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ROUNDTABLE ON COMPETITION IN THE CONSTRUCTION INDUSTRY

-- Issues paper by the Secretariat --

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COMPETITION IN THE CONSTRUCTION INDUSTRY

1. Introduction

1. The construction industry is a critical component of every OECD economy. Building new houses, apartments, factories, offices and schools is only part of what this sector accomplishes. It also builds roads, bridges, ports, railroads, sewers and tunnels, among many other things, and it produces the basic materials such as concrete that are used to make them. In addition, the construction industry maintains, repairs and makes improvements on all of those structures. The industry's significance is due not only to the fact that it provides the buildings and infrastructure on which virtually every other sector depends, but to the fact that it is such a sizeable sector in its own right. The construction industry is Europe's largest industrial employer, accounting for about seven percent of total employment, and in the EU, the US and Japan combined, it employs more than 40 million people.¹ Among all OECD countries, the construction industry accounts for an average of 6.47 percent of GDP.²

2. Unfortunately, the construction industry has acquired a certain degree of notoriety. It is well-known that the sector has been plagued by cartel activity for decades. Lord Borrie, former Director General of Fair Trading in the UK, once said that construction has the worst record of cartelisation of any industry.³ Despite an international trend toward harsher penalties against hard-core cartels in general and a multitude of successful prosecutions against construction firms in particular, the sector continues to be fertile ground for competition enforcers. Here is a sample of recent cases:

- Turkey's Competition Board issued several decisions against cement producers for anticompetitive agreements – including price fixing and market allocation agreements – between 1997 and 2005.⁴
- In 2002, after a whistleblower revealed that a major construction company was keeping secret financial accounts, the Dutch government began investigations that exposed rampant collusion

¹ See the European Commission's Enterprise and Industry web site at www.ec.europa.eu/enterprise/construction/index_en.htm; U.S. Department of Labour, Bureau of Labour Statistics, 2008-09 Career Guide to Industries, available at www.bls.gov/oco/cg/print/cgs003.htm; K. Reeves, "Construction Business Systems in Japan: General Contractors and Subcontractors," 30 Building Research & Information 413, 414 (2002).

² OECD Annual National Accounts Database [SNA] (2006).

³ Lesley Ainsworth, "Competition Law Enforcement in the Construction Industry," in John Uff & Anthony Lavers (eds.), LEGAL OBLIGATIONS IN CONSTRUCTION 539, 549 (1992); see also A. Hargita & T. Toth, "God Forbid Bid-Riggers: Developments under the Hungarian Competition Act," 28 World Competition 205, 206 (2005) (noting that the "great number of cartels in the construction industry is not unique to Hungary"); Srabana Gupta, "The Effect of Bid Rigging on Prices: A Study of the Highway Construction Industry," 19 Review of Industrial Organisation 453, 455 (2001) (the highway construction industry "has a long history of violating antitrust laws").

⁴ OECD, Competition Law and Policy in Turkey (2005) at 17, available at www.oecd.org/dataoecd/26/7/34645128.pdf.

throughout the Netherlands' construction industry. 481 leniency applicants came forward and overall approximately 650 companies were implicated. A parliamentary enquiry committee concluded that government agencies were defrauded by an average of 8.8 percent in public construction projects as a result of the collusion.⁵ The government imposed a total of 239 million euro in fines.⁶

