurisdictional considerations and instead focused on the fact that the sales through transformed products were in fact internal sales of a vertically integrated company, which, according to its earlier judgment in *Guardian*, must be taken into account when determining fines 'since they were inevitably affected' by the cartel and not doing so would give an undue advantage to vertically integrated companies.¹⁰⁶ Moreover, the cartel participants were aware that the price of cartelized LCD panels affected the price of the finished products into which they were incorporated. The fact that the first sale of the cartelized product took place outside the EEA was considered irrelevant since it was an intra-group transfer between the cartelists and its subsidiary. Instead, the determinative element was considered to be the first sale of the cartelized product to an independent party inside the EEA. Hence the ECJ effectively looked at sales through transformed products in the same way that it would look at intra-EU internal sales (sales by vertically integrated companies within the EU), which allowed it to apply the *Guardian* judgment and avoid questions of territoriality and jurisdiction.

104. These questions didn't have to be tackled by the ECJ since the issue of pure indirect sales, which would have triggered them, was not one of the issues on appeal (since European Commission excluded indirect sales from the fine calculation). The European Commission as well as the DOJ have stated their ability to rely on them in appropriate cases¹⁰⁷, and DOJ has relied on those sales in calculating fines in the Hsiung case discussed above. Considering the possibility to rely on indirect sales, the ECJ judgment in

¹⁰⁵ See The GCR Cartel Roundtable moderated by Niall Lynch during the ABA/IBA International Cartel Workshop in Vancouver, British Columbia, GLOBAL COMPETITION REVIEW (2012) Volume 15 Issue 4 and Duke, B.W. (2013) "The Indirect Bump: Indirect Commerce and Corporate Cartel Plea Agreements" Spring 2013 ABA Young Lawyer Division Antitrust Law Committee Newsletter, available at <http://cdn2.winston.com/images/content/6/4/v2/64609/THE-INDIRECT-BUMP.pdf>, hereinafter 'Duke, B.W. (2013)'.

¹⁰⁶ Case C-231/14 P *InnoLux Corp. v. European Commission*, hereinafter '*Innolux*'. Also compare Case C-580/12 P *Guardian Industries and Guardian Europe v Commission*, EU:C:2014:2363, hereinafter '*Guardian*'.

¹⁰⁷ See European Commission Decision of 13 May 2009 in Case COMP/37.990 – Intel, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/37990/37990_3581_18.pdf; European Commission Decision of 8 December 2010 in Case COMP/39.309 – LCD, available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39309/39309_3643_4.pdf. As regards the U.S. DOJ see the GCR Cartel Roundtable moderated by Niall Lynch during the ABA/IBA International Cartel Workshop in Vancouver, British Columbia, GLOBAL COMPETITION REVIEW (2012) Volume 15 Issue 4. and Duke, B.W. (2013).

Innolux contains potentially favorable language: the ‘concept of the value of sales ... encompasses the sales made on the market concerned by the infringement in the EEA, and it is not necessary to determine whether those sales were **genuinely** affected by that infringement’ [emphasis added].¹⁰⁸

105. Assuming that a competition authority would decide to use indirect sales in calculating fines, the question arises how to obtain the relevant data.

106. If the sales are of purely indirect nature (when the cartelized component is produced and sold abroad to a third party that subsequently incorporates it into a finished product that is imported into the relevant jurisdiction’s territory), then the data which are needed for the calculation of the indirect sales are in possession of the manufacturer of the finished product. Even if the data could be obtained, the relevant party to the proceedings (producers of the cartelized component) might not be able to verify the correctness of those figures, which may raise issues of the rights of defense and due process. It is possible that these practical difficulties in dealing with indirect sales played a part in competition agencies’ lack of direct reliance on indirect sales so far.

5.6 *Fines in the context of parallel proceedings in multiple jurisdictions*

107. Apart from issues relating to the determination of the fine itself, cartels in intermediate goods also present challenges concerning parallel fines imposed by different jurisdictions. The rise in global enforcement has resulted in the increase in the number of authorities that may deal with a cartel, leading to possibly significant parallel sanctions. The issue of double jeopardy has been the subject of much debate in recent years and is of particular pertinence to cartels in intermediate goods.

108. Taking the hypothetical example discussed above. Assuming that Country B and Country C investigate the cartel, if they both rely on the relevant value of sales by the cartel as a basis for their fine calculation, the consequence is that a single sale is punished twice, i.e. once by Country B (as direct import sale) and second time by Country C (as sale through transformed products). This could be considered as double counting, leading to double jeopardy, a claim that has been made by the appellant before the ECJ in *Innolux*.