- In 2003, the Bundeskartellamt imposed fines totalling approximately 660 million euro on the six largest cement manufacturers in Germany. At the time, those were the highest fines ever levied by the agency. The companies had reached quota and market allocation agreements with each other, some of them dating back to the 1970s.⁷ The entrenched and seemingly incorrigible nature of these cartels is illustrated by the fact that the Bundeskartellamt had just taken stern action against collusion in the same sector a few years earlier. It fined 33 producers a total of 300 million DM in 1999 for agreeing to restrict their sales.⁸
- In 2005, Japan's Fair Trade Commission uncovered a cartel involving approximately 50 bridge building companies, including several major firms. The JFTC filed criminal accusations with the Public Prosecutor General against six of the companies for jointly deciding the bid winners in advance, as well as against two officials from the Japan Highway Public Corporation for facilitating the bid-rigging schemes. The JFTC imposed surcharges totalling more than 12 billion yen.⁹
- In early 2007, the UK's Office of Fair Trading announced that it had such extensive, high quality evidence against a construction cartel that it was no longer offering leniency to participants.¹⁰ In April 2008, following one of the largest investigations in the agency's history, it issued a Statement of Objections charging 112 British construction firms with conspiring to rig bids in thousands of tenders. The affected projects included publicly funded schools, hospitals, and housing developments.¹¹
- Also in 2007, the Korean Fair Trade Commission imposed fines totalling several million dollars on 19 asphalt concrete manufacturers for colluding on price and sales volume.¹²

⁵ Hugo Priemus, "Dutch Contracting Fraud and Governance Issues," 32 Building Research & Information 306, 309 (2004).

⁶ See generally www.nmanet.nl/engels/home/News_and_publications/Theme_files/Construction_case/.

⁷ OECD, Competition Law and Policy in Germany 2002-2003, p. 6, available at www.oecd.org/dataoecd/22/21/34831942.pdf.

⁸ Bundeskartellamt, "Bundeskartellamt Imposes Fines of Over DM 300 million for Cartel Agreements among Ready-mixed Concrete Firms," Press Release (13 November 1999), available at www.bundeskartellamt.de/wEnglisch/News/Archiv/ArchivNews1999/1999_11_03.php.

⁹ Kazuhiko Takeshima, Chairman of the Japan Fair Trade Commission, "Japan's Endeavour for Establishing Rigorous Anti-Cartel Enforcement," Speech before the International Bar Assn. (New Delhi, 4 November 2006); Japan Fair Trade Commission, "The JFTC Surcharged 44 Participants in the Bid-rigging for Steel Bridge Construction Projects," Press Release (27 March 2006).

¹⁰ Office of Fair Trading, "OFT Closes Door on Cartel Leniency in Construction Bid Rigging Cases in England," Press Release (22 March 2007), available at www.oft.gov.uk/news/press/2007/50-07.

¹¹ Office of Fair Trading, "OFT Issues Statement of Objections Against 112 Construction Companies," Press Release (17 April 2008), available at www.oft.gov.uk/news/press/2008/52-08.

¹² KFTC, "KFTC Detects a Cartel of 19 Asphalt Concrete Manufacturers in Seoul," 5 KFTC Newsletter 11 (28 December 2007), available at http://ftc.go.kr/data/hwp/20071228_103433.pdf.

3. These cases raise a number of questions that could be addressed in this roundtable. For example, why does collusion occur so frequently in the construction industry? What approaches have competition agencies taken to detect and prosecute construction cartels? Of course, collusion is not the only type of anticompetitive practice that arises in the construction industry. Other issues, such as abuse of dominance and problematic mergers, can also arise in this sector. But it is generally fragmented enough that dominant firms and mergers that substantially lessen competition are unusual. Cartel activity is the most commonly occurring competition problem among construction firms, so it has been given most of the attention in this paper.¹³

2. Structural Issues

2.1 Market Definition

4. Market definition is a fundamental issue in merger review and unilateral conduct cases. It can also be relevant in cartel cases because it may inform the decision on how high to set the level of fines. It seems clear that there is more than one product/service market within the construction industry. Common sense goes against putting all buildings and structures, for example, into a single product market for “buildings.” Building a house is very different from building a football stadium. Most if not all firms who build homes would not be able to build stadiums. Furthermore, it is doubtful that a firm specializing in something like fitting pipes could suddenly shift to master carpentry work.

5. Another consideration is that some construction firms do not make any products at all; rather, they provide the service of organizing the construction process, leaving it to subcontractors to do the actual building work. Other firms provide a bundle of services, such as production, installation, and maintenance of heating, ventilation, and air conditioning systems.

6. With respect to the relevant geographic market, transportation costs are obviously an important factor. A firm wishing to bid on projects located well away from its base of operations will face substantial transportation costs for its labour, materials and equipment. Firms in the local area of the project site will, of course, have much lower transportation costs. Aside from transportation costs, some sectors within the construction industry have traits that create a firm upper bound on relevant geographic markets. For example, there is a natural limit to the distance that hot-mix asphalt can be transported (up to about 65 km) without spoiling.¹⁴

How narrowly should relevant product markets in the construction industry be defined? Is it sufficient to define separate markets for commercial buildings, residential buildings, and infrastructure, or

¹³ This paper intentionally avoids revisiting general cartel principles and best practices for dealing with them, which have been covered from various angles several times by the Committee and Working Party 3, including quite recently. See, e.g., OECD, Plea Bargaining/Settlement Of Cartel Cases, DAF/COMP(2007)38; OECD, Prosecuting Cartels Without Direct Evidence of Agreement, DAF/COMP/GF(2006)7; OECD, Cartels: Sanctions Against Individuals, DAF/COMP(2004)39. The subject of how to design public procurement systems in general so as to discourage collusion is not addressed, either, for the same reason. See OECD, Public Procurement, The Role of Competition Authorities in Promoting Competition, DAF/COMP(2007)34; OECD, Competition in Bidding Markets, DAF/COMP(2006)31. Because of this body of prior work, here it is possible to concentrate specifically on the construction industry and what its distinctive features imply for competition law enforcement.

¹⁴ US Department of Transportation and US Department of Justice, Suggestions for the Detection and Prevention of Construction Contract Bid Rigging (1983), available at www.fhwa.dot.gov/programadmin/contracts/dotjbid.htm.

is a narrower delineation more appropriate? How much specificity is enough? What special characteristics of the industry should be taken into account when defining geographic markets?

2.2 Concentration

7. There is some variation in the degree to which product and service markets within the construction industry are concentrated. Overall, the industry appears to be overwhelmingly made up of small firms with fewer than 20 employees.¹⁵ These firms produce most of the industry's output. On the other hand, the importance of the small number of large firms should not be underestimated. Their employees tend to produce a disproportionately high percentage of output.¹⁶

8. Because of the very large number of small firms, the industry is often characterized as unconcentrated. Some parts of it, however, are much less fragmented. There is a limited number of general contractors who are capable of managing very large projects, whereas there is quite a large number of small subcontractors.¹⁷ The two types of firms serve different functions and have more of a vertical relationship than a horizontal one. Competition among the large general contractors seems to be more in the mould of oligopoly, whereas the rivalry among small contractors who do basic work such as laying bricks and pouring concrete tends to be closer to perfect competition.¹⁸

On what factors does the variation in concentration levels among construction industry markets depend? In other words, why are there only a few, relatively large firms in a small number of construction markets and many, relatively small firms in most others? Are there any discernible trends in the way concentration is changing in the industry? If so, what implications does that have for competition law enforcement?

2.3 Barriers to Entry

9. For small construction firms, the start-up costs for entering their local market tend to be low. That may be due to the fact that relatively few pieces of equipment have to be bought. Small firms commonly lease equipment on an as-needed, project-by-project basis.

10. There are other financial hurdles, though. Customers with substantial projects often require construction firms to post a bond, which acts as a financial guarantee for the customer in the event that the firm is unable or unwilling to fulfil its obligations. The standard amount of the bond varies substantially from country to country, being as little as zero to as much as the entire value of the contract. These bond requirements may present formidable obstacles to new firms, especially if they are small.

¹⁵ See, e.g., Niclas Andersson & Fredrik Malmberg, "Competition and Barriers to Entry in the Construction Sector," Conference Proceedings for the 10th Symposium on Construction Innovation and Global Competitiveness pp. 461, 466 (2003) (discussing Denmark and Sweden); Gerard de Valence, "Market Structure, Barriers to Entry and Competition in Construction Markets," in National University of Singapore, KNOWLEDGE CONSTRUCTION (Proceedings of the Joint International Symposium of CIB Working Commissions) (22 October 2003), 819, 821-22 (discussing Australia); Roberto Pietroforte & Piero Tangerini, "From Boom to Bust: The Case of Italian Construction Firms," 17 Construction Management and Economics 419, 421 (1999).