109. Double jeopardy rules have been generally construed very narrowly. According to the EU courts’ case law, the test of double jeopardy contains three elements: i) the same facts; (ii) the same offender; and (iii) unity of the protected legal interest.¹⁰⁹ In *Graphite Electrodes* – a case without any indirect sales – the ECJ rejected the claim that the Commission violated the principle of double jeopardy by not taking into account the fines imposed in the U.S. because there was no unity of the protected legal interests (the EU fines related to the cartels’ impact in the EU).¹¹⁰ In *Innolux*, where there was a possibility that same sales could be taken into account by the Commission and another authority, the ECJ took the same line and held that ‘neither the principle non bis in idem nor any other principle of law obliges the Commission to take account of proceedings and penalties to which the undertaking has been subject in non-member States’.¹¹¹ Therefore, there appears to be little scope for relying on double jeopardy in intermediate goods cartel cases, at least in the EU.

¹⁰⁸ See *Innolux*, para 51.

¹⁰⁹ See Joined Cases C-204/00 P, etc *Aalborg Portland and Others v Commission* [2004] ECR I-123, paras 338-340.

¹¹⁰ *Showa Denko v Commission*, C-289/04 P, EU:C:2006:431, paragraphs 52 to 58; *SGL Carbon v Commission*, C-308/04 P, EU:C:2006:433, paras 28-34; and *SGL Carbon v Commission*, C-328/05 P, EU:C:2007:277, paras 24-35.

¹¹¹ See *Innolux*, para 75.

110. While competition agencies may not be bound by their jurisdiction's rules to take into account fines in other jurisdictions, they may voluntarily do so. For example, according to the U.S. Deputy Assistant Attorney General Brent Snyder situations of double counting are rare but the U.S. DOJ will sometimes take fines of other jurisdictions into account.¹¹² Reportedly, in Freight Forwarding the U.S. DOJ reduced the fines of certain defendants by 10% to reflect the fines the companies had previously paid in Japan.¹¹³ The EU's exclusion of indirect sales in LCD and TV and Computer Monitor Tubes may be also interpreted as a voluntary abstention from including sales that may be reasonably counted by other jurisdictions. The Canadian Competition Bureau also appears to take possible issues of double counting into account when determining fines.¹¹⁴

111. To conclude, there appears to be scope for jurisdictions to take each other's sanctions into consideration, while maintaining an adequate fining policy to ensure appropriate deterrence. Doing so may require discussions between the relevant authorities in ongoing parallel cases, which would appear possible within the existing co-operation frameworks.¹¹⁵

6. Conclusions

112. This paper had essentially two goals. First, to identify whether there are any features that make cartels in intermediate goods specific in relation to cartels in final goods. Second, to highlight and discuss some of the challenges that cartels in intermediate goods present to enforcers when it comes to their investigation, prosecution and sanctioning.

113. With respect to the first goal, empirical research suggests that cartels may be more frequent in markets for final goods than in markets for intermediate goods. A possible explanation may lie in the structural characteristics common to markets in final goods, such as price transparency and lack of buyer power, which may make collusion easier to achieve and monitor. The empirical research has also shown that cartels in intermediate goods are on average more stable, more difficult to detect *ex officio* and often of broader geographic scope than cartels in final goods.

114. As regards the second goal, cartels in intermediate goods pose specific enforcement challenges in particular when it comes to questions of jurisdiction and the calculation of fines, because of their international scope and the intermediate nature of the products involved. There can be no direct sales of the cartelized product but only sales of the final product that incorporates it in a country, which may pose a jurisdictional challenge for enforcement. Also, finding evidence, calculating and imposing fines while avoiding double counting can be complex and hinge on the capacity of competition authorities to co-operate.

¹¹² See Mlex report "Double-counting' of cartel penalties rare, DOJ official says", MLEX IN WASHINGTON: Report from the 63rd ABA Antitrust Law Spring Meeting (2015), available at <http://mlexmarketinsight.com/wp-content/uploads/2015/04/MLex-ABA-Coverage-Book-20153.pdf>.

¹¹³ See Tween, D. and Murray, G. (2014) "Death by 1,000 fines: is there a way to stop the bleeding?" Baker & McKenzie publication, available at <http://www.bakermckenzie.com/ArNADeath1000FinesMar14/>.

¹¹⁴ See The GCR Cartel Roundtable moderated by Niall Lynch during the ABA/IBA International Cartel Workshop in Vancouver, British Columbia, GLOBAL COMPETITION REVIEW (2012) Volume 15 Issue 4.

¹¹⁵ See OECD (2014), Recommendation of the Council concerning International Co-operation on Competition Investigations and Proceedings; OECD (2012) Improving international co-operation in cartel investigations; ICN Anti-Cartel Enforcement Manual - Chapter on International Cooperation and Information Sharing, available at http://www.internationalcompetitionnetwork.org/uploads/cartel%20wg/icn_chapter_on_international_cooperation_and_information_sharing.pdf.

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