¹⁶ In Australia, for example, only 0.62% of all construction firms have more than 20 employees, but that small percentage of firms employs 13.6% of all construction workers, and they in turn produce almost 25% of the industry's output. De Valence, *supra* note 15 at 821.

¹⁷ Hargita & Toth, *supra* note 3 at 209.

¹⁸ De Valence, *supra* note 15 at 823-24.

11. Large construction companies seem to be better able to absorb transportation costs than smaller firms, so they typically manage to bid across a wider geographic area. Nevertheless, they still face some obstacles. In particular, buyers with projects suitable for large construction firms are more likely to demand a track record of successfully completed relevant projects.¹⁹ The larger the project, the more important this factor tends to be because the customer will have more at stake and thus will be less likely to take a chance with an unknown firm. This reputational factor may help to explain why the market for very large construction projects tends to be more concentrated, since it favours incumbents most heavily. The comparatively few major construction firms develop strong ties with the largest clients, making it more difficult for smaller or newer firms to acquire the kind of experience and trust needed to satisfy the clients' prequalification requirements. That means new and smaller firms may not even be allowed to bid on major projects, let alone win them.

Are entry barriers high or low in the construction industry? Does the answer vary from market to market? If so, on what factors does the variation depend (e.g., firm size, the firm's area of expertise)? Where barriers do exist, what are they? What implications, if any, does the need for good track records and client relations with respect to large construction projects have for merger review?

3. Cartel Issues

3.1 *Prone to Collusion?*

12. Dorée, et al. have stated that “[t]here seems to be a culture and an environment that induces and sustains economic offences and malpractices” in the construction industry.²⁰ Does the industry have characteristics that make it especially susceptible to cartel activities?²¹ The following list contains some features of the construction sector that bear on the likelihood of collusion in one way or another:

- *The product is simple and not very differentiated.* Relatively speaking, most construction firms are low-tech businesses. They tend to use fairly basic materials to build the same things their competitors build. Many customers do not care which firm they hire so long as the firm carries out the work according to plan and charges a comparatively low price.
- *Transparent bid procedures.* The general public often has access to bid openings for construction projects, at least in auctions for public procurement. Procurement laws and administrative regulations tend to require a certain amount of transparency so as to discourage corruption. Procurement officials may be required to disclose information such as the identity of bidders and the terms and conditions offered in each bid.²²
- *The business is highly cyclical and orders are “lumpy.”* The construction sector is subject to substantial demand swings. In the Netherlands, for example, 12 percent of all bankruptcies are filed by construction firms, a fact that “reflects the construction sector’s relatively high

¹⁹ Andersson & Malmberg, supra note 15 at 466.

²⁰ A. Dorée, E. Holmen & J. Caerteling, “Co-operation and Competition in the Construction Industry of the Netherlands,” 19th Annual ARCOM Conference (Association of Researchers in Construction Management), vol. 2 (2003), pp. 817-826 at 817.

²¹ For a review of factors that affect the ease of collusion, see OECD, Public Procurement, The Role of Competition Authorities in Promoting Competition, DAF/COMP(2007)34, Background Note at 21-23.

²² Id., Executive Summary at 7.

vulnerability and sensitivity to the economic cycle.”²³ Housing, commercial building and public works all depend on flows from other major sectors. Boom and bust cycles in those other sectors therefore affect construction firms, too.

- *Inelastic demand.* Though subject to fluctuations, the demand for construction work – once it is there – tends to be fairly price inelastic. A town that needs a new sewer system, for example, is probably not going to be sensitive to modest price increases.
- *A large number of buyers.* A large and varied customer base buys construction services. It includes individuals, large and small businesses, and municipal and national governments. The size and heterogeneity of these customers make it more difficult for them to compare information than would be the case if there were only a few buyers.
- *Sub-contracting is common.* Many construction projects could not be efficiently completed without some degree of sub-contracting. Even large contractors have to rely on smaller, more specialised firms for some aspects of their projects. But sometimes a winning bidder will sub-contract part of a project to a firm that would ordinarily be its rival. In fact, firms in the construction sector often consider talking to and partnering with each other to be a normal way of doing business. Whereas in one project companies might truly behave like independent competitors, in another project they might form a joint venture or have a contractor/subcontractor agreement. That kind of complex relationship causes headaches for competition authorities because it may not be clear whether or not meetings and communications between the companies served a legitimate business purpose.²⁴

In what ways do these factors affect the probability of cartel formation? What other characteristics of the construction industry affect that probability? Does the industry have any characteristics that make such conduct especially difficult to detect and/or prove? How can such an unconcentrated industry have a recurring problem with cartels?

3.2 *Types of Collusive Activities Undertaken*

13. Cartels may engage in several different types of anticompetitive practices. These include:

- Simple price fixing
- Bid rotation (when firms agree to take turns winning bids)
- Bid suppression (when some firms agree not to bid)
- Cover pricing (when some firms intentionally submit bid prices that are too high to win or that carry conditions that the buyer is sure to find objectionable)
- Quota agreements
- Market sharing arrangements (when rivals allocate customers to one another according to project type or location)

²³ Hugo Priemus, “Dutch Contracting Fraud and Governance Issues,” 32 Building Research & Information 306, 307 (2004).

²⁴ Hargita & T. Toth, supra note 3 at 209.

- Sharing bidding fees (when a cartel charges its members a fee for bidding which they all add to their bid price; the surplus is then shared after the winner is selected)
- Collusive sub-contracting (when the winning bidder rewards cartel partners for their role by giving them sub-contracts so as to share the spoils of their scheme); and
- Information exchanges (which may not be unlawful)²⁵

What types of unlawful behaviour do construction cartels undertake most often?

3.3 Detecting Construction Cartels

14. Numerous factors can be informative when an agency is trying to determine whether a construction project or market has been affected by a cartel. To begin with, competition authorities will probably find it helpful to complement their own team of investigators with an engineering consultant who specialises in the type of construction at issue and a financial auditor, if possible. This group can then consider factors such as:

- Whether qualified bidders failed to bid
- Whether certain contractors repeatedly avoid bidding against one another
- Whether the winning bidder repeatedly sub-contracts work to firms that submitted higher bids on the same projects
- Whether a certain firm always wins the contracts in a certain geographic area
- For road construction projects, the US Department of Transportation and US Department of Justice suggest plotting the project locations of suspicious contracts on a map, assigning each vendor a different colour; recognizing that, as mentioned earlier, there is a natural limit to how far hot-mix asphalt can be transported (up to about 65 km), a comparison of the vendors' wins in relation to their asphalt plants on the map may reveal a pattern consistent with territorial market allocation.²⁶

15. These factors are insufficient to prove the existence of a cartel, of course, but they can help to determine whether a deeper investigation is warranted.

What other strategies and factors for detecting cartels in construction markets are especially effective?

²⁵ For a more exhaustive list, see John Connor, GLOBAL PRICE FIXING 27 (2d ed. 2007).

²⁶ US Department of Transportation and US Department of Justice, Suggestions for the Detection and Prevention of Construction Contract Bid Rigging (1983), available at www.fhwa.dot.gov/programadmin/contracts/dotjbid.htm . The same document contains several other factors specific to construction projects that can be taken into account when determining whether a cartel is present. For more generally applicable suggestions on what factors and suspicious behaviour should be considered when a cartel is suspected in connection with procurement projects, see OECD, Public Procurement, The Role of Competition Authorities in Promoting Competition, DAF/COMP(2007)34, Background Note at 36-38.

3.4 Case Management

16. The nature and scale of the Netherlands Competition Authority's cartel cases against hundreds of construction companies forced the agency to develop new approaches to investigating and sanctioning cartel activity.²⁷ In 2002 it established a construction industry task force to tackle the investigative work. The agency wanted to prevent lengthy procedures while ensuring that the sanctions imposed would motivate the companies to start competing honestly. The authority therefore introduced an accelerated sanctions procedure that gave a 15 percent fine reduction to companies that agreed not to contest the facts and infringement in the statement of objections. Approximately 90 percent of the companies chose this "fast lane procedure." The substantial time and expense that would have been necessary to hold individual hearings for hundreds of companies were therefore saved.

17. The Bundeskartellamt has also used a combination of leniency and a special task force to achieve successful results in discovering and punishing construction cartels. As mentioned earlier, it imposed heavy fines on the six leading manufacturers in Germany's cement industry for their part in a market allocation and quota scheme. The agency's success in doing so has been attributed primarily to the leniency programme adopted in 2000 and the establishment of a Special Unit for Combating Cartels in 2002.²⁸

18. The charges brought against 112 firms by the UK's OFT earlier this year were the culmination of a four-year effort. It began as an investigation of the roofing industry and quickly spread to other segments of the construction industry. Ultimately, the OFT raided 57 businesses and received 37 leniency applications. But the underlying problem was even larger than those figures suggest. In fact, the OFT eventually had to cut off the investigation because it was uncovering more cartel behaviour than the agency could process, given its resources.²⁹

How has your competition agency approached the prosecution of cartel cases in the construction industry? Have you devised any procedural strategies that have worked especially well in this sector? In particular, how can cartel cases be managed efficiently in an industry such as this one, where cartels may have dozens or even hundreds of members?

4. Arguments against competition

19. Historically, the construction industry has been relatively unreceptive toward the idea of open competition. In fact, its representatives have advanced arguments claiming that competition is not only irrelevant in the construction industry, but that it is actually harmful to society. Therefore, they contend, the sector should be exempt from some or all of the competition laws. Competition officials are in a position to rebuff such arguments, but how should they respond, specifically?

²⁷ See generally www.nmanet.nl/engels/home/News_and_publications/Theme_files/Construction_case/.

²⁸ OECD, Competition Law and Policy in Germany 2002-2003, p. 6, available at www.oecd.org/dataoecd/22/21/34831942.pdf; Bundeskartellamt, "Bundeskartellamt Imposes Fines Totalling 660 Million Euro on Companies in the Cement Sector on Account of Cartel Agreements," Press Release (14 April 2003), available at www.bundeskartellamt.de/wEnglisch/News/Archiv/ArchivNews2003/2003_04_14.php.

²⁹ Office of Fair Trading, "OFT Issues Statement of Objections Against 112 Construction Companies," Press Release (17 April 2008), available at www.offt.gov.uk/news/press/2008/52-08; Office of Fair Trading, Information Note to Local Authorities (17 April 2008), available at www.offt.gov.uk/shared_offt/business_leaflets/general/Information-Note.pdf.

4.1 *The Irrelevance Argument*

20. Construction industry advocates point out that problems that were unforeseen when a project was conceived often arise after a winning bidder has been selected and work is underway. Such problems invariably lead to change orders for additional work, which have to be negotiated and result in increases to the original price. Therefore, the winning bid price is often lower than the actual price paid by the client, and sometimes it is much lower. Industry advocates argue that because it is rarely possible to know what the real price of a project will ultimately be even after a winning bid has been selected, competition is irrelevant in construction markets.

21. It is true that construction work is prone to complications that become apparent only after work has begun. For example, one fairly common problem is that hazardous materials may be discovered in or under an existing building in the course of restoration or expansion work. The cost of removing such materials can have a substantial effect on a project's budget. Another typical complication is that the standard foundation exploration does not uncover a soft soil condition, causing major additional work such as moving columns. Alternatively, rainwater may damage a structure while it is still incomplete. If the damage is only partially mitigated for some reason, mould may set in, often leading to a certain amount of fear and mistrust and therefore to the possibility of lawsuits, and perhaps finally to a costly decision to demolish and rebuild.

22. At least with respect to public procurement auctions, another factor often interacts with the inevitable change orders. Specifically, procurement agencies are commonly required by law to select the bidder who submits the lowest price, or else to have a very good reason for not doing so. Some bidders therefore submit unrealistically low bids, knowing that the actual fee they will receive will be substantially higher due to the change orders that will arise and have to be negotiated. The real fee, in other words, is more the result of negotiation with a single contractor than of price competition among several contractors.

One possible response to this argument is that if competition were irrelevant, then construction firms would not bother to destroy it so often by forming cartels. What other responses can be made?

4.2 *The "Ruinous Competition" Argument*

23. Another argument that construction firms sometimes make is that the nature of their industry makes it especially vulnerable to "ruinous competition" and that both firms and customers would be better off with more cooperation and less competition. In fact, this assertion occasionally appears in academic literature, as well. Professors Dorée, et al., claimed in a 2002 article that "[t]he construction industry seems highly vulnerable to ruinous competition."³⁰ They also contend that "emerging theoretical insights on dynamic competition" from industrial organization economics suggest that "[t]oo much competition may inhibit private enterprises from investing in Research & Technology Development and new product development."³¹ Indeed, they claim that most countries are already moving away from traditional competitive approaches in the construction industry because competition creates a business environment that encumbers innovation and dynamic efficiency.

24. Grumblings about "ruinous" and "cutthroat" competition have been heard since at least the beginning of the 20th century and have not been persuasive.³² Refutations of the article by Dorée, et al.,

³⁰ Dorée, et al., supra note 20 at 818.

³¹ Id. at 817.

³² F.M. Scherer, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 212 (2d. ed. 1980); A. Akintoye & M. Skitmore, "The Profitability of UK Construction Contractors," 9 *Construction Management and Economics* 311 (1991).

existed in academic literature on the construction industry well before they published their paper. For example, Ball, et al., published an article three years earlier that undercuts the ruinous competition argument on both theoretical and empirical grounds. In essence, they base their argument on the unsurprising principle that competitive markets work. In other words, competitive markets tend to move toward efficient equilibria where firms earn a normal long term profit. If some relatively less efficient firms fail and exit, then their exit must have been necessary for the market to reach its long run competitive equilibrium.³³

25. While the notion that most countries are abandoning the competition paradigm may strike enforcement officials as a bit fanciful, the point about innovation and dynamic efficiency deserves some attention. Dorée, et al., are not as specific in their support of that point as one might wish, but they seem to be saying that entry barriers in the construction sector are so low and competition is so fierce that innovation is difficult or impossible to appropriate. Any new cost-saving techniques or quality-enhancing improvements that a firm develops will simply be imitated by the firm's numerous rivals because the construction process is so transparent. It is therefore not worthwhile to innovate, so the industry experiences an innovation gridlock. Another way of describing this argument is that it characterises the construction industry as being positioned at the far left of the inverted U-shape curve believed to depict the relationship between market concentration and innovation.³⁴ The crux of their point is that enforcers are paying too much attention to static efficiency concerns like pricing and not enough attention to dynamic efficiency concerns like innovation. Allowing more cooperation, they argue, would make it easier for firms to capitalise on their innovations, which would ultimately benefit customers.

26. A related point raised by these authors is that the winning bidder on construction projects is too often selected on the basis of its price alone. That suppresses competition on the basis of quality because the buyer simply assumes (or is required to assume) that all bidders offer products with equal value. That, in turn, discourages innovation that would have resulted in superior quality. Therefore, to stimulate the lacklustre level of innovation in this sector, buyers should not necessarily select the low bidder for every construction project.

Do Dorée, et al., have a point about the disadvantage of always selecting the low bidder? If the authors are correct that from a dynamic perspective there is too much competition in the construction industry and there should be more cooperation, competition authorities around the world have been making a mistake by taking actions against so many construction industry cartels over the years. How should competition enforcers reply to their argument?

³³ M. Ball, M. Farshchi, & M. Grilli, "Competition and the Persistence of Profits in the UK Construction Industry," 18 *Construction Management and Economics* 733 (2000).

³⁴ See OECD, *Patents, Competition and Innovation*, DAF/COMP(2007)40, Background Note at pp. 46-48.